

ISSN 1833-3850 (print)  
ISSN 1833-8119 (online)

# International Journal of Business and Management

Vol. 5, No. 3  
March 2010



Canadian Center of Science and Education®

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## Predictors of Job Satisfaction among Emerging Adults in Alberta, Canada

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*The data used in this paper were collected by the Population Research Laboratory (PRL), University of Alberta, as part of the School-Work Transition Project directed by Dr. H. Krahn and Dr. G. S. Lowe. The survey was funded by Alberta Learning.*

### Abstract

This study explores the aspect of satisfaction with jobs and career, and the predictors of job satisfaction among the emerging adults in Alberta. Obtaining data from the *2003 Alberta High School Graduate Survey* among a sample of 1,030 emerging adults from Alberta, the paper examines the predictors of job satisfaction among the emerging adults, which are self-esteem, happiness, work-reward preferences, valued job characteristics, income, education, occupational categories, and other demographic variables. Using structural equation modeling, a job satisfaction model has been developed. The findings indicate that self-esteem and valued job characteristics are direct and strongest predictors of job satisfaction among the emerging adults. In addition, happiness and income positively predicts job satisfaction. The variable 'work-reward preferences' does not directly predict job satisfaction, but is rather mediated through self-esteem and valued job characteristics. Discussion includes limitation, future research direction, and policy implications.

**Keywords:** Job satisfaction, Self-Esteem, Happiness, Work-Reward preferences, Valued job characteristics, Income

### 1. Introduction

Over the last several decades, numerous studies have been conducted around the world examining the impact of different psycho-socio-economic factors on job satisfaction. Research on job satisfaction has examined the role of *self-esteem* (Alavi & Askaripur, 2003; Salmela-Aro & Nurmi, 2007; Sekaran, 1986), *gender* (Clark, 1997; Dole & Schroeder, 2001; Donohue & Heywood, 2004; Eskildsen, Kristensen, & Westlund, 2004; Haviland, 2004; Kim, 2005; Manning, 2002; Oshagbemi, 2000; Okpara, 2004), *education* (Okpara, 2004), *income* (Sokoya, 2000; Sweeney, McFarin, & Inderrieden, 1990) and *happiness* (Boehm & Lyubomirsky, 2008; Connolly & Viswesvaran, 2000; Judge & Ilies, 2004). In 1992, Cranny, Smith, and Stone asserted that more than 5,000 studies of job satisfaction have been published. However, only a few academic research (if any) focused on the predictors of job satisfaction among emerging adults in Canada, and particularly in Alberta. Therefore, this paper aims at filling the gap in research, and explores several factors predicting job satisfaction among emerging adults in Alberta, Canada.

Emerging adulthood marks an important point in the life of an individual. Arnett (2000) asserted that the period of life extending from age 18 to 25 be regarded as a distinctive life stage called 'emerging adulthood'. According to Arnett (2001), emerging adulthood occurs only when they are financially independent, are no longer living at home, have reached their educational aspirations, are comfortable with embracing the roles of marital partner and parent, and are able to live self-sufficiently. This stage of life is crucial in shaping the life direction and social identity of individuals because they are yet to converge on a stable lifestyle. Since this is generally the early stage of a career of an individual, it may have a great impact in shaping a person's future accomplishments and lifestyle. In Canada, the percentage of employed people in this age category is quite large (see Table 1). Therefore, it requires empirical studies to identify the aspects influencing job satisfaction of this particular group of individuals.

Lopez (1982) explored the differential impact of self-esteem on the relationships between various job satisfaction scores (e.g. overall, intrinsic, extrinsic, pay) and job performance, but found no significant correlations between the three

self-esteem measures and the job satisfaction scale. In a study focusing on aspects of job experiences and self-esteem, Walsh and Taylor (1980) examined the association of work-related factors and various indicators of self-esteem for seven work groups, i.e., garbage-collectors, park workers, bartenders, barbers, mail carriers, high-school teachers and university professors. Walsh and Taylor (1980) found that job prestige had a positive influence on occupational self-esteem; although job prestige accounted for only about four percent of the variance in 'global' self-esteem, suggesting that low status jobs produce serious negative psycho-social consequences. A study by Abraham (1999) investigated the relationship between differential inequity, job satisfaction, intention to turn over, and self-esteem involving more than one occupational group. Abraham (1999) hypothesized that individuals with low self-esteem experience greater job dissatisfaction than those with high self-esteem, and found that self-esteem significantly moderated the global inequity-job satisfaction and global inequity-intention to turnover relationships.

Judge, Locke, Durham, and Kluger (1998) found that the four traits— self-esteem, generalized self-efficacy, locus of control, and neuroticism— were each independently significantly correlated with job satisfaction. In addition, Judge et al. (1998) argued that generalized self-efficacy should affect job satisfaction through its association with practical success on the job. In another study, Alavi and Askaripur (2003) found that there is a significant relationship between self-esteem and job satisfaction of personnel in the organization, that is, personnel with high self-esteem had more satisfaction in their jobs than personnel with low self-esteem. Therefore, the following hypothesis is proposed:

H<sub>1</sub>: Self-esteem will have a direct positive association with job satisfaction.

Valued job characteristics indicate the attitude of individuals concerning the nature of work environment and related issues that describe the job they hold. Similar to the concept of valued job characteristics, previous research shows positive relationship between work values and job satisfaction. For instance, Robert Knoop (1994) asserted that work values significantly predicted job satisfaction. Hence, it is proposed that:

H<sub>2</sub>: Valued job characteristics will have a direct positive association with job satisfaction.

Several studies suggested that job satisfaction and general happiness are positively related. Research indicated that happy individuals are relatively more successful in the workplace. For example, happiness is related to income (Diener & Biswas-Diener, 2002), and getting social support from colleagues and supervisors (Iverson, Olekalns, & Erwin, 1998). Most importantly, research provides evidence that happy people are more satisfied with their jobs compared with unhappy people (Connolly & Viswesvaran, 2000; Judge & Ilies, 2004). Happy people are also less likely to lose their jobs and to be unemployed than less happy people (Diener, Nickerson, Lucas, & Sandvik, 2002). In an extensive review, Boehm and Lyubomirsky (2008) illustrated that happy people are more satisfied with their jobs and report having greater autonomy in their duties. It is therefore proposed that:

H<sub>3a</sub>: Happiness will be positively related to job satisfaction.

H<sub>3b</sub>: Happiness will positively lead to self-esteem, which in turn will positively lead to job satisfaction.

Work-reward preferences among individuals may or may not contribute to job satisfaction. Previous research found no significant differences in work-related preferences between US and Australian MBA students and industrial employees (Popp & Davis, 1984). In addition, there were no significant cultural or regional differences found in work reward preferences (Popp & Davis, 1984). Therefore, it is assumed that work-reward preferences may not be directly associated with job satisfaction, but rather could be mediated by other variables. Therefore, the proposed hypothesis is:

H<sub>4</sub>: Work reward preferences will have a positive association with valued job characteristics, which will lead to job satisfaction.

Income has been found to be an important source of satisfaction at work. A number of studies have shown that income is related to job satisfaction (Sokoya, 2000; Sweeney et al., 1990). For instance, in a study comparing job satisfaction of public and private managers, Howard and Frink (1996) found that income was related to job satisfaction. In a similar study examining personal predictors of job satisfaction among 350 public sector managers, Sokoya (2000) found that income was a major source of job satisfaction. In addition, self-consistency theory suggests that individuals will seek out clear indications of their occupational success, and those who have high levels of income will perceive income as an important indication of their self-worth (Gecas & Seff, 1990). Furthermore, Rosenberg and Pearlin (1978) noted that because economic achievement is an indicator of status in society, higher levels of economic achievement should lead to higher self-esteem. Therefore, the following two hypotheses are proposed:

H<sub>5a</sub>: Income will have a direct positive association with job satisfaction.

H<sub>5b</sub>: Income will be positively related to self-esteem, which will lead to job satisfaction.

Educational credentials are vital for obtaining high position in a job. Studies have found positive relationships between education levels and job satisfaction (Al-Ajmi, 2006; Okpara, 2004). In addition, Glenn and Weaver (1982) found that the total effect of education was positive for both male and female, but was considerably stronger for women than for men. Hence, it is proposed that:

H<sub>6</sub>: Education will have a positive association with job satisfaction.

Gender differences in job satisfaction have also been extensively researched, but no conclusive evidence has been found with regard to the levels of satisfaction among men and women. For instance, Oshagbemi (2000) stated that research reported no significant difference between the sexes in relation to job satisfaction, particularly when a number of other variables were statistically controlled. However, results of the studies concerning satisfaction showed that gender was a significant predictor of job satisfaction (Bilgic, 1998). In addition, studies on gender earnings gap indicated that although women are paid less, they appear more satisfied with their jobs compared to men (Clark, 1997; Sloane & Williams, 2000). It is therefore proposed:

H<sub>7</sub>: There will be differences in job satisfaction between male and female.

### 1.1 The Current Study

Although research indicated that the association between age and job satisfaction is U-shaped (Clark, Oswald, & Warr, 1996), there has been limited focus on research about emerging adults' job satisfaction in Canada in general, and Alberta in particular. According to Statistics Canada's *Alberta Labor Force Statistics*, in August 2009, Alberta has the highest employment rate (70.1%) among provinces in Canada. In particular, the labor force participation rate among the emerging adults in Alberta is also one of the highest in Canada (see Table 1). It can be inferred from Table 1 that there is significant presence of emerging adults in the labor force in Alberta in August 2009, which is higher than it was in the previous year. Therefore, it is important to examine the aspect of satisfaction with jobs and career, and the predictors of job satisfaction among the emerging adults in Alberta.

[Insert Table 1 here]

## 2. Methods

### 2.1 Data and Sample

The data for the present study are obtained from the *2003 Alberta High School Graduate Survey* conducted by the Population Research Laboratory (PRL), University of Alberta, as part of the School-Work Transition project. In the summer (April 30 to July 25) of 2003, 1,218 participants from across Alberta, Canada, completed telephone interviews and self-administered questionnaires. The survey used a cluster sampling strategy to construct a representative sample of Albertans. The data were weighted to compensate for the over-sampling of a large city (Edmonton) schools within the province, and to correct for smaller or larger than targeted sub-samples in other regions. A total of 1,175 interviews were completed by telephone, each averaging 32 minutes in length. In addition, 153 "paper and pencil" questionnaires were sent to potential respondents. Forty-three mail questionnaires were returned and added to the main database, creating a final sample of 1,218 survey respondents. The response rate was 62%. Of the respondents, 1,030 were employed; and only employed respondents constituted the final sample in the study. The weighted survey estimates are used in the data analyses.

The research design for this study was developed with careful attention to ethical consideration. A University of Alberta Research Ethics Committee examined the content of the questionnaire and the planned data collection strategy prior to actual data collection for the study. The committee agreed with the research team's assessment that the questions to be asked were not intrusive nor overly sensitive, and that the potential value of the study out-weighted any inconvenience caused to potential participants. The informed consent from participants was obtained and participation was voluntary, and confidentiality of responses was maintained.

### 2.2 Measures

*Job Satisfaction.* Job Satisfaction was the dependent variable, and was measured by asking two questions, a) "How satisfied are you with your job?", and b) "How satisfied are you with your career to this point?". Participants rated these items on a scale from 1 (*very dissatisfied*) to 5 (*very satisfied*) ( $M = 3.64$ ,  $SD = 0.93$ ). The two items formed a one-dimensional scale, with a Cronbach's alpha of 0.72, which indicated good internal consistency reliability for a two-item scale. The scale significantly correlated with other study variables (see Table 4). In addition, factor loadings were 0.88 for each of the items, which further provide evidence for construct validity of the scale. Although job satisfaction consists of two items only, similar scale has been frequently used in previous studies (Heslop, Smith, Metcalfe, Macleod, & Hart, 2002; Salmela-Aro & Nurmi, 2007; Wanous, Reichers, & Hudy, 1997).

*Self-esteem.* Eight items from the 10-item scale developed by Rosenberg (1989) were used to assess self-esteem. This scale is a self-report measure of generalized feelings about the self. Participants indicated on a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*) the extent to which they agree or disagree with statements such as, "I feel that I have a number of good qualities", and "All in all, I am inclined to feel that I am a failure" (reverse coded) ( $M = 4.01$ ,  $SD = 0.59$ ). The factor loadings of items ranged from 0.59 to 0.74. The Cronbach's alpha coefficient for the 8-item scale was 0.79.

*Work reward preferences.* Work reward preferences was measured by six items. Although the original survey contained 13 items, the rest of the items were deleted due to low factor loadings ( $< .50$ ). Participants responded to these items (e.g., “Work that gives a feeling of accomplishment”, “Work with opportunities to learn new things”) on a 5-point Likert scale (1 = *not at all important*, 5 = *very important*) ( $M = 4.58$ ,  $SD = 0.44$ ). The factor loadings of items ranged from 0.52 to 0.76. The Cronbach’s alpha coefficient for the scale was 0.78.

*Valued job characteristics.* Seven items were used to assess the concept of valued job characteristics. A few items from the original survey were deleted due to low factor loadings ( $< .50$ ). Participants indicated on a 5-point Likert scale (1 = *strongly disagree*, 5 = *strongly agree*) the extent to which they agree or disagree with statements such as, “My job lets me use my skills and abilities” and “My job requires that I work very hard” ( $M = 3.64$ ,  $SD = 0.90$ ). The factor loadings of items ranged from 0.58 to 0.84. The Cronbach’s alpha coefficient for the scale was 0.85.

*Happiness.* Happiness was elicited by the question “Thinking about your life in general, how *happy* are you with your life?”. Response categories were 1 = *not happy at all*, 2 = *somewhat happy*, and 3 = *very happy*. The response categories show that participants were generally happy ( $M = 2.62$ ,  $SD = 0.53$ ). Although happiness consists of one item only, a similar scale has been used in previous research. Single-item measures of happiness are reliable, valid, and commonly used in community surveys, as well as in cross-cultural comparisons (Abdel-Khalek, 2006; Kahneman & Krueger, 2006; Swinyard, Kau, & Phua, 2001).

*Income.* Each participant was asked to identify, in Canadian dollars, the average amount of money received each month from income and salaries before any deductions. The average income received each month was about CAD \$2,700 ( $Mean = 2762.52$ ,  $Median = 2,500$ ,  $SD = 1775.36$ ).

*Control variables.* Gender was coded as 0 (*male*) or 1 (*female*). Age was coded as 1 = *up to 24 years*, 2 = *25 years*, or 3 = *26 + years*. Marital status was coded as 0 = *not married* (Single, divorced, widowed, and cohabiting) or 1 = *married*. In the study, 18 participants (1.5%) reported being divorced, 166 participants (13.7%) reported cohabiting, and one reported being widowed. Education was indicated by the enrolment at post-secondary level studies: 0 = *no* or 1 = *yes*. Occupational categories were coded as 1 = *management or professional*, 2 = *skilled*, or 3 = *semi-skilled and unskilled*.

### 2.3 Analysis

The statistical analyses were performed in two steps. First, data were analyzed using SPSS 15.0, which included analysis of descriptive statistics (e.g., percentages, mean scores, standard deviations), and inferential statistics (e.g.,  $\chi^2$ -test, *t*-test, *F*-test, Pearson’s correlation coefficient, and linear regression analysis). Second, Structural Equation Modeling (SEM) was conducted by using AMOS 16.0 to assess fitness of the model based on the proposed hypotheses. AMOS utilizes the missing-data method that enables all the observations in the data set to be used in estimating the parameters of the model. Unlike other methods, this method does not assign values for those that are missing, but employs all the data that are available to estimate the model using the full information maximum likelihood (FIML). Since the data set of the study has multiple missing cases, it is particularly important to ensure the correctness of the analyses.

## 3. Results

### 3.1 Profile of Survey Participants

Fifty three percent (645) of the participants were male and 47 percent (573) of them were female. The average age of these respondents was 25 years ( $Mean = 25$ ,  $SD = 1$ ). About two-thirds of them (76%) were not married (single, divorced or cohabiting). Majority of them (88%) attended in post-secondary level education (technical college, university, or diploma) and among those who attended university (583 participants, 54.7%), 67.2 percent obtained a bachelor degree. Majority of them (85.4%) are currently employed (either in one job [71.6%] or in several jobs [13.8%]). Among the employed, 36.8 percent of them were in management or professional categories, 39.8 percent of them were in skilled category, and 23.4 percent of them were in semi-skilled and unskilled categories. Although quite similar percentage of male and females were employed in management or professional categories, more men were employed in skilled category, while more women were employed in semi-skilled and unskilled categories. More than two-thirds of the participants earned below CAD \$4,000 per month. Among the participants, men earned more than women did (not shown here).

### 3.2 Job Satisfaction

Table 2 demonstrates the level of job satisfaction among the participants. Compare to women (58.3%), men were slightly more satisfied with their job (65.9%); the difference was statistically significant ( $\chi^2 (2) = 11.85$ ,  $p < .01$ ). Regardless of age differences, married individuals were more satisfied with their job (66.9%) compared to non-married one (60.4%); the difference was statistically significant ( $\chi^2 (2) = 7.03$ ,  $p < .05$ ). Although level of education did not significantly differ in terms of job satisfaction, individuals holding management or professional job categories showed more satisfaction with their job (68.4%) compared to two other categories; the difference was statistically significant ( $\chi^2$

(4) = 15.49,  $p < .01$ ). Those who earned more were more satisfied with their job (78.1%), the difference was statistically significant ( $\chi^2(4) = 38.39, p < .001$ ). In a similar fashion, those who were very happy were more satisfied with their job (71.9%), the difference was statistically significant ( $\chi^2(4) = 1.07, p < .001$ ).

[Insert Table 2 here]

### 3.3 Gender Difference in Job Satisfaction

An independent samples  $t$ -test was conducted to evaluate the hypothesis that the male and female participants differ in terms of their mean attitude towards job satisfaction. It can be observed from Table 3 that both the groups had approximately the same sample size (male  $n = 512$ , women  $n = 519$ ), which indicates the fulfillment of one of the principle assumptions of the independent sample  $t$ -test. However, it was surprising to find that the result was not significant,  $t(1029) = 1.49, p = 0.14$ . Although the chi-square test was significant (see Table 2) in terms of gender differences on job satisfaction, this independent sample  $t$ -test showed it to be otherwise. These conflicting findings might be explained by the fact that in Table 2, the response categories for job satisfaction were collapsed into three in order to adjust the sample requirement for cross-tabulation. However, since the study constructed the job satisfaction variable containing 5 response categories, when the original response categories were used to analyze gender differences, it resulted in non-significance. Therefore, hypothesis 7 had to be rejected.

[Insert Table 3 here]

Table 4 presents the descriptive statistics and intercorrelations among the study variables. In the case of job satisfaction, the significant correlations ranged in magnitude from  $r = 0.15$  ( $p < .001$ ) for work reward preferences to a high of  $r = 0.69$  ( $p < .001$ ) for valued job characteristics. In the case of self-esteem, the significant correlations ranged in magnitude from  $r = 0.17$  ( $p < .001$ ) for work reward preferences to a high of  $r = 0.52$  ( $p < .001$ ) for happiness. Work reward preferences significantly correlated with valued job characteristics ( $r = 0.30, p < .001$ ), and with happiness ( $r = 0.08$  ( $p < .05$ )). Valued job characteristics significantly correlated with all other study variables, ranging from  $r = 0.24$  ( $p < .001$ ) to a high of  $r = 0.69$  ( $p < .001$ ). Occupational categories significantly correlated with all other study variables except for work reward preferences. Happiness significantly correlated with all other study variables, ranging from  $r = 0.08$  ( $p < .05$ ) to a high of  $r = 0.52$  ( $p < .001$ ). Finally, monthly income significantly correlated with all other study variables (except for work reward preferences), ranging in magnitude from  $r = 0.13$  ( $p < .001$ ) for happiness to a high of  $r = 0.31$  ( $p < .001$ ) for job satisfaction.

[Insert Table 4 here]

### 3.4 Linear Regression Results and Interaction Effect

Two linear regression analyses were conducted to examine the predictive value of the study variables and to test the interaction effect between the two specific study variables. Results shown in Table 5 illustrate weak to moderately high predictive relationship of the independent variables with the dependent variable. Self-esteem significantly predicted job satisfaction ( $\beta = 0.26, p < .001$ ). Similarly, valued job characteristics significantly led to higher job satisfaction ( $\beta = 0.54, p < .001$ ). Happiness significantly predicted job satisfaction ( $\beta = 0.12, p < .001$ ). Monthly income significantly predicted job satisfaction among participants ( $\beta = 0.06, p < .05$ ).

However, an unexpected finding was that work reward preferences had a negative significant association with job satisfaction ( $\beta = -0.05, p < .05$ ). Among the control variables, only marital status significantly (negatively) predicted job satisfaction ( $\beta = -0.05, p < .05$ ). It indicates that non-married participants had higher job satisfaction. However, gender ( $\beta = -0.03, p = .12$ ), age, occupational categories, and education ( $\beta = -0.02, p = .27$ ) were found to be non-significant. Therefore, Hypothesis 6 had to be rejected. Thus, controlling for gender, age, marital status, occupational categories, and education, the results demonstrated that approximately 58% of the variances of job satisfaction were explained by the independent variables in the model (Adj.  $R^2 = .583$ ), and the model was statistically significant ( $F = 135.74, p < .001$ ).

[Insert Table 5 here]

Since marital status significantly predicted job satisfaction but gender did not, it was important to examine whether there were any interaction effect between gender and marital status on job satisfaction. It was found (not shown here) that the interaction effect was not significant ( $\beta = 0.09, p = .25$ ). However, by incorporating the interaction variable, the impact of marital status was no longer significant ( $\beta = -0.12, p = .06$ ). Therefore, both self-esteem and valued job characteristics remained the strongest predictors of job satisfaction.

### 3.5 Structural Equation Modeling

Structural Equation Modeling (SEM) was conducted by using AMOS 16.0 to assess fitness of the path model based on the proposed hypotheses. As indicated before, the psychometric adequacy of these scales, such as their unidimensionality, is typically evaluated by methods outside of the scope of the structural equation model – usually by the attainment of sufficiently high internal-consistency reliabilities, high item-total correlations, or by high factor

loadings from an exploratory factor analysis – all of which are less rigorous methods than that provided by a SEM analysis (Gerbing & Anderson, 1988). More importantly, SEM is a combination of factor analysis and path analysis, and allows a more ‘causal’ explanation of findings (Byrne, 2001).

There are several criteria set by the SEM scholars to assess the fitness of a model. Hu and Bentler (1999) suggest that for a model to have a good fit, the comparative fit index (CFI) and the Tucker-Lewis index (TLI) should be greater than 0.95, and the root mean square error of approximation (RMSEA) should be less than 0.06. The RMSEA examines the probability of close model fit and is considered a more appropriate test, as it has been shown to be less affected by sample size (Byrne, 2001; Floyd & Widaman, 1995). The lower the discrepancy measured by the RMSEA the better, with RMSEA = 0.0 indicating a perfect fit. The CFI, a revised version of the Bentler–Bonett (Bentler & Bonnett, 1980) normed fit index that adjusts for degrees of freedom (*df*), ranges in value from 0 to 1.00. Acceptable values are CFI > 0.90, and a value of about > 0.08 for the RMSEA indicates a reasonable error of approximation (Arbuckle, 2007, p. 592). James Arbuckle (2007) asserted that all the measures of the normed fit index (NFI), relative fit index (RFI), incremental fit index (IFI), the Tucker-Lewis coefficient also known as the Bentler-Bonett non-normed fit index (NNFI) tend to range between 0 and 1, with values close to 1 indicating a good fit. Kline (2004) and Byrne (2001) also suggested that a good fitting model generally has a  $\chi^2/df$  ratio of less than 3.0 as a measure of minimum sample discrepancy.

In this study, the model fit was assessed using the following reported fit indices: chi-square,  $\chi^2/df$  ratio, the root mean square error of approximation (RMSEA), the normed fit index (NFI), relative fit index (RFI), incremental fit index (IFI), the Tucker-Lewis coefficient or the non-normed fit index (NNFI), and the Comparative Fit Index (CFI). Multicollinearity was also assessed by calculating the squared multiple correlations between each variable and all the rest with values greater than 0.90 being of concern (Kline, 2004). There was not issues of multicollinearity, as the highest value identified in squared multiple correlations between variables was  $\beta = 0.52$ . As shown in the previous analyses, the hypotheses 6 and 7 were non-significant; and therefore, were excluded from the SEM model.

Results obtained from the structural equation modeling are presented in Table 6 and Figure 1. The overall fit indices suggested a good fit of the model to the data: CFI = 0.998, RMSEA = 0.026,  $\chi^2 = 5.57$ ,  $df = 2$ ,  $\chi^2/df = 2.79$ , TLI/NNFI = 0.978, NFI = 0.997, RFI = 0.966, and IFI = 0.998 (see Table 6). As suggested by the literature, CFI and NFI were close to perfect fit. Similarly, RMSEA was 0.03, which falls well below the cut-off points recommended by Hu and Bentler (1999), indicating acceptable model fit. In addition, the  $\chi^2/df$  ratio was below the cut-off point established by Kline (2004) and Byrne (2001).

[Insert Table 6 here]

The results presented in Figure 1 showed the predictability of the independent variables to the dependent variable. Hypothesis 1 stated that self-esteem will have a direct positive association with job satisfaction, and the hypothesis was supported ( $\beta = 0.28$ ,  $p < .001$ ). Hypothesis 2 was also supported, valued job characteristics had a direct positive association with job satisfaction,  $\beta = 0.52$ ,  $p < .001$ . Hypothesis 3a asserted that happiness will be positively related to job satisfaction. The hypothesis was supported ( $\beta = 0.11$ ,  $p < .01$ ). Similarly, hypothesis 3b was also supported, Happiness positively led to self-esteem ( $\beta = 0.48$ ,  $p < .001$ ), which in turn positively led to job satisfaction ( $\beta = 0.28$ ,  $p < .001$ ). Hypothesis 4 suggested that work reward preferences will have a positive association with valued job characteristics, which will lead to job satisfaction. The hypothesis was supported, as work reward preferences was positively related to valued job characteristics ( $\beta = 0.25$ ,  $p < .001$ ), which led to job satisfaction ( $\beta = 0.52$ ,  $p < .001$ ).

[Insert Figure 1 here]

Hypothesis 5a was weakly supported, as income had a direct positive association with job satisfaction ( $\beta = 0.08$ ,  $p < .05$ ). Finally, hypothesis 5b predicted that income will be positively related to self-esteem, which will lead to job satisfaction. The hypothesis was also supported, income had a positive association with self-esteem ( $\beta = 0.22$ ,  $p < .001$ ), which led to job satisfaction ( $\beta = 0.28$ ,  $p < .001$ ). Another interesting finding emerged, which was not previously hypothesized, was that self-esteem predicted values job characteristics ( $\beta = 0.35$ ,  $p < .001$ ), which led to job satisfaction ( $\beta = 0.52$ ,  $p < .001$ ). In the final model, approximately 59% of the variances of job satisfaction were explained by the independent variables (squared multiple correlations or standardized  $R^2 = .59$ ).

#### 4. Discussion and Conclusion

The primary aim of the study was to explore the extent of satisfaction with jobs and career, and the predictors of job satisfaction among the emerging adults in Alberta. The study found, as predicted, that self-esteem was directly related to job satisfaction. This is consistent with findings from previous research (Alavi & Askaripur, 2003; Judge, Locke, Durham, & Kluger, 1998; Lopez, 1982). Likewise, valued job characteristics strongly predicted job satisfaction, similar to Knoop’s (1994) findings. Furthermore, as expected, happiness significantly predicted job satisfaction, which is consistent with the existing literature (Boehm & Lyubomirsky, 2008; Connolly & Viswesvaran, 2000; Judge & Ilies,

2004). It was interesting to note that happiness also predicted self-esteem, which in turn led to job satisfaction. These psychosocial traits are important in understanding job satisfaction among the emerging adults in Alberta.

The analyses also highlighted that income was a predictor of job satisfaction, although the predictive value was statistically weak, but significant. The results are consistent with the previous findings (Sokoya, 2000; Sweeney et al., 1990). In addition, income was highly associated with self-esteem, which in turn led to job satisfaction among the participants. It is also similar to the findings of previous research (Gecas & Seff, 1990; Rosenberg & Pearlin, 1978). However, work-reward preferences did not exhibit direct relationship with job satisfaction, but rather was mediated by self-esteem and valued job characteristics, leading to job satisfaction. This indicates that better work-reward preference reinforces self-esteem leading to more job satisfaction.

However, contrary to other research, which found positive relationships between education levels and job satisfaction (Al-Ajmi, 2006; Okpara, 2004), this study found the opposite: education did not predict job satisfaction. This can be explained by the existing theories. The human capital theory posits that higher education generally leads to better quality jobs, resulting in increased job satisfaction (Krahn, Lowe, & Hughes, 2007, p. 434). On the other hand, highly educated employees working in less-rewarding jobs will experience depleted job satisfaction (Krahn et al. 2007). Furthermore, this study did not find gender differences in terms of job satisfaction among male and female. In addition, gender did not predict job satisfaction. The effect of marital status did also disappear when the interaction effect of gender and marital status was assessed. Since the age structure of this group of people was quite similar, there was no difference in terms of their satisfaction with job. This implies that other personality traits are more important than just the demographic features shaping job satisfaction among the emerging adults.

Several key points summarize the main findings of the study. First, the structural equation model developed in the study had a high predictive value, which accounted for explaining about 60% of the variance of the dependent variable. It fitted the data very well. The model showed that self-esteem and valued job characteristics were the two most significant predictors of job satisfaction. The model is important in understanding the dynamics of the predictive value of the study variables leading to job satisfaction. However, future research should include more psychosocial variables (e.g., stress, hopefulness, depression, social support) in the study to examine the impact of those variables on job satisfaction. Second, the job satisfaction among the emerging adults in Alberta shows similar patterns with the other adult population when taking into account of the findings of the previous research. It would be interesting to examine the cross-cultural differences in terms of job satisfaction among the emerging adults across continents. Third, this study is distinctive in its nature in exploring the job satisfaction among the emerging adults in Alberta, which has been neglected by the researchers so far.

Previous studies assist us to interpret the findings of this research and to identify areas for future study. Except for differences in terms of gender and education, most of the findings in this study were in tune with the previous research conducted across the world. The findings suggest that although lots of research has been done on job satisfaction among different categories of people, more research is needed to understand the pattern of job satisfaction among the emerging adults.

#### *4.1 Limitation and Future Direction*

Despite its strengths, the study has several limitations. First, the model developed in the study is an initial attempt in understanding job satisfaction among emerging adults in Alberta. Clearly, there is a need to replicate the results of the study among other groups. Second, the study uses two items in measuring job satisfaction. Although there are a few research celebrating a one-item measure of job satisfaction, it is also important to examine the impact of a multidimensional scale of job satisfaction that covers the psychological (e.g., personality and behavioral dimension, individual differences), social and cultural (e.g., relationships in the workplace), economic structure, and work environment-specific, social status, class, and ethnic groups, and occupational prestige dimensions in the response items. For instance, researchers can employ widely used and reliable instruments such as the Job Description Index (JDI). Similarly, happiness was measured by a single item. Future research could benefit from employing multidimensional scale that can capture the subjective, general, situational, broader, and culture specific facets of happiness. Third, the study was conducted in Alberta. Future studies can explore job satisfaction among emerging adults across Canada and around the world. Fourth, the study limits itself with cross-sectional analysis of panel data. Future studies can look into the changes of job satisfaction across life-cycle. Fifth, the study used cluster sampling technique. Future research should use more random sampling for better generalizability. Obviously, repeated investigation of linkages among a broader set of variables would permit richer examination in future studies. Sixth, future research can address the question of why educational status and occupational categories do not appear to affect job satisfaction as expected.

#### *4.2 Policy Implications*

The present findings lead the researcher to suggest that employers should conduct programs that would reinforce the self-esteem of the employees; because high self-esteem would direct to high job satisfaction, culminating in more

productivity in the workplace. Although job dissatisfaction may not always result in quitting behavior (Hammer & Avgar, 2005), it may turn into employee deviance and reduced work ethic, e.g., absenteeism, calling in sick etc. (Hulin, 1991), which can ultimately translate into reduced productivity among employees in the workplace. The organizations can benefit from enhanced productivity, and the employees would be rewarded socio-economically, and would enjoy better psychological health. In addition, the organizations should ensure friendly work environment for their employees, which will lead to better job satisfaction and benefit to the organization and the society at large. In summary, one of the best ways to increase job satisfaction of an organization's employees is to enhance their self-esteem.

## References

- Abdel-Khalek, A. M. (2006). Measuring happiness with a single item scale. *Social Behavior and Personality, 34*(2), 139-149.
- Abraham, R. (1999). The relationship between differential inequity, job satisfaction, intention to turn over, and self-esteem. *The Journal of Psychology, 133*(2), 205-211.
- Al-Ajmi, R. (2006). The effect of gender on job satisfaction and organizational commitment in Kuwait. *International Journal of Management, 23*(4), 838-844.
- Alavi, H. R., & Askaripur, M. R. (2003). The relationship between self-esteem and job satisfaction of personnel in government organizations. *Public Personnel Management, 32*(4), 591-600.
- Arbuckle, J. L. (2007). *Amos 16.0 User's Guide*. Chicago, IL: SPSS, Inc.
- Arnett, J. J. (2000). Emerging adulthood: A theory of development from the late teens through the twenties. *American Psychologist, 55*, 469-480.
- Arnett, J. J. (2001). Conceptions of the transition to adulthood: Perspectives from adolescence through midlife. *Journal of Adult Development, 8*, 133-143.
- Bentler P. M., & Bonnett D. G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin, 88*, 588-606.
- Bilgic, R. (1998). The relationship between job satisfaction and personal characteristic of Turkish workers. *The Journal of Psychology, 132*, 549-57.
- Boehm, J. K., & Lyubomirsky, S. (2008). Does happiness promote career success? *Journal of Career Assessment, 16*(1), 101-116.
- Byrne, B. (2001). *Structural equation modeling with AMOS: Basic concepts, applications, and programming*. Mahwah, NJ: Lawrence Erlbaum.
- Clark, A. E. (1997). Job satisfaction and gender: Why are women so happy at work? *Labour Economics, 4*(4), 341-372.
- Clark, A., Oswald, A., & Warr, P. (1996). Is job satisfaction U-shaped in age? *Journal of Occupational and Organizational Psychology, 69*, 57-81.
- Connolly, J. J., & Viswesvaran, C. (2000). The role of affectivity in job satisfaction: A meta-analysis. *Personality and Individual Differences, 29*, 265-281.
- Cranny, C. J., Smith, P. C., and Stone, E. F. (1992). *Job satisfaction: How people feel about their jobs and how it affects their performance*. New York, NY: Lexington Books.
- Diener, E., & Biswas-Diener, R. (2002). Will money increase subjective well-being? A literature review and guide to needed research. *Social Indicators Research, 57*, 119-169.
- Diener, E., Nickerson, C., Lucas, R. E., & Sandvik, E. (2002). Dispositional affect and job outcomes. *Social Indicators Research, 59*, 229-259.
- Floyd F. J., & Widaman K. F. (1995). Factor analysis in the development and refinement of clinical assessment instruments. *Psychological Assessment, 7*, 286-299.
- Gecas, V., & Seff, M. (1990). Social class and self-esteem: Psychological centrality, compensation, and the relative effects of work and home. *Social Psychology Quarterly, 53*, 165-173.
- Gerbing, D., & Anderson, J. (1988). An updated paradigm for scale development incorporating unidimensionality and its assessment. *Journal of Marketing Research, 25*, 186-192.
- Glenn, N. D., & Weaver, C. N. (1982). Further evidence on education and job satisfaction. *Social Forces, 61*, 46-55.
- Hammer, T. H., & Avgar, A. (2005). The impact of unions on job satisfaction, organizational commitment, and turnover. *Journal of Labor Research, 26*(2), 241-266.

- Haviland, S. (2004). Job satisfaction and the gender paradox: An international perspective. *Paper presented at the annual meeting of the American Sociological Association*, San Francisco, CA, August 14, 2004.
- Heslop, P., Smith, G. D., Metcalfe, C., Macleod, J., & Hart, C. (2002). Change in job satisfaction and its association with self-reported stress, cardiovascular risk factors and mortality. *Social Science & Medicine*, 54, 1589–1599.
- Howard, J., & Frink, D. (1996). The effects of organizational restructure on employee satisfaction. *Group and Organizational Management*, 21, 278-303.
- Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1-55.
- Hulin, C. L. (1991). Adaptation, persistence, and commitment in organizations. In M. D. Marvin & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology*, 2<sup>nd</sup> ed., Vol. 2 (pp. 445-505). Palo Alto, CA: Consulting Psychologists Press.
- Iverson, R. D., Olekalns, M., & Erwin, P. J. (1998). Affectivity, organizational stressors, and absenteeism: A causal model of burnout and its consequences. *Journal of Vocational Behavior*, 52, 1-23.
- Judge, T. A., & Ilies, R. (2004). Affect and job satisfaction: A study of their relationship at work and at home. *Journal of Applied Psychology*, 4, 661-673.
- Judge, T. A., Locke, E. A., Durham, C. C., & Kluger, A. N. (1998). Dispositional effects on job and life satisfaction: The role of core evaluations. *Journal of Applied Psychology*, 83, 17-34.
- Kahneman, D., & Krueger, A. B. (2006). Developments in the measurement of subjective well-being. *Journal of Economic Perspectives*, 20(1), 3-24.
- Kline, R. (1998). *Principles and practice of structural equation modeling*. New York: Guilford Press.
- Knoop, R. (1994). Work values and job satisfaction. *Journal of Psychology*, 128(6), 683-690.
- Krahn, H. J., Lowe, G. S., & Hughes, K. D. (2007). *Work, industry, and Canadian society* (5<sup>th</sup> ed.). Toronto, ON: Thomson-Nelson.
- Krahn, H., Lowe, G. S., & Lehmann, W. (2002). Acquisition of employability skills by high school students. *Canadian Public Policy*, 28(2), 275-296.
- Lopez, E. M. (1982). A test of the self-consistency theory of job performance-job satisfaction relationship. *Academy of Management Journal*, 25(2), 335-348.
- Okpara, J. O. (2004). Personal characteristics as predictors of job satisfaction. *Information Technology & People*, 17(3), 327-338.
- Oshagbemi, T. (2000). Gender differences in the job satisfaction of university teachers. *Women in Management Review*, 15(7), 331-343.
- Popp, G. E., & Davis, H. J. (1984). American and Australian work reward preference patterns. *Asia Pacific Journal of Management*, 2(1), 62-64.
- Rosenberg, M. (1989). *Society and the adolescent self-image* (Rev. ed.). Middletown CT: Wesleyan University Press.
- Rosenberg, M., & Pearlman, L.I. (1978). Social class and self-esteem among children and adults. *American Journal of Sociology*, 84, 53-77.
- Salmela-Aro, K., & Nurmi, J. (2007). Self-esteem during university studies predicts career characteristics 10 years later. *Journal of Vocational Behavior*, 70, 463-477.
- Sekaran, U. (1986). Self-esteem and sense of competence as moderators of the job satisfaction of professionals in dual career families. *Journal of Occupational Behaviour*, 7, 341-344.
- Sloane, P. J., & Williams, H. (2000). Job satisfaction, comparison earnings and gender. *Labour*, 14(3), 473-502.
- Sokoya, S. K. (2000). Personal predictors of job satisfaction for the public sector manager: Implications for management practice and development in a developing economy. *Journal of Business in Developing Nations*, 4, article 1. Retrieved August 20, 2009, [Online] Available: <http://www.ewp.rpi.edu/jbdn/jbdnv401.htm>
- Sweeney, P. D., McFarin, D. B., & Inderrieden, E. J. (1990). Using relative deprivation theory to explain satisfaction with income and pay level: A multi-study examination. *Academy of Management Journal*, 33, 423-36.
- Swinyard, W. R., Kau, A. K., & Phua, H. Y. (2001). Happiness, materialism, and religious experience in the US and Singapore. *Journal of Happiness Studies*, 2, 13-32.

Walsh, E. J., & Taylor, M. C. (1980). Occupational correlates of multidimensional self-esteem: comparisons among garbage-collectors, bartenders, professors, and other workers. *The Pennsylvania State University Journal*, 66 (3), 252-268.

Wanous, J. P., Reichers, A. E., & Hudy, M. J. (1997). Overall job satisfaction: How good are single-item measures? *Journal of Applied Psychology*, 82, 247-252.

Table 1. Labor force characteristics by Age and Gender in Alberta (seasonally adjusted)

	August 2009	August 2008
	In thousands (except rates)	
<b>Both genders, 15 to 24 years</b>		
Population	508.3	503.9
Labor force	348.1	365.5
Unemployment rate	<b>13.6</b>	7.4
Employment rate	<b>59.2</b>	67.2
<b>Both genders, 25 years and above</b>		
Population	1,637.3	1,599.0
Labor force	1,445.0	1,408.3
Unemployment rate	<b>5.8</b>	2.5
Employment rate	<b>83.2</b>	85.8
<b>Men, 15 to 24 years</b>		
Population	263.4	260.5
Labor force	183.0	195.7
Unemployment rate	<b>15.5</b>	9.1
Employment rate	<b>58.7</b>	68.3
<b>Women, 15 to 24 years</b>		
Population	244.9	243.4
Labor force	165.2	169.8
Unemployment rate	<b>11.4</b>	5.4
Employment rate	<b>59.8</b>	66.0
<b>Men, 25 years and above</b>		
Population	845.4	821.8
Labor force	796.3	772.7
Unemployment rate	<b>6.3</b>	1.9
Employment rate	<b>88.2</b>	92.2
<b>Women, 25 years and above</b>		
Population	791.9	777.2
Labor force	648.7	635.6
Unemployment rate	<b>5.1</b>	3.4
Employment rate	<b>77.8</b>	79.0

Source: Statistics Canada, Labour Force Survey, CANSIM Table 282 0001

Table 2. Job Satisfaction\* by Demographic Characteristics

<i>Variables</i>	<i>(%) Dissatisfied</i>	<i>(%) Neutral</i>	<i>(%) Satisfied</i>
<b>Total</b>	<b>11.7</b>	<b>26.2</b>	<b>62.1</b>
<b>Gender **</b>			
Male	12.6	21.5	65.9
Female	10.7	30.9	58.3
<b>Age</b>			
Up to 24	11.6	25.3	63.2
25 years	11.5	25.8	62.6
26 + years	13.0	27.9	59.1
<b>Marital status **</b>			
Married	7.1	25.9	66.9
Not-married	13.2	26.4	60.4
<b>Education</b>			
Post-secondary	11.5	26.3	62.2
No post-secondary	13.3	25.8	60.8
<b>Occupation **</b>			
Management/professional	7.9	23.7	68.4
Skilled	12.7	27.0	60.3
Semi- and unskilled	15.8	29.6	54.6
<b>Monthly Income **</b>			
Up to \$2000	15.5	32.3	52.2
\$2001 to \$4000	9.9	23.8	66.2
\$4001 and above	6.0	15.9	78.1

Note:  $n = 1,030$

\* Respondents answered on a scale of 'very dissatisfied' (1) to (5) 'very satisfied'. In this table, values of 1 and 2 are combined into 'dissatisfied' while values of 4 and 5 are combined into 'satisfied' to adjust the sample requirement for cross-tabulation purposes.

\*\* Differences between sub-groups are statistically significant ( $\chi^2, p < .05$ ).

Table 3. Mean Attitude Scores and Standard Deviations on Job Satisfaction by Gender

Gender	<i>n</i>	<i>M</i>	<i>SD</i>	<i>SE Mean</i>	<i>t</i>	<i>p</i>
Male	512	3.69	.94	.042		
					1.49	.14
Female	519	3.60	.92	.040		

Note:  $F(1030) = 0.13$

Table 4. Descriptive Statistics and Intercorrelations for the Job Satisfaction Measures

<i>Variables</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>
1. Job satisfaction <sup>1</sup>	—	.56**	.15**	.69**	-.31**	.38**	.31**
2. Self-esteem <sup>2</sup>		—	.17**	.42**	-.20**	.52**	.29**
3. Work reward preferences <sup>3</sup>			—	.30**	-.04	.08*	-.03
4. Valued job characteristics <sup>2</sup>				—	-.40**	.24**	.28**
5. Occupational categories <sup>4</sup>					—	-.10*	-.24**
6. Happiness <sup>5</sup>						—	.13**
7. Monthly income							—
Cronbach's Alpha	.718	.794	.783	.847	—	—	—
Mean	3.64	4.01	4.58	3.64	2.07	2.62	2762.52
Standard Deviation	.93	.59	.44	.90	.81	.53	1775.36

Note: Sample sizes for above correlations ranged between 988 and 1,030. Sample data is weighted.

\*  $p < .01$ , \*\*  $p < .001$

1. Measured on a 5-point Likert scale, where 1 = 'very dissatisfied' and 5 = 'very satisfied'.
2. Measured on a 5-point Likert scale, where 1 = 'strongly disagree' and 5 = 'strongly agree'.
3. Measured on a 5-point Likert scale, where 1 = 'not at all important' and 5 = 'very important'.
4. Coded as 1 = 'management and professional', 2 = 'skilled', and 3 = 'semi-/unskilled'.
5. Coded as 1 = 'not at all happy' and 3 = 'very happy'.

Table 5. Regression Analysis Results: Predictor and Control Variables' Effects on Job Satisfaction

Variables	b	SE	$\beta$	t
Constant	-.08	.26		-.32
<i>Predictor variables</i>				
Self-esteem	.42	.04	.26	9.78***
Work reward preferences	-.11	.05	-.05	-2.28*
Valued job characteristics	.56	.03	.54	20.89***
Happiness	.23	.04	.12	5.10***
Monthly income	3.15	.00	.06	2.56*
<i>Control variables</i>				
Gender (female = 1, male = 0)	-.07	.04	-.03	-1.57
Age	.004	.03	.002	.12
Marital status (married = 1)	-.06	.03	-.05	-2.51*
Occupational categories	-.02	.03	-.01	-.60
Education (post-secondary, yes = 1)	-.07	.06	-.02	-1.09
R	.766			
Adj. R <sup>2</sup>	.583			
F-value	135.74***			

\*  $p < .05$ , \*\*\*  $p < .001$

There were no issues of multicollinearity in this model: the highest VIF score was 1.63.

Table 6. Fit Indices for Structural Equation Modeling (SEM): Job Satisfaction Model

$\chi^2$	df	$\chi^2/df$	RMSEA	NFI	RFI	IFI	NNFI/TLI	CFI
5.6	2	2.79	.026	.997	.966	.998	.978	.998

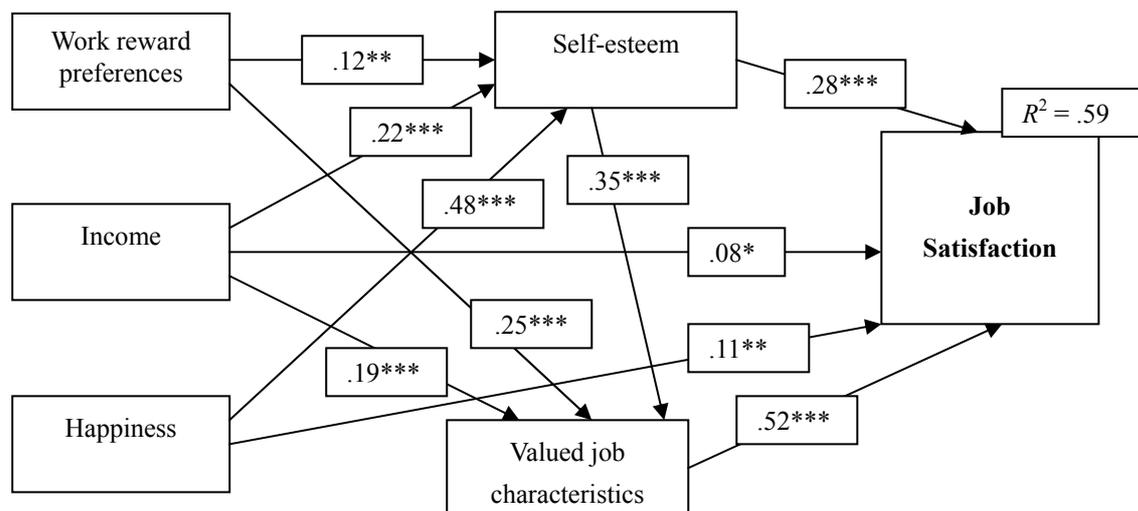


Figure 1.

**Figure 1:** The observed path model (SEM) of Job Satisfaction. The model illustrates the predictor variables for job satisfaction: Work reward preferences, income, happiness, self-esteem, and values job characteristics. Coefficients are standardized Beta's.

\*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$ . Standardized  $R^2 = .59$ .



## An Empirical Assessment of Demographic Factors, Organizational Ranks and Organizational Commitment

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### Abstract

This study investigated the relationship between demographic factors (age, tenure and level of education) and organizational commitment. The data was collected from the knitwear organizations in Lahore and Faisalabad, Pakistan. Five set of questionnaire per organization were distributed to assess the perceived employees' commitment through self reported Organizational Commitment Questionnaire (OCQ) and biographical factors form. The results of the data showed that length of service is significantly associated with organizational commitment, whereas, education level is negatively correlated with organizational commitment. Furthermore, no significant correlation was found between organizational commitment and age. The results of this study also showed that the managers and the supervisors are more committed than the workers. The findings suggested that top management might be able to increase the level of commitment in the workers by increasing employee satisfaction with compensation, policies, training, and working conditions. Furthermore, managers can increase organizational commitment by communicating that they value employees' contribution and that they care about employees' well being.

**Keywords:** Commitment, Job satisfaction, Organizational tenure, Organizational commitment questionnaire (OCQ), Pakistani Knitwear, Analysis of variance (ANOVA), Job category, Correlations

### 1. Introduction

Organizational commitment is the degree to which an employee identifies with the organization and wants to continue actively participating in it (Newstrom, 2007). Organizations, however, are complex and made up of number of divisions each with their own agendas and goals. Commitment can therefore be directed at specific aspects of a person's job such as department, the location, and trade unions (Mathewman, Rose & Hetherington, 2009). Swailes (2002) suggested the four bases of organizational commitment. Table 1, presents the summary and contrast of the four bases of organizational commitment.

Organizational commitment has been extensively researched; however, the relationship between demographic factors and attitudinal commitment has not been fully explored (Mathieu & Zajac, 1990). In this paper, the relationship between demographic factors (age, education and tenure) and attitudinal commitment is exposed in the Pakistani Knitwear Industry.

Previous researchers (e.g. Schneider, Hall & Nygren (1970)) demonstrated that when the goals of the organizations and the members of the organizations integrated or congruent, attitudinal commitment occurs. Therefore, attitudinal commitment represents a state in which an individual identifies with a particular organization and its goals, and maintains membership in order to facilitate these goals (Mowday, Porter & Steers, 1982). Furthermore, organizational commitment has been identified as a useful measure of organizational effectiveness (Steers, 1977) and explaining the work-related behaviour of employees in organizations (Mowday et al., 1982). Therefore, Organizational commitment has emerged as a promising area of research within the study of Industrial/Organizational psychology in recent times (Salami, 2008)

### 2. Literature Review

Organizational commitment has been researched with two constructs for analysis. These are *Behavioural Perspective* and *Attitudinal Perspective*.

### 2.1 Behavioural perspective

Early researchers (Alluto, Herbiniak & Alonso, 1973; Angle & Perry, 1983; Becker, 1960) have focussed on a behavioural definition of commitment. They explained organizational commitment as a binding of the individual to behavioural acts. Becker (1960) argued that an individual acts in a committed manner because previously extraneous situational factors have become agents of influence or 'investment' in the individual's present actions. This theory was later rejected by Ritzer & Trice (1969) and Aranya & Jacobson (1975). However, Angle & Perry (1983) affirmed Becker's Behavioural Perspective. Alluto et al (1973) expanded the Becker's theory of 'side-bet' (See Note 1) and included the notion of the 'investment' in this theory. After the rejection of this theory, researchers focussed their attentions on the attitudinal commitment.

### 2.2 Attitudinal perspective

#### 2.2.1 Mowday, Porter and Steers (1982) Model

Commitment (Attitudinal Commitment), to an organization involves three components: (a) a strong belief in and acceptance of organizational goals and values, (b) a willingness to exert considerable effort on behalf of the organization, and (c) a strong desire to maintain membership in the organization (Mowday et al, 1982). Research on organizational commitment has been examined primarily in relation to labour turnover (Ferris & Aranya, 1983; Hom, Katerberg & Hulin, 1979; Huselid & Day, 1991; Mowday, Steers & Porter, 1979; O'Reilly & Caldwell, 1980; Wiener & Vardi, 1980; Steers, 1977; Stumpf & Hartman, 1984).

#### 2.2.2 Meyer and Allen (1997) Model

Meyer and Allen (1997) view organizational commitment as a 'three component' concept. The three components in their model are 'Affective', 'Continuous', and 'Normative'. The affective commitment describes the emotional attachment an individual has with the organization, their identification with the goals and values of the organization and the level of their involvement (Zanagro, 2001). Affective commitment is taken as a construct closely related to identification (Bergami & Bagozzi, 2000). Continuance commitment is based on the cost that an employee associates with leaving the organizations, such as reduction in pay, pension, benefits, or facilities (Herbiniak & Alluto, 1972). Normative commitment is associated with employees' feelings of obligation to continue employment due to the work culture and other socially accepted norms (Weiner & Gechman, 1977). The less common approach to viewing commitment is in terms of obligation. Of the three components least is known about the development of normative commitment (Meyer & Allen, 1997).

## 3. Organizational Commitment Empirical Review

The majority of researchers have treated organizational commitment as a dependent variable in their studies (Morrow, 1983 in DeCotiis & Summers, 1987). For instance, Steers (1977) examined the relationship between work related variables as antecedents of climate (group attitudes, organizational dependability, and personal impact) and organizational commitment. This study was carried out among 382 hospital employees, 119 scientists and engineers.

The relationship between organizational commitment and other outcomes has also been examined in developing countries. For instance, Ahmed & Alvi (1987) surveyed 1116 employees in various organizations of Pakistan. Exchanged-base variables included wage, job, security, union affiliation, tenure and type of organization. They found that interested work, task identity, peer's friendliness, and authority turned out to be factors that had a significant positive influence on commitment. They also confirmed that any organization which fulfils its workers' psychological needs, along and provides a better working environment enhances their commitment.

Another study was carried out by Khaleque & Rahman (1987) to measure overall job satisfaction of industrial workers in Bangladesh. This study was designed to 1) measure the overall job satisfaction of industrial workers; 2) determine the influence of some personal factors and job facets on the overall job satisfaction of the workers; and 3) evaluate the perceived importance of some facets on the overall job satisfaction of the workers. They found that some specific aspects of jobs, such as good relations with peers, convenient work scheduling, good working environment, and a job security had stronger influence on job satisfaction and commitment.

Demographic factors such as age, tenure, and education level have been associated with organizational commitment (Abdulla & Shaw, 1999; Chughtai & Zafar, 2006; Dodd-McCue & Wright, 1996; Luthans, McCaul & Dodd, 1985; Morrow, 1993; Salami, 2008); however, Mathieu & Zajac (1990) and Weidmer (2006) in Salami (2008) found that demographic factors were not significant predictor of organizational commitment.

Viewing commitment as an affective or emotional attachment to an organization is the most common approach in the literature to studying commitment (Mowday et al, 1982). The present study was delimited to using primarily the attitudinal perspective of commitment. Present study is an inquiry into the attitude and perception which employees have towards commitment in Pakistani knitwear industry.

#### 4. Purpose of the Study

The main purpose of this study is to investigate the relationship between demographic factors and organizational commitment within the Pakistani knitwear industry. Pakistan knitwear industry was chosen as it is highly labour intensive and contributes 60% in the economy of Pakistan. Above all, the best suited to test these variables (Demographic and attitudinal commitment) in this study. Pakistan was mainly based on agrarian economy. Since its independence in 1947, Pakistan has been able to transform itself to a large extent, from a completely agrarian economy to a fairly developed techno-industrial base (United Nations Economic and Social Commission for Asia and the Pacific publications, 2002). However, The knitwear industry in Pakistan is fast losing its benefits in lower raw material, financial incentives and post WTO regime (Anonymous, 2006b); monetary, product mix, quota, technology and human resource issues (Noshab, 2006). Apart from the other issues labour situation is quite crucial and needs thorough attention.

Many organizations in Pakistan hold the traditional view that technical excellence is the primary key to achieve business successes. The relatively low emphasis on all other forms of employee training demonstrates an unwillingness to teach other part of the business (Saigol, 1998). An abundance pool of labour does not mean anything if it is not developed and trained to face the new challenges. Akhtar (2006) suggested that in going forward to implement the real vision, Pakistan should plan to raise its investment in infrastructure and human resources, as shortcomings in these areas are now hurting Pakistan's industrial and export competitiveness.

Other objective of this study is to explore the significance difference in perceptions of three Ranks/Job categories i.e. managers, supervisors, and workers for organizational commitment in the Pakistani knitwear industry. Furthermore, here are many justifications for this study:

1) The literature suggested a relationship between Personal/demographic and organizational commitment but with a corresponding lack of evidence. The relationships, between demographic factors and organizational commitment have not been adequately explored.

2) It was found that very limited research had been conducted that established relationship between demographic factors and organizational commitment in Pakistani context, and none of the research found was conducted in Pakistani knitwear context. So there is need to gain understanding about predicting factors for organizational commitment in the Pakistani knitwear sector.

So, there is need to gain understanding about predictors of organizational commitment among Pakistani workforce.

#### 5. Hypotheses

In order to achieve the purpose of this study, the following hypotheses were tested:

##### 5.1 Demographic Factors:

###### 5.1.1 Age

Some researchers found a significant and positive relationship between age and employees' commitment. For instance, Mathieu & Zajac (1990) found that age is significantly associated with organizational commitment. Sommer, Bae & Luthans (1996) confirmed the previous finding and noted that the organizational commitment among Korean employees increases with age. Researchers suggest that older workers are likely to experience higher level of commitment (Abdulla & Shaw, 1999). This finding may be due to the fact that older people at workplace lower their expectations to more realistic levels and adjust themselves better to their work situations (Newstrom, 2007). Therefore, the following hypothesis is proposed:

**Hypothesis 1:** *Employee's attitudinal commitment is significantly and positively associated with demographic factor (age) in the Pakistani knitwear industry.*

###### 5.1.2 Level of education

Level of education is another demographic factor that has been related to organizational commitment. Steers (1977) found that level of education was negatively related to organizational commitment. Similarly, Mathieu & Zajac's (1990) meta-analysis confirmed this relationship and found that the relationship was significantly stronger but negative for attitudinal commitment. Highly educated individual may have less commitment since they may have other opportunities of employment. So, it is assumed that:

**Hypothesis 2:** *Employee's attitudinal commitment is significantly and negatively associated with demographic factor (education level) in the Pakistani knitwear industry.*

###### 5.1.3 Organizational tenure (length of service)

Commitment is usually stronger among long-term stay employees (Newstrom, 2007). Meyer, Herscovitch & Topolnytsky (2002) found a significant and positive relationship between organizational commitment and

organizational tenure. They further suggest the possibility that the longer a person works in an organization and the older they become their feelings of responsibility for outcomes relevant to them also increases. Salami (2008) also identified a positive and strong relationship between organizational tenure and organizational commitment. Therefore, the following hypothesis is proposed:

**Hypothesis 3:** *Employee's attitudinal commitment is significantly and positively associated with demographic factor (Tenure) in the Pakistani knitwear industry.*

Addition to this, past research (for instance, Bridges and Harrison, 2003) indicates that employee perceptions are an important factor for predicting organizational commitment. Perception varies a lot from time to time, place to place and person to person. Therefore, following hypothesis is proposed to study employees' perceptions.

**Hypothesis 4:** *There is a significant difference in perception of employees' categories for organizational commitment in the Pakistani knitwear industry.*

## 6. Method

The present study is a relationship based research in that it attempts to establish a correlation between personal factors (Age, tenure and education level) and organizational commitment in the Pakistani knitwear industry. This study was carried out in Pakistani knitwear units located in Lahore and Faisalabad. The study was conducted in the form of self-administered surveys (questionnaires). Research design is the structure of research that links the empirical data to be collected to the study's initial research questions and ultimately to its conclusions (Yin, 1994). A demographic questionnaire was administered and incorporated the following items, Age, job category (manager, supervisor and worker), length of service and education level. In order to explore the significant difference among the perception of employees (Hypothesis 4), only job category item was selected for this study.

### 6.1 Sample

The population of knitwear units for this study was obtained from the 'Member directory published by Pakistan Hosiery Manufacturing Association' (Anonymous, 2006a). A sample consisted of about 100 knitwear units with the help of systematic random sampling (SRS) from the population of 432 organizations in Lahore (235) and Faisalabad (197). After a couple of reminders and visits, 415 questionnaires from 85 organizations were returned. Of the 415 questionnaires 353 were found to be valid, which is a useable response rate of 83%. Of the 353 respondents 117(33%) managers, 142 (40%) supervisors and 94(27%) workers, this shows a good representation of staff. Furthermore, 60% respondents were below 30 years. 26% of supervisors were under the age of 30. But with only 3.2% falling in the 50-59, and 60 and above years of age categories, above 50% employees sample had School certificate (O-levels) qualification. Finally, 87% workers have less than ten years working experience.

The knitwear sector in Pakistan is highly compact and simple in terms of structure and location and in most of the organizations general managers and higher authority have direct interaction with supervisors and workers. Participation was voluntary and confidentiality was guaranteed. Questionnaires (Organizational commitment Questionnaire and Demographic questionnaire) were contextualised in the Pakistani environment and translated in Urdu language (National language) and then in English. The Urdu translation was undertaken by an eminent faculty member of Punjab University Lahore, Pakistan.

### 6.2 Measures

There were two parts of questionnaire:

#### 6.2.1 Basic Demographics

A demographic questionnaire was administered and incorporated the following items, age, job category (manager, supervisor and worker), length of service, and education level. Age was measured in five categories, from 1 (less than 29 years) to 5 (60 and above). Education level was coded in eight categories, 0= 'Others', 1= 'Primary', to 8= 'University degree'.

#### 6.2.2 Organizational Commitment

Mowday et al.'s (1982) Organizational Commitment Questionnaire (OCQ) is used to measure employees' commitment to their organizations. The internal consistency reliability (Cronbach's alpha) for OCQ in this study was 0.863. This instrument measures attitudinal commitment, and consists of 15 items (six statements were negative). Examples of these items are: "I am willing to put in a great deal of effort beyond that normally expected in order to help this organization to be successful", "I talk up this organization to my friends as a great organization to work for", "I am extremely glad I chose this organization to work for over others I was considering at the time I joined". A five point scale ranging from 1 (strongly disagree) to 5 (strongly agree) was employed. Scores on the 15 items were averaged to yield a summary, score reflecting organizational commitment.

## 7. Results

### 7.1 Descriptive Analyses

Section I of the survey yielded demographic information on the sample being studied. Of the N=353 respondents 117(33%) managers, 142 (40%) supervisors and 94(27%) workers (see Table 2), which shows a good representation of staff.

According to Table 3, respondent were quite evenly spread across the age groups. 60% respondents were below 30 years. 26% of supervisors were under the age of 30. But with only 3.2% falling in the 50-59, and 60+ years age categories. The age ranges from 18 to 65 years.

Table 4 shows the data on education level and job category. 26% of the respondents had university degrees and of that 26%, 21 % were managers. Above 50% employees sample have college (O-levels) qualification.

Table 4 shows the data of length of service of respondents. 66% employees have less than 5 year tenure in the organizations. In general 87% workers have less than ten years working experience.

### 7.2 Correlations

Results on Table 6 show significant positive correlation between organizational commitment and length of service ( $r=.16$ ,  $p<0.01$ ), hence, Hypothesis 3 is supported. Result also reveals that a negative correlation between education level and organizational commitment ( $r=-.10$ ,  $p<0.05$ ), Hypothesis 2 is supported. No significant correlation found between organizational commitment and age, therefore Hypothesis 1 is not supported.

### 7.3 Analysis of variance (ANOVA)

One way ANOVA was conducted to determine any significant difference among the three groups of employees' job levels in their perceptions of organizational climate. The Table 7 shows the results for organizational commitment.

Findings from the analysis of variance tests, as shown in Table 7, revealed that there were significant differences among the three groups regarding employees commitment on the statement 'proud to tell others about their organization' ( $f(2, 350) = 3.072$ ,  $p=0.048$ ), 'Little change in their circumstances' ( $f(2, 350) = 12.931$ ,  $p=0.000$ ) and 'not much gain from this organization' ( $f(2, 350) = 6.798$ ,  $p = 0.001$ ).

A significant probability for ANOVA indicates that at least one pair of means was different. Thus, Hypothesis 4 is supported. To determine which pairs of means were different, the Tukey (HSD) post-Hoc test was conducted.

A Tukey (HSD) post hoc test (See Table 8) was used to determine the significant differences in groups regarding the organizational commitment in terms of proud to tell others about their organization. The results showed that there was significant difference between the mean of supervisors ( $M = 4.34$ ) and the mean of workers ( $M = 4.01$ ). However, the mean of managers ( $M = 4.17$ ) did not show statistical difference either with supervisors or workers. In this case, supervisor had higher mean than managers and workers.

Results of Tukey (HSD) post hoc for little change in their circumstance, indicated that there were significant differences between the mean of supervisors ( $M = 3.43$ ) and the mean of workers ( $M = 2.84$ ) and between the mean of workers and the mean of managers ( $M = 3.61$ ). In both instances, managers had a higher mean, than, that of supervisors and workers. However, there was no statistically difference in the mean of managers and supervisors.

For the statement 'no much gain from this organization' the results of Tukey (HSD) showed that there were significant differences between the mean of managers ( $M= 0.025$ ) and the mean of supervisors ( $M= 2.44$ ) as well as the mean of workers ( $M= 2.23$ ) and the mean of managers ( $M= 2.85$ ). In both instances managers had a higher means than supervisors and workers. There was no statistical significance between supervisors and workers on 'no much gain from this organization'.

## 8. Discussion

The results from this study indicated that the some of the demographic factors such as length of service is significantly and positively associated with organizational commitment in the Pakistani knitwear sector. This finding is consistent with the finding of number of previous researchers who found length of service is correlated with organizational commitment (Mathieu and Zajac, 1990; Meyer et al., 2002; Newstrom, 2007; Salami, 2008; Steers, 1977). They further suggest the possibility that the longer a person works in an organization and the older they become their feelings of responsibility for outcomes relevant to them also increases. This argument was further attested by Newstrom (2007). He noted that the organizationally committed employees, in general, will usually have good attendance records, demonstrate a willing adherence to company policies, and have lower turnover rates.

This study has also shown that there is a significant negative relationship between the educational level and the organizational commitment; it confirms the previous studies (Glisson & Durick, 1988; Mathieu & Zajac, 1990; Mowday et al., 1982). This finding may be due to the fact that the highly educated people may have developed higher

expectation from their serving organizations that it may not be able to adequately meet (Mowday et. al., 1982). On the other hand, this finding also envisages that as employees acquire more education, management's view to the value of their educational achievement decreases. High levels of educational achievements are sometimes viewed as unnecessary for many positions in a knitwear industry.

No significant correlation was found between organizational commitment and demographic factor (age), this finding is in line with the work previous researchers (Chaughtai & Zafar, 2006; Weidmer, 2006 in Salami, 2008). There are many explanations for this finding. One of the most significant problems facing the Pakistani knitwear industry is that of employee turnover, the sense of being an integral part of the organization.

During the data collection for this study, the researcher observed some very crucial issues in the knitwear industry particularly and textile mills in general are working conditions or environment. Working conditions were poor, below acceptable working standards. Workers were exposed to considerable health hazards, from air borne fibres, air-conditioning, floor conditions (open drains, chemicals/water and damaged floors) and excessive materials handling to and from the machines. The findings reveal that the concern given by the management to work risks is non-existent. Industrial safety and health management practices are non-existent. Although the management claimed that there were no significant work-related accidents, one wonders if the reasons for high absenteeism and labour turnover is ever analysed to determine the causes. Top management and policy makers should revisit their policies and should bring new drastic and dramatic reforms to avoid any further alarming situation in the Pakistani knitwear industry.

One of the objectives of this study was to examine the perception of employees towards organizational commitment. In order to explore the differences in perception among the three job levels, one-way analysis of variance (ANOVA) followed by Tukey's honestly significant difference (HSD) test was used.

Results indicate that (see Table 8) on the statement 'proud to tell others about my organizations', workers show less commitment than managers and supervisors. There could be several explanations for this finding. First, the knitwear industry is not a pay master and most of the workers hired are on a contractual basis. They are paid on the basis of their production (per unit rate). On the other hand, supervisors and managers are inducted as permanent employees. Secondly, strict hierarchical structures, unrealistic production targets, verbal abuse and in some cases assaults by supervisors, as well as poor working conditions, lack of rest times and lack of growth are a few of the problems faced at the work place. Thirdly, there seems to be no evidence of direct consultation with employees regarding skills/knowledge gaps. These employers are likely to provide only limited on-the-job training and in most of organizations it was observed that training was one of the lowest priorities of the employers. As the provision of inadequate equipment, lack of training and adverse working conditions has been shown to affect employee commitment and intention to stay with the organization (McGuire and McLaren, 2009). The main reason behind poor training procedures, as observed in most of the knitwear units are primarily, the unaffordable cost of releasing operational staff for further trainings.

During data collection, this issue was also discussed with top-management when it was asked from one of senior manager, he explained that

*Top-management has no trust in their employees they feel that if we have sent any worker for further training then that worker would not come back or would ask for higher salaries on their return.*

On the statement 'little change in my circumstance', workers had difference of opinion with supervisors and managers. Managers and supervisors believe changes in their circumstances. Same with other statement 'No much gain from this organization'. Workers and supervisors have different stances than that of managers. Most of the managers learn all the relevant skills in their jobs. Unfortunately, local institutions do not impart the right skills to their graduates. Most of educational institutes do not have any interaction with industry which results in most managers learning both technical and managerial skills on the job. This is also reflected in managers' responses.

## **9. Managerial Implications**

In general, leadership (top management and senior managers) can be regarded as the driving force for organizations on the path of productivity. They can give the assurance of and commit themselves to modelling the desired behaviours combined with the values that need to be institutionalised. Managers can increase organizational commitment by communicating that they value employees' contribution and that they care about employees' well being (Stinglhamber & Vandenberghe, 2003). The findings from this study will help senior managers to identify those employee related issues that can slow productivity in the workplace. The Pakistani knitwear industry is highly labour intensive; therefore, prescribed findings of this study will directly impact on the increasing commitment and training strategy of the knitwear units. Furthermore, top management in the knitwear sector who wish to increase the employees' commitment should concentrate on a training structure, formal and informal communication and consideration with their followers. Workers could be interviewed (formal and informal) to determine their perceptions of the management's ability to address these issues. It is also important to foster good communication with employees and establish a comfortable rapport,

encourage the employees to offer input and consider carefully what is said (Fox & Dale, 2008). However, debate is ongoing as how to motivate contractual/temporary employees, which are essential part of knitwear industry.

## 10. Summary and Conclusion

Firstly, this study is cross-sectional and therefore takes the one time views of respondents about organizational commitment in the Pakistani knitwear industry. It is suggested that future research should be undertaken on a longitudinal basis. Secondly, trends in knitwear sector exhibit an association of with political condition and global crisis. The knitwear sector crisis was associated with political instability for many years and growing unpopularity of the previous regimes. For example, the second cotton crisis of the 2000s and the accompanying economic decline have seen the dismissal of two governments and growing public disenchantment with government in general. However, there is a hope that change in regime from military to democratic government might bring positive impact on knitwear sector and will impact employees' commitment in general. It is also suggested that government should play a positive role in industry survival. The industry needs low cost abundant energy and an efficient infrastructure with clean water and good roads to remain viable. These are the basics which any government should provide to an industry that accounts for 60% of all the exports of the country (Anonymous, 2007). Thirdly, limitation can be western-based theories of organizational commitment applied in this study. However, research instruments were adapted and contextualised to acknowledge this limitation. Finally, this study was limited to the knitwear industry in Pakistan and it may be difficult to generalize the results to other sectors of Pakistan.

In conclusion, results of this study identified the notion that, in the sampled group, organizational commitment does vary significantly among the three groups of employees. The significant relationships found in the data are that the managers and the supervisors are more committed than the workers. The findings also suggested that top management might be able to increase the level of commitment in the organization by increasing employee satisfaction with compensation, policies, and working conditions. One way of addressing this could be by increasing the interactions with workers in their workplaces and increasing guided discussions on topics such as safety & security, trainings, participative management programmes, team work and other work related issues

## References

- Abdulla, M. H. A., & Shaw, J. D. (1999). Personal Factors and organizational commitment: Main and interactive effects in the United Arab. *Journal of Managerial Issues*, 11, 77-93.
- Ahmed, S. W., & Alvi, S. A. (1987). Assessing Organizational Commitment in a developing country: Pakistan, A case Study. *Human Relations*, 40(5), 267-280.
- Akhtar, S. (2006). Economic Transformation of Pakistan, Speech delivered at US Chamber of Commerce. Washington DC, [Online] Available: <http://www.bis.org/review/r060705c.pdf> (December 5, 2009).
- Alluto, J., Herbiniak, L., & Alonso, R. (1973). On operationalizing the concept of commitment. *Social Forces*, 51(4), 448-454
- Angle, L., & Perry, L. (1983). Organizational Commitment: Individual and Organizational Influence. *Work and Occupation*, 10(2), 123-146.
- Anonymous. (2006a). *Pakistan Hosiery Manufacturing Association Member Directory*. Lahore: Published by PHMA
- Anonymous. (2006b). Trade Policy Speech by Minister of Commerce, Government of Pakistan: [Online] Available: <http://www.commerce.gov.pk/Tradepolicy-1.asp> (October 23, 2009)
- Anonymous. (2007). Apparel and Knitwear sectors need a new vision in 2007. *Pakistan Textile Journal*, [Online] Available: [http://ptj.com.pk/newsite/editorial/Issue\\_03\\_2007/apparel-and-knitwear-sectors-need-a-new-vision-in-2007-2.html](http://ptj.com.pk/newsite/editorial/Issue_03_2007/apparel-and-knitwear-sectors-need-a-new-vision-in-2007-2.html) (October 22, 2009).
- Aranya, N., & Jacobson, D. (1975). An empirical study of theories of organizational and occupational commitment. *Journal of Social Psychology*, 97, 15-22.
- Becker, H. S. (1960). Notes on the concepts of commitment. *American Journal of Sociology*, 66, 32-40.
- Bergami, M., & Bagozzi, R. P. (2000). Self-categorization, affective commitment and group self-esteem as distinct aspects of social identity in the organization. *British Journal of Social Psychology*, 39, 555-577.
- Bridges, S., & Harrison, K. (2003). Employee perceptions of stakeholder focus and commitment to the organization, *Journal of Managerial Issues*, 15, 498-509.
- Chughtai, A., & Zafar, S. (2006). Antecedents and Consequences of Organizational Commitment among Pakistani University Teachers. *Applied H.R.M. Research*, 11, 39-64.

- DeCotiis, A., & Summers, P. (1987). A path-analysis of a model of the antecedents and consequences of organizational commitment. *Human Relations*, 40(7), 445-470.
- Dodd-McCue, D., & Wright, B. (1996). Men, women and attitudinal commitment: The effects of workplace experiences and socialization. *Human Relations*, 49, 1065-1089.
- Ferris, K., & Aranya, N., (1983). A comparison of two organizational commitment scales. *Personnel Psychology*, 36, 87-98
- Fox, L. M., & Dale, K. (2008). Leadership styles and Organizational commitment: Mediating effect of role stress. *Journal of Managerial Issues*, 20(1), 109-130.
- Glisson, C. A., & Durick, M. (1988). Predictors of job satisfaction and organizational commitment in human service organizations. *Administrative Science Quarterly*, 33, 61-81.
- Herbiniak, L. G., & Alluto, J. A. (1972). Personal and role related factors in the development of organizational commitment. *Administrative Science Quarterly*, 17(4), 555-573.
- Hom, P., Katerberg, R., & Hulin, C. (1979). Comparative examination of three approaches to the prediction of turnover. *Journal of Applied Psychology*, 64(1), 280-290.
- Huselid, M., & Day, N. (1991). Organizational commitment, job involvement, and turnover: A substantive and methodological analysis. *Journal of Applied Psychology*, 76(3), 380-391.
- Khaleque, A., & Rahman, A. (1987). Perceived importance of Job Facets and overall Job satisfaction of industrial workers. *Human Relations*, 40(7), 401-416.
- Luthans, F., McCaul, H. S., & Dodd, N. G. (1985). Organizational commitment: a comparison of American, Japanese, and Korean employees. *Academy of Management Journal*, 28(2), 213-19.
- Mathewman, L., Rose, A., & Hetherington, A. (2009). *Work Psychology*. New York: Oxford University Press
- Mathieu, J., & Zajac, D. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin*, 108(2), 171-194.
- McGuire, D., & McLaren, L. (2009). The impact of physical environment on employee commitment in call centers; The mediating role of employee well-being. *Team Performance Management*, 15(1/2), 35.
- Meyer J. P., & Allen N J. (1997). *Commitment in the workplace: Theory, Research and Application*. California: Sage Publications.
- Meyer, J., Herscovitch, S., & Topolnytsky, L. (2002). Affective, Continuance, and Normative Commitment to the Organization: A Meta-analysis of Antecedents, Correlates, and Consequences. *Journal of Vocational Behaviour*, 61, 20-52.
- Morrow, P. (1993). *The theory and measurement of work commitment*. Greenwich: CT JAL.
- Mowday, R. T., Porter, L. W., & Steers, R. M. (1982). *Employee-organizational linkages: The Psychology of commitment, absenteeism, and turnover*. New York: Academic Press.
- Mowday, R.T., Steers, R. M., & Porter, L. W. (1979). The measurement of organizational commitment. *Journal of Vocational Behaviour*, 14, 224-247.
- Newstrom, J. W. (2007). *Organizational Behaviour-Human Behaviour at work* (12<sup>th</sup> ed). New York: McGraw Hill International Edition.
- Noshab, F. (2006). Globalization, WTO and Pakistan. *The Muslim World*, 96(2), 341-2.
- O'Reilly, C., & Caldwell, D. (1980). The impact of intrinsic and extrinsic factors on subsequent satisfaction and commitment. *Journal of Applied Psychology*, 65(3), 559-565.
- Ritzer, G., & Trice, H. M. (1969). An empirical study of Howard Becker's Side-bet theory. *Sociological Forces*, 47(4): 475-479.
- Saigol, T. S. (1998). Country perspective: Pakistan: The changing Textile face of Asia, Annual conference Report. *International textile Manufacturers Federation*.
- Salami, S. O. (2008). Demographic and psychological factors predicting organizational commitment among industrial workers. *Anthropologist*, 10, 31-38.
- Schneider, B., Hall, D. T., & Nygren, H. T. (1970). Personal factors in organization identification. *Administrative Science Quarterly*, 15, 176-189.
- Sommer, S., Bae, M., & Luthans, F. (1996). Organizational Commitment across Cultures: The Impact of Antecedents on Korean Employees. *Human Relations*, 49, 977-993.

- Steers, R. M. (1977). Antecedents and outcomes of organizational commitment. *Administrative Science Quarterly*, 22, 46-56.
- Stinglhamber, F., & Vandenberghe, C. (2003). Organizations and supervisors as sources of support and targets of commitment. *Journal of Organizational Behaviour*, 24(1), 251-270.
- Stumpf, S., & Hartman, K. (1984). Individual exploration to organizational commitment or withdrawal. *Academy of Management Journal*, 27(2), 308-329
- Swales, S. (2002). Organizational commitment: a critique of the construct and measures. *International Journal of Management Review*, 4(2), 155-178
- United Nations Economic and Social Commission for Asia and The Pacific publications: Pakistan: A country Profile, [Online] Available: [http://www.unescap.org/tid/publication/part\\_two2223\\_pak.pdf](http://www.unescap.org/tid/publication/part_two2223_pak.pdf) (October 15, 2009).
- Weiner, Y., & Gechman, A. S. (1977). Commitment: A behavioural approach to job involvement. *Journal of Vocational Behaviour*, 10, 47-52.
- Weiner, Y., & Vardi, Y. (1980). Relationships between job, organization, and career commitments and work outcomes-an integrative approach. *Organizational Behaviour and Human Performance*, 26, 81-96.
- Yin, K. (1994). *Case Study Research: Design and Methods*. Newbury Park, CA: Sage Publications.
- Zanagro, G. A. (2001). Organizational Commitment: A concept analysis. *Nursing forum*, 36(2), 1-14

#### Note

Note 1. Side-bets are any investments of value made by both parties, which are not related to the job but serve to ensure continued organizational membership by the individual. As Becker (1960) said: "Commitments come into being when a person, by making a side-bet, links extraneous interests with a consistent line of activity."

Table 1. Four bases of Organizational commitment

Bases of organizational commitment	Originators/ Developers
<b>Attitudinal or Affective commitment</b> (Based upon acceptance of and belief in the goals of organization or group)	Etzioni (1961): Moral Commitment Kanter (1968): Cohesion commitment Mowday et. al (1982) O'Reily and Chatman (1986): Internalisation
<b>Continuance Commitment</b> (Based upon socioeconomic factors)	Becker(1960): Side-bets Theory Kanter (1968): continuance Commitment Meyer and Allen(1984) Mowday et. al (1982) O'Reily and Chatman (1986): Compliance
<b>Normative Commitment</b> (Based upon feelings of loyalty and obligation)	Allen and Meyer (1990) Kanter(1968): Control commitment O'Reily and Chatman (1986): Identification
<b>Behavioural Commitment</b> (Based upon binding behaviour)	Salancik (1977, 1982)

**Source:** Swales, S. (2002). *Organizational commitment: a critique of the construct and measures*

Table 2. Respondent Job Category

<b>Job Category</b>	<b>Frequency</b>	<b>Valid Percent</b>
Manager	117	33.1
Supervisor	142	40.2
Worker	94	26.6
<b>Total</b>	<b>353</b>	<b>100.0</b>

Table 3. Age and Job Category

		<b>Respondent job category</b>			<b>Total</b>
		<b>Manager</b>	<b>Supervisor</b>	<b>Worker</b>	<b>%</b>
<b>Age</b>	<= 29	11.4	25.9	22.5	59.8
	30 - 39	14.0	11.4	3.4	28.8
	40 - 49	5.4	2.6	.3	8.3
	50 - 59	1.4	.3	.6	2.3
	60+	.9			.9
	<b>Total %</b>	<b>33.0</b>	<b>40.2</b>	<b>26.8</b>	<b>100.0</b>

Table 4. Education Level and Job Category

		<b>Respondent job category</b>			<b>Total</b>
		<b>Manager</b>	<b>Supervisor</b>	<b>Worker</b>	<b>%</b>
<b>Education level</b>	Other		0.3	1.4	1.7
	University	20.4	5.4	0.0	25.8
	Diploma	3.4	2.5	0.0	5.9
	Graduate	5.1	11.3	2.0	18.4
	College	2.3	4.8	.3	7.4
	H.Sc (O-levels)	2.0	13.0	9.6	24.6
	Middle School	0.0	1.7	4.5	6.2
	Primary school	0.0	1.1	8.8	9.9
	<b>Total %</b>	<b>33.1</b>	<b>40.2</b>	<b>26.6</b>	<b>100.0</b>

Table 5. Length of Service and Job Category

		Respondent job category			Total %
		Manager	Supervisor	Worker	
Length of service	<= 5	16.5	27.6	21.7	65.8
	6 - 10	10.3	8.0	3.7	21.9
	11 - 15	4.3	3.1	.9	8.3
	16 - 20	1.1	1.1		2.3
	21 - 25	.6	.3		.9
	26 - 30	.6			.6
	31+			.3	.3
	Total %	33.3	40.2	26.5	100.0

Table 6. Correlations among All Study Variables

Sr. No.		Attitudinal Commitment	Age of Respondent	Length of service	Education level
1	Attitudinal Commitment	1.00			
2	Age of Respondent	.08	1.00		
3	Length of service	.16(**)	.70(**)	1.00	
4	Education level	-.10*	-.06	-.08*	1.00

\* Correlation is significant at 0.05 level

\*\* Correlation is significant at 0.01 level

Table 7. Analysis of Variance of Employees' Commitment

Employees' Commitment	Mean			F	Sig.
	<sup>a</sup> M	S	W		
Proud to tell others about my organization	4.17	4.34	4.01	3.07	.04*
little change in my circumstances	3.61	3.43	2.84	12.93	.00**
No much gain from this organization	2.85	2.44	2.23	6.80	.00**

\* indicates that the mean difference is statistically significant at 0.05 level or lower.

\*\* indicates that the mean difference is statistically significant at 0.01 level or lower

<sup>a</sup>M=Manager S= Supervisor W= Worker

Table 8. Post Hoc (Tukey-HSD)

Employees commitment	Mean	Job Category	F	Sig.
Proud to tell others about my organization	<sup>a</sup> M = 4.17	M/S	3.07	0.38
	S = 4.34	S/W		0.04*
	W = 4.01	M/W		0.48
<sup>1</sup> Little change in my circumstances	M = 3.61	M/S	12.93	0.42
	S = 3.43	S/W		0.00*
	W = 2.84	M/W		0.00*
<sup>1</sup> No much gain from this organization	M = 2.85	M/S	6.80	0.03*
	S = 2.44	S/W		0.42
	W = 2.23	M/W		0.00*

\* indicates that the mean difference is statistically significant at 0.05 level or lower.

<sup>a</sup>M=Manager S= Supervisor W= Worker

<sup>1</sup>= negative statements and reversed scores.



## Mobile Marketing: Examining the Impact of Trust, Privacy Concern and Consumers' Attitudes on Intention to Purchase

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### Abstract

The aim of the study was to examine the impact of mobile marketing on consumers' attitudes and purchase intentions. More specifically the research intended to measure Jordanian consumers' acceptance of SMS advertising. A number of hypotheses were formulated for this purpose. The findings of the study show that there existed positive relationship between perceived usefulness, perceived entertainment and intention to participate and purchase intention. Whereas there existed negative relationship between personal use, extensive advertising, privacy concern and intention to participate and purchase intention. Based on the results a number of recommendations were proposed, and suggestions for future studies were made.

**Keywords:** Mobile marketing, SMS, Permission marketing, Attitudes, Intentions, Jordan

### 1. Introduction

Mobile phones are far reaching the globe and leading to dramatically unprecedented change in the way people communicate (Friedrich et al. 2009; Xinze, 2008). Such technology has made almost every body reachable (Marez et al. 2007). The penetration and adoption of mobile is almost 100% in many western and Asian countries (Netsize, 2007; The Economist, 2005). This ubiquitous phenomenon has made a revolutionary contribution in the adoption and diffusion of mobile commerce since it allows marketing activities to be tailored to actual customers' needs and tastes (Barutçu, 2007), and targeting customers more accurately through using one-to-one marketing communications compared to impersonal and mass media (Carter, 2009; Shaw et al. 2001). The incredible number of innovations which are introduced yearly, and the fast technological developments (Easingwood and Koustelos, 2000), have also changed the advertising philosophy (Barwise & Farley, 2005), leading firms to adopt mobile marketing strategy as a way to make their advertising messages break through the clutters (Zhang and Mao, 2008).

Early scholars conclude that mobile marketing provides marketers with a real opportunity to get a high response rate compared to traditional media (e.g. Woodside and Soni, 1991). The justification for that is that people within the mobile marketing network such as customers, businesses, advertising agencies, marketers and brands can interact with each other in more creative and fashionable way unlike before (Hanley and Becker, 2009). Recent statistics show that mobile marketing budgets particularly mobile advertisings will exceed 11 billion by 2011 rising from almost 1 billion in 2007 (Leek and Christodoulides, 2009; O'Shea, 2007), since its expected that mobile subscribers will surpass 4 billion by 2011 (Higginbotham, 2009). Other research findings indicate that around 22% of firms which use online advertising as a promotional tool have actually attempted to do mobile marketing (Ask, 2006).

In the Middle East, particularly in Jordan, there are four mobile service providers, and the number of subscribers is more than 6 million, slightly exceeding the number of population. In terms of percentage, the mobile penetration in Jordan is 101% compared to the population (The Jordan Times, 2009). In addition, according to the Telecommunications Regulatory Commission, the internet penetration in Jordan has reached around 30% in 2009 and it is expected to exceed 50% by 2010 (The Jordan Times, 2009).

However, although the mobile marketing has matured rapidly in many European and Western countries, it is still infant in many Asian and Middle Eastern Countries. Furthermore, most of the previous studies have examined mobile marketing in western context, and little attention has been paid to the investigation of such strategy in the Arab world. As far as the current researchers' knowledge is concerned, no previous studies were found that focus on mobile marketing in eastern countries particularly in Jordan. More specifically, this is the first empirical research of its kind in the region that tackles in a specific way the impact of trust, privacy concern and consumers' attitudes on purchase intentions. Another contribution is that the current research draws and systematically synthesizes literature from disparate marketing disciplines, and borrows theories from the social and psychological setting to develop a model which could be used in future studies to measure the influence of mobile marketing on consumers' purchase intention. Based on that, the primary purpose of this paper is to investigate the influence of mobile marketing as a communication tool on generating consumers' purchase intentions and to measure consumers' attitudes toward such strategy.

## 2. Literature Review

Mobile Marketing Association (MMA, 2006), defines mobile marketing as *"the use of wireless media as an integrated content delivery and direct response vehicle within a cross media or standalone marketing communications program"*. Scharl et al. (2005) define mobile marketing as the use of a wireless medium to provide customers with individualized information about products, services, and ideas at any time and locations, which benefit all stakeholders. In the same vein, Wireless Advertising Association (WAA) defines mobile marketing as releasing advertising messages to mobile phones or PDAs through the wireless network (Xu, 2007). According to Advertising age (2006, p. 20) mobile marketing is defined as *"the use of wireless media as an integrated content delivery and direct-response vehicle within a cross-media marketing communications program"*.

Leppäniemi et al. (2006) carried a comprehensive review about mobile marketing research and found 21 different definitions. The authors found that academicians have used different terms interchangeably such as mobile advertising, wireless marketing and wireless advertising which all refer to mobile marketing. The critique which was made by Leppäniemi et al. (2006) and Balasubramanian et al. (2002) is that there is no conceptual agreement about the definition of mobile marketing, besides most of the proposed definitions mainly focused on the technology itself rather than trying to go beyond that to clearly relate such technology into marketing field.

However, what tends to be unique about mobile marketing strategy is that the mobile device is exceptionally personal (Tahtinen & Salo, 2003) thus enabling marketers and advertisers to interact directly and get customers engaged in a direct dialogue by replying to the message content (Bauer et al. 2005), unlike the traditional advertising media which is regarded as a non-personal means of sending a message where customers are passive (Ayanwale et al. 2005). It has been suggested that in the mobile marketing network, firms can get customers engaged through a call-to-action which is not possible via other media channels and make customers respond via text messaging, multimedia messaging, picture messaging, Bluetooth alerts, or voice channels on their mobile (Carter, 2008). It is quite clear that mobile marketing is considered as a viable means of marketing communication because of the inherent attributes and characteristics in such strategy which include personalization, localization, uniqueness, ubiquity and interactivity (Bauer et al. 2005). To support this line of thought, WWA carried a survey in mobile marketing industry and found that more than 90% of mobile advertising practitioners, agencies and professionals agreed about the necessity of the medium to be personalized in order to succeed. Besides, there is a wide recognition that such a strategy is embraced by different firms because of its high retention rate, high reach, high response rate and low cost (Pearse, 2005). This is evident in the findings of Forrester research where 47% of companies have set plans for boosting their mobile marketing expenditures next year (2010), third of interactive marketers now utilize mobile marketing, and another one-third plan to do so (Magill, 2009).

Mobile marketing formats encompass short message service (SMS), multi media service (MMS) and WAP pushes messages which all aim to provide all players in the mobile marketing environment with a clear measures against which to judge the medium (Kimberley, 2007). Such formats are regarded as valuable and helpful channels to direct marketing and promotional activities. Therefore it is expected to achieve higher response rate compared to e-mail marketing since such formats are sent more personally (Frolick and Chen, 2004). Furthermore, SMS ads messages are more likely to be viewed (70%) than email marketing messages (30%) (Timpson and Troutman, 2009). Another advantage is that SMS and MMS may increase brand recall and association leading to generate customers purchase intentions (Li and Stoller, 2007). The inexpensive cost of using SMS and MMS to deliver message contents compared to traditional media, and the interactivity (customers could receive a free gift with their meal using an e-coupon downloaded to their mobile

phone) has made such formats the backbone for mobile marketing (Xinzed, 2008). Therefore, it is expected that around 3 billion SMS ads will be sent by 2011 compared to 41 millions ads sent in 2007 (Timpson and Troutman, 2009). It is also suggested that SMS and MMS can form a strong tie of communication just like face to face communication leading to generate positive word of mouth (Okazai, 2009). Nonetheless, other argue that short length of SMS as it contains few words or numbers will limit the potential use of such strategy in the future (Sinisalo and Karjaluoto, 2009).

### *2.1 Previous research*

Graham, 2001 studied the future of wireless advertisings and found that 60% of respondents showed interest in receiving text advertising through mobile phones and Black (2001) reported that brand awareness for the advertized brand increased more than 80% among respondents who received on average six SMS advertising. Barwise and Strong (2002) studied SMS as a potential advertising means for young people, and found that 51% were very satisfied with a service that was customized and tailored to only receive messages relevant to interests. 84% stated they would recommend such a service to a friend, and 63% said that they had either replied or taken action as a result of receiving the SMS ad. The authors, however, stressed the importance of the relevancy of the SMS contents as prerequisite to motivate young people to take an action. In addition, the authors showed that mobile advertising were more favorable to consumers for location-sensitive and time critical events. Enpocket (2002) reported that 94% of respondents had read the SMS advertising messages, and 23% of them forwarded the marketing messages to friends.

Rettie et al. (2005) analyzed the acceptance of 26 different SMS ads. The result of the study showed that the acceptance of SMS ads was 44 percent. The authors concluded that interest, relevance and monetary incentives were the main reasons that encouraged consumer acceptance. Doherty (2007) concluded that consumers will accept SMS ads only if it is relevant and entailed quality advertising. Carroll et al. (2005) and Carroll et al. (2007) find that permission, control, content, delivery and wireless service provider control are the main determinants behind consumer acceptance of SMS advertising. Haghirian & Madlberger (2005) found that advertising value and content are the main factors that influence the acceptance of SMS ads. Anderson and Nilsson (2000) showed that SMS advertising had a positive impact on increasing brand awareness and purchase intention.

Tsang et al. (2004) found that respondents had a negative attitude toward receiving SMS ads without permission, since they regarded that as an irritating behavior. However, respondents claimed that their behavior would be positive if the ads were sent by permission. Rettie and Burm (2001) reported that 90% of respondents found it unacceptable to receive SMS ads from unknown businesses, while 49% of respondents found it acceptable to receive SMS ads from Internet service providers they had subscribed to, and 44% found it acceptable as well if they could have discount call in return. Okazaki and Taylor (2007) found that the single factor that mainly correlated with intention to adopt SMS ads by multinational companies was the perceived ability to build the brand. Other factors such as the ability to use location-based advertising and the perceptions of how well consumers accept SMS advertising were found to have potential influence on firms' decisions to adopt SMS ads. Bauer et al (2005) found that consumers who were more familiar with mobile communications perceived the use of mobile marketing services less difficult compared to consumers who were unfamiliar. Dickinger et al (2004) concluded that the fear of spam had a strong negative influence on customers' attitudes to accept SMS advertising.

Whitaker (2001) reports that respondents who considered their mobile phones as a very private and personal item were more reluctant to share information with unknown companies and the author also find that when data is controlled by unknown persons has led to annoyance among receivers. Jong and Sangmi (2007) found that mobility, convenience and multimedia service were positively related to attitudes toward mobile advertising, which in turn lead to favorable behavioral intentions. Skog (2002) reports that teenagers are not homogeneous audiences for mobile phones as their usage patterns and attitudes varied widely depending on their social background, technological literacy and urban/rural lifestyles. Chowdhury et al (2006) found that when mobile advertisers presented mobile ads pleasingly, with appropriate information, consumers would not be annoyed and there was a high possibility that they would like the ads. Haghirian and Dickinger (2004) reported that sending games and prizes to the target group's mobile phones was a successful way to attract and keep customers. Li et al. (2002) and Krishnamurthy (2001) reported that the perception which consumers hold about SMS advertising messages is related to the granted permission to marketers confirming by that their willingness to receive SMS advertising messages. Godin (1999) pointed out that consumers who subscribed to a particular company were usually interested in that company's services and products, and hence, when consumers received SMS advertising messages, they were more likely to pay more attention and read the message compared to consumers who receive messages from companies which they are not subscribed with. Heun, (2005) found only 12% of consumers were willing to receive any forms of wireless advertisements, even if they could control what to receive.

### 3. Methodology

#### 3.1 Data source and scale

The primary data was collected through a self administrated questionnaire which was originally developed for this purpose. One hundred questionnaires were distributed for the purpose of pre-testing the questionnaire's contents. A complete questionnaire was developed based on the comments collected during the pre-testing period. A random sample of 10 public and private Jordanian universities namely; Jordanian University, Yarmok University, Al-albayet University, Alhussien Bin Talal University, Moa'tah University, Al-esra'a University, Al-zaytoonah University, Petra University, Jerash University, and Philadelphia University was used. The sample contained 2500 respondents. Approximately, 200 questionnaires were distributed to each university. Out of the 2500 distributed questionnaires a total of 2233 or a response rate of 89% was returned. After removing the invalid questionnaires, 2108 questionnaires were used in the analytical stage. The 125 questionnaires were considered invalid because respondents skipped many items. The period of distributing the questionnaire lasted from 5<sup>th</sup> of March 2009 until the 1<sup>st</sup> of October 2009. The process of distributing the questionnaire was drop-off approach (Aaker et al. 2004). Based on the logic of this method, the authors of this paper hand delivered the questionnaire in classes to undergraduate and graduate students in the above mentioned universities after explaining to them the purpose of the study, the required procedure to fill out the questionnaire and answering any question with regard to any of the questionnaire's statements. The concept of mobile marketing was also explained to the students to ensure a complete understanding of the purpose of the study.

Questions asked respondents to rate their degree of agreement using a 7-point Likert scale. All elements had been measured with single items to maximize completion. Questions were set based on previous literature with regard to direct marketing, mobile marketing, permission, personal use and privacy concern (Tripp Et al. 1993; Schlosser, Shavitt, & Kanfer (1999); Akaah, Korgaonkar and Lund, 1995; Ducoffe, 1996; Mehta and Sivadas, 1995; Shavitt, Lowrey, & Haefner, 1998; Akhter and Durvasula, 1991; Krishnamurthy, 2001; Barwise and Strong, 2002; Heinonen and Strandvik, 2003; Milne and Boza, 1999; Phelps et al. 2000; Sheehan, 1999). In the analytical stage confirmatory factor analysis and structural equation modeling were used. Testing reliability and validity for single items was difficult, as Anderson and Gerbing, (1988) indicated.

### 4. Hypothesis Developments and Proposed Model

#### 4.1 Formation of attitude: Theory of a reasoned behavior (TRA) and The Theory of Planned Behavior (TPB).

Theory of a reasoned behavior (TRA) was originally proposed by Fishbein & Ajzen 1975 to understand behavior and predict outcomes. The main assumption of TRA is that a person takes into consideration the implications of his/her action before s/he decides to actually engage or not in certain behavior. It also posits that the main determinant of a person's behavior is behavior intent. A person's intention to behave in a certain way is contingent upon the attitude toward performing the behavior in question and the social pressure on him/her to behave in that way (subjective norm). This suggests that attitudes and subjective norms differ according to the person involved and behavioral context. Ajzen & Fishbein (1980) pointed out that a person's attitude is determined by his/her perception about the expected consequences of performing the behavior and the assessment of those consequences. Fishbein & Manfredo (1992) state that if a person's intent is strong, then it is expected that the behavior will be actually performed. Therefore, the primary concern is to identify the underlying factors of the formation and change of behavioral intent. Adding on that, the Theory of Planned Behavior (TPB), which is an extension of TRA, has introduced another factor that affects behavioral intention, which is the perceived behavioral control. Control beliefs and perceived power are the main construct of perceive behavioral control. Therefore, it is expected that if people have strong control beliefs about "the existence of factors that might facilitate a behavior, then they will have high perceived control over that behavior". (Mackenzie & Jurs, 1993).

Figure 1 summarizes the relationship between the variables that construct TRA and TPB

#### (Insert Figure 1 here)

As one of the main purpose of this study is to examine the influence of mobile marketing on consumer purchase intention, and the attitudes of consumers toward such strategy, connecting attitudes, beliefs and purchasing intentions is a core issue and central part for purpose of the study. Early research has been carried out in direct marketing to widen our understanding about consumers' attitudes and beliefs toward different forms of direct marketing (e.g. Sackmary, 1987). Building upon such research, scholars have examined the constructs of purchase intentions and elements that influence consumers' attitude, to measure such effect on consumers behavior within direct marketing milieu (e.g. Andrews et al. 1990; Metha and Sivadas, 1995; Griffin et al. 2000; Page and Luding, 2003; Kolsaker, 2004; DuFrene et al. 2005; Taylor et al. 2005).

Andrews et al. (1990) examined consumers' attitudes toward direct marketing and purchase intentions and concluded that attitudes were not only used for processing the received information but they were also used as a basis for specific actions. Therefore, attitudes did not only influence the interpretation of promotional messages of direct marketers, but

they also influenced the way consumers respond to such promotional messages. In the same vein, Metha and Sivadas (1995) assessed consumers' attitudes toward direct marketing on the internet. The authors pointed out that respondents reacted negatively toward untargeted "cyber junk" advertisements and more positively toward targeted and more personalized marketing communication efforts. However, overall favorability towards internet advertisements was perceived negatively because of its irrelevancy and extensiveness. Taylor (2009) demonstrated that advertising agencies which bombard the consumer with extensive and unwanted messages are more likely to influence consumers' attitude negatively. Previous studies have shown that consumers in general tend to have a negative attitude toward advertisements because of intrusive tactics that advertisers use (Zanot, 1984; Mittal, 1994; Zhang, 2000). Kavassalis et al. (2003), pointed out that the low cost of SMS advertising messages might provoke firms and advertising agencies to send excessive spam messages, which leads to unfavorable beliefs and negative attitudes towards SMS marketing-related advertising. Lee et al. (2006) state that consumers' unfavorable attitudes toward such advertisements are formed because of the negative belief such as excessive, offensive and annoyance advertising. Moreover, consumers' shopping orientation plays a major role in influencing consumers' preferences and attitudes to respond to different type of media (Korgaonkar, 1984). Based on the idea of shopping orientation which is well documented in previous literature, Akaah et al. (1995), established a group of variables (i.e. too much direct mail and past direct marketing experience) with regard to consumers' shopping orientation to examine consumers' attitudes toward direct marketing. The study examined particularly the relationship between "consumers' attitudes and intentions to patronize direct marketing offerings". The result of the study showed a negative relationship between too much direct mail and consumers attitudes. In the same vein, it is expected that consumers who have a negative attitude toward extensive direct mail solicitation will lead to form a negative attitude towards direct marketing. Therefore, the following hypotheses are formulated:

*H1: consumers who are subjected to extensive advertising are more likely to react in a negative way towards any forms of direct advertising.*

*H2: Consumers who are subjected to extensive advertising are less likely to have intention to participate in permission based advertising programs.*

#### 4.2 Usefulness and Relevance of Information

Ayanwale et al. (2005) state that in traditional media consumers are characterized as passive since they do not have control about the decision whether or not to subscribe. While in mobile commerce, particularly SMS marketing-related messages, consumers have to some extent an active control receiving advertisements. Bauer et al. (2005) found that the acceptance of SMS advertising messages is contingent upon the attained perceived benefits from such messages; they also concluded that perceived utility was the main motive behind consumers' acceptance of mobile marketing. Doherty (2007) concluded that consumers would accept SMS advertising only if it was relevant to consumers' interests and involved quality advertising. Scharl et al. (2005) reported that short, funny and entertaining and compact SMS advertising messages which were relevant to the target group, and informative about prizes and promotions, were more likely to influence consumer purchasing intention toward the advertised products. Carroll et al. (2007), Pagnani (2004) and Nasco and Bruner (2008) found that consumers were more likely to accept the messages when the content was relevant to them. Since SMS advertising message can facilitate two-way communication between users, then such communication can promote a higher level of interactivity between consumers and SMS advertised messages (Liu and Shrum, 2002). Therefore, based on the reviewed literature the following hypotheses are formulated:

*H3: There is a positive relationship between perceived usefulness and intention to participate. Consumers who believe that SMS advertising messages are useful and relevant to their interests are more likely to participate in permission-based advertising programs.*

*H4: There is a positive relationship between perceived usefulness and purchase intention. Consumers who believe that SMS advertising messages are useful are more likely to buy the advertised products.*

#### 4.3 Entertainment

Hoffman, and Novak (1996) state that computer-based media can provide marketers with a great opportunity to influence consumers' perception and mood positively due to the high degree of pleasure and involvement during the interaction with them. Shavitt et al. (1998) found that consumers overall attitudes were more favorable when they perceived the advert as an enjoyable. Haghirian & Madlberger (2005) found that advertising value and content are the main factors that influence the acceptance of SMS ads. Ankar and D'Incau (2002) reported that timing, entertainment, and personalized services were treasured highly among consumers. Pollay and Mittal (1993) concluded that "perceived entertainment value" had a positive influence on consumers' attitudes and favorability towards advertising. Therefore, the perceived entertainment value of message contents in mobile marketing will have an effect on consumers' attitudes toward SMS advertising messages, and hence, the following hypotheses are formulated:

*H5: There is a positive relationship between perceived entertainment and intention to participate. Consumers who believe that SMS advertising messages are entertaining are more likely to participate in permission-based advertising programs.*

*H6: There is a positive relationship between perceived entertainment and purchase intention. Consumers who believe that SMS advertising messages are entertaining are more likely to buy the advertised products.*

#### 4.4 Personal Use

Since mobile advertising is operationalized through the personal mobile device, then the activities in responding to SMS advertising such as sending, receiving or deleting impose on consumers to interact with such messages (Zhang and Mao, 2008). On the other hand, consumers view their mobile phones as part of their own 'personal space' (Hart 2008) and this in turn may be regarded as an invasion of consumers' privacy since the mobile device is so personal in nature (Kim and Jun, 2008), and reflects the use of its primary user (Friedrich et al. 2009). However, if consumers agree to receive SMS messages from advertisers, they tend to react positively to them (Barwise and Strong, 2002). Nonetheless, Previous literature (e.g. Solomon et al. 2006; Kerin et al) has shown that wireless marketing is an intrusive way of communication as there are over 1 billion e-mail messages sent daily in the United States alone (Cudmore and Patton, 2007). Stewart and Pavlou (2002) pointed out that wireless advertising may provide overwhelming information which may result in confusing and distracting consumers, leading them to react negatively since some of them believe that mobiles are for personal use. Previous literature has shown that mobile marketing communication is challenging because of the personal nature that is associated with mobile devices. Therefore, the following hypotheses are formulated:

*H7: There is a negative relationship between personal use and past reaction. It is expected that consumers who have negative attitudes towards direct advertising are less likely to accept receiving wireless advertising messages.*

*H8: There is a negative relationship between consumer intention to participate and personal use. It is expected that consumers are less likely to have intent to participate in a permission-based advertising programs when they believe that mobile is for personal use.*

*H9: There is a negative relationship between personal use and purchase intention. It is expected that consumers who believe that mobiles are for personal use are less likely to purchase the advertised products.*

#### 4.5 Permission Marketing

Leppaniemi and Karjaluo (2005) state that permission marketing is key to mobile marketing. Permission marketing has been regarded as an integral part of relationship marketing to aid developing consumers' loyalty over a long period (DuFrene et al. 2005) According to Godin and Peppers (1999), permission marketing refers to the situation where consumers are asked to grant approval to companies in order to send e-mail promotional communications with regard to products or service. Sheehan and Hoy (2000) reported that consumers were more likely to be concerned about the invasion of their privacy when they knew that companies had obtained their e-mail addresses without their permission to send unsolicited advertising e-mail. Sultan and Rohm (2008) pointed out that granted permission from the recipients before sending messages had resulted in higher acceptance and effectiveness of mobile advertising. Stambler (2002) reported that 58% of e-mail users said that they had opened the e-mail messages which were sent from marketers to whom they had granted marketing permission, and 53% said that their personal buying habits were influenced by those marketers' e-mail. Hanley and Becker (2008) concluded that when consumers grant their permission in advanced to receive SMS advertising messages they would accept and agree to give up control to the firm, at least on the short run. Milne and Rohm (2004) found that consumers had a little or no control over receiving unwanted commercial information. Phelps et al. (2001) pointed out that the amount of privacy concern is positively related to the amount of information desired to control. Therefore, based on the reviewed literature, the following hypotheses are formulated:

*H10: There is a positive relationship between permission (intention to participate) and purchase intention.*

*H11: Privacy concern is negatively related to intention to participate in permission based advertising programs.*

#### 4.6 Trust

McKnight et al. (2002) found in their study about E-Commerce that trust was an important factor which had a significant influence on consumers' intention to make online transactions. Therefore, it is expected that in mobile marketing, where the perceived risk and uncertainty is high, trust will influence consumers' intention to participate in permission based advertising programs, and hence, the following hypotheses are formulated:

*H12: There is a negative relationship between past reactions and trust. Consumers who have negative attitudes towards direct advertising are less likely to share their personal information via SMS advertising messages.*

*H13: There is a negative relationship between extensive advertising and trust. Consumers who are subjected to extensive advertising are less likely to trust firms using SMS advertising.*

Figure (2) summarizes the relationship between a list of variables which help to form consumers' attitudes, and their influence on consumers' intention to participate. Such relation has been mediated by two variables namely; trust and privacy concern. These two variables in return play an influential role on consumers' intention.

**(Insert Figure (2) here)**

## 5. Results

The data obtained from the survey were analyzed for frequency analysis. Among respondents, male was 58% (1289) and female was 42% (944). 74% of respondents were between the ages of 19 and 24. Respondents at the age of 25 and above constituted 26% of total respondents. 100% of respondents had mobile devices. On average, respondents sent 10 and received 8 SMS messages daily. 2 SMS advertising messages were received daily. 12 hypotheses have been proposed for testing in the analytical stage. The results indicate that all of the proposed hypotheses are statistically significant in the hypothesized direction, where  $p$  ( $p < .05$ ) and critical ratio values ( $CR > 1.83$ ).  $R^2$  was also computed ( $R^2 = 0.158$ ). Multiple regression was used on the endogenous and exogenous variables ( $F(6) = 8.431$ ,  $p < .001$ ). This finding indicates the model explains %19.1 of the variance in the dependent (purchase intention), which is considered an acceptable result. An adequate degree of model fit was obtained ( $\chi^2 = 10.568$   $P = 0.212$ ), GFI = 0.98, AGFI = 0.956, CFI (0.973) and RMSEA (.042). Table 1 shows model relationships and parameter estimates.

(Insert Table 1 here)

### 5.1 Discussion and Conclusion

The objective of this study was to investigate the influence of mobile marketing as a communication tool on generating consumers' purchase intention and to ensure consumers attitudes toward such strategy. The findings of this empirical study show that all the formulated hypotheses were in the same direction as was hypothesized in the study (see table 1). It seems that consumers who were subjected to extensive advertising reacted negatively towards mobile marketing advertising and consequently had less intention to participate in permission-based advertising programs. It also appears to be a positive relationship between perceived usefulness and intention to participate, as consumers who believed that SMS advertising messages were useful and relevant to their interests expressed more readiness to participate in such programs. Consequently, consumers who were convinced that SMS advertising messages were useful expressed the desire to buy the advertised products. In terms of entertainment, the study shows that consumers who thought that SMS advertising messages were entertaining expressed more readiness to participate in such programs, and that there was a positive relationship between perceived entertainment and purchase intention i.e. consumers who believed that SMS advertising were entertaining were more likely to buy the advertised products. However, there appeared to be a negative relationship between personal use and past reaction i.e. consumers who had negative attitudes towards direct advertisings were less inclined to receive wireless advertising messages. Moreover, consumers who were less likely to have intent to participate in a permission based advertising programs had the belief that mobile was for personal use. As such consumers who had the belief that mobiles were for personal use were reluctant to purchase the advertised products. In terms of permission marketing, it appears to be a positive relationship between permission (intention to participate) and purchase intention in that privacy concern was negatively related to intention to participate in permission-based advertising programs. As far as trust is concerned, there appeared to be a negative relationship between past reactions and trust i.e. consumers who expressed negative attitudes toward direct marketing were less likely to share their personal information via SMS advertising messages. Lastly, there appears to be a negative relationship between extensive advertising and trust i.e. consumers who were subjected to extensive advertising pointed out that they were less likely to trust firms using SMS advertising.

Mobile operators are called upon to organize their SMS flows in such a way as not to give consumers the impressions that this flow as a burden on them. One way to resolve this problem is to personalize such messages in order to encourage consumers to participate in permission-based advertising programs. Provided that relevant information is transmitted in such messages. Needless to say such messages should be perceived by consumers as beneficial and useful and match their interests and desire. The quality of message contents should be taken good care of and that content application firms are called upon to cooperate with mobile providers to enhance the quality of message contents, making it more attractive and entertaining. As there to be negative attitudes towards direct advertising, both mobile operators and advertising agencies are advised to make all efforts possible to rectify such negative attitudes by building close relationship with consumers through the full utilization of the data available about such consumers and embody such knowledge in their target strategies. This will inevitably lead to enhance trust between consumers and mobile operators. As there were some privacy concerns expressed by respondents, service providers should obtain consumers' permission prior to using their mobile numbers and other personal details concerning them. As the majority of our sample were young (between the ages of 19-24), mobile operators are called upon to offer incentives to subscribers to encourage them to receive more SMS advertising messages. Such incentives may come in the form of extra points or minutes or any other form of sales promotion (free mobile devices, discounted mobile device prices, etc..). Mobile

retailers are also encouraged to offer sales promotion to consumers who express the desire to receive their product advertisements through SMS messages.

### 5.2 Suggestions for future research

As single item measures make reliability and validity test difficult, then future research should develop multiple-item measures of each construct to enhance validity. Furthermore, Pseudo experimental-style research may be able to examine which brands are more appropriate to consumer acceptance of SMS advertising messages. It would be also interesting to see how mature consumers react to SMS advertising messages.

### References

- Advertising Age. (2006). *Special advertising section of Advertising Age*. December 4, p. 20.
- Ajzen, I., and Fishbein, M. (1980). *Understanding Attitudes and Predicting Social Behaviour*. Englewood Cliffs, N.J., Prentice-Hall.
- Akaah, I. P., Korgaonkar, P. K., and Lund, D. (1995). Direct Marketing Attitudes. *Journal of Business Research*. 34(3), 211-219.
- Akhter, S. H., and Durvasula, S. (1991). Consumers' Attitudes Toward Direct Marketing and Purchase Intentions: An Empirical Investigation. *Journal of Direct Marketing*, 5(3), 48-56.
- Ankar, B., and D'Incau, D. (2002). Value creation in mobile commerce: findings from a consumer survey. *JITTA: Journal of Information Technology Theory and Application*, Vol. 4, 1, 43-65.
- Anderson and Nilsson. (2000). Wireless Advertising Effectiveness: Evaluation of an SMS advertising Trial. [Online] Available: [http://web.hhs.se/cic/courses/underthebridge/wireless\\_ad\\_eff.pdf](http://web.hhs.se/cic/courses/underthebridge/wireless_ad_eff.pdf).
- Anderson, J. C., and Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*. 103, 411-423
- Andrews, J. Craig, Srinivas Durvasual and Syed H. Akhter. (1990). A Framework for Conceptualising and Measuring the Involvement Construct in Advertising Research. *Journal of Advertising*, 19 (4), 27-40.
- ASK, J. Mobile Marketing Forecast 2006-11. JupiterResearch, 2006.
- Ayanwale, A., Alimi, T., and Ayanbimipe, M. (2005). The Influence of Advertising on Consumer Brand Preference. *Journal of Social Sciences*, Vol. 10, 1, 9-16.
- Balasubramanian, S., Peterson, R.A., and Jarvenpaa, S.L. (2002). Exploring the implications of m-commerce for markets and marketing. *Journal of the Academy of Marketing Science*, Vol. 30, 4, 348-361.
- Barutçu, S. (2007). Attitudes towards mobile marketing tools: A study of Turkish consumers. *Journal of Targeting, Measurement and Analysis for Marketing*, Vol. 16, 1, 26-38.
- Barwise, P., and Strong, C. (2002). Permission-based mobile advertising. *Journal of Interactive Marketing*, Vol. 16, 1, 14-24
- Barwise, P., and Farley, J.U. (2005). The state of interactive marketing in seven countries: interactive marketing comes of age. *Journal of Interactive Marketing*, Vol. 19, 3, 67-80.
- Bauer, H., Barnes, S., Reichardt, T., and Neumann M. M. (2005). Driving consumer acceptance of mobile marketing: A theoretical framework and empirical study. *Journal of Electronic Commerce Research*, Vol. 6, 3, 181-192.
- Black, J. (2001, January 15). Ads will test users. *Internet World*, p.47-49.
- Carroll, A., Barnes, S. J., and Scornavacca, E. (2005). Consumers Perceptions and Attitudes towards SMS Mobile Marketing in New Zealand. In the Proceedings of the Fourth International Conference on Mobile Business (ICMB 2005), pp. 434-440.
- Carter, E. (2008). Mobile Marketing and Generation Y African-American Mobile Consumers: The Issue and Opportunities. *International Journal of Mobile Marketing*. Vol. 3, 1, 62-66.
- Chowdhury, H., K., Parvin, N., Weitenberner, C., and Becker, M., (2006). Consumer Attitude toward Mobile Advertising in an Emerging Market: An Empirical Study. *International Journal of Mobile Marketing*, Vol. 1 2, 33-42.
- Cudmore, B., and Patton J., (2007). The Intimate Marketer: Personalized Direct Marketing Strategies in a Wireless Environment. *Journal of Internet Commerce*, Vol. 6, 4, 73-96.
- Dickinger A., Haghirian P., Murphy J., and Scharl A. (2004). An Investigation and Conceptual Model of SMS Marketing. Proceedings of the 37th Hawaii International Conference on System Sciences (HICSS-37), Hawaii, USA. [Online] Available: <http://csdl.computer.org/comp/proceedings/hicss/2004/2056/01/205610031b.pdf>.
- Doherty, C. (2007). Mobile Marketing is Yet to Bloom. *Revolution*, November, pp. 51.

- Ducoffe, R. H. (1996). Advertising value and advertising on the Web. *Journal of Advertising Research*, 36(5), 21–35.
- Dufrene, D.D., Engelland, B.T., Lehman, C.M., and Pearson, R.A. (2005). Changes in consumer attitude resulting from participation in a permission email campaign. *Journal of Current Issues and Research in Advertising*, 27(1), 65-77.
- Easingwood, C. J., and Koustelos, A. (2000). Marketing high technology: Preparation, targeting, positioning, execution. *Business Horizons*, Vol. 43, 3, 27 – 34
- ECONOMIST. Mobile Phone Penetration, September 1, 2005.
- Enpocket. (2002). The response performance of SMS advertising. [Online] Available: <http://www.enpocket.com/resource/acrobat/Enpocket%20Insight%20-%20Direct%20response.pdf>, accessed 19 June 2004.
- Fishbein, M., and Ajzen, I. (1975). *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*. Reading, MA, Addison-Wesley.
- Friedrich, R., Grone, F., Holbling, K., and Peterson, M. (2009). The March of Mobile Marketing: New Chances for Consumer Companies, New Opportunities for Mobile Operators. *Journal of advertising research*. Vol. 49, 1, 54-61.
- Frolick, M. N., and Chen, L. D. (2004). Assessing mobile commerce opportunities. *Information Systems Management*, Vol. 21, 2, 53 – 61.
- GARROLL, A., S. J. BARNES, E. SCORNAVACCA., and K. FLETCHER. (2007). Consumer Perceptions and Attitudes towards SMS Advertising: Recent Evidence from New Zealand. *International Journal of Advertising*. Vol. 26, 1, 79-98.
- Godin, S. (1999). *Permission Marketing: Turning Strangers into Friends, and Friends into Customers*. New York, NY, Simon & Schuster.
- Graham, J. (2001, June 20). *Can we ensure a future for wireless advertising*. Clickz.
- Griffin, M., Babin, B., and Modianos, D. (2004). Shopping Values of Russian Consumers: The Impact of Habituation in a Developing Economy. *Journal of Retailing*, Vol. 76, 1, 33-55.
- Haghirian, P., & Dickinger, A. (2004). Identifying Success Factors of Mobile Marketing, ACR Asia-Pacific 2004, *Association of Consumer Research*.
- Haghirian, P., and Madlberger, M. (2005). Consumer attitude toward advertising via mobile devices - An empirical investigation among Austrian users. In the Proceedings of the 13th European Conference on Information Systems, Regensburg, Germany.
- Hanley, M., and Becker, M. (2008). CELL PHONE USAGE AND ADVERTISING ACCEPTANCE AMONG COLLEGE STUDENTS: A FOUR-YEAR ANALYSIS. *International Journal of Mobile Marketing*, Vol. 3, 1, 67-80.
- Hart, K. (2008). *Advertising sent to cellphones opens new front in war on spam*. Washington Post, 10 March, p. A1.
- Heinonen, K., and Strandvik, T. (2003). Consumer Responsiveness to Mobile Marketing. Unpublished Dissertation. Helsinki: Hanken Swedish School of Economics and Business Administration. [Online] Available: [http://www.hhs.se/cic/roundtable2003/papers/D22Heinonen\\_Strandvik.pdf](http://www.hhs.se/cic/roundtable2003/papers/D22Heinonen_Strandvik.pdf).
- Heun, C., T. (2005). Ads take aim at cell phone. *InformationWeek*. Issue 1051, p42-42.
- Higginbotham, S. (2009). Data: The Future of the Internet Looks Highly Mobile. [Online] Available: <http://gigaom.com/2009/07/17/data-the-future-of-the-internet-looks-highly-mobile/>
- Hoffman, D. L., & Novak, T. P. (1996). Marketing in hypermedia computer-mediated environments: Conceptual foundations. *Journal of Marketing*, 60, 50–68.
- Jong, W., J., and Sangmi, L. (2007). Mobile Media Use And Its Impact On Consumer Attitudes Toward Mobile Advertising. *International Journal of Mobile Marketing*, Vol. 2 Issue 1, p50-58.
- Kavasslis, P., Spyropoulou, N., Drossos, D., Mitrokostas, E., Gikas, G., & Hatzistamatiou. (2003). A., Mobile permission marketing: framing the market inquiry. *International Journal of Electronic Commerce*, 8(1), 55-79.
- Kerin, R. A., Hartley, S. W., Berkowitz, E. N., & Rudelius, W. (2006). *Marketing*. 8<sup>th</sup> ed., Burr Ridge, IL: McGraw-Hill/Irwin.
- Kim, M., and Jun, J. (2008). A case study of mobile advertising in South Korea: Personalisation and digital multimedia broadcasting (DMB). *Journal of Targeting, Measurement and Analysis for Marketing*. Vol. 16, 2 129–138.
- Kimberley, S. (2007). SMS growth continues as mobile market takes off. *Precision Marketing*. Vol. 20, 2, 2-2.
- Kolsaker, A., Lee-Kelley, L., and Pui Ching, C. (2004). The reluctant Hong Kong consumer: purchasing travel online. *International Journal of Consumer Studies*, Vol. 28, 3, 295-304.

- Korgaonkar, Pradeep K. (1984). Consumer Shopping Orientations, Non-Store Retailers, and Consumers' Patronage Intentions: A Multivariate Investigation. *Journal of The Academy of Marketing Science* (Winter), 11-22.
- Krishnamurthy, C. (2001). A Comprehensive Analysis of Permission Marketing. *Journal of Computer-Mediated Communication*, 6 (2). [Online] Available: <http://www.ascusc.org/jcmc/vol6/issue2/krishnamurthy.html>.
- Lee, S.F., Tsai, Y.C., & Jih, W.J. (2006). An Empirical examination of customer perceptions of mobile advertising. *Information Resources Management Journal*, 19(4), 39-55.
- Leek, S., and Christodoulides, G. (2009). Next-Generation Mobile Marketing: How Young Consumers React to Bluetooth-Enabled Advertising. *Journal of advertising research*, Vol. 49, 1, 44-53.
- Leppaniemi, M., & Karjaluoto, H. (2005). Factors influencing consumers' willingness to accept mobile advertising: a conceptual model. *International Journal of Mobile Communications*, 3(3), 197-213.
- Leppaniemi, M., Sinisalo, J., and Karjaluoto, H. (2006). A review of mobile marketing research. *International Journal of Mobile Marketing*, Vol. 1, 1, 2-12.
- Li, H., and Stoller, B. (2007). Parameters of mobile advertising: A field experiment, *International Journal of Mobile Marketing*, Vol. 2, 1, pp. 4 - 11.
- Li, H. S., EDWARDS, M., and LEE, J. (2002). Measuring the intrusiveness of Advertisements: Scale Development and Validation. *Journal of Advertising*, 31, 2, 37-47.
- Liu, Y., & Shrum, L. J. (2002). What is interactivity and is it always such a good thing? Implications of definition, person, and situation for the influence of interactivity on advertising effectiveness. *Journal of Advertising*, 31, 53-64.
- Magill, K. (2009). The Mobile Channel is Finally Getting Some Momentum upward Mobility. *Multichannel Merchant*. Vol. 5, 10, 30-32.
- Marez, L., Vyncke, P., Berte, K., Schuurman, D., and Moor, K. (2007). Adopter segments, adoption determinants and mobile marketing. *Journal of Targeting, Measurement and Analysis for Marketing*. Vol. 16, 1, 78-95.
- McKenzie, J., & Jurs, J. (1993). *Planning, Implementing, and Evaluating Health Promotion Programs*. Macmillan Pub. Co. New York.
- McKnight, D. H., Choudhury, V., & Kacmar, C. (2002). Developing and validating trust measures for e-commerce: An integrative typology. *Information Systems Research*, 13, 334-359.
- Mehta, R., and Sivadas, E. (1995). Direct Marketing on the Internet: An Empirical Assessment of Consumer Attitudes. *Journal of Direct Marketing*, 9(1), 21-32.
- Milne, G.R., and Gordon, M.E. (1993). Direct mail privacy-efficiency trade-offs within an implied social contract framework. *Journal of Public Policy & Marketing*, 12(2), 206-215.
- Milne, George R., and Andrew J. Rohm. (2004). Consumers' Protection of Online Privacy and Identity. *Journal of Consumer Affairs*, 38 (2), 217-232.
- Mobile Marketing Association. (2007). [Online] Available: <http://www.mmaglobal.com> (accessed 30<sup>th</sup> April, 2007).
- Nah, F.F-H., Zhao, F., & Zhu, W. (2003). *Factors Influencing Users' Adoption of Mobile Computing*. In Mariga, J. (Ed.), *Managing E-Commerce and Mobile Computing Technologies Book*, 260-271. Idea Group Inc.
- Nasco, S., & Bruner II, G.C. (2008). Comparing consumer responses to advertising and non-advertising mobile communications. *Psychology & Marketing*, 25(8), pp. 822-838.
- Netsize. (2007). The Netsize guide 2007. Convergence: Everything's going mobile. *Informa Telecoms & Media*, Vol. 10, pp. 1 - 159.
- O'Shea, D. (2007). Small screen for rent." Retrieved 16/4/09. [Online] Available: [http://telephonyonline.com/mag/telecom\\_small\\_screen\\_rent/index.html](http://telephonyonline.com/mag/telecom_small_screen_rent/index.html).
- Okazaki, S. (2009). The Tactical Use of Mobile Marketing: How Adolescents' Social Networking Can Best Shape Brand Extensions. *Journal of advertising research*. Vol. 49, 1, 12-26
- Okazaki, S., and Taylor, C., R. (2007). What Is SMS Advertising and Why Do Multinationals Adopt It? Answers from an Empirical Study in European Markets. *Journal of Business Research*. Vol. 61, 1, 4-12.
- Page, C., and Luding, Y. (2003). Bank managers' direct marketing dilemmas - customers' attitudes and purchase intention. *International Journal of Bank Marketing*, Vol. 21,3, 147-163.
- Pagnani, M. (2004). Determinants of adoption of third generation mobile multimedia services. *Journal of Interactive Marketing*, 18(3), pp. 46-59.
- Pearse, J. (2005). MediaCom to measure mobile response rates to drive take-up. *New Media Age*. p8-8.

- Phelps, J. E., D'Souza, G., and Nowak, G. J. (2001). Antecedents and Consequences of Consumer Privacy Concerns: An Empirical Investigation. *Journal of Interactive Marketing*, 15(4), 2-17.
- Phelps, J. E., Nowak, G. J., and Ferrell, E. (2000). Privacy Concerns and Consumer Willingness to Provide Personal Information. *Journal of Public Policy & Marketing*, 19(1), 27-41.
- Pollay, R., and Mittal, B. (1993). Here's the beef: factors, determinants, and segments in consumer criticism of advertising. *Journal of Marketing*, Vol. 57, 3, 99-114.
- Rettie, R., and Brum, M. (2001). M-commerce: *The Role of SMS text messages*. In the Proceedings of the fourth biennial International Conference on Telecommunications and Information Markets (COTIM 2001), Karlsruhe, Germany.
- RETTIE, R., U. GRANDCOLAS., and B. DEAKINS. (2005). Text Message Advertising: Response Rates and Branding Effects. *Journal of Targeting, Measurement and Analysis for Marketing*. Vol. 13, 4, 304-312.
- Sackmary, B. (1987). Research on Consumer Behavior in Direct Marketing A review and Assessment. *Journal of Direct Marketing*, Vol. 1, 1, 30-37.
- Scharl, A., Dickinger, A., and Murphy, J. (2005). Diffusion and success factors of mobile marketing. *Electronic Commerce Research and Applications*, Vol. 4, 2, 159- 173.
- Schlosser, A. E., and Shavitt, S. (1999). Survey of Internet Users' Attitudes toward Internet Advertising. *Journal of Interactive Marketing*, 13(3), 34-54.
- Schlosser, A.E., Shavitt, S., & Kanfer, A. (1999). Survey of Internet users' attitudes toward Internet advertising. *Journal of Interactive Marketing*, 13, 3, 34-54.
- Shavitt, S., Lowrey, P., & Haefner, J. (1998). Public attitudes toward advertising: more favorable than you think. *Journal of Advertising Research*, 38(4), 7-22.
- Shaw, M. J., Subramaniam, C., Tan, G. W., & Welge, M. E. (2001). Knowledge management and data mining for marketing. *Decision Support Systems*, Vol. 31, 1, 127-137.
- Sheehan, K.B. (1999). An investigation of gender difference in on-line privacy concerns and resultant behaviors. *Journal of Interactive Marketing*, 13(4), 24-38.
- Sheehan, Kim B., and Mariea G. Hoy. (2000). Dimensions of Privacy Concern among Online Consumers. *Journal of Public Policy and Marketing*, 19 (1), 62-73.
- Sinisalo, J., and Karjaluoto, H. (2009). The Impact of Mobile Phone Capabilities On Mobile Service Usage: Empirical Evidence From Finland. *International Journal of Mobile Marketing*, Vol. 4, 1, 4-11.
- Skog, B. (2002). Mobiles and the Norwegian teen: identity, gender and class, in Katz, J.E. & Aakhus, M. (eds) *Perpetual Contact*. New York: Cambridge University Press.
- Solomon, M. R., Marshall, G. W., & Stuart, E. W. (2006). *Marketing: Real People Real Choices*. 4th ed. Upper Saddle River, NJ: Prentice-Hall.
- Stambler, Sarah. (2002). Most Consumers Like Permission Marketing. *The E-Tactics Letter*, 12 (October 31), General Business file database.
- Stewart D.W., and P.A. Pavlou. (2002). From Consumer Response to Active Consumer: Measuring the Effectiveness of Interactive Media. *Journal of the Academy of Marketing Science*. Vol. 30, 4, 376-396.
- Sultan, F., & Rohm, A. (2008). How to market to generation M(obile). *Sloan Management Review*, 49(4), pp. 35-41.
- Tahtinen, J., and Salo, J. (2003). *Special Feature of Mobile Advertising and their Utilization Marketing*, University of Oulu, Hawaii.
- Taylor, C. (2009). Editorial: The Six Principles of Digital Advertising. *International Journal of Advertising*. Vol. 28, 3, 411-418.
- Taylor, C., Franke, G., and Maynard, M. (2000). Attitudes Toward Direct Marketing and Its Regulation: A Comparison of the United States and Japan. *Journal of Public Policy & Marketing*. Vol. 19, 2, 228-237.
- The Jordan Times, Mobile Phone Penetration, November 22, 2009.
- Timpson, S., and Troutman, M. (2009). The Importance of a Layered Privacy Policy on all Mobile Internet Sites and Mobile Marketing Campaigns. *International Journal of Mobile Marketing*. Vol 4, 1. 57-61.
- Tripp, C., Clow, K., and Freeman, B. (1993). The Use of Video Direct Mail by Retail Managers: Implications for Store Image and Onsumer Purchase Intention. *The Journal of Marketing Management*, Vol. 3, 1, 57-65.

- Tsang, M., Ho, S.-C., and Liang, T.-P. (2004). Consumer Attitudes Toward Mobile Advertising. *International Journal of Electronic Commerce*, Vol. 83, 3, 65-78.
- Whitaker, L. (2001). Ads Unplugged. *American Demographics*, 23(6), 30 - 34.
- Woodside, A., G., and P. K. SONI. (1991). Direct-Response Advertising Information: Profiling Heavy, Light, and Nonusers. *Journal of Advertising Research*. Vol. 31, 6, 26-36.
- Xinze, L. (2008). Taking digital marketing mobile. *Telecom Asia*, Vol. 19, 11, 32-33.
- Xu , J. D. ( 2007 ). The influence of personalization in affecting consumer attitudes toward mobile advertising in China, *Journal of Computer Information Systems*, Vol. 47 , 2, 9 – 19.
- Zanot, E.J. (1984). Public attitudes toward advertising: The American experience. *International Journal of Advertising*, 3(1), 3-15.
- Zhang, J., and Mao, E. (2008). Understanding the Acceptance of Mobile SMS Advertising among Young Chinese Consumers. *Psychology & Marketing*, Vol. 25, 8, 787–805.

Table 1. Relationships and Parameter Estimates

Relationship From	To	Parameter	Standard Error	Critical Ratio	<i>p</i>
Extensive Advertising	Past Reaction	-0.131	0.039	-4.565	0.007
Extensive Advertising	Intention to Participate	-2.323	0.065	-3.734	0.002
Perceived Usefulness	Intention to Participate	0.207	0.054	4.846	0.003
Perceived Usefulness	Purchase Intention	0.188	0.049	3.382	0.000
Perceived Entertained	Intention to Participate	0.235	0.075	3.943	0.000
Perceived Entertained	Purchase Intention	0.193	0.043	3.478	0.000
Past Reaction	Personal use	-1.372	0.058	-4.397	0.004
Personal use	Intention to Participate	-0.229	0.061	-3.636	0.008
Personal use	Purchase Intention	-0.223	0.074	-4.749	0.004
Intention to Participate	Purchase Intention	0.179	0.067	3.445	0.003
Privacy Concern	Intention to Participate	-0.282	0.043	-5.110	0.000
Past reaction	Trust	-0.341	0.077	-5.883	0.000
Extensive Advertising	Trust	-0.255	0.045	4.318	0.001

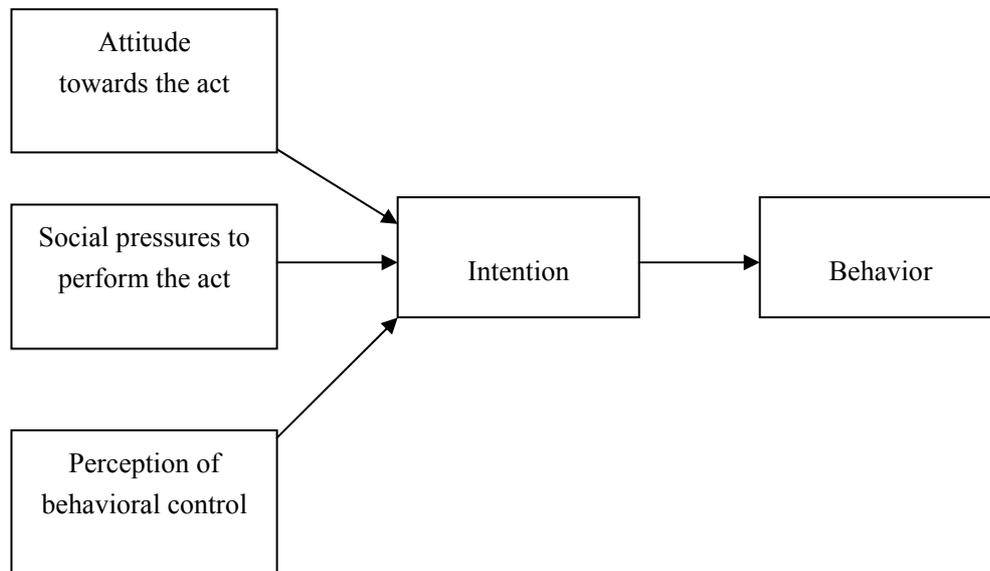


Figure 1. TRA and TPB

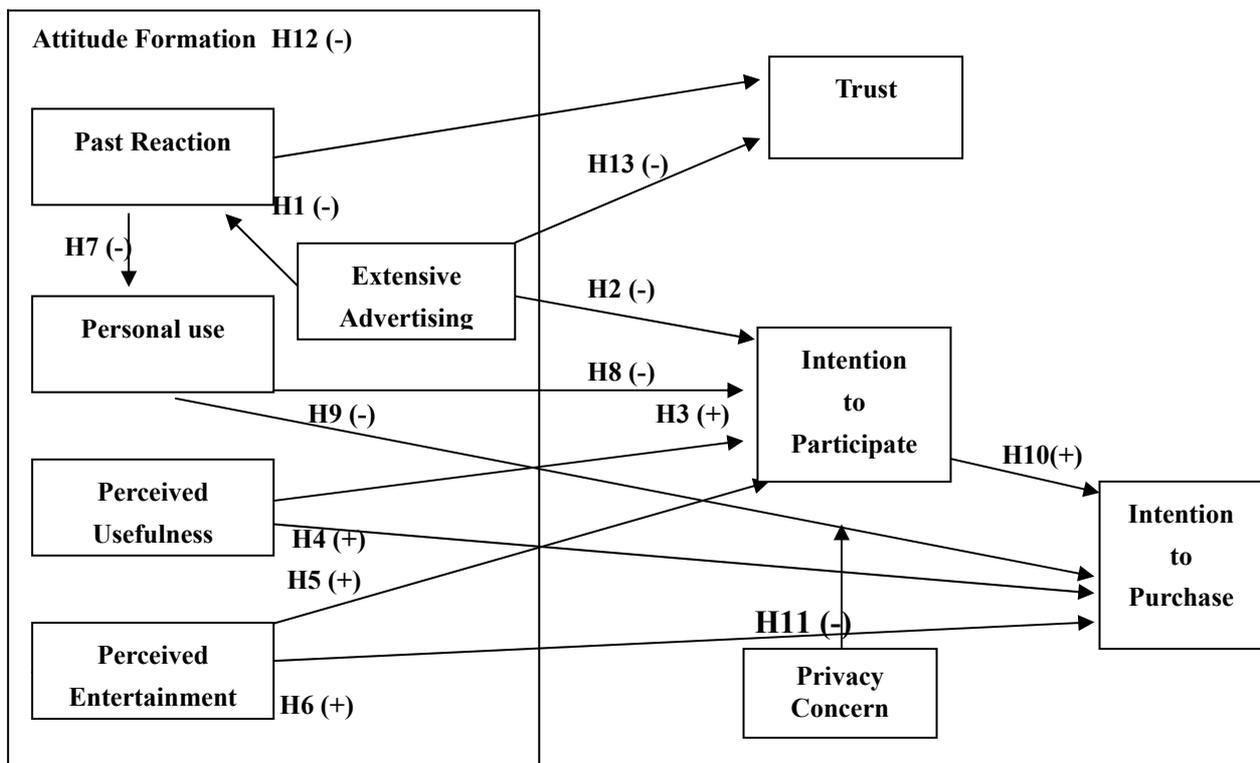


Figure 2. The Study's Model.



## An Investigative Relationship between Efforts-Rewards Model and Job Stress in Private Educational Institutions: A Validation Study

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### Abstract

The aim of this study was to provide the reliability and validity of new four quadrant model of the 30-item efforts–rewards questionnaire and to analyze its association with job stress and employees turnover intention in a sample of private educational institutions. A self reported survey was conducted, in private educational institutions, among 180 teachers. Appropriate internal consistencies of the four scales: efforts, rewards, job stress and turnover intention, were obtained. Zero-order correlation and regressions analysis replicated the theoretically assumed structure of the efforts-reward model (ERM) construct in men and women collectively. Evidence of criterion validity was obtained from cross-correlations of the scales and from their linear, multiple and hierarchical regression analysis. Finally, all four scales were associated with a highly significant ratio of job stress, and the effect was strongest for the ERM ratio as predicted by fundamental theory. Based on the results of this study, the four quadrant version of the ERM, questionnaire is considered a reliable and valid instrument for measuring psychosocial stress at work environment. It is applicable to all services and manufacturing industries. The findings from this study strongly supported this theory of efforts and rewards. We found a high percentage of teachers with both job stress and dissatisfaction and an imbalance characterized by high effort and low reward in their professional life. This work environment obviously calls for preventive measures.

**Keywords:** Efforts-Rewards Model, Job reward, Job efforts, Job stress, Educational institutions

### 1. Background of Study

The Effort-Reward Model (ERM) dates back to the late Siegrist et al., (1986), presented a job dissatisfaction model according to which mental stress and dissatisfaction result from the interaction of job efforts and job rewards. Likewise, the model has been used in organizational intervention studies as well (Tsutsumi & Kawakami, 2004). The ERM Model has its origin in medical sociology and emphasizes both the job efforts and the job rewards structure of work environment (Marmot, Siegrist, & Theorell, 2006). According to their model, work-related benefits depend upon a reciprocal relationship between job efforts and job rewards at work place. Job efforts represent job obligations that are imposed on the employee to perform his/her duty to meet the requirements. Job rewards distributed by the employer consist of money, esteem, and job security/ career development. This model predicts that mental dissatisfaction and job dissatisfaction are the combination of high job efforts with low job rewards. Therefore, four types of jobs predicts through this model which

might result from different combinations of job efforts and job rewards: passive jobs (low job efforts and low job rewards), active jobs (both high efforts and high rewards), job satisfaction (low efforts and high job rewards) and high dissatisfaction jobs (high job efforts and low job rewards). The given below four diagonals in the figure within one model represent two interactions situations in which job efforts and job rewards deviate: low-high combination, low-low combination, and some situations in which they are matched high-high combination. According to Siegrist et al. (2004), the first condition, when job efforts are relatively higher than job rewards results high dissatisfaction job, is of primary importance in conducting research study. Furthermore, passive jobs are dissatisfying job, whilst active jobs are associated with more satisfaction and reduced depression of employees, even if they are more challenging. Similarly, an active job is associated with outcomes such as job motivation, job involvement, learning, personal growth, job participation and job innovation. The following model illustrates the core concept of Marmot, Siegrist, Tores Theorell, & Feeney, (1999), Siegrist et al (2004) Efforts-Rewards Model.

**(Figure 1 insert here)**

The given model encompasses a succeeding theoretical prediction concerning the diagonal running from passive to active jobs and stepping down from satisfaction to dissatisfaction. Therefore, self-styled active jobs, which have high levels of both job efforts and job rewards, challenge their stakeholders, and give confidence to these individuals to develop competencies, locus of control, acquire supports and exercise talents that may otherwise remain dormant. Those employees who have these positions find that the challenges (efforts) attached with their jobs are corresponding by equivalent levels of rewards, and consequently these employees become more actively involved in a range of steady growing professionally and individually, and providing quality output to their organization. On the other hand, those employees who have passive jobs come across few challenges (job efforts) and so become gradually less involved in job and in other activities of organization. Eventually, Siegrist et al. (2004) predicted that low levels of job rewards have two sets of potential consequences - psychological dissatisfaction, if efforts are high and passive withdrawal, if efforts are low. Data analysis is included self-report procedures of job efforts (stressors), job rewards (real wages), and job dissatisfaction (exhaustion, depression, dissatisfaction, behavioral outcomes, etc.). Job efforts placed depend upon work pace and meeting deadlines, while the job rewards (real wages) classified into three mechanisms: personal financial need, personal social needs, and personal esteem on and off the work environment. These research findings as a result support our hypothesis that the relationship between job efforts and job rewards contributes to the prediction of level of job satisfaction and dissatisfaction.

This study was a cross-sectional, self-report questionnaire of random samples of 180 employees of private educational institutions of Rawalpindi. The following hypotheses were tested:

- ❖ H1. Job efforts are positively related to respondent ratings of job stress.
- ❖ H2. Job rewards are negatively related to job stress.
- ❖ H3. The combination of job efforts and job rewards predicts levels of job stress better than does either main effect alone

## 2. Methods

In this study, two different private educational set up in Rawalpindi, Pakistan, were surveyed; one was Punjab Group of Colleges and another was Siddeeq Public School System. Questionnaires were sent to all 200 teachers in the schools and colleges of the two educational groups and were returned by 180 teachers. The response rates were 90% (180/200). Mean working time was 3.4 years (SD = 1.5). Demographics showed that 60% of the respondents were male, and mean age was 28 years (SD = 8.7, range 25–40). The response rate and reliability did not differ significantly from the remaining participants in socio-demographic and work related characteristics. This study was approved by the Directors of respective groups of educational institution. Questionnaires contained an administration number for organizational-wise identification (which was only known to the researchers) and could be returned directly to researcher in sealed envelopes.

The 30-item ERM questionnaire consists of four scales and is developed with addition of 7 questions in original 23-items questionnaire of Siegrist et al (2004). The four scales are termed physical and mental efforts (10 items), monetary and recognition rewards (10 items, including money, esteem, job security, job participation and promotion prospects), job stress (7 items), and employee's turnover intention (3 items). Responses to all the items of job efforts, job rewards, job stress and employees' turnover intention are scored on a 5-point scale (1 = strongly disagree and 5 = strongly agree with the statement). Consequently, with such a scoring, the range for the scale 'job effort' is 1A to 10A, for the scale 'job reward' 1B to 10B, for the scale of 'job stress' 1C to 7C and for the scale 'employees' turnover intention' 8C & 10C (see Appendix 1.1). Furthermore, total efforts scales were measured by ten items with contents varies from physical load, time pressure, interruptions, responsibility, working overtime, to increasing demands, and repetitive work. Example items are: "I have constant time pressure due to a heavy workload," and "I have a lot of responsibility in my job." Internal reliability of the job effort scale, expressed by Cronbach's alpha, was satisfactory in this sample i.e.  $\alpha = 0.78$ . Total rewards were assessed by 10 items with a 5-point rating scale, which were coded in same direction afterward. This scale was composed

of three components, i.e., monetary rewards (2 items, e.g., “Considering all my efforts and achievements my salary/income is adequate”) career-related aspects (3 items, e.g., “My job promotion prospects are good”), job security (1 item, e.g., “My job security is good”) and recognition rewards (4 item, e.g., “I receive the respect I deserve from my colleagues”). Cronbach’s alpha of the composite rewards scale (10 items) was good in this samples ( $\alpha = 0.81$ ). Job stress was measured by eight items with rating scales ranging from 1 (strongly disagree) to 5 (strongly agree). The items consist of inability or uncontrollability to and of impatience and disproportionate irritability. Example items are: “When I get home, I can not relax and switch off work,” and “As soon as I get up in the morning I start thinking about work problems.” Cronbach’s alpha of this scale was satisfactory in Sample 1 ( $\alpha = 0.72$ ). Employees’ turnover intention was measured by two items with rating scales ranging from 1 (strongly disagree) to 5 (strongly agree). The items consist of intention to withdraw from work and of impatience and disproportionate irritability. Example items are: “I feel a great deal of stress because of my job,” and “Over the past month, I have seriously thought about making a real effort to enter a new and different occupation/Origination.” Cronbach’s alpha of this scale was satisfactory in Sample 1 ( $\alpha = 0.69$ ). According to Siegrist et al (2004) a ratio between the two jobs factor scales ‘job efforts’ and ‘job rewards’ are calculated to quantify the degree of mismatch between high costs and low gain. Therefore, this questionnaire is developed to moderate the Sigrist (1996; 2004) and Tseng and Cheng (2002) questionnaires to meet the requirement of new model. More specifically, the ERM questionnaire claims that work characterized by both job efforts and job rewards represents a reciprocity deficit/surplus between “costs” and “gains,” which could elicit positive/negative emotions among on job employees. The accompanying feelings may produce satisfaction or dissatisfaction reactions as predicted in the given model. Some assumptions of the ER Model concerns individual differences (personality traits) in the experience of effort-reward imbalance. In fact some employees characterized by a motivational pattern of high job-related commitment and a high need for recognition and rewards will respond with more dissatisfaction reactions to an job effort-job reward imbalance, in comparison with less committed employees (Siegrist, 1996; 2004).

### 3. Results and Discussion

#### 3.1 Evaluation of Original Model

Accumulated empirical evidence suggested a job dissatisfaction model, according to which various outcomes of dissatisfaction are result from the interaction of job efforts and job rewards. This original model predicts that mental dissatisfaction and job dissatisfaction are the combination of high job efforts with low job rewards. This study is critically evaluated (Siegrist, 1996; 2004) original presentation of the job dissatisfaction model in the form of comparisons between groups of workers broken down by levels of job efforts and/or job rewards. Similar analyses are performed on the current data set. Current analyses using the total job factor scales only are reported. Groups with higher efforts and low rewards reported greater levels of stress on immediate and remote outcomes of dissatisfaction (see Table 1.1). These findings provide strong support to four quadrant original model. Similar analyses are performed using sub-groups determined by levels of total rewards on various outcomes. The effect of low efforts and greater rewards on outcomes of stress is highly significant when two levels of rewards are used to form sub-groups. These findings generally support hypotheses 2 (rewards on stress). Furthermore, Table 1.1 shows total efforts and total rewards scales used to assign participants to “high” and “low” groups on each job factor, and these are combined to form four groups representing all possible combinations of high and low efforts and rewards levels. Validity tests for possible additive effects are conducted (by SPSS) by comparing mean levels of these groups. Analyses that examined the effects on outcomes of dissatisfaction provided a direct test of original four-quadrant model of job factors. As can be seen from the sub-group high and low means and standard deviation tests given in Table 1.1, there are clear trends in the expected direction, that is, participants employed in high efforts/low rewards (high dissatisfaction and high means values) jobs reported the highest levels of job stress, dissatisfaction outcomes, whilst those in low efforts/high rewards jobs reported fewest stressors and least dissatisfaction (low means values). Table 1.1 shows that the pattern of group means from lowest levels of dissatisfaction outcomes in low efforts/high rewards jobs, to highest levels of dissatisfaction in high efforts/low rewards jobs, are consistent with the ideas of stress researchers.

#### (Table 1.1 insert here)

In these cases, means values varied in the predicted order (highest means values in the high efforts-low rewards and lowest means values in the low efforts –high rewards), and the amount of differences between means values of all job factors are as expected in original model. Therefore, high and low mean values are strongly associated with the role of immediate and remote of dissatisfaction. In all these cases significant interactions are consistent with expectations-thereby providing strong support for relevant hypotheses.

Table 1.2 presents the zero-order correlations between the 8 variables measured in this study. Scores on most of the variables remained almost stable during current study. Correlations between various measures of the same variable ranged from -0.19 (employees monetary rewards over mental efforts) to 0.98 (monetary rewards and recognition rewards to total rewards) were calculated. Correlations between pairs of specific efforts scales averaged approximately 0.58 on both occasions. This finding is consistent with evidence reported in this study regarding the relatively good fit of a single-factor

model to the full set of efforts items (Siegrist & Peter, 1996). Correlations between pairs of specific rewards scales were stronger, averaging approximately .58 except mental efforts. Total efforts were correlated in the expected directions with the job stress, and with the outcome variables of employees' turnover intention. Similarly, there was a trend for job stress and employees turnover intention to be more highly correlated with these variables than was monetary rewards. The two composite outcomes of efforts were moderately inter-correlated in the expected (positive) direction with job stress and employee's turnover intention. Consistent with hypotheses 1, job efforts was positively correlated with both stressors and turnover. Conversely, a reward was negatively correlated with job stressors and job turnover. Most job factor-dissatisfaction relationships were quite stable in this study. Total efforts and total rewards were highly correlated with job stress than either was with job factor, and job stress was closely associated with total efforts than were monetary rewards. Comparisons with correlations reported in past researches, reveal that this study measures of efforts and rewards were correlated in the same direction with all measures of job stress, but somewhat slightly higher than typically reported in the study of Hanson et al., (2000) & Oreskog & Orbom, (1996).

**(Table 1.2 insert here)**

Reported is Pearson correlation for pairs of interval/ratio scaled variables (including all composite scales and sub-scales of total efforts, total rewards and stressors). Correlations are significant (two-tailed) at  $p < .001$  if over .16, at  $p < .01$ . ( $N = 180$ ). For all analyses involving all independent and dependent variables of job stress, scores were inverted so that (consistent with all other job stress outcomes) high scores indicate high levels of stress. These consistencies between the current and typical past findings are evidence of the validity of the measures used in this study. Finally, it is concluded this study designed to develop and test multi-item scales to measure the past studies predictor, moderator and criterion variables and to extend the model of Theorell (1990) and Siegrist & Peter, (1996). Interestingly, the scale developed in this study was reliable and factorially-consistent across both job factors and times of measurement. Zero-order correlations between all pairs of variables were also reported. Furthermore, several sets of analyses were performed to compare the magnitude of single stressors across sub-groups of the sample defined by the efforts, rewards and job stress as job factors. These analyses followed procedures adopted in past researches. All sub-groups of total efforts, total rewards and employees' turnover intention were highly correlated with all job factors (see Table 1.2).

Tests for possible main and additive effects between the job factors and stressors yielded significant finding. Hierarchical regression models were computed using the total efforts, rewards and stressor scales. Hypothesis 1 & 2 predicted a main effect of efforts and rewards whereas hypothesis 3 predicted an additive effect of efforts and rewards on job stress. As an initial test of these hypotheses, the job factor measures were standardized, and the following variables computed using these standardized variables. These variables were computed through cross-sectional study data separately. Since gender and age were not significantly different correlation with total stressors, these were excluded as efforts and rewards variables.

**(Table 1.3 insert here)**

Significant predictors of this study were total efforts ( $\beta = .62$ ,  $Beta = .80$ ,  $t$ -values = 10.83,  $F$ -values = 117.33 and  $R^2 = .63$  at  $p < .001$ ), total rewards ( $\beta = -.52$ ,  $Beta = -.65$ ,  $t$ -values = -7.08,  $F$ -values = 50.16 and  $R^2 = .43$  at  $p < .001$ ), and employee's turnover intention ( $\beta = .86$ ,  $Beta = .82$ ,  $t$ -values = 11.87,  $F$ -values = 141.02 and  $R^2 = .67$  at  $p < .001$ ) on job stress.

Table 1.4 shows that additive interaction term was highly significant than that of main effect alone (although the efforts plus rewards interaction approached significance,  $p = .001$ ). In short, the analyses strongly support hypothesis 1, 2 and 3 or any of the interaction effects. As shown in Table 1.3 and 1.4 specific stressor scale scores were predicted by the corresponding efforts variable in two domains (sub-group) and by the corresponding rewards variables. Most of these effects were significant in two regression tables. Employee's turnover scale predicted job factors significantly at all levels of variables

**(Table 1.4 insert here)**

All of the interaction terms predicted stressor scores consistently across the all sub-group analysis (see Tables 1.2, 1.3 and 1.4). However, the total efforts plus total rewards interaction, and the four sub-group interactions, were each significant predictors of job stress. In sum, these analyses of the cross-sectional study specific job factor data provide quite strong support for the main and additive effects of efforts and rewards (hypotheses 1-3).

### 3.2 Summary of Findings from Stressors and Job Stress

#### **Hypotheses 1 (Independent effects of job efforts and job stress)**

This hypothesis was strongly supported through correlation and regression analysis. Reliable effects of total efforts and two sub-groups on stressors were shown in this cross-sectional study, but total efforts were slightly better predictor of stress than physical and mental efforts alone. Therefore, in all analyses, stressors were more closely related to total efforts plus two sub-groups.

**Hypothesis 2 (Independent effects of rewards on job stress)**

Both correlation and sub-group analyses provided evidence for the predicted independent effects of total rewards (monetary and recognition rewards) on job stress. The effects were significant predictor for both types of rewards in this study sub-group analysis. The contribution of total rewards to the explanation of total stressors held in this study was remained highly significant. On balance, hypothesis 2 (independent effects of rewards on job stress) was further confirmed.

**Hypothesis 3 (Additive effects and rewards on job stress)**

The (total) efforts plus (total) rewards composite variable was more highly correlated with job stress and employees turnover intention than was efforts and rewards alone. However, ANOVAs using composite job factor variables provided strong support for the efforts plus rewards additive effect. Furthermore, in this study different correlation and regression analyses indicated that efforts and rewards explained significant amount in variance in job stress and employees turnover intention.

The efforts plus rewards hypothesis was significantly supported by the regression analysis, and also received strong support from the various sub-group analyses (see Table 1.4). Multiple regressions provided full support to combine effects of four sub-groups (physical efforts, mental efforts, monetary rewards and recognition rewards) better than main effect alone (see Tables 1.4). Therefore, the hypothesis was confirmed.

**4. Discussion**

Siegrist et al. (2004) consistently argued that job efforts and job rewards have direct effects on job stress. Their fundamental theory and original models provided significant supports to the current variables. But current research concluded that perceived job stressfulness is an important mediator of the job factors - stress relationship. Both efforts and rewards are likely to have strong additive effects upon these more proximate outcomes than main and interaction effects. The findings from this study strongly supported this theory of efforts and rewards. At this stage we made it clear that stress researchers (van Dick and Wagner 2001; Yoon 2002; Bauer et al. 2005; Siegrist et al. 2004), appraisals of job stressfulness appear to be a joint function of environmental and personal factors but latter they extended to role of efforts and rewards and nature of work. Results of this study reported further evidence of the independent linear and additive effects of efforts and rewards on job stress, and provide moderately strong support for a similar role played by complexities of work environment among the employees. The results were also generally consistent with the additive effects of efforts and rewards on job stress, and provide significant support for efforts plus rewards additive effect on job stress and employees' turnover intention. In past few researchers put attention on additive effects on job stressfulness, despite the potential theoretical and practical implications of the existence of such effects. The current results are reasonably consistent in suggesting that significant amount of power are obtained through the inclusion of multiple job factors to account for variance in job stress. It is concluded that current findings demonstrated that the two job resources of efforts (particularly, physical efforts) and rewards act in a supplemental, rather than substitutive manner, in reducing perceptions of job stress and employees' turnover intention. A significant buffering role of rewards on the efforts-stress relationship in this study was obtained through main and sub-group regression analyses (see Tables 1.3 & 1.4). These significant effects were obtained in through cross-sectional design and a limited number of (competing) predictors. Findings from this study are broadly consistent with these earlier results. Furthermore, there was evidence, that the results were slightly strong and consistent in predicting stressors in the main and sub-group analysis than composite effects. Our results were consistent and developed significant relationships between total efforts, total rewards and job stress, but also slightly less consistent with main and interactive effects associated with these variables, must be placed systematically within the context of this study. This study provided evidence that the teachers of our sample are relatively high degree of job stress symptoms compared to values in other studies. Furthermore, based on the ERI questionnaire, 80% of the teachers belong to a so-called effort-reward imbalance risk group. As a consequence, our sample would reflect a selection of somewhat high burdened teachers. However, since in our sample parameters, such as gender, ages, and school type, were not representative, we assume that this possible differ is limited. Further limitations of the representativeness of our study result from the fact that only two educational systems were included working in private sector, and finally, that the survey, instead of being conducted also in a current work environment, was done only in and around a big-sized city. In spite of the aforementioned clarifications we feel that our data give a realistic description of the professional situation of teachers. Teachers of our sample showed a relatively high degree of job stress symptoms when compared with data of other studies. Teachers in our sample indicated significant amount of job stress and turnover intention due to lack of motivation, low rewards and high efforts, and repetitive work environment (see Table 1.2, 1.3 and 1.4). Our study made use of the Effort- Reward-Imbalance Questionnaire (ERI). According to Siegrist (2001), an effort reward imbalance predicts occupational stress especially in psychosocial work environments. In our sample, 80% of the teachers displayed high imbalance (ERI) ratio, indicating that effort outweighs reward. Our data indicate that this is caused by the increased effort reported by full-time teachers. Thus it appears that increasing time spent working in school/college is correlated with increasing effort but not with increasing rewards. Older teachers have a worse ERI ratio, due to their high scores in

the efforts scale. Decreasing resilience along age may cause an increase in perceived effort. A further subgroup difference in the ERI parameters was observed between teachers of the different college types. Teachers in Punjab College of Information Technology (PCIT) felt less rewarded. This may be a consequence of a higher degree of behavioral disorders caused by the fact that college needs high degree of work environments. Although the aforementioned differences were significant, the effect sizes turned out to be increased for the last couple of years. In this regard, Candova' (2005) who found that personal expectations and aims have a strong influence in experiencing stress and dissatisfaction (see also Barth 1997). These are the possible reasons why significant group differences explain only small parts of the total variances in the job stress parameters. Similarly, the results of the ERI are strongly determined by personal variables such as e.g. unrealistic aspirations or intrinsic claims (Heyse et al. 2004, Schmitz 2004). As a consequence our group differences explain only a small part of the variances in the ERI scales and subscales.

## 5. Conclusion and Recommendations

In conclusion, we found a high percentage of teachers with both job stress and dissatisfaction and an imbalance characterized by high effort and low reward in their professional life. This work environment obviously calls for preventive measures. Necessary changes should probably include several aspects, first of all smaller class sizes and less numbers of assignments, job description, job specification, attractive salary structure, and good promotional policy. In addition management should support teachers in improving their interpersonal skills, since during the last couple of years students have become more difficult clients. The additive relationship between these two job factors (job efforts and job rewards) suggests that maximum reductions in job dissatisfaction require reasonable job efforts and increasing job rewards. At the same time it may also improve productivity levels. On the other hand, if the relationship is interactive, and efforts only increase job stress and dissatisfaction under conditions of low rewards, this suggests a practicable approach to improving job-related well-being without sacrificing worker performance. Our findings stated that the performance of employees (individually and collectively) and the organization as a whole can be improved by the re-design of jobs description to incorporate greater worker rewards (personal financial need, personal social needs, and personal esteem) with reasonable job efforts. In fact, our research model invites attention of new researcher on several limitations of his previous models. Firstly, the additive or interactive effects of efforts and rewards at both the group and organizational levels were not considered. Secondly, the potential stressors of specific types of job efforts and rewards were not assessed. Thirdly, the role played by job efforts and job rewards on job stress and dissatisfaction were not explored. Finally, the theory was not adequately precise to determine the exact mathematical relationship between job efforts and job rewards. Future research is obviously needed to extend the existing ER model by providing new information about issues inherent in job stress research. First, we conclude that the four quadrant ER model is a psychometrically well-justified measure of assessing psychosocial stress at work place. Our demonstration of time invariance of the ER scales allows researchers to conduct job stress intervention studies without having to worry about whether observed differences and real changes in efforts, rewards, and satisfaction are due to structural change of the ER 30-items scales over time. However, we encourage researchers to examine the assumption of stable instruments before conducting substantive analyses of data. Although there is still room to sophisticate the ER scale as described earlier (i.e., items similarities of both efforts and satisfaction, the stability of the job rewards constructs, as well as the way of response rating and reliability), the one-step response format in the latest version seems to be applicable to all kind of working employees. Finally, the methodological approaches proposed here offer several benefits in studying the stability of ER constructs and operationalizations. Moreover, it extends it into the job stress and impact on job performance where this kind of conceptual advance pay huge dividend to organization concerned.

## References

- Bentler, P., & Bonett, D. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88, 588–606.
- Chichester, UK: Wiley & Sons, & Yeager, S. (1976). Measuring change and persistence in human affairs: Types of change generated by OD designs. *Journal of Applied Behavioral Science*, 12, 133–157.
- Dormann, C., & Zapf. (2002). Social stressors at work, irritation, and depressive symptoms: Accounting for unmeasured third variables in a multi-wave study. *Journal of Occupational and Organizational Psychology*, 75, 33–58.
- Dragano, N., von dem., & Siegrist, J. (2003). [Psychosocial work stress and usculoskeletal diseases: Significance for prevention]. *Zeitschrift für Gesundheitswissenschaften*, 11, 196–207.
- Frese., & Zapf. (1988). Methodological issues in the study of work stress: Objective vs subjective measurement of work stress and the question of longitudinal studies. In C. L. Cooper & R. Payne (Eds.), *Causes, coping and consequences of stress at work* (pp. 375–411).
- Goodman, J., & Blum, T. (1996). Assessing the non-random sampling effects of subject attrition in longitudinal research. *Journal of Management*, 22, 627–652.
- Hair, Jr., J., Anderson, R., & Tatham, R. (2006). *Multivariate data analysis*. Upper Saddle River, NJ: Pearson Education.

- Hanson, E., Schaufeli, W., Vrijkotte, T., Plomp., & Godaert, G. (2000). The validity and reliability of the Dutch effort-reward imbalance questionnaire. *Journal of Occupational Health Psychology, 5*, 142–155.
- Joksimovic, L., Starke, D., & Siegrist, J. (2002). Perceived work stress, overcommitment, and self reported musculoskeletal pain: A cross-sectional investigation. *International Journal of Behavioral Medicine, 9*, 122–138.
- Peter, R., Siegrist, J., Theorell, T., & Westerholm, P. (1998). High effort, low reward, and cardiovascular risk factors in employed Swedish men and women: Baseline results from the WOLF study. *Journal of Epidemiology and Community Health, 52*, 540–547.
- Siegrist, J. (1996). Adverse health effects of high-effort/low-reward conditions. *Journal of Occupational Health Psychology, 1*, 27–41.
- Siegrist, J., & Peter, R. (1996). Measuring effort-reward imbalance at work: Guidelines. D'usseldorf: Heinrich Heine University.
- Siegrist, J., Siegrist., & Weber, I. (1986). Sociological concepts in the etiology of chronic disease: The case of ischemic heart disease. *Social Science & Medicine, 22*, 247–253.
- Siegrist, J., Starke, D., Chandola., & Peter, R. (2004). The measurement of effort-reward imbalance at work: *Social Science & Medicine, 58*, 1483–1499.
- Tsutsumi, A. (2004). *Development and application of the Japanese version of effort- reward imbalance questionnaire*. Okayama, Japan: Okayama University School of Medicine and Dentistry.
- Tsutsumi, A., & Kawakami, N. (2004). A review of empirical studies on the model of effort-reward imbalance at work: Reducing occupational stress by implementing a new theory. *Social Science & Medicine, 59*, 2335–2359.
- Tsutsumi, A., & Matoba, T. (2002). Responsiveness of measures in the effort-reward imbalance questionnaire to organizational changes: A validation study. *Journal of Psychosomatic Research, 52*(4), 249–256.
- Tsutsumi, A., Ishitake, T., Peter, R., Siegrist, J., & Matoba. (2001). The Japanese version of the Effort-Reward Imbalance Questionnaire: A study in dental technicians. *Work and Stress, 15*, 86–96.
- Van Vegchel, N., de Jonge, J., Bakker, A., & Schaufeli, W. B. (2002). Testing global and specific indicators of rewards in the Effort-Reward Imbalance Model: Does it make any difference? *Journal of Work and Organizational Psychology, 11*, 403–421.
- Van Vegchel, N., de Jonge, J., Bosma, H., & Schaufeli, W. (2005). Reviewing the effort- reward imbalance model: Drawing up the balance of empirical studies. *Social Science & Medicine, 60*, 1117–1131.
- Zapf, D., Dormann, C., & Frese. (1996). Longitudinal studies in organizational stress research: A review of methodological issues. *Journal of Occupational Health Psychology, 1*, 145–169.

Table 1.1. Comparisons of Various Levels of Dissatisfaction across Four Types of Job

Outcomes Variables	Measures	Low Dissatisfaction Job	High Dissatisfaction Job	Active Job	Passive Job
Mental Effort	N	25	95	22	38
	Mean	2.15	3.55	3.10	2.88
	SD	0.62	0.49	0.54	0.51
Physical Effort	N	25	95	22	38
	Mean	2.45	3.85	3.15	2.66
	SD	0.44	0.35	0.41	0.51
Total Efforts	N	25	95	22	38
	Mean	2.30	3.72	3.12	2.77
	SD	0.32	0.44	0.49	0.34
Monetary Reward	N	25	95	22	38
	Mean	2.33	4.12	3.52	3.15
	SD	0.66	0.23	0.56	0.54
Recognition Reward	N	25	95	22	38
	Mean	2.11	3.00	2.45	2.14
	SD	0.43	0.58	0.64	0.45
Total Rewards	N	25	95	22	38
	Mean	2.22	3.65	3.00	2.65
	SD	0.33	0.44	0.56	0.45
Job Stress	N	25	95	22	38
	Mean	2.14	3.78	3.12	2.45
	SD	0.51	0.46	0.55	0.43
Job Turnover	N	25	95	22	38
	Mean	1.99	3.45	2.00	2.00
	SD	0.34	0.64	0.42	0.57

**Note:**

Low Dissatisfaction Job: Low efforts high rewards

High Dissatisfaction Job: High efforts low rewards

Active Job: High efforts high rewards

Passive Job: Low efforts Low rewards

N = Number of participants

SD = Standard Deviation

Table 1.2. Correlation Matrix (N=180)

Time Variables									
Sr. No.	Job Factors	1	2	3	4	5	6	7	8
1	Mental Effort	1							
2	Physical Effort	.89	1						
3	Total Efforts	.97	.96	1					
4	Monetary Reward	-.19	-.35	-.28	1				
5	Recognition Reward	-.30	-.44	-.38	.94	1			
6	Total Rewards	-.25	-.40	-.34	.98	.98	1		
7	Job Stress/ Dissatisfaction	.72	.81	.80	-.60	-.67	-.65	1	
8	E. T. Intention	.48	.60	.56	-.65	-.65	-.66	.82	1

Table 1.3. Linear Regression Analyses of Job Factors Scale on Job Stress

Independent Variables	$\beta$	SE $\beta$	Beta	t-Values	R <sup>2</sup>	F-Values
Physical Effort	.59	.05	.82	11.65	.67	135.85
Mental Effort	.59	.06	.73	8.75	.53	76.57
Total Efforts	.62	.05	.80	10.83	.63	117.33
Monetary Reward	-.50	.08	-.60	-6.22	.36	38.77
Recognition Reward	-.51	.06	-.68	-7.60	.46	57.70
Total Reward	-.52	.07	-.65	-7.08	.43	50.16
E. T. Intention	.86	.07	.82	11.87	.67	141.02

**Note:**

Dependent Variable: Job Stress

$\beta$  = Un-standardized Co-efficient of Regression,

SE  $\beta$  = Standard Errors in Beta (un-standardized).

Beta= Standardized coefficients.

All Beta and F values are significance at \*\*\*p<.001.

Predictors of Model and their Interactions (N=180)

Table 1.3. Linear Regression Analyses of Job Factors Scale on Job Stress

Independent Variables	$\beta$	SE $\beta$	Beta	t-Values	R <sup>2</sup>	F-Values
Physical Effort	.60	.11	.82	5.24	.67	66.93
Mental Effort	.42	.12	.48	3.84		
Monetary Reward	-.25	.21	.30	-1.15	.47	29.66
Recognition Reward	-.72	.18	.96	-3.66		
Total Efforts	.51	.04	.65	11.08	.80	131.40
Total Rewards	-.34	.04	-.43	-7.34		
Physical Effort	.16	.10	.19	1.51	.80	65.19
Mental Effort	.33	.09	.46	3.43		
Monetary Reward	-.12	.14	-.10	-.50		
Recognition Reward	-.25	.13	-.33	-1.93		

**Note:**

Dependent Variable: Job Stress

$\beta$  = Un-standardized Co-efficient of Regression,

SE  $\beta$  = Standard Errors in Beta (un-standardized).

Beta= Standardized coefficients.

All Beta and F values are significance at \*\*\*p<.001.

Predictors of Model and their Interactions (N=180)

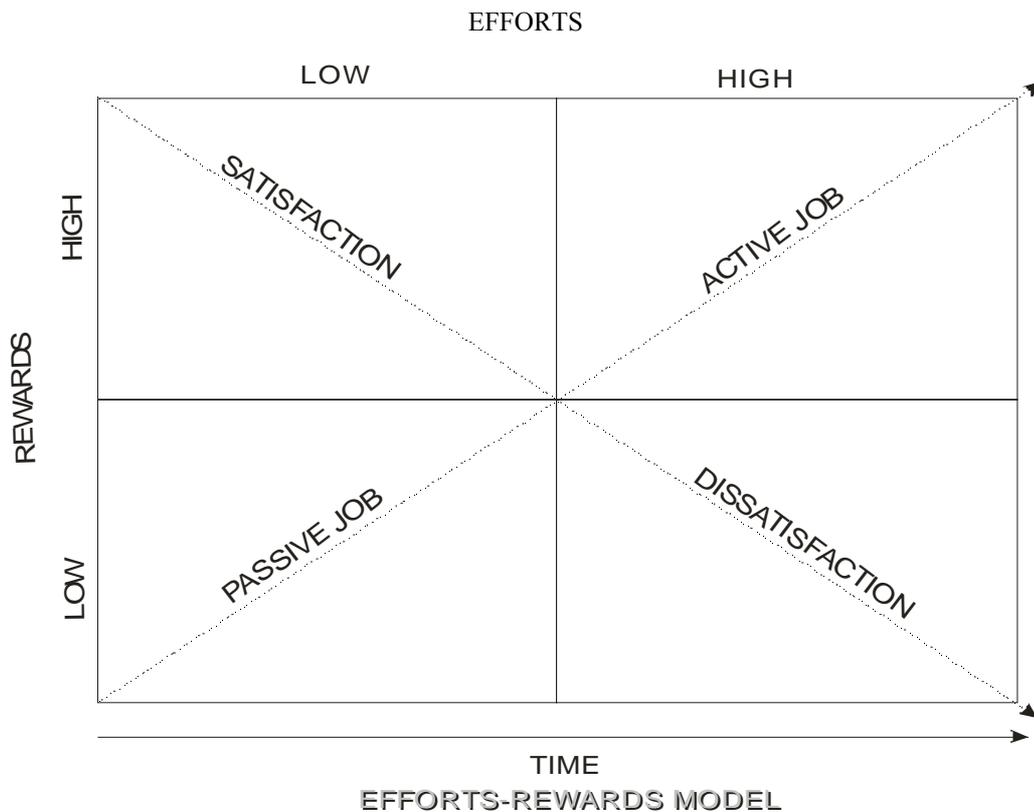


Figure 1. Original Efforts-Rewards Model



## Factors Affecting the Selection of Tour Destination In Bangladesh: An Empirical Analysis

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### Abstract

Although multifaceted problems are causing the frustrating scenario of the country's tourism sector, Bangladesh has the potentials to develop its tourism sector and earn huge foreign currency and generate employment opportunities like the neighboring countries, such as India, Sri Lanka, Maldives and Nepal who attract substantial number of tourists every year and thus generates huge amount of foreign currencies. The paper looks at different preferences of the tourist and examines the tour intention in selecting different tour destination. The study utilizes both exploratory and empirical research approach. The study collects data through interview with a structured self-administered questionnaire from 146 tourists, in utilizing convenient sampling technique. A multiple regression model was estimated to examine the effects of different factors on the tourists tour intention where nine factors related to different aspects of tourism such as service quality, natural beauty, known destination, convenient lodging, adventure, security, effective and efficient transportation, safe and quality food and shopping facility were used as indigenous variables where tour intention was used as exogenous variable of the model. The regression result shows that Service quality, Natural Beauty, Security and Shopping Facility are statistically significant indicating 24.6% of the variation in explaining the intention to select a tour destination in Bangladesh. The study outlines some policy implications.

**Keywords:** Tourism, Tour intention, Destination

### 1. Introduction

Tourism is a growing industry not only in developed countries, but also in developing as well as in underdeveloped countries (Tasci, *et al.*, 2004). The tourism industry generates substantial economic benefits to both host countries and tourist's home countries. According to the World Tourism Organization, 698 million people traveled to a foreign country in 2000, spending more than US\$478 billion. In terms of receipts, tourism earned US\$ 129.7 billion for developing countries in 1996 (excluding fares), which is 29.9% of the global total (WTO, 1998). International tourism receipts combined with passenger transport currently total more than US\$ 575 billion – making tourism as the world's most export earner (WTTC, 2005).

For many indigenous communities, particularly in tropical developing countries, tourism has indeed represented a first or stronger connection to capitalist markets (Campbell, 1999; Honey, 1999; Johnston, 2000; Mowforth & Munt, 1998; Rodriguez, 1999). In these countries, tourism is a catalyst of change in household economies, leading to new opportunities for employment, new sources of cash income, and new information about technologies (Barkin, 1996; Eadington & Smith, 1992; Levy & Lerch, 1991; Liu, 2003).

Bangladesh having various kinds of natural variations e.g., hilly areas, sea beaches, mangrove forest and many historical places, has a huge potential in the scenario of world tourism (Islam, 2006). But the basic structure required for attracting the domestic as well as foreign tourists is yet to be developed. Whereas the neighboring countries like India, Sri Lanka, Maldives and Nepal attract substantial number of tourists every year and thus generates huge amount of

foreign currencies. Though Bangladesh, since the industrial policy of 1999, that integrated tourism has been treated as an industry and termed it as a thrust sector (Islam, 2006), could not develop its various tourist destination sufficiently attractive to the foreign tourists. The performance of a tourist destination and satisfaction of visitors with the destination are of paramount importance to the destination competitiveness since the pleasantness of the experience is more likely to influence visitors' future behavior. (Baloglu, *et al.*, 2003).

Bangladesh, although, having the longest sea beach of the world at Coxes Bazar, the largest mangrove forest, the Sundarbans, attractive hilly areas in Hill Tracts cannot attract sufficient number of foreign tourists. Multifaceted problems are causing the frustrating scenario of the country's tourism sector. In Bangladesh, insufficient infrastructural development at various tourist spots, lack of proper facilities for the tourists, scarcity of skilled and professional tour service providers and poor promotional programs are responsible for the lower response from the foreign tourists. Therefore the target customers are not being properly addressed and thus the tourism sector in Bangladesh is not flourishing in that pace as expected. The paper thus looks at different preferences of the tourist and examines the tour intention in terms of selection of different tour destination.

## 2. Theoretical Framework and Hypotheses

In a review of customer satisfaction research in the hospitality and tourism industry, it is found that most of the studies undertaken by hospitality researchers have focused on identifying the sources of customer satisfaction and discovering effective ways to determine customer wants and needs. While most researchers disagree on the number of key attributes, they all agree that satisfaction must be measured on a multi-attribute scale (Cai & Zhang, 2003; Neal, 2003; and Yourtseven, 2000).

In a post-modern society, tourism is often conceptualized as a highly complex series of production-related activities (Pretes, 1995). Recently, the concept of customer value has become an important key to building a sustainable competitive advantage (Woodruff, 1997).

Customer satisfaction related to service quality during the vacation experience is of paramount importance to the travel and tourism industry (Neal, 2003). Customer satisfaction has generally been conceptualized as the 'outcome' for the customer after exposure to the service product (Crompton and Love, 1999). A major focus in any hospitality and tourism service model should be the personal linkage between the service provider and customer (Noe and Uysal 2001).

Service quality and customer satisfaction have been critical concepts in the fields of recreation and tourism as well as in marketing because they may be used as indicators of profitability and the successful achievement of organizational objectives. Most studies have paid attention to the distinctiveness of these concepts, the ways and means to measure them, and their interrelationship vis-à-vis their influence on outcomes (Lee, *et al.*, 2004). It is the task of the event management to provide quality of service elements for each type of visitors. Visitors expect the service elements to demand their expectations with full satisfactions (Yourtseven, 2000). Regardless of the type of tourism management tool used, the authentic qualities of the destination and community need to be preserved to keep the local identity of the destination. (Tasci, *et al.*, 2004)

International tourism industry comprises of various sub-functions of overall tourism industry in forms of transportation, food and lodging also security in some cases. Attractiveness of the spot, historical aspects and entertainment facilities are also major actors for tour attractions. It is required to provide a basket of services in all those fields in order to satisfy customers (Neal, 2003). For providing maximum level of customer satisfaction, it is necessary to understand what the customers really want. Various tour organizations thus adopt offensive strategy which involves providing consumers variety of services.

The tourism industry would cease to function without an efficient and effective transportation system (Cook *et al.*, 2007). To become a 'destination', a historic city or city centre needs to be easily accessible. Those off major rail or road transportation networks have been significantly losing out. For many, ease of access needs to be considered with adequate parking facilities that are convenient to the city centre – yet at the same time do not detract from the character of the historic environment. With retail becoming a leisure activity, studies show families visiting retail parks and the like on weekends can easily ignore an historic centre or major historic attraction that is only a few kilometers away (Kroshus, 2003). Transport is the cause and the effect of the growth of tourism. To start with, the improved facilities have stimulated tourism, and the expansion of tourism has stimulated transport. Accessibility is the main function behind the basics of tourism transport. In order to access the areas that are mainly aimed, tourists will use any transportation mode. However, air transport is the main mode for international tourism (Kroshus, 2003).

Although accommodations can be found in many shapes and sizes, these facilities have commonly been grouped under the umbrella term lodging. Accommodations create temporary living, quarters for guests through a variety of sources, including bed and breakfasts, condominium properties, timeshares, conference centers, hotels, motels recreational vehicle parks, and campground. Lodging properties, which provide the bulk of overnight accommodations, can be traced to biblical times. Lodging properties are more than just mortar, bricks, and sticks. Once the physical facility has

been constructed, a staff must be hired, trained, organized, and motivated to meet guest needs. This task often begins long before reservations are made or guests arrive. Depending on the size of a property, guests may encounter a whole host of service employees (Cook *et. al.*, 2007).

According to Middleton and Clarke (1999), accommodation plays a functional role by providing the facilities that make travel convenient and comfortable. Hall (1995) regarded accommodation as one of the more critical components on the demand side as accommodation has a major influence on the type of visitors who come to a destination. Cooper *et. al.*, (1996) suggested accommodation provides an essential support services to satisfy the wider motivation that brought the visitor to the destination.

Food obviously plays a major role in tourism and therefore services related to food are very crucial. The required and preferred food items in destinations' vastly depend on the cultural and geographic background of the guests (MacDonald, 1997). Foodservice operations are not simply in the business of providing food and beverages; they are in the business of creating guest enjoyment. Achieving this goal requires attention to detail and preparation that begins well in advance of welcoming the first guest. The guest experience is determined by a variety of interrelated factors from menu design and place settings to plate presentation and style of service. Each of these factors plays a significant role in achieving guest satisfaction and must be made within the physical and human constraints of the operation (Cook *et. al.*, 2007). Food and beverage are vital components of the tourism experience, and are increasingly being seen as prime travel motivators in their own right.

Safety and security are vital to providing quality in tourism finally affect in tourists destination selection. More than any other economic activity, the success or failure of a tourism destination depends on being able to provide a safe and secure environment for visitors. This was highly evident in the aftermath of the tragic events of 11th September 2001 (Besculides *et. al.*, 2002). We cannot be complacent, since there is an emerging consensus that crime - which raises safety issues - is a growing concern among tourism stakeholders who fear the potential damage that it may inflict on the perception of safety and, by extension, the industry (Volker and Sore'e, 2002). Of even greater concern than crime is the issue of visitor harassment, which also impacts on the tourist's sense of safety. It may be claimed that, although varying in severity, it is a widespread phenomenon.

Entertainment is closely related to leisure is the availability of entertainment facilities in historic centers. Opera, theatre or concerts, especially those taking place in historic and atmospheric settings add to the visitor appeal of a place and can become an important factor in determining an overnight stay. To be sustainable they need to appeal to local interests and remain accessible. Other forms of entertainment, such as nightclubs, may be less welcome in the historic environment, even though they have come to be an important economic contributor in places. (MacDonald, S. 1997)

Many resorts and estimations were simply developed in locations with natural beauty, favorable climates, and easy transportation access. In fact, one popular classification system that has been used to describe resorts relies on the historical seasonal operations patterns that defined the markets of many resorts (Gee, 1988).

People have always been attracted to new, unusual, or awe-inspiring attractions and events in every corner of the world. In the days before recorded history, travelers may have journeyed for miles just to experience the beauty of the setting sun across a mountain valley or to participate in a religious festival in honor of bountiful harvests. Today, we may expect more, but we are still inspired to travel by the appeal of special attractions and events. No matter whether it is the chance to attend a rock concert, to witness Shakespeare being performed in the rebuilt Globe Theater, to climb to the top of the Eiffel Tower, or to view the solitude and majesty of Ayers Rock, tourists are constantly seeking new sights, sounds and experiences as well as the opportunity to participate in a variety of leisure activities (Cook *et. al.*, 2007).

Attractions are similar in some ways to live entertainment alternatives. Visiting attractions or enjoying entertainment opportunities requires travelers to make choices about how they will use their leisure time. Some attractions are planned around historic sites and natural settings while others are designed and constructed around planned activities, themes and events. Depending on the purpose or setting, they may be controlled an operated by not-for-profit organizations that are dedicated to preservation and interpretation or commercial organizations dedicated to meeting guest's needs while making a profit. Live entertainment opportunities may also be found in these same settings and many be operated on a not-for-profit or a for-profit basis. However there are some key-differences between attractions and live entertainment venues (Cook *et. al.*, 2007).

Attractions are natural location, objects or constructed facilities that have a special appeal to both tourists and local visitors. In addition to these attractions, tourists and other visitors are also drawn to see and be part of a variety of live entertainment opportunities. While most attractions are permanent, entertainment alternatives are often temporary. In contrast, events such as fairs and festivals are temporary attractions that include a variety of activities, sights and live entertainment venues (Cook *et. al.*, 2007).

Shopping may be part of the travel experience or it may be the primary focus of travel. Shopping is an activity that crosses all market segments. As long as cities have existed, the pattern of going into town has included a leisure

experience, and visiting towns is an essential part of the tourist market (Jansen, 1991). While some visitors simply pick up necessities or a souvenir as a reminder of their travels, others may travel to specific locations for the primary purpose of shopping. Nearly nine out of ten, or 89% of overseas travelers report that they shopped during their visit to the United States, according to a study conducted by the U. S. Department of Commerce and Taubman Centers Ind. (Knight 1999).

In review of the above-mentioned research outcomes the study anticipates the following hypotheses:

H1: Tourists perception on the service quality is positively related to their visit or revisit intention.

H2: Tourists perception on the natural beauty of the tour destination is positively related to their visit or revisit intention.

H3: Tourists awareness on the tour destination is positively related to their visit or revisit intention.

H4: Tourists perception on convenience of lodging facility of the tour destination is positively related to their visit or revisit intention.

H5: Tourists perception on adventure of the tour destination is positively related to their visit or revisit intention.

H6: Tourists perception on security of the tour destination is positively related to their visit or revisit intention.

H7: Tourists perception on effective and efficient transportation in reaching the tour destination is positively related to their visit or revisit intention.

H8: Tourists perception on the safe and quality food of the tour destination is positively related to their visit or revisit intention.

H9: Tourists perception on shopping facility in the tour destination is positively related to their visit or revisit intention.

### **3. Methodology**

#### *3.1 Research Design, Sample, and Procedure*

A descriptive research design was used to test the hypotheses, proposed for examining the effects of various factors to the tourists' tour intention and /or revisit intention, with data collected from different tourists in Bangladesh through a self administered structured survey instrument. The survey questions were adopted from the literature and exploratory techniques. A convenient sampling method was used to select the sample considering the total citizens of Bangladesh as population of the study. The sample for this study is selected from the prospective tourists of 4 divisions in Bangladesh such as Dhaka, Rajshahi, Khulna and Sylhet. Different types of tourists have been included in the sample, which is stated in the sample profile, to make the sample representative. A total of 150 surveys were conducted in April 2008-August 2008 while 146 questionnaires were received as complete thus used for further analysis.

#### *3.2 Data Analysis*

To address nine independent variables of the study 28 items were generated, that were purified and validated through the factor analysis and internal consistency of the items were examined using cronbach alpha.

For the purposes of this study, items measuring the independent variables were simultaneously subjected to a principal components factor analysis with varimax rotation. The result yielded a 9 factor solution with eigen values greater than 1.0 (as shown in Table 2). The factor analysis further reveals that all the items were retained within the 9 factors those are anticipated for the study that cumulatively explained 66.79% of the total variance.

### **4. Research Findings**

Table 1 shows the demographic profile of the responding companies.

The reliability statistics among study variables are presented in Table 4. As shown in the table:4, the internal reliabilities of scales for most of the factors found satisfactory is clearly acceptable (Nunally, 1978) although perceived quality, known destination, security, safe and quality food and shopping facility were below 0.70. All of the factors reliability score were above .60, except the shopping facility which was the lowest score that was very near to .60, thus, is acceptable for further analysis.

As shown in Table 4, regression model shows a good fit with F value 4.934 ( $p < .01$ ) and  $R^2$  value 0.246 indicating 24.6% of the variation in the travel intention can be explained by the independent variable. Service quality, Natural Beauty, Security and Shopping Facility are statistically significant in explaining the intention to select a tour destination in Bangladesh. The model result indicates that peoples perception on security, quality service and natural beauty of the destination are the stronger predictors followed by shopping facility of the destination.

### **5. Discussion**

The purpose of the research was to examine the influence of various factors affecting the tour intention of the citizens in Bangladesh. This study analyses various factors that affect the people's tour intention adapted from different previous

literature as well as using field survey. Finally the study examines the effects of the factors in explaining the tourists' tour intention.

Nine factors related to different aspects of tourism such as service quality, natural beauty, known destination, convenient lodging, adventure, security, effective and efficient transportation, safe and quality food and shopping facility were used as indigenous variables where tour intention was used as exogenous variable of the model.

As hypothesized, service quality, natural beauty, known destination, convenient lodging, security, effective and efficient transportation, safe and quality food, adventure and shopping facility have positive correlation with the tour intention of Bangladeshi tourists. The regression analysis have indicated significant correlations between service quality, natural beauty, security and shopping facility of the destination with the tour intention where Service Quality, Natural Beauty, and Security are positively correlated which means that the positive perceptions of these three characteristics or attributes led to higher purchase intention. On the other hand, shopping facility is negatively correlated with tour intention, which means that the perceptions of more advanced shopping facility in the tourist spot led to lower visit or revisit intention. Although the shopping facility of the tour destination is observed significant in tourists' destination selection, disagree with previous researches as most of the researches explain the significant positive relation in between shopping facilities in destination and the destination selection (Knight 1999; and Jansen, 1991).

Security emerged as the strongest factor in terms of degree and magnitude affecting the tour intention of Bangladeshi tourists. The security issue is significant as people go for tour for pleasure and amusement. The amusement or entertainment is not possible if the place is not secured. It is thus an important aspect to be considered by the government of Bangladesh to ensure the security in various tourist spots in order to gain the tourist attention and acceptance.

Quality of service emerged as an important factor affecting the tour intention of Bangladeshi tourists. The service quality issue is significant because it deals with the tourists' perception on the pleasure.

Natural beauty of the destination also emerged as another important factor affecting the tour intention of Bangladeshi tourists. The natural beauty issue is significant as it deals with tourists' perception on the importance of the destination and its attractiveness to be considered as a place of destination. Natural beauty is in fact considered as core service of the tourism products.

Shopping facility exist in the tourist spot inversely affects the tour intention of Bangladeshi tourists. The result is not complementary with the tourists' intention in foreign countries. In international environment the tourists' fundamental desires are to make amusement with different tourism facilities that include convenient shopping facility. Purchasing different souvenir and gift items with indigenous products is one of the common tasks of general international tourists. The study findings implies that the people of Bangladesh are not interested to spend much money in purchasing products or commodities rather they are interested to spend almost entire money only for tourism purpose. In the case of group tour, tourists are bound to spend some money for shopping some fashion and fancy goods in response to their peers, friends or group fellows' pressure. It provides negative impact on their satisfaction. Unusual shopping and spending much money during the tour are not required if the destination has not adequate facility of shopping. The tourists of the country, due to their limited earnings, thus prefer to visit those destinations that don't provide adequate shopping facility or to push them to spend substantial amount of money in shopping.

## **6. Conclusions and Implications**

Bangladesh is trying to foster its economic development through utilizing country's resources and expertise in service sector by the side of its main foreign currency earner manufacturing industry, the RMG industry and others. The government of Bangladesh has declared tourism is one of the thrust sectors of the country. The indigenous culture, climate, geographic location, currency exchange rate, price of essential commodities and services; and price and convenience of lodging and quality of food are extremely favorable for developing an organised and professional tourism industry in Bangladesh that can contribute a substantial amount of money each year in the national exchequer. It will also generate huge employment opportunities that will ultimately help develop country's overall economic environment. Although the tourism industry has the potentials of contributing a substantially large amount of money in national economy, the government's initiative, people's perception on the tourism, and country's culture hinder the development of the sector. The political instability, strike, blockage and ban in different issues and the emergence of political and religious rebellions and terrorism are to be considered as major barriers of emerging tourism industry in Bangladesh. Infrastructures like technological, legal, financial, human resources are also to be considered as important influencer in Bangladesh. Bangladesh is a country where different types of tourism elements and destinations are available such as historical places, holy places, indigenous cultures, natural beauty, sea beach, hilly areas etc. The tourist places like Sylhet, Zaflong, Cox's Bazaar, Mohesh Khali, Cent. Martin island, Inani beach, Kuakata beach are important tourists areas that should be adequately developed for attracting both foreign and domestic tourists. The government should provide a positive look at developing the human resource infrastructure required for developing

tourism sector in the country. Highly professional and technical human resource competent in tourism can contribute positively to satisfy diversified needs of different tourists. A specialized institution thus may be established for tourism education in Bangladesh. The recent trends of rebellions and terrorist attacks and their possible growth are also hindering Bangladesh's tourism industry development and its sustainability. The initiatives to establish regional inter-country taskforce initiated by the present Govt. of Bangladesh to combat the possible terrorism attacks and activities may contribute positively in tourism sector. Besides the above mentioned supports and services the entrepreneurs in the field of tourism industry should be supported and encouraged by establishing government's grants and subsidies and adopting country's tourism policy that may be used as the guideline for the rapid expansion of this sector. The study is believed to be supported by its academic proponents and professionals.

## References

- Baloglu, S., Pekcan, A., Chen, S-L., & Santos, J. (2003). The relationship between destination performance, overall satisfaction, and behavioral intention for distinct segment. *Journal of Quality Assurance in Hospitality & Tourism*, 17 (1), 149-165. [Online] Available: <http://www.haworthpress.com/web/JQAHT> (Accessed 10-10-2006).
- Barkin, D. (1996). Ecotourism: A tool for sustainable development in an era of international integration?. In J.A. Miller and E. Malek-Zadeh (Eds), *The Ecotourism Equation: Measuring the Impacts* (pp. 263–272). New Haven, CT: Yale University.
- Besculides, A., Lee, M.E., and McCormick, P.J. (2002). Residents' perceptions of the cultural benefits of tourism. *Annals of Tourism Research*, 29 (2), 303–319.
- Bitran, G.R. (2003). Framework for analyzing service operation. Sloan School of Management Massachusetts Institute of Technology. [Online] Available: <http://www.intute.ac> (Accessed 5-11-2006).
- Cai, L.A., & Zhang, L. (2003). Meeting the demand from tourism development– higher occupation and technical education in China. *Journal of Human Resources in Hospitality & Tourism*, 3(1),106-117. [Online] Available: <http://www.haworthpress.com/web/JTTM> (Accessed 22-10-2006).
- Campbell, L .M. (1999). Ecotourism in rural developing communities. *Annals of Tourism Research*, 26(3), 534–553.
- Chaisawat, T. (1998). Ideas and trends. [Online] Available: [www.hotel-online.com](http://www.hotel-online.com) (Accessed 18-11-1006).
- Chan, B., & Coleman, M. (2002). Skills and competencies needed for the Hong Kong hotel industry: The perspective of the hotel human resources manager. *Journal of Human Resources in Hospitality & Tourism*, 3(1), 3-18. [Online] Available: <http://www.haworthpress.com/web/JTTM> (Accessed 22-10-2006).
- Cook, R. A., Yale, L. J., & Marqua, J. J. (2007). *Tourism – The Business of Travel*. Delhi: Pearsons Publication.
- Cooper, C., Fletcher, J., Gilbert, D., & Wanhill, S. (1996). *Tourism Principles and Practice*, London: Longman.
- Eadington, W.R., and Smith, V.L. (1992). *Tourism Alternatives: Potentials and Problems in the Development of Tourism*. Philadelphia, PA: University of Pennsylvania Press.
- Ekinci, Y. (2003). Which comparison standard should be used for service quality and customer satisfaction. *Journal of Quality Assurance in Hospitality & Tourism*, 17(1), 1-76. [Online] Available: <http://www.haworthpress.com/web/JQAHT> (Accessed 10-10-2006).
- Ennew, C., & Schoefer, K. (2003). Service failure and service recovery in tourism: A review. [Online] Available: <http://www.sciencedirect.com> (Accessed 2-11-2006).
- Fall, L.T. (2004). Developing innovative public relations strategies: Using Grunig's nested segmentation model and Yankelovich's generational influences model to distinguish pleasure traveler publics. *Journal of Hospitality & Leisure Marketing*, 17(1), 5-30. [Online] Available: <http://www.haworthpress.com/web/JTTM> (Accessed 12-10-2006).
- Fallon, P., & Schofield, P. (2003). Just trying to keep the customer satisfied: A comparison of models used in the measurement of tourist satisfaction. *Journal of Quality Assurance in Hospitality & Tourism*, 17(1), 77-96. [Online] Available: <http://www.haworthpress.com/web/JQAHT> [Accessed 10-10-2006].
- Gee, C. Y. (1988). *Resort Development and Management*. (2<sup>nd</sup> ed.). East Lansing, MI: Educational Institute of the American Hotel and Motel Association.
- Hall, C. (1995). *Introduction to Tourism: Development*. (2<sup>nd</sup> ed.). Melbourne: Longman Cheshire.
- Honey, M. (1999). *Ecotourism and Sustainable Development: Who Owns Paradise?* Washington, DC: Island Press.
- Huh, J., & Uysal, M. (2001). Satisfaction with cultural/heritage sites: Virginia historic triangle. *Journal of Quality Assurance in Hospitality & Tourism*, 17(1), 177-194. [Online] Available: <http://www.haworthpress.com/web/JQAHT> (Accessed 10-10-2006).
- Islam, S.M. (2006). Rural tourism: right time to contemplate. *The Daily Star* (Dhaka), An English daily.

- Jansen-Verbeke, M. (1991). Leisure shopping: A magic concept for the tourism industry? *Tourism Management*, 9-14.
- Johnston, A. (2000). Indigenous peoples and ecotourism. *Tourism Recreation Research*, 25(2) 89–96.
- Kim, S., O'Neill, W.J., & Jeong, S.E. (2002). The relationship among leader-member exchange, perceived organizational support, and trust in hotel organizations. *Journal of Human Resources in Hospitality & Tourism*, 3(1), 59-70. [Online] Available: <http://www.haworthpress.com/web/JTTM> [Accessed 22-10-2006].
- Knight, Mary Beth. (1999). America's tourist attractions. *Chain Store Age*, 75(3), 64-66.
- Knutson, B.J., & Beck, A.J. (2006). Identifying the dimensions of the experience construct: Development of the model. *Journal of Quality Assurance in Hospitality & Tourism*, 17(1), 23-37. [Online] Available: <http://www.haworthpress.com/web/JQAHT> [Accessed 10-10-2006].
- Knutson, B.J., Singh, A.J., Yen, H-H., & Bryant, B.E. (2002). Guest satisfaction in the U.S. lodging industry using the acsi model as a service quality scoreboard. *Journal of Quality Assurance in Hospitality & Tourism*, 17(1), 97-118. [Online] Available: <http://www.haworthpress.com/web/JQAHT> [Accessed 10-10-2006].
- Kozak, M., Bigné, E., & Andreu, L. (2003). Limitations of cross-cultural customer satisfaction research and recommending alternative methods. *Journal of Quality Assurance in Hospitality & Tourism*, 17(1), 37-60. [Online] Available: <http://www.haworthpress.com/web/JQAHT> [Accessed 10-10-2006].
- Kroshus Medina, L. (2003). Commoditizing culture. Tourism and maya identity. *Annals of Tourism Research*, 30(2), 353–368.
- Kwun, J-W., & Oh, H. (2004). Effects of brand, price, and risk on customers' value perceptions and behavioral intentions in the restaurant industry. *Journal of Hospitality & Leisure Marketing*, 17(1), 31-49. [Online] Available: <http://www.haworthpress.com/web/JTTM> [Accessed 12-10-2006].
- Laing, A., & Hogg, G. (2003). Re-conceptualising the service encounter: Services and information empowered consumers. *Cultures of Consumption Working Paper Series*, [Online] Available: <http://www.consume.bbk.ac.uk> [Accessed 8-10-2006].
- Lan, T. (2004). Human resources issues in Asia-Pacific. *Journal of Human Resources in Hospitality & Tourism*, 3(1), 1-2. [Online] Available: <http://www.haworthpress.com/web/JTTM>. [Accessed 22-10-2006].
- Landey, J., & Silvers, J.R. (2004). The miracle of training in event management. *Journal of Convention & Event Tourism*, 6 (3), 21-47, [Online] Available: <http://www.haworthpress.com/web/JTTM> [Accessed 25-10-2006].
- Lee, J., Graefe, A.R., & Burns, R.C. (2001). Service quality, satisfaction, and behavioral intention among forest visitors. *Journal of Travel & Tourism Marketing*, 17(1), 73-82. [Online] Available: <http://www.haworthpress.com/web/JTTM> [Accessed 15-10-2006].
- Levy, D.E., and Lerch, P.B. (1991). Tourism as a factor in development: Implications for gender and work in Barbados. *Gender and Society*, 5, 67–85.
- Liu, Z. (2003). Sustainable tourism development: A critique. *Journal of Sustainable Tourism*, 11(6), 459–475.
- MacDonald, S. (1997). A people's story: Heritage, identity and authenticity. In C. Rojek and J. Urry (eds.) *Touring Cultures. Transformations of Travel and Theory* (pp. 155–175), London: Routledge.
- McGuiggan, R., & Foo, J-A. (2002). Who plays which tourist roles? An Australian perspective. *Journal of Travel & Tourism Marketing*, 17(1), 41-54. [Online] Available: <http://www.haworthpress.com/web/JTTM>, [Accessed 15-10-2006].
- McQuitty, S., Hyman, M.D., Oliver, R., Sautter, P., & Stratemeyer, A.W. (2001). Service variability and its effect on consumer perceptions and intentions. Department of Marketing MSC 5280, New Mexico State University, [Online] Available: <http://www.mcquitty@nmsu.edu>, Accessed by, 8-10-2006.
- Meric, A. (2003). Modeling service quality measurement instruments by using neural networks. Master Thesis, Department of Industrial Engineering, Ankara. [Online] Available: <http://www.sciencedirect.com> [Accessed 2-11-2006].
- Mowforth, M., and Munt, I. (1998). *Tourism and Sustainability: New Tourism in the Third World*. London, UK: Routledge.
- Nash, D. (1996). *Anthropology of Tourism*. New York, NY: Pergamon.
- Neal, J. D. (2003). The effect of length of stay on travelers' perceived satisfaction with service quality. *Journal of Quality Assurance in Hospitality & Tourism*, 17 (1), 167-176. [Online] Available: <http://www.haworthpress.com/web/JQAHT>. [Accessed 10-10-2006].

- Noe, F.P., & Uysal, M. (2003) Social interaction linkages in the service satisfaction model. *Journal of Quality Assurance in Hospitality & Tourism*, 17(1), 7-22. [Online] Available: <http://www.haworthpress.com/web/JQAHT>. [Accessed 10-10-2006].
- Northcote, J., & Macbeth, J. (2005). Conceptualizing yield sustainable tourism management. *Annals of Tourism Research*, 33(1), 199–220. [Online] Available: <http://www.elsevier.com/locate/atoures>. [Accessed 18-10-2006].
- O’Neill, J.W., & Mattila, A.S. (2001). Towards the development of a lodging service recovery strategy. *Journal of Hospitality & Leisure Marketing*, 17 (1), 73-82. [Online] Available: <http://www.haworthpress.com/web/JTTM>[Accessed 51-64-2006].
- Pritchard, M.P., & Havitz, M.E. (2002). Destination appraisal an analysis of critical incidents. *Annals of Tourism Research*, 33(1), 25-46. [Online] Available: <http://www.elsevier.com/locate/atoures> [Accessed 18-10-2006].
- Rodriguez, A. (1999). Kapawi: A model of sustainable development in Ecuadorean Amazonia. *Cultural Survival Quarterly*, 23, 43–44.
- Schoefer, K., & Ennew, C. (2002). Customer evaluations of tour operators responses to their complaints. *Journal of Travel & Tourism Marketing*, 17(1), 73-82. [Online] Available: <http://www.haworthpress.com/web/JTTM>. [Accessed 15-10-2006].
- Sellick, M.C. (2002). Discovery, connection, nostalgia: Key travel motives within the senior market. *Journal of Travel & Tourism Marketing*, 17(1), 55-71. [Online] Available: <http://www.haworthpress.com/web/JTTM> [Accessed 15-10-2006].
- Shanka, T., & Taylor, R. (2003). An investigation into the perceived importance of service and facility attributes to hotel satisfaction. *Journal of Quality Assurance in Hospitality & Tourism*, 17(1), 119-134. [Online] Available: <http://www.haworthpress.com/web/JQAHT>. [Accessed 10-10-2006].
- Tasci, A.D.A., & Knutson, B.J. (2004). An argument for providing authenticity and familiarity in tourism destinations. *Journal of Hospitality and Leisure Marketing*, 17(1), 73-82. [Online] Available: <http://www.haworthpress.com/web/JTTM>. [Accessed 15-10-2006].
- Volker, S., and Sore’e, J. (2002). Fighting over tourists: A case study of competing entrepreneurs in a small town in Belize. In H. Dahles and L. Keune (eds), *Tourism Development and Local Participation in Latin America* (pp.101–114), New York: Cognizant Communications Corporation.
- Whelan, T. (1991). *Nature Tourism: Managing for the Environment*. Washington, DC: Island Press.
- Whitford, M. (2004). Event Public Policy Development in the northern sub-regional organisation of councils, Queensland Australia: Rhetoric or realisation? *Journal of Convention & Event Tourism*, 6 (3), 81-99, [Online] Available: <http://www.haworthpress.com/web/JTTM>. [Accessed 25-10-2006].
- Woodside, A.G., Caldwell, M., & Albers-Miller, N.D. (2001). Broadening the study of tourism: introduction to the special issue on the consumer psychology of travel/tourism behavior. *Journal of Travel & Tourism Marketing*, 17 (1), 73-82. [Online] Available: <http://www.haworthpress.com/web/JTTM> [Accessed 15-10-2006].
- Woodside, A.G., MacDonald, R., & Burford, M. (2002). Grounded theory of leisure travel. *Journal of Travel & Tourism Marketing*, 17 (1), 7-40. [Online] Available: <http://www.haworthpress.com/web/JTTM>, [Accessed 15-10-2006].
- WTO. (1998). *Statistical Yearbook of Tourism*. Madrid.
- WTTC. (2005). *World Travel & Tourism: Sowing the Seeds of Growth--The 2005 Travel & Tourism Economic Research*. London E1W 3HA, United Kingdom: World Travel & Tourism Council.
- Wunder, S. (1999). *Promoting Forest Conservation through Ecotourism Income? A Case Study from the Ecuadorian Amazon Region Occasional Paper 21*. Bogor, Indonesia: CIFOR.
- Wunder, S. (2000). Ecotourism and economic incentives: An empirical approach. *Ecological Economics*, 32, 456–479.
- Yourtseven, H., & Jencturk, A. (2000). *Measuring and managing service quality of ANZAC day as a cultural heritage event*. Onsekiz University. [Online] Available: <http://www.rourtseven@comu.edu.tr>.

Table 1. Respondents Profile

Description	<i>f</i>	Percent
<b>Respondents Age</b>		
Below 25 years	12	8.2
25 to 45 years	103	70.5
46 to 60 years	30	20.5
Above 60 years	1	.7
<b>Occupation</b>		
Student	11	7.5
Government Job	44	30.1
Private Job	75	51.4
Business	11	7.5
Others	5	3.4
41 and Above	43	19.4
<b>Gender</b>		
Male	131	89.7
Female	15	10.3
<b>Marital Status</b>		
Married	110	75.3
Single	36	24.7
<b>Education</b>		
HSC or below	1	.7
Graduate	75	51.4
Post Graduate	70	47.9
<b>Area</b>		
Dhaka Division	26	17.8
Rajshahi Division	37	25.3
Khulna Division	75	51.4
Sylhet Division	8	5.5

Table 2. Principle Component Analysis

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.638	16.565	16.565	4.638	16.565	16.565	2.691	9.611	9.611
2	3.237	11.562	28.127	3.237	11.562	28.127	2.504	8.943	18.555
3	2.163	7.724	35.851	2.163	7.724	35.851	2.293	8.190	26.744
4	2.107	7.524	43.375	2.107	7.524	43.375	2.242	8.006	34.750
5	1.872	6.687	50.062	1.872	6.687	50.062	2.108	7.530	42.280
6	1.288	4.600	54.662	1.288	4.600	54.662	2.094	7.479	49.759
7	1.229	4.389	59.051	1.229	4.389	59.051	1.656	5.914	55.673
8	1.103	3.940	62.992	1.103	3.940	62.992	1.645	5.874	61.547
9	1.064	3.801	66.793	1.064	3.801	66.793	1.469	5.246	66.793

Table 3. Factor Matrix

		Component								
		Standard	Natural Beauty	Knowledge	Lodging	Adventure	Security	Transportation	Food	Shopping
1	q30	.453	.031	.040	-.205	<b>.531</b>	.085	.024	.146	.093
2	q31	.270	-.084	.029	-.140	<b>.770</b>	.097	-.022	.027	.122
3	q43	.105	.401	.119	-.012	<b>.680</b>	-.032	-.022	.053	-.060
4	q39	.009	<b>.798</b>	.072	-.030	.029	.006	.052	.107	-.017
5	q40	.000	<b>.770</b>	.029	.145	.029	.193	-.034	.064	-.001
6	q41	.191	<b>.535</b>	.035	.107	.481	-.215	-.026	-.035	-.006
7	q42	.140	<b>.766</b>	.068	-.046	.069	.053	-.014	-.041	.118
8	q6	.234	-.058	.164	<b>.685</b>	-.185	.295	.074	.120	.078
9	q8	-.037	.042	-.176	<b>.643</b>	-.103	-.014	-.068	-.010	.073
10	q9	-.143	-.018	-.015	<b>.666</b>	-.112	.077	.170	.205	.139
11	q10	.058	.187	.219	<b>.663</b>	.337	.025	.035	.094	-.255
12	q32	<b>.694</b>	.037	-.087	-.349	.354	.025	-.012	.107	-.038
13	q5	<b>.655</b>	-.018	-.063	.104	.209	.114	.047	.215	.064
14	q7	<b>.782</b>	.086	.077	.186	-.027	-.058	-.062	-.029	-.038
15	q27	<b>.670</b>	.243	-.022	-.125	.299	-.003	.157	.112	.112
16	q34	-.113	-.009	<b>.678</b>	.042	.021	.153	.054	.122	.032
17	q35	.278	.057	<b>.684</b>	-.056	-.093	.006	.150	-.320	.108
18	q36	-.118	.207	<b>.701</b>	-.094	.051	.194	.114	.092	.066
19	q37	.038	.021	<b>.748</b>	.068	.120	-.105	.024	.069	.035
20	q46	.116	-.014	.117	-.062	-.061	.062	<b>.880</b>	.081	-.090
21	q47	-.048	.010	.149	.205	.043	.020	<b>.827</b>	.130	.168
22	q16	.027	.077	.017	.115	-.021	<b>.811</b>	.023	-.049	.189
23	q17	.160	.196	.054	-.019	.040	<b>.782</b>	-.032	.183	-.122
24	q18	-.133	-.099	.185	.160	.059	<b>.688</b>	.127	-.251	.158
25	q1	.079	.086	.163	.107	.231	-.135	.148	<b>.783</b>	.039
26	q3	.289	.066	-.013	.221	-.079	.061	.119	<b>.708</b>	.063
27	q24	-.033	.104	.043	.168	.084	.068	.126	-.078	<b>.866</b>
28	q25	.199	-.010	.248	-.057	.017	.183	-.100	.303	<b>.653</b>

Table 4. Regression Statistics

Variables	Standardized Beta	Alpha
Quality Service	.252**	.692
Natural Beauty	.247**	.738
Known (Knowledge) destination	.007	.697
Convenient Lodging	.036	.652
Adventure	-.103	.757
Security	.261**	.698
Transportation	.087	.705
Safe and quality Food	.060	.646
Sopping Facility	-.175*	.551
R <sup>2</sup>	.246	
F Value	4.934**	
Durbin-Watson	1.872	

\*\* p &lt; .001, \* p &lt; .05



## Aligning Military and Soldiers' Values Hierarchy

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### Abstract

Studies on the fit between the person and the environment i.e. P-E fit are widespread. One aspect of P-E fit is values congruence i.e. the fit or similarity between the values of the organization and the employees' values. However, there has been no study that reported the congruence between an organization's value hierarchy (i.e. the ranking of its values) and those of its employees. This study investigates the values hierarchy congruence between the Malaysian Armed Forces (MAF) and its soldiers and the relationship with satisfaction. A sample of 214 officers in the MAF were obtained. When the top 5 values were used in analyses, values hierarchy congruence scores were significantly correlated with soldiers' satisfaction (.122,  $p < 0.05$ ). This suggests that not only should the values of the soldiers and the organizations be similar or congruent, but the priority or ranking of these values are important as well.

**Keywords:** Values, Hierarchy, Soldiers, Military, Congruence, Satisfaction

### 1. Introduction: Person-Environment Fit

Parsons' (1909) seminal work appears to be the first to have stressed the importance of both person and environment variables in vocational choice. Today, both variables are regarded as important. However, somewhere in between 1968 and 1989 (Mischel 1968; Pervin 1989), academics became divided. There were two extreme views. At one extreme, the view was that a person's behaviour was caused entirely by the "environment". At the other, the view was that the person's behaviour was determined solely by his "personality". Several theorists (e.g. Bowers, 1973; Endler & Edwards, 1978) have argued that it is fruitless to argue that either personality or the situation is all-important.

P-E fit was summarised by Edwards (1996, p. 292) as follows: "In essence, P-E fit embodies the premise that attitudes, behaviour and other individual level outcomes result not from the person or environment separately, but rather from the relationship between the two (Lewin, 1951; Murray, 1938; Pervin, 1989)." There is an abundance of research on P-E fit. Buboltz, Ebberwein, Watkins and Savickas (1995) discovered that in the last 20 years preceding their article, a total of 229 articles on P-E fit appeared in the *Journal of Vocational Behavior* and 75 articles on it appeared in the *Career Development Quarterly*. They also noted that, about 63 of the 229 articles on P-E fit in the *Journal of Vocational Behavior* and 22 out of the 75 in the *Career Development Quarterly* appear during the last five years preceding their article. In addition, there are other studies involving P-E fit (cited below) reported in other journals. The concept of P-E fit has been described as, "so pervasive as to be one of, if not the dominant conceptual forces in the field" (Schneider, 2001, p.142). This constitutes evidence that the subject matter of P-E fit has not only been well established and extensively researched, but also remains a current area of interest. A review of the studies of P-E fit revealed that prior to 1987, most studies did not distinguish between the different forms of fit and did not expressly state which category of fit they were investigating. Kristof (2005, 1996), Piasentin and Chapman (2006) and Verquer, Beehr and Wagner (2003) have done a thorough literature review and as such, the bulk of it will not be reproduced here.

Kristof (1996) appears to be the first to categorise the different levels of fit. They are: 1) person-organisation fit or P-O fit i.e. the fit between the person and the organisation, (2) person-group fit or P-G fit i.e. the fit between the person and

the group, and (3) person-job fit or P-J fit i.e. the fit between the person and the job. Research that involved comparing the values of the organization with the employees' values were P-O fit studies.

## 2. Contribution of the Study

Although there have been many studies on P-O fit i.e. value congruence, there has been no reported study that investigated the congruence between an organization's value hierarchy (i.e. the ranking of its values) and those of its employees, especially in the Military. What is unique in the Malaysian Armed Forces (MAF) which is absent in most other private and public organizations in Malaysia is the arrangement of values according to a certain order or hierarchy. The MAF spends a lot of time and effort in ensuring that its soldiers share the same values hierarchy as that of the organization. Thus, the main research question that this study aims to address is "*Are soldiers whose value hierarchies more similar to those of the MAF, more satisfied?*"

## 3. Values

Value can be defined as the fundamental belief behind attitudes or the rationale behind an action as a result of the importance that an individual or society has placed on it. As such values reflect a person's sense of right or wrong or what it ought to be (Jacobs, Flinks & Schuchman, 1962). Scott (1956) defined values as a conception of what are desirable, thus influencing decisions and actions. Rokeach (1968) took this definition further by categorizing values into two categories i.e. terminal and instrumental values. Terminal values were described as the end states of idealized existence (e.g. wisdom, comfort, wealth) while instrumental values are the means for achieving the end states (e.g. learning, hardworking, thrift). However, this way of looking at values is not appropriate for organizations (especially government organizations) which often continue to exist long after the resignation, retirement and even the death of their employees.

## 4. Military Values as Compared with Other Organizations' Values

Jamieson and O'Mara (1991) listed nine of the top values based on a nationwide sample of managers and human resource professionals. They are: recognition for competence and accomplishments, respect and dignity, personal choice and freedom, involvement at work, pride in one's work, lifestyle quality, financial security, self-development and lastly, health and wellness. Military values on the other hand are different. According to the Value and Standards of the British Army (2008), the essential function of an armed force is to fight in battle. The same goes for the MAF. The military values have been inculcated in all soldiers during basic training and further enhanced while the soldier continues to work in the regiment or the unit where he is posted. Therefore all military personnel are known for their discipline and esprit de corps. Ethos and values are believed by the Malaysian army to be essential factors to produce an effective and efficient military organization. The military values was intended to unite and enhance individuals who come from different backgrounds, ethnicity, religion and cultures – and this is important in a multi-racial and multi-cultural country such as Malaysia. The esprit de corps is essential in critical moments on the battlefield.

## 5. Value Congruence

Krishnan (1996) and Kristoff (1996) defined person-organization congruence or P-O fit as the compatibility between people and organizations that occurs when they share similar fundamental characteristics – such as similar values. When there is a lack of fit or incongruence between the individuals' values and those of the organization, this may result in negative psychological, physiological and behavioral consequences (O'Reilly, Chatman & Caldwell, 1991). Schneider (1987) popularized the Attraction-Selection-Attrition (ASA) theory, and one of the most important criteria is the value congruence.

## 6. Job Satisfaction

Job satisfaction represents a constellation of a person's attitudes towards or about a job as a whole. According to Smith, Kendall and Hulin (1969) it is a function of satisfaction with different aspects of the job which are the work itself, pay, opportunities for promotion, supervision and co-workers. This is the view adopted in this research. Comparison theories assess job satisfaction by asking workers how much of some characteristic (e.g. need, value, social comparisons) they have in their present jobs and how much of this characteristic they would like to have. According to Porter (1962), the larger the discrepancy between the amount of such characteristics that is present and the amount that is desired, the lower the reported job satisfaction. Conversely, it can be argued that the more similar the values of the person are to those of the organization, the higher the reported job satisfaction. There are already researchers that have investigated this (Meglino, Ravlin & Adkins, 1989).

Some researchers have also found that certain values by themselves are related to satisfaction. Blood (1969) found that religious ethics (Protestant) have positive correlation with job satisfaction. This is supported by Yousef (2001) that religious values through work ethic have a positive relationship with work satisfaction. Therefore both research supports that religious values have a positive impact on work satisfaction and coincidentally, belief in God is also the

number one value in the MAF. However, this research goes further by comparing the ranking of the values of the MAF with that of the soldiers and how the similarities in ranking are related to the job satisfaction of the soldiers.

### 7. The Relationship between Value Congruence and Job Satisfaction

Meglino, Ravlin and Adkins (1989) found that value congruence between the organization and the employees are related to satisfaction of the employees. Earlier research such as those by Schneider (1987) in his Attraction-Selection-Attrition (ASA) model, found that employees are choosing to work with the organizations which have similar values to them. This is supported by Chatman (1989) who found that employees are less satisfied when organizations have a different set of work values compared with theirs. This comes as no surprise as Locke (1976) has long argued that job satisfaction is related to how the organizational values or supports the needs of the employees. Fleishman and Bass (1984) also argued that work satisfaction is achieved when the values and needs of the employees are fulfilled through the job. Pine and Innis (1987) pointed out that work values reflect the individual's needs and therefore have the potential to affect work outcomes and attitudes.

### 8. Values Hierarchy Congruence

Few research have been conducted in western countries such as United States of America and United Kingdom on the subject of military values hierarchy. Table 1 shows the values hierarchy in USA (United States Army, 2008), United Kingdom (British Army, 2008) and Malaysia (Malaysian Armed Forces, 1994).

#### Insert Table 1

The ranking of values of the Malaysian military are listed in Table 1 along with the values of other countries. They are:

**1) Belief in God.** This is the number one value which interestingly is completely absent from the military values of USA and UK. Belief in God entails the highest submission of man to the ascendancy of the Creator. It is the principle that provides a sense of purpose to live, serve, fight and die for God and the country. History has proven that this belief made man willing to survive extreme hardship and even lay down their lives for a cause they believe in. Even though the soldiers are from different religions, they do believe in the existence of God as there are very few atheists (as found in our previous qualitative survey).

**2) Discipline.** This is the second Malaysian military value. It is the third ranked value in the UK military but is surprisingly missing in the USA military. Discipline is the prohibition of undesirable behaviour and the willingness to follow orders issued by superiors. This is the result of years of training. Discipline is instilled and maintained as a feeling of pride in himself/herself, his/her unit and the MAF, rather than by fear of punishment.

**3) Loyalty.** This is the strong allegiance to the King, and the country and demanded from all soldiers. It is the number one value in the USA, fifth in the UK.

**4) Sacrifice.** This is the subordination of self for the benefit of the superior, unit, army, king and country. Selfless-service is also ranked fourth in the USA. However, unlike selfless-service which is putting other people's needs ahead of our own, sacrifice may mean being willing to even lay down our lives for the greater good, when necessary.

**5) Esprit de corps.** This is the feeling of pride that goes along with the sense of belonging, fellowship and loyalty between comrades in the respective units. There is no room for individuality.

**6) Integrity.** This is akin to having moral principles, the ability to distinguish between right and wrong.

**7) Courage.** This is the high level of confidence built through the rigorous activities in training. Courage is also inspired by charismatic and effective leadership as well as devotion to one's religious beliefs.

James and Woodsmall (1988) in their book emphasized the importance of the values hierarchy i.e. the ranking order or priority of values, and how the values hierarchy of the organization must match the value hierarchy of the individual in order for the individual to achieve high performance and satisfaction. However, they have not done any empirical research to support this statement, thereby justifying this research. The current research examines the match or congruence between the hierarchies of the MAF with those of the soldiers and whether they are related to the satisfaction of the soldiers.

Accordingly the hypotheses are as follows:

H0: There is no significant relationship between hierarchical value congruence scores and job satisfaction scores.

H1: Hierarchical value congruence scores are significantly related to job satisfaction scores.

### 9. Method

#### 9.1 Sample

The sample consisted of 214 officers in the MAF from various locations throughout Malaysia. They were selected using judgmental or purposive sampling techniques from lists obtained from four separate army training centers - 44

respondents were from the Institute of Management (“IPDA”) and 25 were from the Senior Officer Institute (“INSPEKA”), both in the state of Negeri Sembilan, 20 respondents were from the Malaysian Staff College (MTAT) in the capital city of Kuala Lumpur, and 125 respondents were from the Army Combat Training Centre (“PULADA”) in the state of Johor Bahru. The respondents were purposely chosen from these four institutions as it presents a convenient method to ensure that the sample consists of army officers who came from different regions in Malaysia.

214 questionnaires were distributed of which all 214 were returned i.e. a response rate of 100%. The questionnaires were distributed personally by the researchers by visiting respondents at their institutions – there were 4 separate institutions. Prior to answering the questionnaire, the respondents were explained by the researchers regarding the purpose of the survey and instructions were given as to how to answer the questionnaire. The respondents were assured that their individual responses would be kept confidential and were requested to be as honest as possible when answering the questions. Respondents were given 30 minutes to complete the questionnaire in a room free from noise and distraction. Any queries regarding the questionnaires were explained on the spot and the questionnaires were then collected personally by the researchers after completion.

## 9.2 Measures

Part A collected demographic information of the participants. In part B, respondents were asked to rate the importance of the seven Malaysian Military Values on a 20-point scale (1 for “not important to me” and 20 for “very important to me”). This is to prevent any bias on the part of the respondents i.e. the temptation to recall the ranking as stipulated by the MAF and simply reproducing the same hierarchy in their answers. The method employed to calculate the value congruence scores is explained in the results section. Part C contained the Job Descriptive Index (JDI) which had a Cronbach reliability score of 0.89 in this study.

Smith Kendall and Hulin (1969) developed the JDI, which is a simple short questionnaire that requires low verbal measures and is suitable for a wide variety of situations. The JDI uses 72 adjectives or items to describe the five dimensions of job satisfaction as follows: work (18 items), pay (9 items), promotion (9 items), supervision (18 items) and co-workers (18 items). Respondents were required to answer either “Yes”, “No”, or “?” for each adjective. The respondent was not asked how satisfied he/she was with his/her work but rather to describe his/her work i.e. the responses are a “job-referent” rather than “self-referent”. Scoring for the questionnaire has been done in accordance with Smith *et al*'s (1969) recommendation as follows: a positive answer to a positive item is scored 3; a negative answer to a negative item is scored 3; an undecided answer to any item is scored 1; a positive answer to a negative item is scored 0 and; a negative answer to a positive item is scored 0. Note: an undecided answer scores 1 point, not 2, because Smith *et al* (1969) stated that a “?” is more indicative of dissatisfaction than satisfaction. This aspect was tested by Hanisch (1992) and shown to be correct. Total job satisfaction was obtained by simply summing up the results of the five facet scales to obtain an acceptable measure of global job satisfaction as was done by Hulin, Drasgow, and Komocar (1982).

There were several reasons why the JDI was selected for use in this study. The JDI has been reported to be the most frequently used measure of job satisfaction (De Meuse, 1986; O'Connor, Peters and Gordon, 1978; Yeager, 1981; Ironson et al, 1989). According to Ironson et al (1989), the Social Science Citation Index and Psychological Abstracts revealed 454 articles referring to the JDI between January 1979 and November 1987. The JDI was shown to have dimensional consistency over a wide range of situations (Jung, Dalessio and Johnson, 1986) and to have good discriminant and convergent validity. It has also been used in P-E fit studies to measure job satisfaction (Smart, Elton and McLaughlin, 1986). It has been shown to be reliable and valid not only in America but also in Spain (Hulin, Drasgow and Komocar, 1982), Saudi Arabia (Maghrabi and Johnson, 1995), Hong Kong (Lam, 1995) and Singapore (Goh, Koh and Low, 1991).

## 10. Results

### 10.1 Descriptives

Part A of the questionnaire collected information about the respondents' demographics (i.e. age, gender, job/education level). The ages ranged from 20 to 54 and the average age is 28. 14 respondents (6.5%) were aged between 20 to 25 years. The majority i.e. 96 respondents (44.9%) were between 26 to 30 years. 51 respondents (23.8%) were between 31 to 35 years, 17 respondents (7.9%) were between 41 to 45 years, and 4 respondents (1.9%) were above 46 years of age. The majority of the respondents were not married (n=181, 84.6%) and the remaining were married (n=33, 15.4%). As for gender, the majority of the respondents were male (n=190, 88.8%) and the remaining were females (n=24, 11.2%). This was expected as the Malaysian Army is a male dominated occupation. 72 respondents (33.6%) had only school education, 66 respondents (30.8%) had diplomas, 58 respondents (27.1%) had undergraduate university degrees and 58 respondents (27.1%) had Masters Degrees. In terms of salary, most of the respondents (n=92, 43%) had salary between RM2,001 to RM3,000. The second largest category of respondents (n=84, 39.3%) had salaries from RM3,001 to RM4,000 (RM3.5 is approximately equivalent to 1 US dollar). In terms of years of service, most of the respondents

(n=82, 38.3%) had between 5 to 9 years. The second largest category of respondents (n=66, 30.8%) had between 10 to 14 years.

### 10.2 Calculation of the hierarchical value congruence scores

The scores of the respondents in Part B of the questionnaire were transformed into rankings which were then compared with the rankings of the MAF and a hierarchical value congruence score was computed using a method loosely adapted from Meir, Hadas and Noyfeld (1997) (i.e. a study that obtained personality congruence scores by comparing the personality of each soldier with that of his team in the Israeli tank units). The step-by-step description of the procedure, is as follows: for each respondent, the value with the highest score was given the number one ranking, the value with the second highest score was given the number two ranking and so on until the seventh ranked value was identified. The value ranking or hierarchies of the respondents were then compared with the MAF value ranking. So, if the number one value of the respondent is belief in God (which is the same as the MAF value ranking) then, a score of 1 was given to a new variable which was formed and called "value congruence 1". If "belief in God" was the respondent's number 2 value, then a score of 2 was given to the said variable. If belief in God is the respondent's number 3 value, then the score of 3 was given to the said variable, and so on.

Next the second military value of "discipline" was examined. So, if the respondent's 2nd value was also discipline, then a score of 1 was given to a new variable formed called "value congruence 2". If the respondent's value of discipline was ranked 1st or 3rd, then a score of 2 was awarded to the said variable. If the respondents value of discipline was ranked 4th, then a score of 3 was awarded and so on.

The third, fourth, fifth, sixth and seventh military values were also examined in a similar way and new variables were formed called "value congruence 3", "value congruence 4", "value congruence 5", "value congruence 6" and "value congruence 7" respectively. The scores from "value congruence 1" to "value congruence 7" were summed up to obtain a new variable called "total value congruence scores."

### 10.3 Spearman correlations of hierarchical value congruence scores with JDI scores

According to Zikmund (2003, p. 506), "ordinal scales typically use nonparametric statistical tests." Thus, tests of spearman correlation were conducted between "total value congruence scores" which were ordinal, and total JDI scores (i.e. total job satisfaction scores). However, contrary to expectation, the correlations were not significant at the 0.05 level. One interpretation could be that not all the 7 ranked values were important. In fact, James and Woodsmall (1988) argued that the congruence between the individuals' and the organization's values are more important for the higher ranked values than for the lower ranked ones. Thus, further analyses were done as follows: total value congruence scores were obtained in relation to only the top 6 military values and whether they are congruent with the respondents' top 6 values – a new variable called "total value congruence top 6" was formed. Again, correlations were not significant. Finally, total value congruence scores were obtained in relation to only the top 5 military values and whether they are congruent with the respondents' top 5 values – a new variable called "total value congruence top 5" was formed. This time, there was a significant correlation between this variable and job satisfaction scores (.122,  $p < .05$ ). Thus, although the correlation was somewhat weak, hypothesis **H1** was supported. This also supports James and Woodsmall's (1988) proposition that congruence of the higher ranked values are more relevant and important to the person than congruence of the lower ranked values. Details of the correlation coefficients and their significance level are stated in Table 2.

Insert Table 2

## 11. Conclusion

This study further developed the value congruence theory of P-O fit by examining not only the values congruence but the congruence in the ranking or hierarchy of values between the soldiers and the military organization. The MAF presented us with a unique opportunity to do this because most organizations do not rank their values but merely state them. This study lends support for the argument put forward by James and Woodsmall (1988) that it is important to align the hierarchy of values of the employees with those of the organization. Thus, the MAF is justified in taking the time and effort to this end.

This study also lends support for James and Woodsmall's (1988) argument that the top five values are more important than the lower ranked values – when the top 7 and top 6 values were taken into account, the correlations were not significant. However, when only the top 5 values were used to compute value congruence, the correlations with soldiers' job satisfaction were significant. Thus, MAF should focus on building only the top 5 military values as these are significantly related to job satisfaction.

## 12. Limitations

As with all studies, this one is also not without limitations. Limited sample size and cross sectional data are obvious limitations. Perhaps the most important limitation in this study was that the soldiers were not allowed to write down

their own sets of values but were asked to rate the importance to them of each of the listed military values. So, perhaps if the respondents were allowed to list their own hierarchy of values, it is possible that they have their own unique sets of values, none of which contain any of the military values. It is possible that this could be the cause of the low correlations. The reason why this method was not used was because a pilot test was conducted during the early stages of questionnaire development, and of the ten people tested most of them did not include all the military values – some even had none. This would make computation of value congruence, even more complicated, and this approach was therefore not adopted. Despite this limitation, one could still advocate that the MAF should not only ensure that the soldiers have the same values as that of the military, but also in the same hierarchy, as results suggest that this would lead to greater satisfaction.

## References

- Blood, M. R. (1969). Work value and job satisfaction. *Journal of Applied Psychology, 53*(6), 456-459.
- Bowers, K. (1973). Situationism in psychology: an analysis and critique. *Psychological Review, 80*, 307-36.
- British Army. (2008, November 16). *Values and Standards of the British Army*. [Online] Available: [http://www.army.mod.uk/documents/general/v\\_s\\_of\\_the\\_british\\_army.pdf](http://www.army.mod.uk/documents/general/v_s_of_the_british_army.pdf)+Values+and+Standards+of+the+British+Ar my&cd=1&hl=en&ct=clnk&gl=my
- Buboltz, W. C., Eberwein, C., Watkins, C. E., & Savickas, M. L. (1995). A comparison of the content, authors and institutions represented in the Career Development Quarterly and the Journal of Vocational Behavior. *Journal of Vocational Behavior, 46*, 216-226.
- Chatman, J. A. (1989). Improving international organizational research: a model of person-organization fit. *Academy of Management Review, 14*, 333-348.
- De Meuse, K. P. (1986). A compendium of frequently used measures in industrial/organizational psychology. *The Industrial-Organizational Psychologist, 23*(2), 53-59.
- Edwards, J. R. (1996). An examination of competing versions of the person–environment fit approach to stress. *Academy of Management Journal, 39*(2), 292-339.
- Endler, N. S., & Edwards, J. (1978). Person by treatment interactions in personality research. In Pervin L. A. & Lewis, M. (Eds.), *Perspectives in Interactional Psychology*. New York: Plenum.
- Fleishmen, B. A., & Bass, A. R. (1984). *Studies in Personnel and Industrial Psychology*. Illinois: Dorsey Press.
- Goh, C. T., Koh, H. C., & Low, C. K. (1991). Gender effects on the job-satisfaction of accountants in Singapore. *Work and Stress, 5*(4), 341-348.
- Hanisch, K. A. (1992). The Job Descriptive Index revisited: questions about the question mark. *Journal of Applied Psychology, 77*(3), 377-382.
- Hulin, C. L., Drasgow, F., & Komocar, J. (1982). Applications of item response theory to analysis of attitude scale translations. *Journal of Applied Psychology, 67*(6), 818-825.
- Ironson, G. H., Brannick, M. T., Smith, P.C., Gibson, W. M., & Paul, K. B. (1989). Construction of a job in general scale: comparison of global, composite and specific measures. *Journal of Applied Psychology, 74*(2), 193-200.
- Jacob, P. E., Flink, J. J., & Schuchman, H. L. (1962). Value and their function in Decision. *American Behavior Scientist, 6*-38.
- James, T., & Woodsmall, W. (1988). *Time Line Therapy and the Basis of Personality*. CA: Meta Publications.
- Jamieson, D., & O'Mara, J. (1991). *Managing Workforce 200*. San Francisco: Jossey-Bass.
- Jung, K. G., Dalessio, A., & Johnson, S. M. (1986). Stability of the factor structure of the Job Descriptive Index. *Academy of Management Journal, 29*(3), 609-616.
- Krishnan, V. R. (1996). *Value Systems of Transformational Leaders and the Relationship between Transformational Leadership and Value System Congruence of Subordinates*. Unpublished Dissertation, Temple University, Philadelphia.
- Kristof, A. (1996). Person-organisation fit: an integrative review of it's conceptualisations, measurement, and implications. *Personnel Psychology, 49*, 1-49.
- Kristof, A., Zimmerman, R. D., & Johnson, E. C. (2005). Consequences of individuals' fit at work: a meta-analysis of person-job, person-organization, person-group and person-supervisor fit. *Personnel Psychology, 58*, 281-342.
- Lam, S. K. (1995). *International Journal of Management, 12*(1), 96-101.
- Lewin, K. (1951). *Field Theory in Social Science*. New York: Harper.

- Locke, E. A. (1976). The nature and causes of job satisfaction. In Dunnette, M. D. (Ed.), *Handbook of Industrial and Organizational Psychology* (pp.1297-1349). Skokie, IL: Rand McNally.
- Maghrabi, A. S., & Johnson, D. A. (1995). An Arabic version of the revised Job Descriptive Index. *Current Psychology, 14*(1), 47-53.
- Malaysian Armed Forces. (1994). *The Malaysian Armed Forces Manual*. Kuala Lumpur, Malaysia: Malaysian Armed Forces.
- Meglino, B. M., Ravlin, E. C., & Adkins, C. L. (1989). A work values approach to corporate culture: A test of the value congruence process and its relationship to individual outcomes. *Journal of Applied Psychology, 74*, 424-432.
- Meir, E. I., Hadas, C., & Noyfeld, M. (1997). Person-environment fit in small army units. *Journal of Career Assessment, 5*, 21-29.
- Mischel, W. (1968). *Personality and Assessment*. New York: John Wiley & Sons.
- Murray, H. A. (1938). *Explorations in Personality*. Boston: Houghton Mifflin.
- O'Connor, E. J., Peters, L. H., & Gordon, S. M. (1978). The measurement of job satisfaction: current practices and future considerations. *Journal of Management, 4*, 17-26.
- O'Reilly, C. A., Chatman, J., & Caldwell, D. (1991). People and Organizational Culture: A Q-sort approach to assessing person-organizational fit. *Academy of Management Journal, 34*, 487-516.
- Parsons, F. (1909). *Choosing a Vocation*. Boston, MA: Houghton Mifflin.
- Pervin, L. A. (1989). Persons, situations, interactions: the history and a discussion of theoretical models. *Academy of Management Review, 14*(3), 350-360.
- Piasentin, K. A., & Chapman, D. S. (2006). Subjective person-organisation fit: Bridging the gap between conceptualisation and measurement. *Journal of Vocational Behaviour, 69*, 202-221.
- Pine, G. J., & Innis, G. (1987). Cultural and individual work value. *Career development Quarterly, 35*(2), 279-287.
- Porter, L. W. (1962). Job attitudes in management: perceived deficiencies in need fulfilment as a function of job level. *Journal of Applied Psychology, 46*, 375-384.
- Rokeach, M. R. (1968). *The Nature of Human Value*. New York: The Free Press.
- Schneider, B. (1987). The people make the place. *Personnel Psychology, 40*, 437-454.
- Schneider, B. (2001). Fits about fit. *Applied Psychology: An International Review, 50*, 141-152.
- Scott, W. (1956). *Values and Organization II*. Chicago: Rand McNally.
- Smart, J. C., Elton, C. F., & McLaughlin, G. W. (1986). *Journal of Vocational Behavior, 29*, 216-225.
- Smith, P. C., Kendall L. M., & Hulin, C. L. (1969). *The Measurement of Satisfaction in Work and Retirement: A Strategy for the Study of Attitudes*. Chicago: Rand McNally & Company.
- United States Army. (2008, November 16). *Corps of Discovery. United States Army*. [Online] Available: [http://www.history.army.mil/lc/the%20mission/the\\_seven\\_army\\_values.htm](http://www.history.army.mil/lc/the%20mission/the_seven_army_values.htm)
- Verquer, M. L., Beehr, T. A., & Wagner, S. H. (2003). A meta-analysis of relations between person-organization fit and work attitudes. *Journal of Vocational Behaviour, 63*, 473-489.
- Yeager, S. J. (1981). Dimensionality of the Job Descriptive Index. *Academy of Management Journal, 24*, 205-212.
- Yousef, D. A. (2001). Islamic work ethic - A moderator between organizational commitment and job satisfaction in a cross-cultural context. *Personnel Review, 30*(2), 152-161.
- Zikmund, W. G. (2003). *Business Research Methods*. South-Western: Thomson.

Table 1. Comparison of military values hierarchy between different countries

Ranking	USA	United Kingdom	Malaysia
1	Loyalty	Selfless commitment	Belief in God
2	Duty	Courage	Discipline
3	Respect	Discipline	Loyalty
4	Selfless Service	Integrity	Sacrifice
5	Honor	Loyalty	Esprit de corps
6	Integrity	Respect for others	Integrity
7	Personal Courage	-	Courage

Table 2. Spearman Correlations between value hierarchy congruence scores and job satisfaction

	Spearman correlation with job satisfaction	Sig 2-tailed	Significance
Top 7 values	.072	.148	Not significant
Top 6 values	.048	.243	Not significant
Top 5 values	.122*	.037	Significant

\* = sig at the 0.05 level



## Effects of Motivational Factors on Employees Job Satisfaction a Case Study of University of the Punjab, Pakistan

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### Abstract

Motivational factors play an important role in increasing employee job satisfaction. Satisfied employees in return can help in improving organizational performance. The objective of following research is to analyze the effects of motivational factors on job satisfaction of employees. This is an exploratory study based on primary data. The primary data has been collected from non-academic staff of University of the Punjab, which is one of the biggest universities of Pakistan. The study of Herzberg et al. (1959) has been widely validated and well renowned among research community. This theory tests hygiene and motivator factors and impact of personal and job characteristics on work perceptions and job satisfaction. Structural equation modeling technique has been applied to test hypothesis, SPSS 16.0 has also been adopted for basic analysis purposes. The results are being questionable to verify Herzberg's theory. The study concludes that intrinsic motivational factors are having significant relationship with employee job satisfaction, whereas hygiene

(extrinsic) factors are not having any significant relationship with employee job satisfaction. Moreover, significant difference was observed between gender, qualification, experience, job characteristics and job satisfaction. This study offers useful information as it provides both, the practical implications for professionals working on authoritative posts within Public Sector University set up in Pakistan, and theoretical implications for researchers interested in exploring job satisfaction in a higher education context.

**Keywords:** Motivation, Job performance, Organizational performance, Hygiene factors

## 1. Introduction

Many studies focusing on organizational behavior have given extensive consideration motivation, employee job satisfaction and organizational performance. All these variables are interdependent on each other.

Simply the association between motivation, job satisfaction and organizational performance can be viewed as: Motivation can be elaborated as what individuals strive to achieve better. However, not everyone gets motivated by the identical factors. Someone may get motivated by or satisfied by achieving higher authority and responsibility where some other person merely needs flexibility in work schedule, or someone may be motivated by sense of accomplishment.

When we talk about motivation this only effects people when they are ready for it and when it is applied the best way suitable for them. That is, when it feeds the needs of the person to be motivated. Still the motivation will not have effect on individuals if they are unable to perform a task or if they are not willing for certain tasks. Here comes the role of leadership as leaders have to decide what foundation requirements are there to apply motivation and what sort of motivation is needed. Motivation is going to work if the right person with suitable skills is made responsible for the job or otherwise it will be a wastage of resources and time, and may lead to an opposite side that creates an incapable and non willing job performer.

This paper is aimed to study all those employees who are involved in administrative duties in the public sector university set up. These may include human resource professionals, financial professionals, IT experts and information department. This study is based on three basic questions that are, how job satisfaction is affected by personal characteristics and job characteristics? What are the paramount predictors the job satisfaction? And lastly verification of Herzberg's theory of motivators and hygiene factors. So the current research is not only to test the Herzberg's theory but to know about the quality of work life in university set up; so this research has both theoretical and practical perspectives.

## 2. Conceptual Model and Development of Hypothesis

Knowing job satisfaction requires study of great debates on this topic, one of the major contributories of this topic is Herzberg's theory of motivation. This paper starts with the review of Herzberg's theory of motivation and ends with the findings regarding job satisfaction in Public Sector University set up in Pakistan.

### 2.1 Duality Theory of Job Satisfaction by Herzberg

The debate on job satisfaction started when Herzberg published his book "*THE MOTIVATION TO WORK*" (1959). This book was based on interviews conducted with engineers and accountants. The respondents were asked to narrate a story about the event when they went exceptionally bad or exceptionally good. According to those situations he divided work dimensions in two elements Motivators and Hygiene factors. All those factors those caused exceptionally good feelings were motivators and satisfying factors; achievement, recognition, work itself, responsibility, advancement, and growth.

While recalling about the exceptionally bad events, they responded following points, administration of the company and its policy, supervisory behavior, relationship with superiors, working environment, salary, relationship with coworkers, relationships with subordinates, status, personal life, and safety measures. Herzberg narrated the above as Hygiene factors and related these events with external context of the work, and the motivators are going to deal with internal mind state. He compared his theory with traditional approach in motivation that assumes that salary, supervision or company policy leads employees towards higher job satisfaction. According to Herzberg job satisfaction is not through improving these 10 hygiene factors but by escalating the six motivators.

Moreover, an absence of the motivator factors will not cause job satisfaction e.g. when employees were not offered recognition or achievement or any other motivator for their work this will not cause the dissatisfaction of job yet they are not going to be motivated. The concept parallel to job satisfaction is not job dissatisfaction but no job satisfaction, and similarly opposite of job dissatisfaction is not job satisfaction but no job dissatisfaction.

Herzberg's theory was severely criticized and pointed out by various researchers, as Vroom (1964) this theory was making people uncovering themselves and making them good by attributing positive events to internal factors and negative events to external events. Even (1964) also criticized his work as he said that this theory was based on a limited job range and examined only one aspect of the job attitude, but if critical incident method of interviewing is followed and used findings support the duality (Herzberg's) theory of job satisfaction.

## 2.2 Job Satisfaction

The concept and assessment of job satisfaction began in 1911 with the research of Taylor. Taylor (1911) stated that rewards like the earnings of the job, incentive payments, promotion, appreciation, and opportunities for progress could lead to increased job satisfaction (as cited by Aslan, 2001). Various researchers have defined the term job satisfaction. Wiener (1982) states that, job satisfaction is an attitude towards work-related conditions, facets, or aspects of the job. Feinstein (2000) was of the view that Job satisfaction is more of a response to a specific job or various aspects of the job.

Job satisfaction is an important element from organizational perspective, as it leads to higher organizational commitment of employees and high commitment leads to overall organizational success and development (Feinstein, 2000) additionally growth, effectiveness and efficiency of the organization and low employees' intentions to leave the organization (Mosadeghard 2000). Obstinate, dissatisfied individuals leave the organization and deflate the motivation of those staying there (Feinstein, 2000) and as a result workers loose performance and efficiency and might sabotage the work and leave the job (Sonmezer and Eryaman 2008).

Various researchers have contributed their research findings from organizational set ups, in order to increase employee job satisfaction and have given various suggestions to boost up the satisfaction. Feinstein (2000) says in order to increase individual's satisfaction level employees should be given advancement opportunities. Similarly changes in organizational variables, such as pay scales, employee input in policy development, and work environment could then be made in an effort to increase organizational commitment and overall outcome. Elton Mayo found that interaction within the group is the biggest satisfier. Safety, relation to work and success are followed by intergroup relations (Bektas, 2003). Mosadeghard (2000) gave Job satisfaction dimensions like nature of the job, management and supervision, task requirement, co-workers, job security, and recognition and promotion had more effect on employees' organizational commitment in organizational set up. Pensions and profit-sharing plans are positively associated with job satisfaction (Bender and Heywood, 2006). According to Stephen (2005), one would be wrong to consider one single measure of job satisfaction and there may be number of reasons that need to be considered (Stephen 2005). He further found that actual work was the biggest satisfier and working conditions were the least satisfier; job security was also big determinant of job satisfaction. Penn et al. (1988) found that opportunity for professional development is the biggest determinant to differentiate satisfied and non-satisfied employees. An employee will be satisfied if he has reached the ideals in his profession; he will develop positive feelings towards his profession (Sirin 2009).

Absence of work life balance, lack advancement opportunities, work environment, lack of encouragement, lack of recognition may lead to stress, which ultimately causes dissatisfaction, burnout and finally increased turnover rate within organization (Ahmadi and Alireza, 2007). Job satisfaction is inversely related to burnout, intentions to leave the organization (Penn et al. 1988). Job satisfaction is increased when income is greater than predicted income in education sector (Bender and Heywood, 2006).

## 2.3 Job Satisfaction in University

Hagedorn (1994) tested a causal model among faculty at different stages of career development and found that satisfaction with salary, total work hours, and co-workers support affected the level of stress and ultimately satisfaction. Increased freedom and flexibility of academicians would have resulted in significantly greater job satisfaction (Bender and Heywood, 2006). According to Sonmezer and Eryaman (2008) Salary, social status, advancement, ability utilization, administrative-employee relationship, creativity, security are the main factors that determine job satisfaction amongst education sector employees.

### INSERT FIGURE I HERE

The job satisfaction research among administrative staff generally found satisfaction is best predicted by work stress caused by interpersonal relationships and the teamwork perceptions (Volkwein *et al.*, 1998). They found that teamwork has a positive association with satisfaction and work stress caused by interpersonal relationships is negatively associated with satisfaction. Same results were witnessed by Volkwein & Parmley (2000) when they studies administrative satisfaction and made a comparison between public sector and private sector universities. Element of teamwork, that are same as Herzberg's relationship with co-workers, is found to be positively associated with satisfaction confirming the theory of Herzberg's. Johnsrud & Rosser (1999) conducted research on middle level managers and witnessed that perception of recognition, mobility, discrimination, and external relations, were the best explanatory variables of job satisfaction. Volkwein and Zhou (2003) found that organizational, environmental, and personal characteristics proved to be less influential than features such as teamwork, job security, and interpersonal relationship. They concluded that "overall satisfaction is the product of a complex balance of many ingredients".

In sum, none of the studies confirm or disconfirm Herzberg's duality theory. Almost all of the studies have concluded affects of either motivators or hygiene factors on job satisfaction. Smerek and Peterson (2006) used all elements of duality theory to testify the impact of all these factors over the satisfaction of administrative employees; and concluded

that the work itself was the biggest predictor of job satisfaction amongst university administrative employees. This study is conducted to verify the findings of Smerek and Peterson's work in an underdeveloped countries set up with lack of resources and poor infrastructure.

The conceptual model was adopted from the research of Smerek and Peterson (2006) research work. This model contains personal characteristics, job characteristics, perceived work environment (intrinsic and extrinsic) and job satisfaction as major constructs of study (see Fig. I). Overall, the conceptual model frames the three research questions driving the study: How influential are personal characteristics and job characteristics on job satisfaction? What are the greatest predictors of job satisfaction? And is Herzberg's duality theory of motivators and hygiene factors verified in this higher education context? The following hypothesis can be developed based on previous discussions.

### **3. Research Methodology**

#### *3.1 Instrument and Measurement*

This is an exploratory study based on primary data; the data has been collected through survey. The survey instrument was devised to assess all motivators and hygiene factors of Herzberg's theory. This questionnaire was based on all the elements of motivators and hygiene factors proposed by Herzberg et al (1959). Five point Likert scale was used ranging from 1 Strongly Disagree to 5 Strongly Agree. Personal demographic information was also collected in this survey and items were included in the survey, relevant items were also included to gather all necessary information.

#### *3.2 Population and Sampling*

This questionnaire was distributed amongst the administrative staff of university. The population of the study was 6,000 administrative staff member working in four campuses. Each campus has various institutes, schools, constituent colleges, departments and main administration department. This University offers bachelors and masters degrees in 16 disciplines; these are divided in 8 faculties. To limitize the scope of the study only one campus named as Quaid-e-Azam Campus was selected for study, as it is the main campus of the University. Out of this campus administrative staff of the 5 academic blocks; Hailey College of Commerce, Hailey College of Banking and Finance, Institute of Business Administration, Institute of Chemistry, Institute of Physics, and Center for High Energy Physics, were selected. These departments were selected because of their maximum number of students studying there and requirement of great number of administrative staff. There were five sections working in administration of these institutes i.e. Engineering, Examination, Medical, Registration and Treasury section. Out of these sections examination, Registration and Treasury sections were selected because of their scope of operation and greater number of employees working in these sections. The total strength of administrative staff working in these academic wings was 900. Out of those total members 400 were selected for study using stratified random sampling technique. Out of those 312 responded back forming 78% (n=400) response rate.

#### *3.3 Data Analysis*

The main point in using SEM is to find the extent to which the model is 'fit' or effectively represents the sample data (Byrne, 2001). SEM is a statistical technique for testing and estimating causal relationships using a combination of statistical data and qualitative causal assumptions. This view of SEM was articulated by the geneticist Sewall Wright (1921), the economists Trygve (1943) and Herbert (1953), and formally defined by Judea (2000) using a calculus of counterfactuals. SEM normally starts with a hypothesis, develops it as a model, operationalises the constructs of interest with a measurement instrument, and tests the fit of the model to the obtained measurement data. Among the strengths of SEM is the ability to construct latent variables: variables which are not measured directly, but are estimated in the model from several measured variables each of which is predicted to 'tap into' the latent variables. This allows the modeler to explicitly capture the unreliability of measurement in the model, which in theory allows the structural relations between latent variables to be accurately estimated. Factor analysis, path analysis and regression all represent special cases of SEM.

### **4. Results and Discussions**

The index fit of the model is shown in the table II. With (41.150) degree of freedom into consideration, most index values satisfy the general standard values for index fit. The general accepted standards for model fit are; Chi-square value (significant level > 0.05), goodness of fit index (GFI > 0.80), adjusted GFI (AGFI > 0.80), normed fit index (NFI > 0.90), comparative fit index (CFI > 0.90), and root means square residual (RMR < 0.05). Although this model fit does not meet all standards, it may be overall an accepted model.

INSERT TABLE II HERE

Table III shows significant relationship between intrinsic motivational factors and employee job satisfaction. This is quite logical finding, it depicts that university administrative staff get motivated and higher job satisfaction by the recognition, work itself, opportunity for advancement, professional growth, responsibility, and good feelings about organization, therefore we accept our H1 hypothesis. We accept any hypothesis if the value of p is less than 0.05. On the

contrary, no significant relationship has been observed between hygiene (extrinsic) factors and employee job satisfaction. These factors includes effective senior management, effective supervisor, good relation with co-workers, satisfaction with salary, satisfaction with benefits, presence of core values, job security. These are interesting findings because employees do feel motivated by these factors and are not satisfied by these factors. These findings are having implication for the management of the university.

INSERT TABLE III HERE

Figure II depicts the results of SEM and also the nature of relationships between various variables. Positive relationship can be seen between intrinsic factors, hygiene (extrinsic) factors and employee job satisfaction.

INSERT FIGURE II HERE

Table IV explains the descriptive statistics of gender i.e. male and female. Table V shows the effects of gender on employee job satisfaction. T test has been applied to measure this association; Table V shows significant difference of gender on employee job satisfaction. Job satisfaction was significantly high in female employees than male employees.

INSERT TABLE IV-VII HERE

Kruskal-Wallis test has been applied to measure the effects of employee academic qualifications on job satisfaction. Table VI contains the results of Kruskal-Wallis Test. Table VII has applied Post Hoc Dunnett T3 test and shows significant relationship of academic qualification on employee job satisfaction. It was noted that job satisfaction was higher in employees with higher academic background i.e. master and above. The remaining categories of academic qualifications are having low effects on employee job satisfaction.

INSERT TABLE VIII HERE

Kruskal-Wallis test has been applied to measure the effects of employee work experience on job satisfaction. Table VIII contains the results of Kruskal-Wallis Test. Table IX has applied Post Hoc Dunnett T3 test and shows significant relationship of job experience on employee job satisfaction. It was noted that job satisfaction was higher in employees with work experience ranging from 5-10 years. The remaining categories of work experience are having low effects on employee job satisfaction.

Table X depicts that Kruskal-Wallis test has been applied to measure the effects of job characteristics (department) on job satisfaction. Table VIII contains the results of Kruskal-Wallis Test. Table XI has applied Post Hoc Dunnett T3 test and shows significant relationship of job characteristics on employee job satisfaction. It was noted that job satisfaction was higher in employees working in treasury department. Whereas the employees working in examination and registration departments are having low job satisfaction.

INSERT TABLE VIII-XI HERE

## 5. Conclusion

This study was conducted to test the Herzberg's motivation and hygiene theory in the context of non-academic staff of the University of the Punjab. In this regard it is an important study in the higher education set-up of Pakistan. The study concludes that significant relationship exists between intrinsic motivational factors including recognition; work itself, opportunity for advancement, professional growth, responsibility, good feeling about organization and employee job satisfaction. Whereas no significant relationship was found between hygiene (extrinsic) factors and employee job satisfaction. Moreover, higher job satisfaction was observed in employees of treasury department then employees of examination and student registration departments. Significant difference was noted regarding job satisfaction between male and female employees with female employees having more job satisfaction than male employees. There was no significant different of job satisfaction between permanent and temporary employees. Significant difference was found regarding employee academic qualification and job satisfaction, higher job satisfaction was noted in employees having higher education of master and above. Finally, significant difference was recorded regarding job experience ranging from 5-10 years; remaining categories of experience were having low job satisfaction.

This is an important study on motivation and job satisfaction in the context of higher education in Pakistan and it has implications for the management of higher education institutes and policy makers in higher education. This study also provided literature for future researchers on this topic.

## References

- Ahmadi K., and Alireza K. (2007). Stress and Job Satisfaction among Air Force Military Pilots. *Journal of Social Sciences*, 3(3), 159-163
- Aslan, A.K. (2001). İköretim I. kademe ööretmenlerinin yaşam kalitesi ve mesleki doyumları. *Ege Eöitim Dergisi*. 1(1):63-82
- Bektas, H. (2003). Cs Doyum Düzeyi Farklı Olan Ööretmenlerin Psikolojik Belirtilerinin Karsılaştırılması.

- Yayınlanmamış yüksek lisans tezi, *Atatürk Üniversitesi Sosyal Bilimler Enstitüsü, Erzurum: Türkiye*
- Bender, K. A., & Heywood, J. S. (2006). Job satisfaction of highly educated. *Scottish Journal of Political Economy*, 53(2), 253-279.
- Feinstein, A. H. (2000). A study of relationships between job satisfaction and organizational commitment among restaurant employees.
- Hagedorn, L. S. (1994). Retirement proximity's role in the prediction of satisfaction in academe. *Research in Higher Education*, 35(6): 711–728.
- Herbert, S. (1953). Causal ordering and identifiability, In: Hood, W.C. & Koopmans, T. C., *Studies in Econometric Method*, Wiley, New York, pp. 49–74
- Herzberg, F., Mausner, B., & Snyderman, B. B. (1959). *The Motivation to Work (2nd edition)*, John Wiley & Sons, New York.
- Johnsrud, L. K., & Rosser, V. J. (1999). College and university mid-level administrators: Explaining and improving their morale. *Review of Higher Education*, 22(2), 121–141.
- Judea, D. (2000). *Causality: Models, Reasoning, and Inference*. Cambridge University Press. England
- Mosadeghard. (2008). A study of the relationship between job satisfaction, organizational commitment and turnover intention among hospital employees. *Health Services Management Research*, 21, 211-217.
- Penn M., Romano J. L., and Foat D. (1988). The relationship between job satisfaction and burnout: a study of human service professionals. *Administration in Mental Health*, 15(3), 157-163.
- Smerek, R. E., & Peterson, M. (2006). Examining Herzberg's Theory: improving job satisfaction among non-academic staff at a university. *Research in Higher Education*, 48(2), 229-250.
- Stephen P. A. (2005). The job satisfaction of English academics and their intentions to quit academe. (viewed at <http://129.3.20.41/eps/lab/papers/0512/0512005.pdf>)
- Sirin, A. F. (2009). Analysis of relationship between job satisfaction and attitude. *Journal of Theory and Practice in Education*, 5(1), 85-104
- Sonmezer, M. G., & Eryaman, M. Y. (2008). A comparative analysis of job satisfaction level of public and private school. *Journal of Theory and Practice in Education*, 4(2), 189-212
- Vroom V. H. (1964). *Work and motivation*, Wiley Inc, New York
- Volkwein, J. F., Malik, S. M., & Napierski-Pranel, M. (1998). Administrative satisfaction and the regulatory climate at public universities. *Research in Higher Education*, 39(1), 43–63
- Volkwein, J. F., & Parmley, K. (2000). Comparing administrative satisfaction in public and private universities. *Research in Higher Education*, 41(1), 95–116
- Volkwein, J. F., and Zhou, Y. (2003). Testing a model of administrative job satisfaction. *Research in Higher Education*, 44(2), 149–171
- Wiener, Y. (1982). Commitment in organizations: A normative view. *Academy of Management Review*, 7(3):418-428.
- Wright, S. S. (1921). Correlation of causation. *Journal of Agricultural Research*, 20: 557–85.

Table I. Development of Hypotheses

<i>Hypotheses statements</i>	
<i>H1</i>	Intrinsic motivation factors have positive influence on employee job satisfaction.
<i>H2</i>	Extrinsic motivation factors have positive influence on employee job satisfaction.

Table II. Index of the fit of the Model

Index of fit	Chi-Square (df)	P	GFI	AGFI	NFI	CFI	RMR
Value	33.426	.000	.891	.346	.396	.380	.052

Table III. Regression Weights (results of hypotheses tests)

Path	Estimates	S.E.	C.R.	P	Hypotheses	Results
Intrinsic factors – Job Satisfaction	.207	.039	5.297	.000	H 1	Accept
Extrinsic factors – Job Satisfaction	.060	.038	1.564	.118	H 2	Reject

Table IV. Gender and Job Satisfaction

Group Statistics					
	Gender	N	Mean	Std. Deviation	Std. Error Mean
Job Satisfaction	Male	377	1.1014	.30282	.02489
	female	23	1.0000	.00000	.00000

Table V. Results of t-test

		Levene's Test for Equality of Variances		t-test for Equality of Means			
Job Satisfaction		F	Sig.	t	df	Sig. (2-tailed)	
	Equal variances assumed		10.192	.002	1.416	164	.159
	Equal variances not assumed				4.072	147.00	.000

Table VI. Results of Kruskal-Wallis Test

Ranks			
	Qualification	N	Mean Rank
Job Satisfaction	Masters and above	158	94.86
	Bachelors	192	76.00
	Intermediate	36	76.00
	Matric and below	14	76.00
	Total	400	

Table VII. Results of Post Hoc Tests

Job Satisfaction Dunnett T3				
(I) Qualification	(J) Qualification	Mean Difference (I-J)	Std. Error	Sig.
Masters and above	Bachelors	.22727*	.05198	.000
	Intermediate	.22727*	.05198	.000
	Matric and below	.22727*	.05198	.000
Bachelors	Masters and above	-.22727*	.05198	.000
	Intermediate	.00000	.00000	.
	Matric and below	.00000	.00000	.
Intermediate	Masters and above	-.22727*	.05198	.000
	Bachelors	.00000	.00000	.
	Matric and below	.00000	.00000	.
Matric and below	Masters and above	-.22727*	.05198	.000
	Bachelors	.00000	.00000	.
	Intermediate	.00000	.00000	.

\*. The mean difference is significant at the 0.05 level.

Table VIII. Results of Kruskal-Wallis Test

Ranks			
	Work Experience	N	Mean Rank
Job Satisfaction	less then 5 years	101	76.00
	5-10 years	87	99.06
	10-15 years	29	76.00
	15-20 years	12	76.00
	more then 20 years	171	81.85
	Total	400	

Table IX. Results of Post Hoc Tests

Job Satisfaction Dunnett T3				
(I) Work Experience	(J) Work Experience	Mean Difference (I-J)	Std. Error	Sig.
less than 5 years	5-10 years	-.27778*	.07571	.008
	10-15 years	.00000	.00000	.
	15-20 years	.00000	.00000	.
	more than 20 years	-.07042	.03058	.212
5-10 years	less than 5 years	.27778*	.07571	.008
	10-15 years	.27778*	.07571	.008
	15-20 years	.27778*	.07571	.008
	more than 20 years	.20736	.08165	.131
10-15 years	less than 5 years	.00000	.00000	.
	5-10 years	-.27778*	.07571	.008
	15-20 years	.00000	.00000	.
	more than 20 years	-.07042	.03058	.212
15-20 years	less than 5 years	.00000	.00000	.
	5-10 years	-.27778*	.07571	.008
	10-15 years	.00000	.00000	.
	more than 20 years	-.07042	.03058	.212
more than 20 years	less than 5 years	.07042	.03058	.212
	5-10 years	-.20736	.08165	.131
	10-15 years	.07042	.03058	.212
	15-20 years	.07042	.03058	.212
*. The mean difference is significant at the 0.05 level.				

Table X. Results of Kruskal-Wallis Test

Ranks			
	Departments	N	Mean Rank
Job Satisfaction	examination	189	81.32
	Registration	112	93.66
	Treasury	99	76.00
	Total	400	

Table XI. Results of Post Hoc Tests

Job Satisfaction Dunnnett T3				
(I) Departments	(J) Departments	Mean Difference (I-J)	Std. Error	Sig.
examination	Registration	-.14866	.06649	.083
	Treasury	.06410	.02791	.071
Registration	examination	.14866	.06649	.083
	Treasury	.21277*	.06034	.003
Treasury	examination	-.06410	.02791	.071
	Registration	-.21277*	.06034	.003

\*. The mean difference is significant at the 0.05 level.

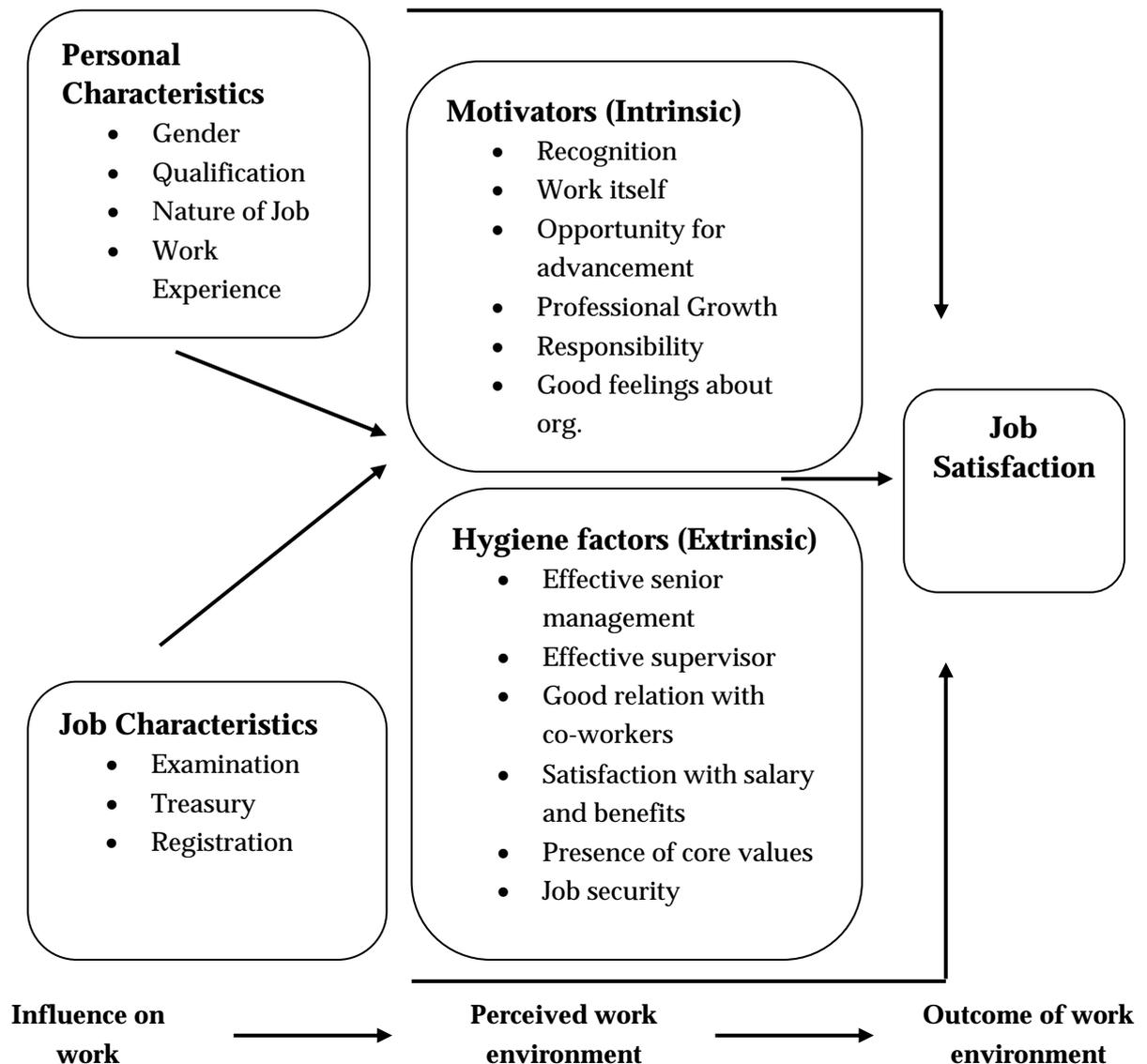


Figure I. Model for Assessing Job Satisfaction adopted from Semerek and Peterson (2008)

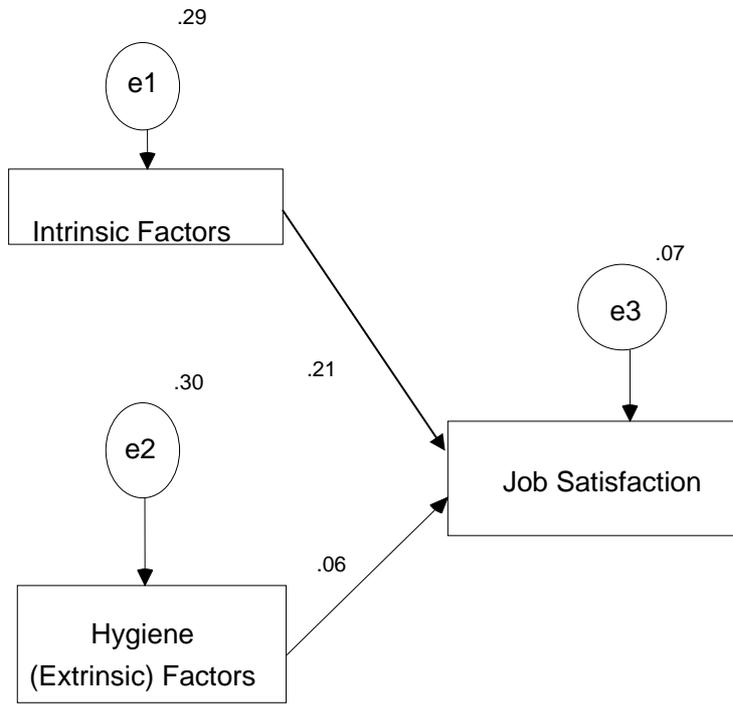


Figure II. AMOS Model



## A Preliminary Study of Green Micro-entrepreneurs in Kelantan, Malaysia

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### Abstract

A recycling business or a green business which involves micro entrepreneurs is nothing new in Malaysia. Upon the country independence in 1957, green entrepreneurs used to go from house to house with their bicycles or trishaws to buy used bottles as well as cooking utensils (made from copper, aluminium or irons) and old batteries to resell to bigger used items collectors for profits. But in those days, such an entrepreneurship was the last thing thought by ones who wanted to be entrepreneurs because it was considered as a low status business and least profit as well. However, at present this kind of business is steadily growing and profitable enough. As far the environmental management is concerned this kind of entrepreneurship contributes significantly to sustainability as it reduces usage of raw materials as used materials are recycled to produce new products. Notwithstanding with the contribution of this kind of business, there is a dearth of literature of green business in Malaysia as researchers of small and medium enterprises (SMEs) in the country have concentrated their studies in the areas of finance, micro credit, human resource management, strategic management, marketing as well as leadership. Against this background, a study of green entrepreneurship is paramount. In general, amongst important questions sought in this research were: what push and/or pull factors to be green entrepreneurs? what strategies adopted?, what business routines of green entrepreneurs?, what challenges faced by the entrepreneurs?, and what the prospects of green business? This research capitalized a qualitative study where interviews were conducted with two green micro-entrepreneurs in Kota Bharu, Kelantan. The interviews were conducted at the entrepreneurs' premises at their conveniences and were audio-recorded. The findings from the interviews provided answers to the above-mentioned research questions and to a little extent filled a void in the field of business and natural environment in the country in particular and in developing country in general.

**Keywords:** Green entrepreneurs, Environmentally friendly product, Recyclable items

### 1. Introduction

According to Paul Hawkin (1993 p.12) in his influential book entitled *The ecology of Commerce: a declaration of sustainability*, each and every business has three questions pertaining to the natural environment. First, in order to produce a product, business sources raw material excessively. Second, product's production uses excessive energy, and lastly, methods of producing it is not environmentally efficient - produces excessive wastes by which harmful to current and future generations. Because business's activities partly responsible for environmental problems, entrepreneurs who run the business should be responsible and should play proactive roles to address the problem.

Although, the exact time when businesses first concern about the environment is debatable, it is believe, businesses first took environmental issues seriously as a result of the Earth Summit, in Rio de Janeiro, Brazil in 1992. During the summit, leaders especially from big organizations across the globe agreed to work towards sustainable development through the Agenda 21. However, it must be borne in mind that sustainable development can only be achieved if other parties (government, the public, ENGOs, academicians, to name but a few) work hand in hand with business organization. It requires holistic approach that warrants cooperation from all parties. Furthermore, one should also realize big organizations are not alone in business, small and medium sized enterprises (SMEs) should work hand in hand with their big businesses counterparts for the cause of the environment.

Amongst businesses, a green business or recycling business is one of the many environmentally friendly activities, a business can contribute to address environmental issues. This is because this type of business affords to lengthen any life cycle of products. Apart from that, such an activity affords to reduce problems related with waste materials of which commonly perceived as externality – something is not included in business activities. For example, roles of enterprises

come to an end, when buyers buy their products - packages and wastes as a result of usage of products by customers are not considered as responsibility of the enterprises to look upon.

However, recycling business in which generates sustainable income to entrepreneurs promises a bright future for sustainable development. In developing countries, such a kind of business is not only paramount important from the environment perspective *per se* but as a means of job opportunities as well as alleviation of poverty. Hence, this preliminary study aims to explore micro-green entrepreneurship. This research focuses on two entrepreneurs in Kota Bharu, the capital state of Kelantan, Malaysia. It is worthwhile to inform here that this enterprise is getting popularity amongst Kelantanese who traditionally involved in business activities related with agriculture and cottage industry such as textile (*batik, songket*) and silvercraft.

## 2. The State of Kelantan

Kelantan (Map 1) has an area of 14,920 sq.km, situated at the northeast of Peninsular Malaysia. It borders Thailand in the northeast, Perak in the west, Terengganu in the east and Pahang in the south. Kota Bharu is the capital of Kelantan. The state of Kelantan is oft-quoted as a cradle of Malay culture. About 95 per cent of its 1.8 million populations are ethnic Malays, the rest are Thai, Chinese, Indians and aborigines. Politically, Kelantan has been ruled by the opposition Islamic Party of Malaysia (PAS) since it took over the state from the National Front in 1990.

As far as her economy is concerned, Kelantan has a chiefly agrarian economy dominated by rice, rubber, tobacco as well as oil palm. Fishing and livestock are also important economic activities. Another important economic activity is related to cottage industry – employing traditional skills in handicraft production such as *batik*, woodcarving and *songket* weaving. Logging activities are active, given remaining area of forest available in the hinterland and tourism has increased in important over the last four decades.

Kelantan has a GDP per capita RM 10,000 (US\$2632) (<http://en.wikipedia.org/wiki/kelantan>, accessed on 3/5/2007), which is considered as the second poorest state in Malaysia after Sabah. Arguably, it is well known fact that many Kelantanese are actively involved in small and medium enterprises and enjoy good income. However, this is not reflected in the GDP calculation since in most cases the income is not reported or under-reported. In Malaysia, Kelantanese people are well-known because of their entrepreneurship capabilities and admired by many Malays counterparts throughout the country.

## 3. Entrepreneurship, SMEs and a Recycling Business

It cannot be denied that entrepreneurship especially amongst SMEs has contributed significantly to Malaysia economy. According to the latest census of enterprise in 2005 (<http://www.bnm.gov.my/index.php?ch=1048pg> accessed on 12/11/2007) 99.2 percent or 518,996 enterprises were SMEs, of which 411,849 (79 per cent) were in the micro sector. The report also showed the number of labourers in SMEs across the country more than 3 million or 30 per cent of total workforce, and this sector generated added-value RM 154 (US\$40.5) billion in 2003.

Realising this sector is crucial to the country; the government as well as academicians pay particular attention to it as it is considered as the engine of the country social-economic growth. Over the last four decades, many researchers have studied SMEs in Malaysia in different fields of interest. For example entrepreneurship (MEDEC, 1997), micro credit (Sudin, and Bala, 1994; Moha Asri, 1997, Rosman *et.al.*2004), franchise (Abu Bakar and Rohaizat, 2003), business strategy (Mohd Rafi and Syed Ihsan, 2002), human resources management (Wyer and Mason, 1998; Hooi, 2006), and information technology (Moha Asri, 2002; Foong, 1999). But nevertheless, as far as the researcher is concerned no or little comprehensive academic study capitalizing on a qualitative method involved a recycling or green business, especially in micro sector of SMEs in the country. As a result this research will reduce the information gap pertaining to a recycling business area in the country. In the meantime, this study is timely as this type of enterprise is more and more popular as a result of modernization of life style amongst Malaysians coupled with the availability of the modern recycled technology throughout the region. In addition, limited sanitary landfills, issues of deforestation, as well as depletion of natural resources are amongst the hot topics amongst the public in the country.

Simply speaking recycling can be defined as a business activity by which involves gathering, sorting and selling used materials to premises for further processes to reuse the materials. In other words, used materials will be used again after they are processed. These indeed can extent a life cycle of a product. Paper, boxes, aluminium cans, cooking utensils, bottles, cooper wires, irons, used batteries, as well as electrical components are used materials can be recycled.

This sector of industry is important to Malaysia in both economic and environmental terms. Economically, it provides job opportunities to local people to be entrepreneurs because ample of used and recyclable materials can be sourced locally. Lately, this business has gained attention, more and more people have jumped into the business bandwagon. Some of them were so successful and be millionaires (Berita Minggu, 17 August 2000, Harian Metro, 29 April, 2004, Berita Harian, 3 June 2005). Environmentally, this business can reduce domestic and industrial wastes collected by the local municipal and in turn lengthen the period of sanitary landfills across the country. Furthermore, it can reduce operational costs of the local authority as well as cost to open up new areas for sanitary landfills. Since getting a new

land for the purpose is getting scarce, this business to a small extent addresses the above-mentioned problem. It is worth to mention here the Ministry of Housing and Local Government of Malaysia has implemented recycling campaign throughout the country, however, such a program has not been successful as the public at large has been too slow to respond. Alternatively, green entrepreneurs can contribute in order to address environmental issues especially solid waste in Malaysia. For example, with the existing recycling business, recycling activities will increase as people see financial profits of it. At the same time usage of recycled paper can reduce deforestation to produce paper. Usage of reused iron, aluminium also avoid mining of the earth surface and reduce usage of fuel and electricity. Over time such activity can also nurture and enculture recycling habits amongst the public. Prior to this, all these wastes (except for a few items) were thrown away because they were useless, as no monetary value attached with them. But no more, nowadays they are valuable, and the public keep them and recycle for some money.

Overall, there are three types of recycled business operator:

#### 1. Scavengers

Scavengers are individuals who search recycleable items through rubbish bins or throw away items from business premises. Usually they obtained those items for free. In other words they do not usually use capital to get them. What they usually need is transportation - bicycle, trisaw or motorcycle. Once the quantity of recyclable materials reached certain weights, they will be sent to small collector at the vicinity to earn some money.

#### 2. Small collectors

Small collectors involve individuals who collected recycleable items relatively at the larger quantity compared to scavengers. They usually buy recyclable items from scavengers, business premises, schools, government departments as well as from houses especially from housewives. Usually, they have their own workers, one or two persons and they also have their own transportation –small lorry or van to facilitate transportation of the materials. Once small collectors have enough recyclable items, they will send them to recycling centres. On the other hand, some collectors do not send the items straight away to the centres, whenever possible, they try to separate the items according to their grades because sorted items will be paid more than unsorted items. The amount of capital to start up and run this business quite small (a couple of thousands ringgit).

#### 3. Recycling centres

Establishing a recycling centre needs more capital, it is common for entrepreneurs to spend close to a million ringgit. They use heavy vehicles- magnetic crane, backhoe, etc. to sort-out and place materials onto trailers to transport them to processing plants in west coast states of peninsular Malaysia. This involves individuals or private companies who buy recyclable items from small collectors and/or to the small extent from scavengers. They usually have a bigger compound to keep and sort-out recyclable items in a certain period of time.

#### 4. Definition of SMEs – a Recycling Business (green business)

Thought, there is no universal definition of SMEs in Malaysia, in general the acceptable definitions by academicians, government agencies and related associations pertaining to SMEs based on two criteria: number of workers or annual sales or both. These two criteria are usually used to define SMEs in Malaysia and they are also approved by the National SME Development Council on 9<sup>th</sup>. June 2005 and the Central Bank of Malaysia (Bank Negara Malaysia 2005 p. 2). Since SMEs involve various sectors of economy, the above definition from the council is using for the definition of SMEs for five main sectors: (i) primary agriculture; (ii) manufacturing (including agro-based); (iii) manufacturing related services (MRS); (iv) mining and quarrying and (v) construction. Based on the above classification of economic activities, recycling businesses are classified under the third sector - manufacturing related service. Under this classification there are five types of recycling business: recycling of tin (37101); recycling of other metal waste and scrap (37109); recycling of non-textile fiber (37201); recycling of rubber (37202); and recycling of non-metal waste & scrap (37209) (<http://www.smeinfo.com/my>, accessed on 29 April 2009) Appendix 2, Bank Negara Malaysia, 2005).

According to the National SME Development Council, the definition of SMEs in service sector is: “A small and medium enterprise in manufacturing (including agro-based) and MRS is an enterprise with full-time employees not exceeding 150 or with annual sales turnover not exceeding RM 25 million” (National SME Development Council and Bank Negara, 2005 p.5).

In the meanwhile, any business in the above mentioned sectors is defined as either micro, small and medium if they respectively have full time employees less than 5 and annual sales less than RM250,000, 5-50 employees or RM 250,000 to less RM 10 million (National SME Development Council and Bank Negara, 2005 p. 5-6).

#### 5. Research Aim

The main aim of this preliminary study is to make an early exploration from green micro entrepreneurs activities as well as to answer several research questions pertaining to the industry. In turn, those information will be valuable inputs for the actual research which will be conducted in the very near future.

## 6. Research Questions

Altogether, there are ten research questions of this study. (i) What are recyclable items? (ii) Who are micro-green entrepreneurs? (iii) Why they involved with recycling business? (iv) Why a recycling business is unique? (v) What's business routines and strategies employed by those entrepreneurs to ensure their sustainability? (vi) How a recycling business can contribute to recycling habit amongst the public? (vii) Do entrepreneurs obtain micro credit? (viii) Why entrepreneurs do not establish recycling centres? (ix) What are the challenges of this business to entrepreneurs? and (x) What are the future prospects of this industry?

## 7. Research method

This preliminary study involved the second type of recycling business activity – small collectors. They are entrepreneurs who buy recyclable items from scavengers and/ or buy them from individual suppliers from houses, schools, government agencies and/ or business premises.

This research capitalized a qualitative technique where it involved interpretative and descriptive analysis of words. Instead of number, this technique analyses words from conversation with the respondents. Two green micro entrepreneurs who were known by the researcher voluntarily participated in the study. Even though, this technique can be criticized as bias, it helped in terms of accessibility and cooperation from the entrepreneurs. The fieldworks were conducted in the end of 2007. Apart from accessibility and cooperation, a qualitative technique was chosen because it helped the researcher to probe micro-green entrepreneurs' business activities. In addition it provides valuable information of how and why of the research questions. This research technique seemed more relevant in the context of a recycling business as this type of business is not widely explored by researchers in SMEs in the country. Moreover, no or little study has been conducted so far pertaining to this type of business in Malaysia. In addition, this technique allowed some flexibility – researcher could easily interact with respondents to establish rapport and can reduce barrier or bias between them.

Information were gathered through semi-structure interview of research protocol. Questions pertaining to the study were first drafted. The medium of conversation of the interview was in *Kelantanese* dialect as to ensure accurate and comprehensive information gathered from the respondents. English is not widely spoken in the state after all. The interviews were audio-recorded under the consent of the both entrepreneurs. Overall the interviews took about two hours and conducted at the interviewees premises at their convenience. Once the interviews completed, the data then were transcribed verbatimly. This process took longer time than the interviews. The researcher then read the whole transcripts of the interviews to get an overview of the whole conversation. Then, various codes were given according to the topics of the interview and they were were classified under different themes.

## 8. Findings

In this qualitative study, the researcher gained some insights into various research questions pertaining to SMEs recycling business activities in Kelantan. The following discusses the answers of each research question:

### 8.1 What are recyclable items?

As far as the both entrepreneurs were concerned recyclable items consisted of aluminium cans, used paper including books and newspapers, corrugated containers (cardboard), electrical products, vehicles' batteries, irons, copper wires, corrugated zink as well as plastics and glass bottles. Amongst these items, copper wires were the most expensive, almost RM20 per kilo, followed by aluminium cans – RM3 to RM4 per kilo. Used paper was the most cheapest item, between 15 cents to 20 cents per kilo. Amongst the items, used bottles did not get attractive demand in the business.

### 8.2 Who are green entrepreneurs' and why they involved in the business?

Two participants from Kota Bharu voluntarily involved in the study. In order to ensure anonymity, the researchers named the first entrepreneur as Mrs. W and the second one as Mr. S (not their real names). Both of are Kelantanese Malays who run recycling businesses in Kota Bharu and in the vicinity districts.

Mrs. W, a petite woman, aged 65 years old, mother of 12 and has a score of grandchildren. Two of her children studied at local higher institutions. When the researcher questioned her involvement in the industry, she told that she first involved in the late 1960s, shortly after her marriage. During that period her husband ran the business, where he used his old trisaw across villages at the vicinity of Kota Bharu to buy used bottle as well as cooking utensils made from aluminum, copper and steel. Though she was a housewife, at home her neighbours brought various recyclable items to sell. That, undoubtedly, nurtured her interest to buy recyclable items. Eventhough her husband abandoned the business to concentrate to retail business in the early 1980s and turned to be a taxi driver after the business was not so successful, she continuously bought recyclable items from her neighbours. In the late 1980s she replaced her husband as recycling entrepreneur. At the time of interview she had two assistants, not included her husband who worked as her driver and two of his sons who worked at home, sorting out various recyclable items brought home to ensure they get a higher price for those items. Mrs. W actually could straight away sell the items to a private recycling centre without doing so,

but unsorted and ungraded items would be sold at a cheaper price. Once those items were sorted out, in the morning of following day the items will be sold to the recycling centre.

Aged 53 years old, Mr. S has 2 children, both at a secondary school in his village. He involved in recycling business almost 10 years. Prior to that, he was a driver of a Chinese recycling entrepreneur in Kota Bharu. His interest in recycling budding when he gained business knowledge in the area and saw opportunity from the business. In the late 1990s he resigned as a driver and ran his own business and rented a small lorry to buy recyclable items. Previously, he had a full time employee and concentrated on steel scraps, especially junk cars. He had two business partners. Due to the difficulty to get junk cars as more and more people jump into the business, sometimes he and his partners travelled to the neighboring state, Terengganu to get the items.

### *8.3 Why recycling business is unique ?*

There were a number of uniqueness of a recycling business compared to other businesses as perceived by those entrepreneurs. According to Mr. S recyclable items are non-perishable products. He argued that 'if someone sell fish...if unsold they would be rotten, it is risky'. Moreover, "if there are recyclable materials, they have no problem to sell them as private recycling centres are mushrooming in Kota Bharu" he added. Compared to other businesses, recycling entrepreneurs do not need to promote their products and/or to wait customers to come to them to sell their goods. Another reason why this business interesting according to them, especially to Mr. S because it gave ample opportunities to him to wander around to various villages in Kelantan. He enjoyed the freedom of travelling, rather than being confined in a small premise.

### *8.4 What are the entrepreneurs' routines and what their strategies to ensure sustainability?*

According to both entrepreneurs there were three daily main activities pertaining to the business. First, purchasing, second, sorting out purchased items and lastly selling those items to recycling centres.

They had their own strategies to ensure survival of their businesses. As far as purchasing is concerned, they must ensure that they had enough cash – worker's salary, fuel for their vehicles, food for breakfast and lunch, as well as money to buy recyclable items. Roughly in a day they need between RM 300-RM 500 ringgit. For example, Mrs. W usually spend RM100 for daily use and another RM300 for the purpose of purchasing recyclable items. They bought materials from domestic users, schools, government agencies, business premises, as well as from 'scavengers'. In the meanwhile, another common strategy was to develop a relationship with their customers. According to Mrs. W the majority of their customers preferred to deal with her once they knew her. She related her story that in a number of occasions in her absence, her husband and sons failed to make a good purchasing. Her presence made a difference. Logically, housewives would feel comfortable to make a business deal with Mrs. W because of the same gender, the same is also true for business premises where wives of Chinese entrepreneurs usually responsible to sell recyclable items of their enterprises since their husbands are busy with their businesses. These items are considered as not main business but only provides side-income, after all.

Mr. S reiterated the same line of story. According to him, "if someone don't know their customers, they don't want to sell their items". Customers sometimes made an excuse that other buyers already interested. In order to ensure a good relationship and ease of communication both of the entrepreneurs gave their telephone numbers to their prospective customers.

Another strategy commonly used by the both entrepreneurs was to compete in term of price. They bought recyclable items at slightly higher price from their competitors. This was practised to attract their customers to sell to them as well as to ensure they would be regular customers in the long run. Price factor, more or less important for them to attract their customers. For example, for a kilogram of paper bought at 15 -20 cents, and they sold back at 20-25 cents, at 5 to 10 cents profit per kilogram. In the meanwhile, aluminium can be bought at RM 3-4 and sold back at between RM 4 – 4.50 for a kilogram.

Sorting out and grading recyclable items was a further strategy practised by the both entrepreneurs to gain more profits. This especially for paper and aluminium. Usually papers were not directly sent to a recycling centre, but were brought home and sorted out according to the grades. Book's covers needed to be sorted out from plain papers. For that purpose Mrs. W had two sons to help her at home. As for aluminium cans, the materials needed to be pressed to ensure there are compact enough. Apart from paper and aluminum cans, her sons also salvaged steel and copper wires from used electrical products. On the other hand, Mr. S specialized in buying scrap cars - salvaged valuable components of the cars such as aluminum. This job was usually done by his business partners.

Honesty was another important element came upfront during the interview. According to Mr. S, Chinese customers were particular about that. Sometimes they tested his honesty, where prior to business deal. They weighted their recyclable items prior to the transaction and would ensure the weight of recyclable items from buyers is the same with the actual weight of the items. Failure to do so is a big mistake - chinese customers would shift to other buyers who they

perceive as honest. Because Chinese customers sell their items at the higher volume, failure to get supply from them should be avoided because they realise they would miss the opportunity.

In relation to the honesty, according to Mrs. W some recycling entrepreneurs cheated their customers due to customers' ignorance. They mixed up expensive items with cheaper items to reap more profits. This is very dangerous practices, once customers knew the truth, they would not make business deal with them in the future. Mrs. W policy is to tell the truth, she told her client of the values of different recyclable items and weight them separately. Honesty is a strategy to main customers in this case.

#### *8.5 How recycling business activities inculcate recycling practices?*

Even though both entrepreneurs as well as their customers involve in the activity motivated largely by profits, such an activity at the same time encourages environmentally friendly habits amongst community. In those days, only a handful of items could be recycled, items such as paper, aluminium cans, as well as plastic containers were perceived as rubbish, no monetary values attached to them, so they were thrown away indiscriminately. Nowadays, when these items have monetary values, they keep them in a proper places and then sell to recycling entrepreneurs. It is obvious in Kota Bharu, Kelantan in particular and in Malaysia in general, monetary value is a push factor, not awareness of the importance of recycling habit for the cause of the environment.

#### *8.6 Why not operate recycling centre?*

According to the news from local newspapers from both daily English and vernacular newspapers some recycling entrepreneurs earned handsome profits and be a millionaire, this is especially true for those who run recycling centres. They buy recyclable items on bulk and send them to recycling process with trailers. A question here is, why entrepreneurs in this study do not move one step a head - to be owners of recycling centre? The answer is obvious. For example, Mrs. W who has been in this business for more than four decades, when the researcher raised such a question, with a soft voice she told the researcher in order to do so she needs a large capital, reaching million ringgit. "We need cash money...since all transaction in cash" she said. On her gross calculation, at least in a day a recycling owner needs about RM300,000 to pay recyclable items from entrepreneurs who usually come to their premises to sell the items them in the evening. That's not include assets such as buildings and a big compound to temporarily keep recyclable items. It is a common scenery to see a mountain of scrap irons, at a recycling centre's compound. Apart from that, recycling centre need to be equiped with heavy machineries such as forklifts, magnetic cranes to uplift and sorted-out recycled materials. So it does not come as a surprise this category of business in Kelantan, and other states in Malaysia is overwhelmingly monopolised by Chinese and Indian entrepreneurs who are financially capable.

#### *8.7 Do green entrepreneurs obtain micro credit?*

As far as micro credit is concerned, Mrs. W received a small loan from the Amanah Ikhtiar Malaysia (AIM) as additional capital to run the business. First, she borrowed RM1000 and when she settled the loan, she received another RM5,000 credit from the agency. Due to a good payment record, she asked a higher amount of loan - RM8,000. During the time of the interview she had to pay RM110 a week. According to her the highest amount of loan from the AIM is RM20,000. Interestingly, amongst borrowers of the agency, only Mrs. W runs recycling business. Other women entrepreneurs involved in business activities commonly run by women - food industries and sewing clothes to name but a few. On the other hand, since the above mentioned agency only caters micro credit for women entrepreneurs Mr. S is not eligible for the such a loan. However, he told the researcher a couple of years ago his wife borrowed money from the agency and she allocated some money from the loan to finance his business.

#### *8.8 What challenges faced by recycling entrepreneurs?*

Based from the interviews there were a number of challenges faced by the entrepreneurs in the recycling business were identified.

Shyness is the first challenge faced by recycling entrepreneur, this is especially true for women who need to visit houses, business premises, as well as government offices. It is a big challenge especially in the early phase of the business. This job requires patience and full commitment as it will take some times to familiarize oneself with the business as well as to develop a good rapport with clients. As far as Mrs. W was concerned, she's the only woman in the business in Kota Bharu. Though she knew that another woman involved in the business before, it not sustained – that women ceased her business in a couple of month after operation.

Second challenge is competition form other entrepreneurs in the same type of business throughout the state of Kelantan. According to Mrs. W, in the 1970s and 1980s until in the early 1990s not many entrepreneurs actively involved in the business. But lately (since the late 1990s) when more items can be recycled and more importantly, recyclable items have monetary values and provide job opportunities. As a result many people have jumped into the bandwagon. Due to the intense competition in the industry, both entrepreneurs in the study had their own strategies to secure recyclable items from their customers. Mr. S told the researcher that junk cars are more difficult to get because competitors also

search the items. If his client contacted him, he need to get the items as soon as possible, if he procrastinated, oftentimes his competitors first bought the cars. In another case, Mrs. W referring to other recycling entrepreneurs from Tumpat (neighbouring district of Kota Bharu) who are well-known hardworking. They work in a group of four, and in a day usually they managed to sell a ten full-load of small lorries to recycling centres in Kota Bharu. It is worth mentioning here even though competition exists in the industry, at the same time it seems there is some sorts of understanding or mutual respect amongst recycling entrepreneurs. If they know that any business premise has its regular buyer of recyclable items, other entrepreneurs would not try to buy from the the premise.

Apart from competitor, capital is another challenge. As being discussed in previous section this type of business requires a certain amount of cash in comparison to other businesses. This problem was admitted by both entrepreneurs. Financial problem can be closely related to the question why entrepreneurs in this study do not establish their own recyclable centres which generate more income. According to Mrs. W what she observed from recycling centres, at least ones need to have RM30,000 cash, and all transactions in cash. She estimated that she needs capital at least one million to run such a centre.

Furthermore, a challenge faced by Mrs. W was her sons who currently help her not capable enough and do not show high interest to expand her business in the near future. Her good reputation as well as her experience in the business field (which she considered as an asset), not properly capitalised by her sons. Instead, their sons preferred to work at home – sorting out recyclable items at their house. It is difficult for her to ask her sons to purchase recyclable materials from her customers. She wondered who are going to inherit her business when she retired. .

#### 8.9 What the prospects of a recycling industry in Malaysia?

When the researcher asked the hypothetical question of the prospects of the recycling industry, both entrepreneurs were optimistic. Amongst others, the following answers summarised their opinions. The availability of recycling technologies coupled with modernisation of lifestyle in Malaysia were strong grounds for optimism. Both would promise profitable and continuous supply of recycleable materials. In addition, the prospect of such a business looks good because it is inline with the aim of the Ministry of Housing and Local Authority of Malaysia to see a more proactive recycling activiy, overtime becomes part of culture of Malaysians. At the same time, more and more public and entrepreneurs started accepting this business as a good career to earn money to eke of their families living and to alleviate poverty in the country.

### 9. Conclusion

The results of the study of green micro enterprises in Kelantan show the industry is interesting to study and warrant in-depth investigation in the future. Lately this industry has attracted more and more small entrepreneurs in Kelantan who in the past overwhelmingly involved in traditional activities of entrepreneurship. In the same development, due to increasing demand of recycled materials more and more recycling centres have been established in in Kota Bharu, Kelantan. In this preliminary study a number of research questions were answered from the interviews with the two micro green entrepreneurs participated in the study. Information extracted provide insight into green entrepreneurship in the state in particular and Malaysian in general. But nevertheless, more interviews should be conducted in the future to ensure validity and reliability of the data.

### References

- Abu Bakar A. H., and Rohaizat B. (2003). Franchising as a tool for small medium enterprises: A study on critical success factors. Proceedings the 1st. International Conference of the Asian Academy of Applied Business, 10-12 July Sutura Harbour Resort Kota Kinabalu, Sabah, Malaysia, 263-270.
- Bank Negara Malaysia. (2005). Definisi Perusahaan Kecil dan Sederhana di Malaysia. Majlis Pembangunan PKS Kebangsaan.
- Bank Negara Malaysia. (2007). [Online] Available: <http://www.bnm.gov.my/index.php?ch=1048pg>(November12)
- Berita Harian. 17 August 2000. Jutawan besi buruk.
- Berita Harian. 21 April 2005. Syarat perniagaan besi buruk diperketatkan.
- Berita Harian. 3 June 2005. Penjaga lif kini tauke kitar semula.
- Foong, S. (1993). Effect of end-user personal and system attributes on computer-based information system success in Malaysia smes. *Journal of small business management*, 37(3), 81-87.
- Harian Metro. 29 April, 2004, Siva gigih usaha bisnes besi buruk.
- Hawken, P. (1993). *The ecology of commerce: a declaration of sustainability*. New York: Harper Collins.
- Hooi L.W. (2006). Implementing e-HRM: The readiness of small medium sized manufacturing companies in Malaysia. *Asia Pacific Business Review*, 12(4). 465.

Malaysian entrepreneurial development centre (Medec). (1997).

Moha Asri Abdullah. (1997). *Industri kecil di Malaysia: Pembangunan dan masa depan*. Dewan Bahasa dan Pustaka, Kuala Lumpur.

Moha Asri Abdullah. (2002). Entrepreneurs and their influence on usage of IT in smes: Evidence from Malaysia. *Journal of small business and entrepreneurship*, 16(2), 60.

Mohd Rafi Yaacob., and Syed Ihsan Adam Al-Jafri. (2002). Strategic management practices: The case of small business in Dungun, Terengganu. Proceedings on Seminar kebangsaan pengurusan dan pembangunan sumber manusia, 22-23 Oktober, Hotel Puteri Pan Pacific, Johor Bahru. 357-370.

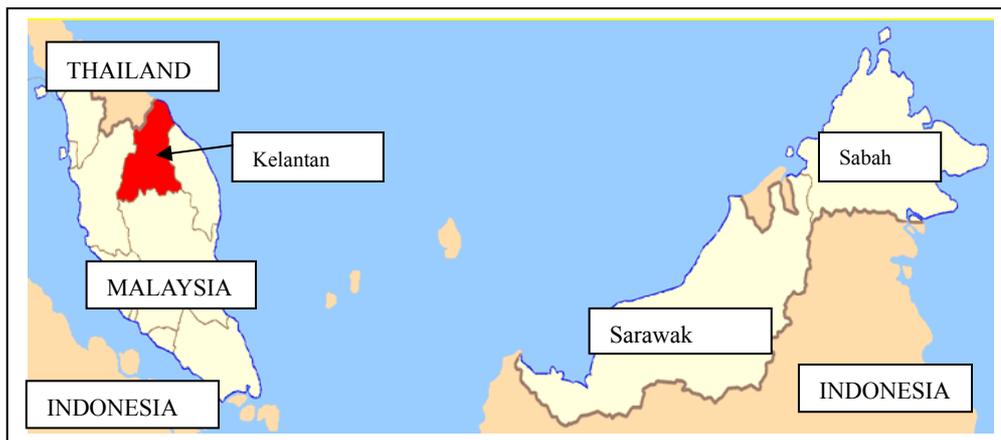
National SME Development Council and Bank Negara. (2005). pp. 5-6.

Rosman Mahmood *et al.* (2004). Laporan kajian impak program pinjaman tekun negeri Terengganu, kajian disediakan untuk Kementerian Pembangunan Usahawan dan Koperasi.

Schmidheiny, S. (1992). *Changing course: a global business perspective on development and the environment*. Cambridge, Mass:MIT Press.

Wyer, P., and J. Mason. (1998). An organization learning perspective to enhancing understanding of people management in small business. *International Journal of Entrepreneurial Behaviour and Research*, 4(2), 112.

Table 1. Map 1: The State of Kelantan, Malaysi





## Age of Joint Venture, Inter-Firm Technology Transfer and Local Firms' Performance

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### Abstract

The inter-firm technology transfers (TT) through international joint ventures (IJVs), among others, have significantly contributed to a higher degree of local innovation performance/capabilities, technological capabilities, competitive advantage, organizational learning effectiveness, productivity, technological development of local industry, and the economic growth of the host country. Since the focus of inter-firm TT in developing countries has shifted to degree of technology transfer, organizations in developing countries are attempting to assess not only the significant role of technology transfer in strengthening their corporate and human resource performance but also the influence of other critical variables such as MNCs' size, age of JVs (JVAGE), country of origin, and MNC's type of industries that could significantly moderate the relationship. The main objective of this paper is to empirically examine the moderating effect of age of JV (old vs. young JVs) on the relationships between degree of inter-firm technology transfer and two dimensions of local firms' performance: corporate and human resource performances. Using the moderated multiple regression (MMR) analysis, the theoretical models and hypotheses in this study were tested based on empirical data gathered from 128 joint venture companies registered with the Registrar of Companies of Malaysia (ROC). The results revealed that age of JV has significantly affected the relationships between degrees of technology transfer and both dimensions of local firms' performance; where the relationships were found stronger for old JVs as compared to young JVs. The study has bridged the literature gaps in such that it offers empirical evidence and new insights on the significant moderating effects of age of JVs in the relationships between degree of inter-firm technology transfer and local firms' performance using the Malaysian sample.

**Keywords:** Inter-Firm Technology Transfer, Local Firms' Performance, International Joint Ventures, Age of Joint Venture, Malaysia

### 1. Introduction

When compared to various forms of strategic alliance such as distribution and supply agreements, research and development partnerships or technical and management contract, the international joint ventures (IJVs) are considered

as the most efficient formal mechanism for technology transfer (TT) to occur through inter-partner learning between foreign MNCs and local firms (Kogut and Zander, 1993; Inkpen 1998a, 2000). IJVs are also viewed as the most efficient mode to transfer technology and knowledge which is organizationally embedded and difficult to transfer through licensing agreements (Kogut, 1988; Mowery, Oxley and Silverman, 1996). IJVs provide both MNCs and local partners an appropriate avenue to facilitate the transfer of organizational knowledge, particularly for knowledge which is hard to be transferred without the setting up of a JV such as institutional and cultural knowledge (Harrigan, 1984).

A review of literature reveals that most of empirical studies on inter-firm technology and knowledge transfer in strategic alliance particularly IJVs are limiting their focus on the performance of the IJVs (for example Lyles and Salk, 1996; Lane *et al.*, 2001; Tsang *et al.*, 2004; Dhanaraj *et al.*, 2004; Steensma and Lyles, 2000). On the other hand, the performance of the MNCs' subsidiary and affiliate in the host countries has become the primary focus of intra-firm knowledge transfer literature (for example Chen, 1996; Chung, 2001; Cui *et al.*, 2006; Lin, 2003). Most of the studies on strategic alliance and IJVs have recorded positive relationship between knowledge acquisition or transfer and IJVs' performance for example 1) knowledge acquisition has a positive impact on the IJVs' human resource, general and business performance (Lyles and Salk, 1996), 2) knowledge acquisition as a better predictor for human-resource related performance than the general and business performance (Lyles and Salk, 1996), 3) knowledge acquisition from parent firms has a significant positive effect on IJVs' performance (Lane *et al.*, 2001; Tsang *et al.*, 2004), 4) explicit knowledge acquisition have a positive impact on IJVs' performance (Dhanaraj *et al.*, 2004), and 5) tacit knowledge about overseas information was positively related to new product development capacities (Subramaniam and Venkatraman, 2001). In addition, Yin and Bao (2006) found tacit knowledge acquisition had significantly affected local firms' performance (LFP). Surprisingly, Dhanaraj *et al.* (2004) found tacit knowledge was negatively related to IJVs' performance.

As indicated above, although many studies have acknowledged the significant effect of knowledge transfer on performance outcomes, nevertheless except for Yin and Bao (2006), studies which examine the effects of degree of technology transfer (TTDEG) on both local firms' corporate (CPERF) and human resource (HRPERF) performances in inter-firm TT are still scarce. Moreover, the relationships between TTDEG and both CPERF and HRPERF of local firms could possibly have been influenced by other established moderating factors such as size of MNCs, age of JV, MNCs' country of origin, and MNCs' types of industry. In other words the variations in CPERF and HRPERF could have been significantly influenced or explained by these variables. Thus, this study fills in the literature gaps by specifically examining the effect of age of joint venture (old vs. young JVs) as a moderating variable in the relationships between degree of technology transfer (TTDEG) and two distinct dimensions of local firms' performance (LFP): corporate (CPERF) and human resource (HRPERF) performances. The primary objective is to provide new insights and information on the boundary conditions for TTDEG-LFP relationship (Aguinis, 2004).

## 2. Technology Transfer in the Malaysian Context

In the context of developing country, technology is viewed as an important catalyst of corporate success and national economic growth (Millman, 2001). Due to lack of resource capacities such as weak research and development (R & D) base, limited investment in R&D, production and manufacturing capability, weak infrastructure and technological disadvantage (Lado and Vozikis, 1996; Tepstra and David, 1985), Malaysia like other developing countries, mainly depends on FDIs from the multinational corporations (MNCs) as its primary source of technology to enhance the technological capabilities and competitiveness of local industries (Lee and Tan, 2006). This is because MNCs own, produce and control the bulk of world technology in which they undertake nearly 80% of all private R&D expenditures worldwide (Dunning, 1993). Therefore, to realize its aspiration in becoming an industrialized and developed nation in 2020, Malaysia must develop and sustain its own technology through appropriate TT strategies and initiatives. Through the Third Industrial Master Plan 2006-2020, Malaysia aims at leveraging the country's existing strength and resources to enhance its competitiveness and resilience to achieve global competitiveness. On the other hand, The Ninth Malaysian Plan 2006-2010 stresses on the importance of developing human capital to strengthen the country's technological capability and capacity to support local innovation through knowledge acquisition and utilization (The Ninth Malaysian Plan, 2006).

In order to achieve this primary objective, foreign technologies are greatly needed by Malaysian firms and industries to build their technological capacity, strengthen their core competencies and expand into technological fields that are critical for maintaining and developing market share (Wagner and Yezril, 1999). Realizing the need for foreign technologies in Malaysia, since 1995 the Ministry of International Trade and Industry (MITI) has accelerated the imports of technology; especially explicit technology, by focusing on investments in high value-added and technology intensive industries. From January 1995 to August 2001, MITI has approved a total of 779 technical and technology agreements of which 429 were technical assistance agreement, 172 licensing and patent agreements, 74 trade mark agreements, 27 service agreements, and 26 know-how agreements (MITI, 2004). Between this period (1995-2000), the payment for technology acquisition royalties and fees for the franchises' procurement, use of international brand names,

and license for the utilization of new and improved technologies have increased from RM932 million to RM1.6 billion in 2001. Japan was the major source of technology with 443 technical/technology agreements approved, followed by the USA (120), Germany (57), Singapore (24), Korea (18), France (16), Taiwan (13), Australia (13), Switzerland (11), and Netherland (5) (MITI, 2004).

### **3. Theory and Hypotheses: Degree of Technology Transfer, Local Firms' Performance and Moderating Effect of Age of Joint Venture**

The current TT issue in developing countries revolves around the extent of degree of technologies that are transferred (TTDEG) by the suppliers to recipient partners (Pak and Park, 2004; Minbaeva, 2007). The question is no longer whether or not the MNCs are transferring technology to local firms; instead the focus in the literature has shifted to questions on 1) the level (sophistication) of the transferred technology, and 2) the stage where the transfer process has reached (Lai and Narayanan, 1997; Narayanan and Lai, 2000). Except for Pak and Park (2004) and Minbaeva (2007), not many studies in both intra and inter-firm TT have focused on TTDEG as independent or dependent variable. In general, bulk of the studies has focused more on technological knowledge and knowledge acquisition '*per se*' as the outcomes (dependant variables). For example, the technology transfer, knowledge transfer (KT) and strategic alliance literature have extensively examined the relationships between 1) knowledge attributes, source and recipient and KT success (Cummings *et al.*, 2003), 2) knowledge seekers, knowledge holder and contextual factors and know-how acquisition (Hau and Evangelista, 2007), 3) IJVs characteristics and knowledge acquisition (Lyles and Salk, 1996), 4) knowledge actors' interaction and KT (Bresman *et al.*, 1999), 5) organization motivation, learning capacity, learning hindrance and KT (Simonin, 2004), 6) absorptive capacity and knowledge learned from foreign firm (Lane *et al.*, 2001), 7) the IJV characteristics and knowledge acquisition (Tsang *et al.*, 2004), 8) knowledge antecedents, ambiguity and knowledge transfer (Simonin, 1999a), 9) learning intent, management control and managerial knowledge acquisition (Lin, 2005), 10) relational embeddedness and tacit/explicit knowledge acquisition (Dhanaraj *et al.*, 2004), 11) overseeing effort, management involvement and knowledge acquisition (Tsang *et al.*, 2004), 12) the supplier and recipient factors and tacit knowledge acquisition (Yin and Bao, 2006), and 13) relation-specific determinants, knowledge specific determinants and degree of knowledge transfer (Pak and Park, 2004).

Although the previous researchers have not specifically dealt with TTDEG as a variable, however, a number of studies have operationalized degree (amount) of technology transferred to the recipient firm in terms of the extent of type of technological knowledge that are transferred or acquired for instance 1) the tacit and explicit marketing knowledge (Hau and Evangelista, 2007), 2) the tacit and explicit knowledge (Dhanaraj *et al.*, 2004; Yin and Bao, 2006), 3) the marketing know-how (Simonin, 1999b; Wong *et al.*, 2002), 4) the technology in service industries (Grosse, 1996), 5) the knowledge on product development and foreign cultures (Lyles and Salk, 1996), 7) the technological learning (Lin, 2007), 8) the managerial knowledge (Si and Bruton, 1999; Tsang 2001; Liu and Vince, 1999; Lin, 2005), 9) managerial skills (Wong *et al.*, 2002), 10) the technology or manufacturing know how (Lam, 1997; Bresman *et al.*, 1999), 11) the business environment and product market knowledge (Geppert and Clark, 2003), and 12) the research and development (Minbaeva, 2007). In the context of inter-firm technological knowledge transfer in IJVs, only Pak and Park (2004) have directly dealt with degree of knowledge transfer as the outcome (dependent variable) with respect to the transfer of new product development and manufacturing skills/techniques.

The TT and KT literature have acknowledged that a substantial transfer of technology regardless whether tacit or explicit technology will positively 1) lead to a higher potentials of innovation performance/capabilities (Guan *et al.*, 2006; Kotabe *et al.*, 2007), 2) increase technological capabilities (Kumar *et al.*, 1999; Madanmohan *et al.*, 2004), 3) enhance organizations' competitive advantage (Liao and Hu, 2007; Rodriguez and Rodriguez, 2005), 4) enhance organizational learning effectiveness (Inkpen, 2000; Inkpen and Dinur, 1998), 5) improve productivity (Caves, 1974; Liu and Wang, 2003), 6) increase technological development of local industry (Markusen and Venables, 1999), and 7) improve the economic growth of the host country (Blomstrom, 1990). In addition, the IJV literature has also suggested that the longer the collaborative relationships the greater the opportunity for JV partners to share, learn and transfer technology and knowledge between them. This is because the duration of relationship is positively associated with frequency of communication and information exchange between partners (Kale *et al.*, 2000; Hallen *et al.*, 1991; Foss and Pedersen, 2002). Nevertheless, duration of JV could also increase the propensity of losing the valuable proprietary asset to the other JV partner (Kale *et al.*, 2000). From the strategic alliance perspective, as an alliance sustains overtime; JVAGE provides several effects such as it intensifies inter-partner trust, changes the bargaining power between partners, and develops partners' personal attachment (Gulati, 1995; Inkpen and Beamish, 1997). Empirical studies have found that the moderating effect of JVAGE has mixed results. Few empirical studies on inter-firm knowledge transfer in IJVs find JVAGE is insignificant in relationship between 1) knowledge acquisition-performance relationship, and 2) organizational characteristics, structural mechanisms, contextual factors, and knowledge acquisition relationship (Tsang *et al.*, 2004; Lin, 2005; Lyles and Salk, 1996). Nevertheless, empirical studies have also recorded significant moderating effect of JVAGE on 1) ambiguity-knowledge transfer relationship, and 2) knowledge

characteristics-marketing knowledge transfer relationship (Simonin, 1999a, 1999b). Therefore, this study posits as follows:

H1: The relationship between degree of inter-firm technology transfer and local firms' corporate performance is moderated by age of joint venture.

H2: The relationship between degree of inter-firm technology transfer and local firms' human resource performance is moderated by age of joint venture.

#### 4. Methods

##### 4.1 Sample

The sample frame was taken from the IJV companies registered with the Registrar of Companies (ROC). As at 1<sup>st</sup> January 2008, the number of IJVs operating in Malaysia was 1038. Out of this, 850 IJVs were considered as active IJVs and 103 IJVs were either dormant or had ceased operation. Since the focus of this study is on inter-firm TT from foreign MNCs to local companies, 85 IJVs were further eliminated from the population frame because only IJVs that have operated more than 2 years and have at least twenty percent (20%) of foreign equity are eligible to participate in the survey. Therefore, based on the list provided by ROC, which is considered as the most official and original source of information on foreign investment in Malaysia, it was decided that all IJVs (850) be included in the survey. Data collection was conducted in the period from July 2008 to December 2008 using a self-administered questionnaire. The questionnaires were mailed to 850 active JV companies as listed with ROC using a cover letter. After one month from the posting date the response was found not encouraging. By mid July 2008 there were only 70 responses received from the respondents. Thus, in order to increase the response rate the researcher followed-up through numerous phone calls, e-mails, reminders via letters and personal visits to seek the respondents' cooperation in the survey. After intensive efforts were made, by mid November 2008 a total of 145 responses (17.05%) were received. Based on literature review, the response rates for mailed questionnaires are usually not encouraging and low (Sekaran, 2003). In the Malaysian context, however, a response rate of 15% to 25% is still being considered appropriate and acceptable (Mohammed, 1998; Rozhan, Rohayu and Rasidah, 2001). From 145 responses only 128 questionnaires were usable and 17 questionnaires were returned blank, returned incomplete, or replied but unable to participate in the study.

##### 4.2 Instrument and measurement

The main research instrument in this study is the questionnaire. Building on the previous TT and KT studies, the questionnaire adopts a multi-item scales which have been modified accordingly to suit the context of the study: inter-firm TT. Except for degree of technology transfer (TTDEG), all the variables are measured using ten-point Likert Scale (1 = strongly disagree to 10 = strongly agree). For TTDEG, this variable is measured using ten-point Likert Scale (1 = very low transfer to 10 = substantial transfer). The ten-point Likert Scale was selected because 1) the wider distribution of scores around the mean provides more discriminating power, 2) it is easy to establish covariance between two variables with greater dispersion around their means, 3) it has been well established in academic and industry research, and 4) from a model development perspective, a ten-point scale is more preferred (Allen and Rao, 2000).

##### 4.3 Dependent Variable - Local Firms' Performance (LFP)

This study operationalizes LFP from two dimensions of performances: 1) corporate performance (CPERF), and 2) human resource (competencies) performance (HRPERF). Based on literature review, the qualitative (objective) measures of companies' performance are the most practical and ideal measurement of performance. However, the concrete financial figures are neither available nor reliable (Lyles and Barden, 2000; Tsang *et al.*, 2004). Past studies have shown a positive relationship between objective and perceptual (subjective) measures of firm's performance (Lyles and Salk, 1996; Dess and Robinson, 1984; Geringer and Hebert, 1989, 1991). Thus, this study applies subjective measures to measure LFP based on IJV's top management assessments using "a multi-dimensional performance indicators". The CPERF, as the first dimension of LFP, is measured by a four (4) items scale measuring business volume, market share, planned goals and profits. For HRPERF, as the second dimension of LFP, four (4) items are used to measure product/service quality, employees' productivity, managerial techniques/skills and operational efficiency (Tsang *et al.*, 2004; Yin and Bao, 2006; Lane *et al.*, 2001; Lyles and Salk, 1996). The Cronbach Alphas for CPERF and HRPERF were 0.926 and 0.97 respectively. The results of Cronbach Alpha were well above of Lyles and Salk (1996).

##### 4.4 Independent Variable - Degree of Technology Transfer (TTDEG)

Following Lyles and Salk (1996), Lane *et al.* (2001), Gupta and Govindarajan (2000), Dhanaraj *et al.* (2004), Pak and Park (2004), Yin and Boa (2006) and Minbaeva (2007), this study adopts "a multi-dimensional operationalization approach" in measuring this construct. This study operationalizes TTDEG as the transfer of technological knowledge from two dimensions: 1) tacit knowledge (TCTDEG) in terms of new product/service development, managerial systems and practice, process designs and new marketing expertise, and 2) explicit knowledge (EXPDEG) in terms of manufacturing/service techniques/skills, promotion techniques/skills, distribution know-how, and purchasing know-how. The respondents were asked to evaluate TTDEG from MNCs to local firms in terms of tacit and explicit dimensions of

technological knowledge. The Cronbach Alphas for TCTDEG and EXPDEG were 0.96 and 0.97 respectively. The results of Cronbach Alpha were quite similar to that of Hau and Evangelista (2007) and Yin and Bao (2006).

#### 4.5 Moderating Variable - Age of Joint Venture (JVAGE)

In measuring JVAGE this study required the respondents to indicate the JV's number of years in operation based on items coded: 0 = old joint ventures (number of years > 10 years) and 1 = young joint ventures (number of years < 10 years) (Tsang *et al.*, 2004; Lin, 2005; Simonin, 1999a; Luo, 2001).

#### 4.6 Model and Analysis

The moderated multiple regression (MMR) analysis is described as an inferential procedure which consists of comparing two different least-squares regression equations (Aguinis, 2004; Aiken and West, 1991; Cohen and Cohen, 1983; Jaccard *et al.*, 1990). Using the MMR analysis, the moderating effect of the variable (product term) was analyzed by interpreting 1) the  $R^2$  change in the models obtained from the model summaries, and 2) the regressions coefficients for the product term obtained from the coefficients tables. Prior to conducting the MMR analysis, preliminary analyses were conducted to ensure that there was no violation of the assumptions of normality, linearity, homoscedasticity, and homogeneity of error variance. The population data was carefully examined to avoid the occurrence of 1) Type 1 error; which is the error of rejecting the true null hypotheses at a specified  $\alpha$ , and 2) Type 2 error ( $\beta$ ); which is the error of failing to reject a false null hypotheses at a specified power (Aguinis, 2004). In this study, Equation 1 below was used to represent the variables in the ordinary least-squares (OLS) model:

$$\text{Equation 1 (OLS model): } Y = \beta_0 + \beta_1X + \beta_2Z + e$$

To determine the presence of moderating effect, the OLS model was then compared with the MMR model which was represented by Equation 2 below:

$$\text{Equation 2 (MMR model): } Y = \beta_0 + \beta_1X + \beta_2Z + \beta_3X*Z + e$$

where, Y = local firms' performance (CPERF and HRPERF as the dependent variables), X = degree of technology transfer (TCTDEG and EXPDEG), Z = a hypothesized binary grouping moderator (Age of joint venture; old vs. young JVs), X\*Z = the product between the predictors (TTDEG\*JVAGE),  $\beta_0$  = the intercept of the line-of-best-of-fit which represents the value of Y when X = 0,  $\beta_1$  = the least-squares estimate of the population regression coefficient for X,  $\beta_2$  = the least-squares estimate of the population regression coefficient for Z,  $\beta_3$  = the sample-base least-squares estimates of the population regression coefficient for the product term, and  $e$  = the error term. The moderating variable (product term) is a binary grouping moderator; where the moderating variable JVAGE was coded using the dummy coding system; 0 = old JVs, and 1 = young JVs. This was done because of its simplicity and ease of interpretation of results when making comparisons between different groups (Aguinis, 2004).

### 5. Results

Table 1 and Table 2 show the model summary for both corporate (CPERF) and human resource (HRPERF) performances. The coefficients for all variables for Model 1 and Model 2 (for both CPERF and HRPERF) are presented in Table 3 and Table 4. Table 1 shows that for Model 1,  $R = .678$ ,  $R^2 = .459$  and  $[F(2, 125) = 53.186, p = .0001]$ . This  $R^2$  means that 45.9% of the variance in the CPERF is explained by TTDEG scores and JVAGE. Model 2 shows the results after the product term (TTDEG\*JVAGE) was included in the equation. Table 1 also indicates that the inclusion of the product term resulted in an  $R^2$  change of .032,  $[F(1, 124) = 7.796, p < 0.01]$ . The results support for the presence of a moderating effect. To put it differently, the moderating effect of JVAGE explains 3.2% variance in the CPERF above and beyond the variance by TTDEG scores and JVAGE. Thus, it can reasonably be concluded that hypothesis  $H1$  is supported.

Table 2 shows that for Model 1,  $R = .736$ ,  $R^2 = .541$  and  $[F(2, 125) = 73.710, p = .0001]$ . This  $R^2$  means that 54.1% of the variance in the HRPERF is explained by TTDEG scores and JVAGE. Model 2 also shows the results after the product term (TTDEG\*JVAGE) was included in the equation. Table 2 above indicates that the inclusion of the product term resulted in an  $R^2$  change of .027,  $[F(1, 124) = 7.662, p < 0.01]$ . The results also show a presence of significant moderating effect. To put it differently, the moderating effect of JVAGE explains 2.7% variance in the HRPERF above and beyond the variance by TTDEG scores and JVAGE. Thus, it can safely be concluded that hypothesis  $H2$  is supported. The coefficients table for CPERF as shown in Table 3 depicts the results of the regressions equation for Model 1 and Model 2.

Model 1 indicates that TTDEG was statistically significant ( $p < 0.001$ ; Beta value = 0.651); however JVAGE was not statistically significant ( $p > 0.05$ ). Equation 3 below shows that for a 1-point increase in TTDEG, the CPERF is predicted to have a difference by .436, given that the JVAGE is held constant. The regression coefficient associated with JVAGE means that the difference in CPERF between old and young JVs is -1.055, given that TTDEG is held constant.

$$\text{Equation 3: } CPERF = 10.968 + .436TTDEG - 1.055JVAGE$$

The high-order of interaction effects of the MMR test was conducted to differentiate the extent of CPERF that was influenced by old and young JVs. Model 2 shows the results after the product term (TTDEG\*JVAGE) was included in the equation. As indicated in Table 1 the inclusion of product term resulted in an  $R^2$  change of .032, [ $F(1, 124) = 7.796, p < 0.01$ ]. Model 2 shows TTDEG was highly significant ( $p < 0.001$ ; Beta value = .953). Both JVAGE and TTDEG\*JVAGE were also found to be significant ( $p < 0.01$ ; Beta value = -0.571 and  $p < 0.01$ ; Beta value = -0.677, respectively). The results support for the presence of a significant moderating effect. Table 3 also reveals information on the regression coefficients after the inclusion of product term in the equation. The equation for Model 2 is as follows:

$$\text{Equation 4: } CPERF = 4.390 + .638TTDEG - 8.000JVAGE - .051TTDEG*JVAGE$$

As indicated above, the interpretation of the regression coefficients is based on the fact that the binary moderator was coded using the dummy code system. The result for Model 2 indicates that for a 1-point increase in the TTDEG, the CPERF is predicted to have a difference by .638, given that JVAGE is held constant. The interpretation of the regression coefficients for the product term in Equation 4 is that there is a -.051 difference between the slope of CPERF on TTDEG between old and young JVs. In other words, the slope regressing CPERF on TTDEG is steeper for old JVs as compared to young JVs. The TTDEG and CPERF relationship for old and young JVs is shown in Figure 1 below by creating a graph displaying the relationships for each of the groups (Aguinis, 2004). From the results of descriptive statistics, the value of the mean score for TTDEG is 6.19; and for the standard deviation ( $SD$ ) is 1.30. Following Aguinis (2004), the value 1  $SD$  above the mean is 7.49 and the value 1  $SD$  below the mean is 4.89. Thus, using the value of 1  $SD$  above and 1  $SD$  below mean in Equation 4 yields the graph shown in Figure 1. Results based on Equation 4 led to the conclusion that there was a moderating effect of JVAGE. Figure 1 below shows that the TTDEG-CPERF relationship is stronger (i.e. steeper slope) for old JVs as compared to young JVs. The coefficients table for HRPERF as shown in Table 4 depicts the results of the regressions equation for Model 1 and Model 2.

Model 1 also indicates that TTDEG was statistically significant ( $p < 0.001$ ; Beta value = .741); however JVAGE was not statistically significant ( $p > 0.05$ ). Equation 5 shows that for a 1-point increase in TTDEG, the HRPERF is predicted to have a difference by .422, given that the JVAGE is held constant. The regression coefficient associated with JVAGE means that the difference in HRPERF between old and young JVs is .215, given that TTDEG is held constant.

$$\text{Equation 5: } = 3.338 + .422TTDEG + .215JVAGE$$

Model 2 shows the results after the product term (TTDEG\*JVAGE) was included in the equation. As indicated in Table 2 the inclusion of product term resulted in an  $R^2$  change of .027, [ $F(1, 124) = 7.662, p < 0.01$ ]. TTDEG was found highly significant ( $p < 0.001$ ; Beta value = 1.016); whereas both JVAGE and TTDEG\*JVAGE were also statistically significant (both at  $p < 0.01$ , Beta value = -0.435;  $p < 0.01$ , Beta value = -0.618, respectively). The results show the presence of a significant moderating effect. Table 4 also reveals information on the regression coefficients after the inclusion of product term in the equation. The equation for Model 2 is as follows:

$$\text{Equation 6: } HRPERF = 5.222 + .579TTDEG - 5.186JVAGE - .040TTDEG*JVAGE$$

The result for Model 2 indicates that for a 1-point increase in the TTDEG, the HRPERF is predicted to have a difference by .579, given that JVAGE is held constant. The interpretation of the regression coefficients for the product term in Equation 6 is that there was a -.040 difference between the slope of HRPERF on TTDEG between old and young JVs. The slope regressing HRPERF on TTDEG is steeper for old JVs as compared to young JVs. The TTDEG and HRPERF relationship for old and young JVs is also shown in Figure 1. The value of the mean score for TTDEG is 6.19 and for the standard deviation ( $SD$ ) is 1.30. The value 1  $SD$  above the mean is 7.49, and the value 1  $SD$  below the mean is 4.89. Thus, using the value of 1  $SD$  above and 1  $SD$  below mean in Equation 6 yields the graph shown in Figure 1. Results based on Equation 6 led to the conclusion that there was a significant moderating effect of JVAGE. Figure 1 below indicates that the TTDEG-HRPERF relationship is slightly stronger (i.e. steeper slope) for old JVs as compared to young JVs.

## 6. Discussion and Conclusion

The inclusion of JVAGE (old and young JVs) in TTDEG-LFP relationship has similar significant moderating effects in changing both local firms' corporate performance (CPERF) ( $p < 0.01$ ;  $R$ - squared change of 0.032) and local firms' human resource performance (HRPERF) ( $p < 0.01$ ;  $R$ - squared change of 0.027). The moderating effect of JVAGE is shown to be capable of changing the nature of relationship and further explains under what conditions TTDEG causes CPERF and HRPERF. This means the presence of significant moderating effect of JVAGE (old and young JVs) exceeded the linear relationships between TTDEG and both CPERF and HRPERF. The result are consistent with recent literature which has strongly supported the significant role of JVAGE (Foss and Pedersen, 2002; Kale *et al.*, 2000; Tsang *et al.*, 2004; Simonin, 2004). The results also suggest that JVAGE; whether old or young JVs, has been established to provide a significant moderating impact in TTDEG-CPERF and TTDEG-HRPERF relationships in the JVs; where the relationships were found stronger for old JVs as compared to young JVs.

The results of this study provide critical information in such that although a successful technology transfer in IJVs; which includes the transfer of substantial tacit and explicit knowledge could have significantly increased 1) the corporate performance in terms the local firms' business volume, market share, planned goals and profits, and 2) the human resource performance in terms of local firms' product/service quality, employees' productivity, managerial techniques/skills and operational efficiency, nevertheless, since the technologies which are transferred to local firms mostly originated from the sophisticated and competitive foreign MNCs, the propensity of increasing both CPERF and HRPERF is unlikely to maximize the local firms' performance. This is simply because although a longer period of collaborative relationship in JVs could escalate the opportunity to share, learn, and transfer technologies between JV partners; which is resulted from the decrease of cultural distances, increase of inter-partner trust and personal attachment between partners (Gulati 1995; Yan and Gray, 1994), however, the formation of alliances and JVs have frequently been perceived as 'a race to learn' and are closely associated with JVs' instability. Therefore, a longer duration of JVs may probably cause a shift (increase) in the supplier partners' bargaining power thus eliminating their partner dependency on the recipient partners (Inkpen and Beamish, 1997). As a result, this will indeed frustrate the recipient partners' organizational learning process; when the supplier partners become more protective of their strategic valuable asset and reluctant to transfer higher technologies. On the other hand, the MNCs in young JVs are normally reluctant to invest a higher degree of resources (both capital and human resources) in the newly formed JVs. Their attitude is closely associated with the skeptical feelings towards the recipient partners' true learning intent (whether competitive vs. collaborative) thus limiting the flows of their valuable technologies to recipient partners (Child and Falkner, 1998; Khanna *et al.*, 1998; Hamel, 1991). In this circumstance, as technology flows are strictly restricted and controlled, even if technologies are intentionally transferred, their effects on local firms' performance could be very nominal. The results are explicitly consistent with Dhanaraj *et al.*'s (2004) who reasoned that tacit knowledge could negatively affected IJVs' performance because 1) tacit knowledge has lagged relationship with IJVs' performance (Lyles and Salk, 1996), 2) the foreign tacit knowledge needs to be adapted to the IJVs and current environment (Martin and Solomon, 2003a, b), and 3) tacit knowledge learning and tacit knowledge utilization are interdependent but distinct (Lane *et al.*, 2001).

One of the major limitations encountered by this study was the resource constraints; where this study has mainly relied on responses obtained from the top management level of the IJVs. Thus, the scope of respondents could have been extended to include the response from middle and lower management levels in the JVs. Secondly, consistent with the literature, the subjectivity of nature of relationship is difficult to capture. Thus, the nature of relationship between IJV partners could have tremendously affected the results if the respondents perceived that the IJVs that they involved in were competitive in nature rather than collaborative. Thirdly, due to lack of awareness on academic research the response rate in terms of the number of usable questionnaires, though sufficient, was not encouraging. This has become a major challenge to many researchers who conduct organization studies in Malaysia. Finally, due to time constraints, the types of technology under investigation in this study were limited to tacit vs. explicit knowledge dimension.

This empirical study is a response to the need for statistical evidence that has typically been lacking in inter-firm TT literature. Since this study focuses on degree of inter-firm TT and local firms' performance, future studies could be conducted to further examine the moderating effects of age of joint venture in the relationships between degree of technology transfer and other critical dependent variable such as partners' conflict, learning outcomes, asymmetric bargaining power, stability of IJVs and equity ownership. Secondly, the above relationship could also be extended to cover other formal and externalized inter-firm TT agents such as direct exporting, FDIs and licensing. Thirdly, it is worthwhile to extend the degree of technology transfer's dimension (tacit vs. explicit dimension) to cover other dimensions of supply chain activities such as production, marketing, management, and distribution. Finally, future studies could further investigate the effects of few other established moderating variables such as organizational culture, collaborative know-how, prior JV experience, and learning capacity on the above relationships to provide new insights and information on the boundary conditions for degree of technology transfer-local firms' performance relationship.

## References

- Aguinis, H. (2004). *Regression Analysis for Categorical Moderators*. New York, The Guilford Press.
- Aiken, L. S., & West, S. G. (1991). *Multiple Regression: Testing and Interpreting Interacting*. Newbury Park, CA: Sage.
- Allen, D. R., & Rao, T. R. (2000). *Analysis of Customer Satisfaction Data*. United States of America: America Society for Quality.
- Blomstrom, M. (1990). *Transnational Corporations and Manufacturing Exports from Developing Countries*. New York, United Nations.
- Bresman, H., Birkinshaw, J., & Nobel, R. (1999). Knowledge Transfer in International Acquisitions. *Journal of International Business Studies*, 30(3), p. 439–62.

- Caves, R.E. (1974). Multinational Firms, Competition and Productivity in Host-Country Markets. *Economica*, 41, p. 176-193.
- Chen, E.K.Y. (1996). *Transnational Corporations and Technology Transfer to Developing Countries in UNCTAD, Transnational Corporations and World Development*, p. 181-214, London, UK: Thompson Business Press.
- Child, J., & Faulkner, D. (1998). *Strategies of Cooperation: Managing Alliances Networks and Joint Ventures*. Oxford University, New York.
- Chung, W. (2001). Identifying Technology Transfer in Foreign Direct Investment: Influence of Industry Conditions and Investing Firm Motives. *Journal of International Business Studies*, 32(2), p. 211-229.
- Cohen, J., & Cohen, P. (1983). *Applied Multiple Regression/Correlational Analysis for the Behavioral Sciences* (2<sup>nd</sup> ed.). Hillsdale, NJ: Erlbaum.
- Cui, A.S, Griffith, D.A., Casvugil, S.T., & Dabic, M. (2006). The Influence of Market and Cultural Environmental Factors on Technology Transfer between Foreign MNCs and Local Subsidiaries: A Croatian Illustration. *Journal of World Business*; 41; p. 100-111.
- Cumming, J.L., & Teng, B.S. (2003). Transferring R&D Knowledge: The Keys Factors Affecting Knowledge Transfer Success. *Journal of Engineering and Technology Management*, 20, p. 39-68.
- Dess, G. G., & Robinson, R. B. J. (1984). Measuring Organizational Performance in the Absence of Objective Measures: The Case of the Privately-Held Firm and Conglomerate Business Unit, *Strategic Management Journal*, 5 (3), p. 265-73.
- Dhanaraj, C., Lyles, M.A., Steensma, H.K., & Tihanyi, L. (2004). Managing Tacit and Explicit Knowledge Transfer in IJVs: the Role of Relational Embeddedness and the Impact on Performance. *Journal of International Business Studies*, 35(5), p. 428-42.
- Dunning, J. H. (1993). *Multinational Enterprise and the Global Economy*. Reading, MA: Addison-Wesley.
- Foss, N.J. & Pedersen, T. (2002). Sources of Subsidiary Knowledge and Knowledge Transfer in MNCs. In: Lundan, S., (Eds.). *Network Knowledge in International Business*, Edward Elgar, Cheltenham, p. 91-114.
- Geppert, M., & Clark, E. (2003). Knowledge and Learning in Transnational Ventures: An Actor-Centred Approach. *Management Decision*, 41(5), pp.433-442.
- Geringer, J. M., & Hebert, L. (1991). Measuring Performance of International Joint Ventures, *Journal of International Business Studies*, 22(2), p. 249 - 63.
- Guan, J. C., Mok, C. K., Yam, C.M., & Pun, K. F. (2006). Technology Transfer and Innovation Performance: Evidence from Chinese Firms. *Technological Forecasting and Social Change*, 73, p.666-678.
- Gulati, R. (1995). Does Familiarity Breed Trust? The Implications of Repeated Ties for Contractual Choice in Alliances. *Academy of Management Journal*, 38(1), p. 85-112.
- Gupta, A. K., & Govindarajan, V. (2000). Knowledge Flows within Multinational Corporations. *Strategic Management Journal*, 21(4), p. 473-96.
- Hallen, L, Johanson, J., & Seyed-Mohamed, N. (1991). Interfirm Adaptation in Business Markets. *Journal of Marketing*, 55, p. 29-37.
- Hamel G. (1991). Competition for Determinant and Interpartner Learning within International Strategic Alliances. *Strategic Management Journal*, 12, p. 83-103.
- Harrigan, K.R. (1984). Joint Ventures and Global Strategies. *Columbia Journal of World Business*, 19(2), p. 7-16.
- Hau, L. N., & Evangelista, F. (2007). Acquiring Tacit and Explicit Marketing Knowledge from Foreign Partners in IJVs. *Journal of Business Research*, 60, pp. 1152-1165.
- Inkpen, A. C. (1998a). Learning and Knowledge Acquisition through International Strategic Alliances, *The Academy of Management Executive*, 12(4), p. 69-80.
- Inkpen, A.C. (2000). Learning through Joint Ventures: A Framework of Knowledge Acquisition. *Journal of Management Studies*, 37(7), p. 1019-1043.
- Inkpen, A.C., & Beamish, P.W. (1997). Knowledge Bargaining Power and the Instability of International Joint Ventures. *Academy of Management Review*, 22(1), p. 177-199.
- Inkpen, A.C., & Dinur, A. (1998). Knowledge Management Processes and International Joint Ventures. *Organization Science*, 9(4), p. 454-468.
- Jaccard, J. J., Turrissi, R., & Wan, C. K. (1990). *Interaction Effects in Multiple Regression*. Newbury Park, CA: Sage.

- Kale P., Singh H., & Perlmutter H. (2000). Learning and Protection of Proprietary Assets in Strategic Alliances: Building Relational Capital. *Strategic Management Journal*, 21(3), p. 217–37.
- Khanna, T., Gulati, R., & Nohria, N. (1998). The Dynamics of Learning Alliances: Competition Cooperation, and Relative Scope. *Strategic Management Journal*, 19(3), p. 193–210.
- Kogut, B. (1988). Joint Ventures: Theoretical and Empirical Perspectives. *Strategic Management Journal*, 9(4), p. 319-32.
- Kogut, B., & Zander, U. (1993). Knowledge of the Firm and the Evolutionary Theory of the Multinational Corporation. *Journal of International Business Studies*, 24(4), p. 625-646.
- Kotabe, M., Dunlap-Hinkler, D., Parente, R., & Mishra, H. (2007). Determinants of Cross-National Knowledge Transfer and Its Effect on Firm Innovation. *Journal of International Business Studies*, 38, p. 259-282.
- Kumar, V., Kumar, U., & Persaud, A. (1999). Building Technological Capability through Importing Technology: The Case of Indonesian Manufacturing Industry. *Journal of Technology Transfer*, 24, p. 81-96.
- Lado, A., & Vozikis, G. (1996). Transfer of Technology to Promote Entrepreneurship in Developing Countries: An Integration and Proposed Framework. *Entrepreneurship Theory and Practice*, Winter, p. 55-72.
- Lai, Y.W., & Narayanan, S. (1997). The Quest for Technological Competence via MNCs: A Malaysian Case Study. *Asian Economic Journal*, 11(4), p. 407-422.
- Lam, A. (1997). Embedded Firms, Embedded Knowledge: Problems of Collaboration and Knowledge Transfer In Global Cooperative Venture. *Organization Studies*, 18(6), pp.973-996.
- Lane, P. J., Salk, J.E., & Lyles, M.A. (2001). Absorptive Capacity, Learning, and Performance in International Joint Ventures. *Strategic Management Journal*, 22(12), p. 1139-61.
- Lee, H. H., & Tan, H. B (2006). Technology Transfer, FDI and Growth in the ASEAN Region. *Journal of the Asia Pacific Economy*, 11 (4), p. 394-410.
- Liao, S.H., & Hu, T.C. (2007). Knowledge Transfer and Competitive Advantage on Environmental Uncertainty: An Empirical Study of the Taiwan's industry. *Technovation*, 27, p. 402-411.
- Lin, X. (2005). Local Partner Acquisition of Managerial Knowledge in International Joint Ventures: Focusing on Foreign Management Control. *Management International Review*, 45(2), p. 219-237.
- Lin, W.B. (2007). Factors Affecting the Correlation between Interactive Mechanisms of Strategic Alliance and Technological Knowledge Transfer Performance. *The Journal of High Technology Management Research*, 17, p. 139-155.
- Liu, S., & Vince, R. (1999). The Cultural Context of Learning in International Joint Ventures. *Journal of Management Development*, 18 (8), p. 666-675.
- Liu, X., & Wang, C. (2003). Does Foreign Direct Investment Facilitate Technological Progress? Evidence from Chinese Industries. *Research Policy*, 32, p. 954-953.
- Luo, Y. (2001). Antecedents and Consequences of Personal Attachment in Cross-Cultural Cooperative Ventures. *Administrative Science Quarterly*, 46(2), p. 177-201.
- Lyles, M. A., & Barden, J. Q. (2000). *Trust, Controls, Knowledge Acquisition from the Foreign Parents and Performance in Vietnamese IJVs*. Submission to the International Management Division of the AOM meeting.
- Lyles, M. A., & Salk, J.E. (1996). Knowledge Acquisition from Foreign Parents in International Joint Ventures: An Empirical Examination in the Hungarian. *Journal of International Business Studies*, 29(2), p. 154-74.
- Madanmohan, T.R., Kumar, U., & Kumar, V. (2004). Import-led Technological Capability: A Comparative Analysis of Indian and Indonesian Manufacturing Firms. *Technovation*, p. 979-993.
- Markusen, J.R., & Venables, A.J. (1999). Foreign Direct Investment as a Catalyst for Industrial Development. *European Economic Review*, 43, p.335-356.
- Martin, X.Y.F., & Salomon, R. (2003a). Tacitness, Learning, and International Expansion: A Study of Foreign Direct Investments in A Knowledge-Intensive Industry. *Organization Science*, 14 (3), p. 297-311.
- Martin, X.Y.F., & Salomon, R. (2003b). Knowledge Transfer Capacity and its Implications for the Theory of the Multinational Corporation. *Journal of International Business Studies*, 34(4), 356-373.
- Millman, A. F. (2001). Technology Transfer in the International Market. *European Journal of Marketing*, 17 (1), p. 26-47.
- Minbaeva, D. (2007). Knowledge Transfer in Multinationals. *Management International Review*, 47(4), p. 567-593.

- Ministry of International Trade and Industry. (2004). *Annual Report*, [Online] Available: www.miti.gov.my. Accessed on 18<sup>th</sup> March 2007.
- Mohamed, M.Z (1998). Assessing the Competitiveness of the Malaysian Electronic and Electrical Industry: Part I-Technology Adoption. *Malaysian Management Review*, 33(10), p. 19-20.
- Mowery, D.C., Oxley J.E., & Silverman B.S. (1996). Strategic Alliances and Interfirm Knowledge Transfer. *Strategic Management Journal*, 17, p. 77–91.
- Narayanan, S., & Lai, Y. W. (2000). Technological Maturity and Development without Research: The Challenge for Malaysian Manufacturing. *Development and Change*, 31, p. 435-457.
- Pak, Y., & Park, Y. (2004). A Framework of Knowledge Transfer in Cross-Border Joint Ventures: An Empirical Test of the Korean Context. *Management International Review*, 44(4), p. 435-455.
- Rodriguez, J.L., & Rodriguez, R.M.G. (2005). Technology and Export Behaviour: A Resource-Based View Approach. *International Business Review*, 14, p. 539-557.
- Rozhan, O., Rahayu., & Rashidah. (2001). Great Expectation: CEO's Perception of the Performance Gap of the HRM functions in the Malaysian Manufacturing Sector. *Personnel Review*, 30 (1), 1& 2, p. 61-80.
- Sekaran, U. (2003). *Research Methods for Business*, Fourth Edition, John Wiley & Sons, Inc.
- Si, S. X., & Bruton, G. D. (1999). Knowledge Transfer in International Joint Ventures in Transitional Economy: The China Experience. *The Academy of Management Executive*, 13(1), p. 83-90.
- Simonin, B. L. (1999a). Ambiguity and the Process of Knowledge Transfer in Strategic Alliances, *Strategic Management Journal*, 20(7), p. 595-623.
- Simonin, B. L. (2004). An Empirical Investigation of the Process of Knowledge Transfer in International Strategic Alliances, *Journal of International Business Studies*, 35(5), 407-27.
- Simonin, B.L. (1999b). Transfer of Marketing Know-how in International Strategic Alliances: An Empirical Investigation of the Role and Antecedents of Knowledge Ambiguity. *Journal of International Business Studies*, 30(3) p. 463–90 [Third Quarter].
- Steensma, H. K., & Lyles, M.A. (2000). Explaining IJV Survival in a Transitional Economy through Social Exchange and Knowledge-based perspectives. *Strategic Management Journal*, 21(8), p. 831-51.
- Subramaniam, M., & Venkatraman, N. (2001). Determinants of Transnational New Product Development Capability: Testing the Influence of Transferring and Deploying Tacit Overseas Knowledge. *Strategic Management Journal*, 22(4): 359-378.
- Tepstra, V., & David, K. (1985). *The Cultural Environment of International Business*. Cincinnati, OH: Southwestern Publishing Co.
- The Ninth Malaysia Plan*. (2006). The Economic Planning Unit. Prime Minister's Department, Putrajaya, Percetakan Nasional Malaysia Berhad.
- The Third Industrial Master Plan 2006-2020*. Ministry of International Trade and Industry, Putrajaya, Percetakan Nasional Malaysia Berhad.
- Tsang E.W.K., Tri D.N., & Erramilli M.K. (2004). Knowledge Acquisition and Performance of International Joint Ventures in the Transition Economy of Vietnam. *Journal of International Marketing*, 12(2), p. 82–103.
- Tsang, E.W.K. (2001). Managerial Learning in Foreign-Invested Enterprises of China. *Management International Review*, 41 (1), 29-51.
- Wong, Y. Y., Maher, T. E., & Luk, T. K. (2002). The Hesitant Transfer of Strategic Managerial Knowledge to International Joint Ventures in China: Greater Willingness Seems Likely in the Future, *Management Review News*, 25(1), pp. 1-16.
- Yin, E., & Bao, Y. (2006). The Acquisition of Tacit Knowledge in China: An Empirical Analysis of the 'Supplier-side Individual Level' and 'Recipient-side' Factors. *Management International Review*, 46(3), p. 327-348.

Table 1. Model Summary<sup>c</sup> - Corporate Performance

Model Summary<sup>c</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.678 <sup>a</sup>	.459	.451	5.186	.459	53.060	2	125	.000
2	.701 <sup>b</sup>	.491	.479	5.051	.032	7.796	1	124	.006

- a. Predictors: (Constant), TTDEG, JVAGE
- b. Predictors: (Constant), TTDEG, JVAGE, TTDEG\*JVAGE
- c. Dependent Variable: CPERF

Table 2. Model Summary<sup>c</sup> - Human Resource Performance

Model Summary<sup>c</sup>

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.736 <sup>a</sup>	.541	.534	4.067	.541	73.710	2	125	.000
2	.754 <sup>b</sup>	.568	.557	3.962	.027	7.662	1	124	.007

- a. Predictors: (Constant), TTDEG, JVAGE
- b. Predictors: (Constant), TTDEG, JVAGE, TTDEG\*JVAGE
- c. Dependent Variable: HRPERF

Table 3. Coefficients<sup>a</sup> - Corporate Performance

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	10.968	2.493		3.789	.000	-2.967	6.902
	TTDEG	.436	.046	.651	9.455	.000	.345	.527
	JVAGE	-1.055	.964	-.075	-1.094	.276	-2.964	.853
2	(Constant)	4.390	2.578		1.703	.091	-7.713	9.493
	TTDEG	.638	.085	.953	7.493	.000	.469	.806
	JVAGE	-8.000	2.659	-.571	-3.009	.003	-13.262	-2.738
	TTDEG*JVAGE	-.051	.018	-.677	-2.792	.006	-.088	-.015

- a. Dependent Variable: CPERF

Table 4. Coefficients<sup>a</sup> - Human Resource Performance

Coefficients<sup>a</sup>

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
		B	Std. Error	Beta			Lower Bound	Upper Bound
1	(Constant)	3.338	1.955		1.707	.090	-.531	7.207
	TTDEG	.422	.036	.741	11.675	.000	.351	.494
	JVAGE	.215	.756	.018	.285	.776	-1.281	1.712
2	(Constant)	5.222	2.023		2.582	.011	1.218	9.225
	TTDEG	.579	.067	1.016	8.671	.000	.447	.711
	JVAGE	-5.186	2.086	-.435	-2.486	.014	-9.314	-1.057
	TTDEG*JVAGE	-.040	.014	-.618	-2.768	.007	-.069	-.011

- a. Dependent Variable: HRPERF

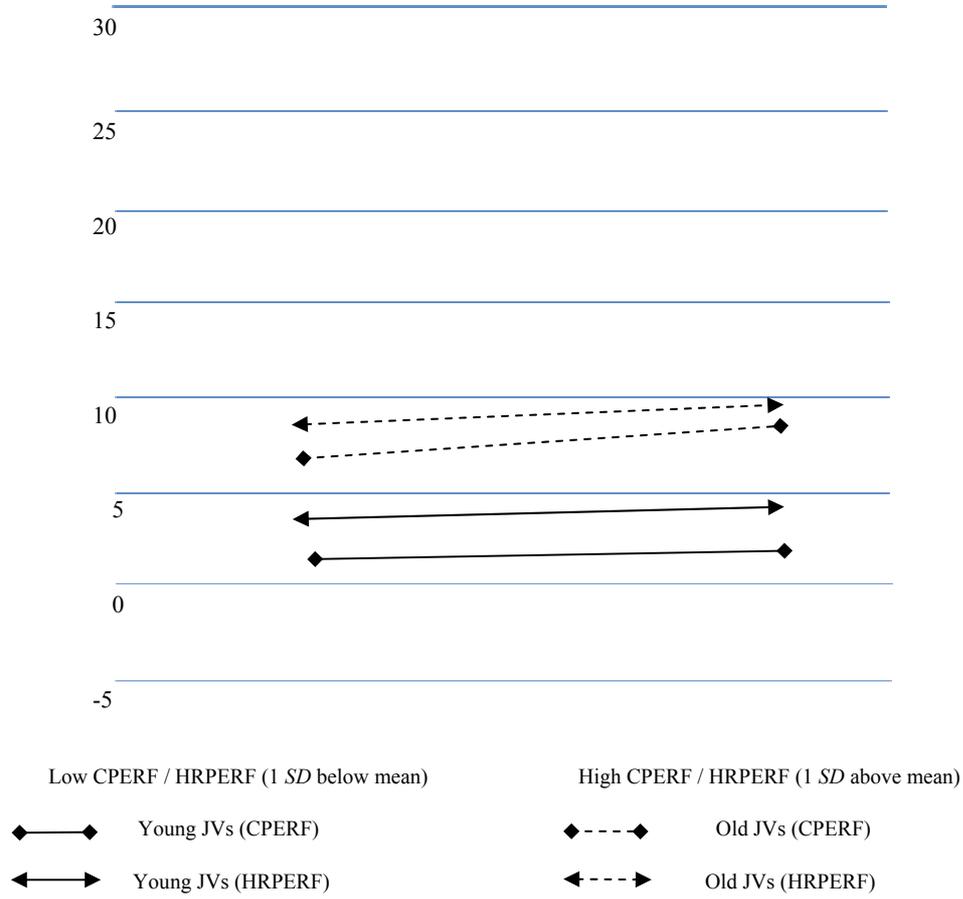


Figure 1. Slopes for both CPERF and HRPERF on TTDEG for JVAGE



## Service Programs---New Chances for the US-China's Economies

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**Fund Project:** *Jiangsu Government-sponsored Scholarship Project for visiting scholars (Su foreign education [2008]45th), and the 2009 Research Project from Jiangsu Provincial Department of education (149).*

### Abstract

For years the US and China have cooperated closely on manufacturing programs, which helps China become the world manufacturing center. While both have gained much from the cooperation, there are also increasing frictions, disputes, complains and dissatisfaction with each other because of the huge trade unbalance problem and others significant issues. The US is eager to expand export to China, but China seems hesitate to decide what to import from the US. This paper presents an analysis of the benefits of the US-China cooperation with a primary focus on the service sector which remains a large and untapped opportunity in China. The goal of the paper is to explore a new route to relieve the trade balance issues as they separately impact both nations. While focusing on analyzing several immediate opportunities, the paper also investigates several new ideas that rest on technology as well as entrepreneurial development.

**Keywords:** The US-China economies, Service sector trade, Win-Win

### 1. Introduction

China is a rapidly developing and increasingly more influential market economy. It is currently ranked as the third largest economy in the world after the US and Japan with a nominal GDP of US\$4.4 trillion. (Note 1) The Chinese economy has been growing at a relatively fast pace for the past 30 years with an average annual GDP growth rate above 10%.

Two factors contribute much to China's rapid economic growth. Export trade has increased annually from 20.1% in 2001 to 40% of its economy in 2008. Chinese exports rose from \$14 billion in 1979 to \$1429 billion in 2008, while imports over this period grew from \$16 billion to \$1133 billion in 2008. (Note 2) A report (Note 3) released by WTO shows that from January to June, 2009, for the first time, China took the lead as the world's export champion, surpassing Germany. It is predicted by a Chinese government commercial official that China will possibly pass Germany as the largest exporter in 2009 (Note 4).

Foreign direct investment (FDI) represents the second major contributor to China's rapid growth rates of late. China has remained one of the world's premier destinations for FDI since it gained access to the WTO in 2001. In 2008 alone, China absorbed \$111.17 Billion of FDI. That represented an increase of 27.65 percent for the year and can be compared to 21% drop in global FDI and a 32 % slump in FDI for developed nations.

Evidences suggest that it will be hard for China to maintain its current growth if it continues to follow its recent historical development path. The high export volume has created increasing trade disputes between China and its trading partners. Statistics provided by the American Chamber of Commerce indicates that between 2001 and 2008, the US trade deficit with China increased from \$83.10 to \$268.04 billion (excluding service trade), accounting for 28.8% of the US total trade deficit. Decreasing the trade imbalance between US and China is a top concern in US-China relations. The rapid Chinese growth, stimulated by large exports and its huge FDI, largely the result of strong manufacturing sector, has been at the expense of wage and tax reform, rising pollution, energy, and effective land use programs and a more reasonable utility distribution and cost formula.

However, China can still break through the development bottleneck if it appropriately restructures its strategy to better reflect short term problems it has tended to ignore. China must begin to develop a long term perspective that involves the creation of a more diversified economy. China's past growth relied heavily on investment in manufacturing. Its non manufacturing, primarily its service sectors did not receive commensurate attention by planners. During period from 2001 through 2008, net exports and investment predominantly linked to building capacity in export based sectors accounted for more than 60 percent of China's growth, up from 40 percent in the 1990s. This is much larger than the 2001–08 average of the G7 (16 percent) and Euro area (30 percent). The service industries in China now only accounts for 40% of GDP (2008), (Note 5) which is much lower than that of any other economy in its size class. However, this statistic does a considerable potential for growth in service sectors in China which can be a crucial resource for China's sustainable growth.

## **2. The Features of Service Programs**

A service refers to the non-material equivalent of a good. Service provision is defined as an economic activity that does not result in ownership, and this is what differentiates it from physical goods. It is claimed to be a process that creates benefits by facilitating either, a change in customers, a change in their physical possessions, or a change in their intangible assets. Service output is a component of the nominal gross domestic product of a nation. Service sectors such as gigantic supermarkets, luxury showrooms and business services and offices, which are typically peculiar features of advanced economies. The tertiary sector of industry, also called the service sector or the service industry, is one of the three industrial categories of an economy, the others being the secondary industry (manufacturing and primary goods production such as agriculture), and primary industry (extraction such as mining and fishing). Much of this so-called tertiary sector is more capital-and knowledge-intensive than either the primary sector (agriculture, mining, forestry, and fisheries) or the secondary sector (manufacturing and construction).

Service sector programs consist of such functions as translation, tourism, communication, building, insurance, finance, advertising, culture, education, law, medicine, as typical examples.

Since service industries' products are intangible, they contain considerably less cost in solid raw materials, and typically have a considerably smaller environmental footprint than do the primary secondary sectors. A developed service sector also provides a mature or maturing economy with an invaluable hedge against swings in the business or trade cycle. Many services are actually counter cyclical and tend to have a relatively more stable employment and revenue base which translates into small over all swings in the level of business activity, lower unemployment turnover and a more steady flow of tax revenues.

## **3. The Service Situation of Both the US and China**

The service sector is the largest and most significant part of the American economy. It represents about 80 percent of U.S. economic activity. Services are also an increasingly more important component of U.S. trade and accounts for much of the growth in U.S. exports.

The US economy tends to run larger and larger trade deficit (table 1), however, thanks to service contribution, the deficit has a much smaller impact on the total US economy than it otherwise would have been.

<Insert Table 1 here>

In contrast, China has a great advantage over most major exporting countries, especially when compared to that of the US economy (table 2). China's historical reliance on labor-intensive industries, enhanced by the expanding tendency of the US to outsource almost all of its manufacturing capacity, has rendered China as a leading world manufacturing center. China continues to export ever more manufactured goods to the US accounting for 21-32% of the US total goods trade deficit during the 2002 to 2008 period. However, despite the US advantage over China in services industries output (table 2), its service trade surplus with China accounted for less than 4.1% of its total service trade surplus prior to 2008. The US trade deficit to China alone, accounted for 37.7% of its total deficit to the world in 2008 (table 3).

Most experts think that to achieve a decrease in the US trace deficit to China, China must decrease goods export to the US. It is our position that Chinese manufactured export to the US is determined by comparative advantage principles of the market and ongoing deficit balances might best approached by increasing the export of US services to China.

<Insert Table 2 here>

<Insert Table 3 here>

## **4. The Benefits of Cooperation on Service Programs of Both Countries**

China and the US must recognize an unalterable reality surrounding the increasingly fast pace of globalization coupled with the equally rapid growth in technology which, when viewed together, create an entirely new set of opportunities for the service sector in both countries. Progressive economies can, indeed must, fall back on the time tested hypothesis that they are best advised to focus on that which they have a natural comparative advantage in terms of production if they are to successfully compete in the rapidly shrinking geography of world markets.

Capital and innovation intensive economies need to use that advantage as an export resource. That utilization involves not only exploiting its output and capacity to seek new and innovated ways through which they can best expand their markets in nations that lack those same sectors. In addition, Capital and innovative intensive economies such as the United States must implement the most contemporary educational and delivery systems possible to insure and maintain its leadership in this sector. Education becomes more than an output to stable growth. Current technological growth has made education at all levels an invaluable input to virtually all sectors of a modern capital, innovative and technology driven economy.

This does not mean that the US should abandon its ability to produce manufactured good, any more than should China relegate its service sector to nations with a comparative advantage over them in those sectors. What it does mean is that each nation must undertake a full sector due diligence designed to seek a proper and optimal balance between that which it can do best and that which best utilizes its scarce resources and all inputs to production.

Our objective with this more classical approach to economic development is to not only insure the best balance of factor inputs but to also build an economic development policy that encourages the advantages of each trading partner to the advantage of both the exporting and importing nation. The natural output from this approach that should be realized by both nations will be the creation of a more productive labor force which invariably spills over into the creation of a more robust middle class, a vital component of every successful economy.

Another by product of our call for a better balance between a production and service sector economy for China is that it offers an efficient and important path towards a more responsible environmental conservation policy, a deficiency aimed at China by many of its trading partners. China's environmental problems are among the worst in the world, and are likely to only get worse. These environmental issues are a big problem for China because they have real socio-economic implications for the Chinese people and China's economy. China is known by many as the 'world's factory' and this term is quite accurate. China is an export juggernaut in everything from T-shirts to TVs. China is the world's largest producer of steel, cement, aquaculture food and television sets, and is the second-largest producer of electricity and synthetic textiles. Unfortunately, being the 'World's Factory' often means exporting goods while at the same time, leaving unacceptable levels of pollutants behind on China's factory floor.

China has recently been labeled as both the world's biggest polluter and among the world's most progressive developer and installer of renewable energy, particularly solar. Clearly, China wants to attain a positive impact in tackling its pollution problems. To do so it must not only upgrade the existing traditional manufacturing sectors, but also enhance its service sector output. A vibrant service sector will help China both relieve its pollution problems and provide a better overall output balance so that its economy can continue to prosper throughout this next century.

## **5. How to Develop Cooperation on Service Programs**

The market for services in China has significant growth potential in both the short and long term. However, both the US and China have imposed some restrictions in certain service sectors that prevent or discourage each other from gaining or further expanding market access. Of course, these barriers are gradually being removed now, and we think that the following service sectors which have little impacts on both countries' politics should be expanded at a larger scale presently.

### *5.1 Education*

It has historically been difficult for geographically distant nations to find economically, environmentally, and in some cases politically efficient ways in which the exchange of information can flow between them. Distance alone has made it difficult for joint production and shared exchanges throughout almost all service sector enterprises for China and America. Such fields as education, medicine, business services as well as the cultural and the arts sectors have had to rely on traditionally expensive and time consuming travel costs to create a mutually satisfying exchange.

Clearly, a large number of Chinese students, scholars and doctors are eager to learn from America, but to do so, they must spend a considerable amount of money, time and energy to both apply for and implement the journey. Ever more American students and scholars are also seeking intellectual, cultural and informational exchange with Chinese counterparts. However, to date, there are only 160,000 Chinese students studying in America and a mere 20,000 American students studying in China. Although President Obama declared in Shanghai on November 16, 2009, that American government would plan to enlarge the number of American students studying in China to 100,000 and that his administration would simplify the visa procedures for Chinese students to go studying in America, these policies will not come close to meeting the demand for these programs on the part of Chinese students. China has more than 18,600,000 college students in 2008. If a more streamlined and efficient policy and application systems existed on both sides of the Pacific, numerous Chinese students would leap at the opportunity to study or visit America. The same enthusiasm exists on the part of many American students for study in China.

There are many benefits for the exchange of both countries' students and scholars. First and foremost is the chance to open closer communications and to get to know each country better, all of which would bring both countries more closely together in many ways. Another benefit through enhanced exchange will be economic in that as we all learn more about

each others nation we open numerous doors for all to help promote each economic as well as cultural development. A third benefit will be realized by helping Chinese students master English as well as opening educational opportunities for American students to study Chinese. Both languages are very different from each other, further complicating the process of learning for American as well as Chinese students. The more we can each provide efficient and knowledgeable teachers to help we can begin to reduce the time it takes to learn each others language which then spills very quickly into how we can then better create business, cultural, and artistic opportunities that can only help both nations better achieve economic stability and growth

Identically, besides communication face to face, meeting on line is the best substitute than any other way for education between both countries. It not only save time and energy, but also save money, so many people who could not afford to study or visit abroad before can realize their ideals. For example, online meeting with Dimdim.com, Glance or other videoconferencing software, represent an easy way to see and talk with many people at any time, regardless of where they're located. At present, there are many software companies that have developed very advanced technology to enhance international communications and conferencing. They support Web meetings with up to 100 attendees, regardless of whether they are and do it on either Mac or Windows based machines. Attendees can see the contents of host's computer screen on their own computer screens. They can talk with the host conveniently and clearly. Therefore, even if students or scholars don't go abroad, they could be taught or met by teachers or scholars in another country. We believe that if Chinese students are taught English among a host of subject, by American teachers. In this way, they are sure to master English language well and fast. And do so at a much reduced cost and smaller environmental footprint. Additionally other courses, seminars, lectures, forums, speeches and reports can be taught or transmitted with these technologies. The number of internet user in China has hit a estimated 253 million, ranking China the No.1 internet user in the world. America has the most advanced technology in internet uses. Therefore, it is the time for China and America recognize the comparative advantage of each and begin to both develop and expand it commitment to on line virtual education.

### *5.2 Medicine*

Meeting on line can also play an important role in the field of medicine for both countries. Not only can professional medical providers from both countries' more efficiently communicate and discuss difficult diseases, and procedure almost as though they were in the same room, they can also hold a joint consultation to decide how to best deal with some cures, surgical approaches, and diagnosis on a patient regardless of where they are by watching the x-ray, electrocardiograph and laboratory data as obtained.

Before it was a maxim that a patient must come to doctor and be observed by the doctor before being diagnosed. In modern times, this type of observation can be almost entirely replaced by more accurate and discriminating clinical laboratory tests results which can then be transmitted to other countries or localities instantly. It means that doctors or experts outside of the countries who have not themselves examined the patient can participate in identifying the illness afflicting a person. America has been a dominant force in western medical skills and advanced medical equipment. It has long been recognized that China has many unique medical skills, very different that those practiced in the west. The combination of both skills would surely represent a scientific strength to deal with many illnesses. It is most crucial to diagnose the cause of an illness as quickly as possible. Before the advent of these new communication technologies, doctors and experts were forced to either fly to a country themselves or have the patient flown in so as to collaborate with local doctors and experts. Now, meeting on line can win much valuable diagnosis and curing time.

### *5.3 Technology*

Technology trade accounts cover transactions of intangible assets, including patents, trade secrets, and other proprietary rights—that are used in connection with the production of goods, copyrights, trademarks, franchises, rights to broadcast live events, software licensing fees, and other intellectual property rights.

America takes huge advantage in these services and China desire to own these service products in order to enhance its service ability. However, China often complains that America sets many barriers to limit exporting high technology products to China and claims that it is one of the reasons for the unbalance trade between both countries. In contrast, America often complains that China lacks of effective intellectual property rights (IPR) enforcement, which remains a major challenge, as counterfeiting and piracy in China remain at unacceptably high levels and cause serious economic harm to American stakeholders across the economy, so American industries hesitate to market leading edge technology in China due to the high probability of piracy.

At the time of its accession to the WTO in 2001, China was in the process of modifying the full range of IPR laws, regulations, and implementing rules, including those relating to patents, trademarks, and copyrights. China had completed amendments to its Patent Law, Trademark Law, and Copyright Law, along with regulations for the Patent Law. Within several months after its accession, China issued regulations for the Trademark Law and the Copyright Law, followed by implementing rules. China also issued regulations and implementing rules covering specific subject areas, such as integrated circuits, computer software, and pharmaceuticals.

In 2008, China announced an updated Action Plan for revising its legal regime in order to better protect IPR. Among other things, this Action Plan sets out China's intentions for revising various laws and other measures, including the Patent Law, which passed the National People's Congress in December 2008, the Trademark Law, and related measures. China has also been working on other proposed legal measures that could have significant implications for the intellectual property rights of foreign right holders. In particular, China issued an Anti-monopoly Law in August 2007, which became effective in August 2008, and under this law is considering issuing rules relating to the treatment of IPR by standards setting organizations.

In 2008, China also issued its long-awaited National IP Strategy, a policy document intended to encourage and facilitate the effective creation, development, and management of intellectual property in China. The document addresses strengthening IPR protection, preventing IPR abuses, and fostering a culture of IPR in China. The strategy also identifies key sectors in which China seeks to obtain foreign patents and technology standards. Other goals include improving patent quality and improving protection for geographical indications, genetic resources, traditional knowledge, folklore, and layout-designs of integrated circuits. Notably, the document mentions that China will explore the establishment of courts of appeal for IP cases. (Note 6)

Although China's central government displayed strong leadership in modifying the full range of China's IPR laws and regulations in an effort to implement China's WTO obligations, effective IPR enforcement has not been achieved, and IPR infringement remains a serious problem in China. IPR enforcement is hampered by a lack of coordination among Chinese government ministries and agencies, and between sub-national authorities and the central government, a lack of training, resource constraints, lack of transparency in the enforcement process and its outcomes, and local protectionism and corruption.

Therefore, on the one hand, Chinese regulatory authorities must initially make improvements in technology services enforcement. They must make sure that American providers' IPR must be protected efficiently. On the other hand, America must remove definite technology export limitations to China according to ongoing bilateral dialogues or negotiations. The more China is pushing to accelerate its transformation into a more market-based economy, the more America should decrease the limitations to exporting its technology service products to China.

#### *5.4 Producer service*

The producer services industry covers logistics, technology, finance, information, commerce, and so on, which facilitate manufacturing industry. It is a generally accepted view that advanced manufacturing industry could not exist without the presence of advanced producer service. Subsequently, it is much more difficult for manufacturing industry to maintain comparable and competitive advantages. Therefore, to enhance the producer services strength will definitely become China's concentration in the near future. Meanwhile, every producer service industry in China has donated a huge prosperous market.

For example, the Chinese logistics reached a value of \$81.4 billion, accounting for 40.5% of revenues generated for the Asia-Pacific region, and 13.8% of the revenues generated globally. The Chinese share of the global market is predicted to continue to increase, rising to 19.8% by 2010; this is mirrored regionally, as China is predicted to increase its share of the Asia-Pacific region to 51.9% (table 4)

<Insert Table 4 here>

China's civil logistics market is difficult to penetrate, but its international logistics market is also a lucrative channel that can be easier to exploit. In March 2006, FedEx announced that it was introducing three new flights to China, taking FedEx's weekly total up to 26 flights; now FedEx has the highest number of weekly flights into China of any US-based logistics company.

The Chinese biotechnology market grew by 13.3% in 2008 to reach a value of \$6.3billion. In 2013, the Chinese biotechnology market is forecast to have a value of \$12.3 billion, an increase of 95.4% since 2008.

The Chinese hotels and motels industry generated total revenues of \$28.4 billion in 2008, representing a compound annual growth rate (CAGR) of 15.6% for the period spanning 2004-2008. The performance of the industry is forecast to decelerate, with an anticipated CAGR of 12.3% for the five-year period 2008-2013, which is expected to drive the industry to a value of \$50.7 billion by the end of 2012.

The Chinese insurance market grew by 23% in 2007 to reach a value of \$98.4 billion. In 2012, the Chinese insurance market is forecast to have a value of \$201.8 billion, an increase of 105.1% since 2007.

There are many other service data demonstrating the huge potential of China producer service sectors, and just above limited data has shown that if America takes the chance, it will definitely expand the service sector trade with China and gain much more service trade surplus with China.

## 6. Summary

Relationship between the US and China has worked to the advantage of American economic interests. As a member of the WTO and the world's fastest-growing market, China service sector is being opened more and more to the US. The services sector accounts for most of the jobs and economic activity in the United States, and offers the best prospects for growth in U.S exports. The service sector trade means decrease of trade unbalance degree between the US and China. Besides, the service sector trade is beneficial to China's sustainable development.

However, despite the benefits of trade between the US and China, there remain many and varied sources of friction in this relationship. In the US, a company can generally engage in any lawful business and may expand the scope or markets of interest in which it pursues business. In China, however, a company can only engage in an approved scope of business. The scope of business that is ultimately approved for a company in China is under the direction and control of the governmental approving authority at the time of the company's registration. The ability of a company in China to expand thereafter beyond its original scope of business cannot occur unless it first obtains approval from the authority. As a result, a Chinese company's business is quite specific and limited. Therefore, the US service transferor should investigate and assure itself that the transferee-to-be will not violate the provisions of its business license, articles of association or other organizational documents.

## References

- Craig Van Grastek. The Benefits of U.S.-China Trade in Services, United States Council Foundation Occasional Paper No. 1 July 2006.
- Edward M. Graham, Erika Wada, FOREIGN DIRECT INVESTMENT IN CHINA: Effects on Growth and Economic Performance, Oxford University Press, forthcoming 2001.
- Greg McGuire. TRADE IN SERVICES – MARKET ACCESS OPPORTUNITIES AND THE BENEFITS OF LIBERALIZATION FOR DEVELOPING ECONOMIES, POLICY ISSUES IN INTERNATIONAL TRADE AND COMMODITIES STUDY SERIES No. 19.
- IMF World Economic Outlook, projections for China – April 2006 (China excerpt).
- Jennifer Koncz-Bruner and Anne Flatness. U.S. International Services, Cross-Border Trade in 2008 and Services Supplied Through Affiliates in 2007, SURVEY OF CURRENT BUSINESS, October 2009.
- Kai Guo and Papa N'Diaye, 2009 “Is China's Export-Oriented Growth Sustainable?” International Monetary Fund.
- Liu Yong. The Synergic Development of China's Producer Service and Manufacturing Industries Trial, SEMINAR, University of Birmingham, 4 November 2008.
- Lucy Hornby, U.S.-China interdependence transcends trade, FACTBOX, 28 October 2009.
- Marketline. Information from around the world, across markets and inside companies, [Online] Available: [www.marketlineinfo.com/library](http://www.marketlineinfo.com/library)
- Office of the United States Representative. Executive Office of the President, COUNCIL OF ECONOMIC ADVISERS, “PREPARING THE WORKERS OF TODAY FOR THE JOBS OF TOMORROW”, July 2009.
- Terrie L. Walmsley., Thoms W. Hertel., & Elena Lanchovichina. ASSESSING THE IMPACT OF CHINA'S WTO ACCESSION ON INVESTMENT. *Pacific Economic Review*, 11: 3 (2006) pp. 315–339
- The US-China Business Council. China's implementation of its world trade organization commitments, 2 October 2009.
- The US-China Business Council. CHINA AND THE US ECONOMY: ADVANCING A WINNING TRADE AGENDA, Recommendations for the New Administration and Congress, January 2009
- The White House. Remarks by President Barack Obama at Town Hall Meeting with Future Chinese Leaders, Museum of Science and Technology, Shanghai, China, 16 November 2009.
- Wayne M. Morrison. China's Economic Conditions. *CRS Issue Brief for Congress*, April 25, 2005
- World Climate Conference-3. Climate prediction and information for decision-making, Geneva, 31 August-4 September 2009.
- World Economic outlook, Sustaining the Recovery. *International Monetary Fund*, October 2009.

## Notes

- Note 1. 2008 list by the CIA world fact book.
- Note 2. Note 6. Note 8. Note 9. Ministry of Commerce of the People's Republic of China Comprehensive Department
- Note 3. WTO: China surpasses Germany as world's NO.1 exporter for first time, China daily, August 26, 2009

Note 4. Zhongshan: China will possibly surpass Germany as world's NO.1 exporter in 2009. <http://stock.sohu.com/20091228/n269251643.shtml>

Note 5. IMF Working Paper, Asia and Pacific Department, "Is China's Export-Oriented Growth Sustainable?" Prepared Kai Guo and Papa N'Diaye, August 2009

Note 6. U.S. Census Bureau, U.S. Bureau of Economic Analysis news, U.S. INTERNATIONAL TRADE IN GOODS AND SERVICES, Annual Revision for 2008 U.S. Department of Commerce • Washington, D.C. 20230

Note 7. The same as ii

Note 8. The same as ii

Note 9. The same as ii

Table 1. U.S. International Trade in Goods and Services (Note 7) In millions of dollars, details may not equal totals due to seasonal adjustment and rounding.

Period	Balance			Export			Import		
	Total	Goods	Services	Total	Goods	Services	Total	Goods	Services
2002	-421,603	-482,829	61,226	977,469	685,171	292,298	1,399,074	1,168,002	231,072
2003	-495,042	-549,012	53,970	1,020,186	715,848	304,338	1,515,228	1,264,860	250,368
2004	-609,990	-671,834	61,844	1,159,230	806,161	353,069	1,769,219	1,477,994	291,225
2005	-715,273	-790,851	75,578	1,281,457	892,338	389,119	1,996,729	1,683,188	313,541
2006	-760,359	-847,260	86,901	1,451,685	1,015,812	435,873	2,212,044	1,863,072	348,972
2007	-701,423	-830,992	129,569	1,643,168	1,138,384	504,784	2,344,590	1,969,375	375,215
2008	-695,937	-840,252	144,315	1,826,596	1,276,994	549,602	2,522,532	2,117,245	405,287

Note: Data presented on a Balance of Payments (BOP) basis.

Table 2. U.S. International Trade with China in Goods and Services (Note 8) In millions of dollars, Details may not equal totals due to seasonal adjustment and rounding.

Period	Balance			Export			Import		
	Total	Goods(1)	Services	Total	Goods(1)	Services	Total	Goods(1)	Services
2002	-101,187	-103,115	1,928	28,101	22,053	6,048	129,288	125,168	4,120
2003	-121,998	-124,068	2,070	34,378	28,368	6,010	156,376	152,436	3,940
2004	-159,370	-161,938	1,624	41,983	34,744	7,239	202,297	196,682	5,615
2005	-199,105	-201,673	2,568	50,904	41,799	9,105	250,009	243,472	6,537
2006	-231,079	-234,101	3,022	63,673	53,673	10,000	294,752	287,774	6,978
2007	-254,106	-259,506	5,400	77,136	62,936	14,200	330,242	321,442	8,800
2008	-262,158	-268,040	5,882	85,602	69,732	15,870	347,760	337,772	Less than 9,988

Table 3. The degree of deficit and surplus of American good trade and service trade to China (Note 9)

Period	Deficit to China/Total deficit	Goods trade deficit to China/Good trade deficit	services trade surplus to China/services trade surplus
2002	24%	21%	3%
2003	25%	22.6%	3.8%
2004	26%	24%	2.6%
2005	28%	25.5%	3.4%
2006	30%	27.6%	3.5%
2007	36%	31%	4.2%
2008	37.7%	32%	4.1%

Table 4. China logistics market value forecast: \$billion, 2005-2010

Year	\$billion	RMB yuan (billion)	%Growth
2005	81.4	667.9	24%
2006	96.3	789.7	18.20%
2007	107.7	883.4	11.90%
2008	119.1	977.3	10.60%
2009	130.0	1,066.5	9.10%
2010	143.3	1,175.7	10.20%
CAGR, 2005-2010			12.0%

Source: Datamonitor, USA, 2008



## Corporate Governance Characteristics and External Audit Fees: A Study of Large Public Companies in Israel

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### Abstract

The purpose of this study is to examine the association between corporate governance characteristics and external audit fees in large public companies in Israel. The results show that board independence (proportion of external directors on the board of directors) and audit committee diligence (number of meetings) are positively and significantly associated with audit fees. The results are consistent with the demand-based perspective of audit services, wherein firms with strong corporate governance characteristics demand additional assurance from the auditors and higher audit quality, resulting in higher external audit fees.

The findings of this initial study in Israel offer support for the new proposal of Amendment 10 to the Israeli Companies Law that calls for general adoption of strict principles of corporate governance, including increasing the number of independent directors on the board of directors and expanding the roles of the board's audit committee.

**Keywords:** Audit committee meetings, Audit fees, Board independence, Corporate governance, External auditor, Israel

### 1. Introduction

In 2004, the Israel Securities Authority (ISA) formed a Corporate Governance Committee ("Goshen Committee") in an attempt to strengthen the independent control mechanisms in companies. The committee was formed in light of corporate governance codes adopted by the OECD states and the enactment of the U.S. Sarbanes Oxley Act in response to the collapse of Enron and other corporate scandals.

The Goshen Committee focused on a large number of issues, including the composition and activity of the board of directors and audit committee. Following the Goshen Committee's recommendations, Proposal of Amendment 10 to the Israeli Companies Law was published. The proposal was based on the recommendations of the Goshen Committee as well as some of the recommendations of the committee on stimulating institutional investors' involvement in the capital market in Israel ("Hamdani Committee").

The objective of this study is to analyze the various factors in corporate governance that affect external auditing fees in Israel. As part of this study, we examine three groups of variables.

**The first group** includes variables related to the quality of corporate governance – independence of the board of directors (relative number of external directors) and independence of the audit committee, its accounting and financial expertise and the frequency of meetings. **The second group** includes variables related to implementation of the new international financial reporting standards (IFRS). We selected two key balance sheet items affected by the new standards – Property, Plant and Equipment and Investment Property, since the use of the fair value model has a material impact on these items (Schuv & Ovadia, 2007). **The third group** includes control variables related to the size of the company, external audit risk and the complexity of the company.

Previous research on the relationship between corporate governance and audit fees has focused primarily on strong and sophisticated capital markets (the USA, Britain and Australia). Little research has been conducted in countries with emerging markets that are usually characterized by concentrated stock ownership and significant government ownership in listed firms (Yatim et al., 2006). These differences between developing capital markets and other developed markets may influence how boards of directors govern their firms.

The study of this issue in an emerging market such as Israel is interesting for two reasons. Firstly, Israel is different from most capital markets worldwide in terms of the size of the companies and the centralized impact of the controlling shareholders on the capital market. According to the ISA Economic Department, only in 10.2% of the companies traded on the Tel-Aviv Stock Exchange, the public owns more than 50% of the voting shares. These figures demonstrate the hegemony of the controlling shareholder in the Israeli capital market. This concentrated ownership structure is different than the structure in developed markets and may influence the way boards control their firm. Secondly, corporate governance in Israel is still evolving. Under the Israeli Companies Law, companies are required to appoint two external directors to their board of directors, with at least one of them having accounting and financial expertise. All public companies in Israel must have an audit committee. In addition, Israel is currently in a transition period – after the submission of the Goshen Committee's recommendations and prior to approval of Amendment 10 to the Companies Law that calls for general adoption of strict principles of corporate governance, including increasing the number of independent directors on the board of directors and expanding the roles of the board's audit committee.

This article joins the growing body of literature on the relationship between corporate governance variables and audit fees. This initial research on Israeli companies adds to the country diversity of the audit fee modeling literature and extends this line of research into another emerging market such as Israel. The findings of the study and understanding of the factors that explain differences between companies in audit fees are important for the ISA and directors in public companies. The results of the study may help the ISA recommendation to strengthen the external auditing and corporate governance at public companies in Israel. Furthermore, new regulatory requirements in Israel in recent years have increased the legal responsibility of officers and directors. Therefore, for directors whose objective is to preserve their reputations and reduce their exposure to lawsuits, particularly during a financial crisis, it is important to understand the various factors that influence the cost and quality of the external audit.

The remainder of this paper is organized as follows. The next section provides a brief review of corporate governance in Israel. The third section describes the literature and develops the hypotheses. The fourth section describes the research method. The results of the study are reported in the fifth section with discussion of the implications. The last section concludes and describes limitations as well as recommendations for further research.

## **2. Corporate Governance in Israel**

The Israeli Companies Law of 1999 provides for a number of corporate governance means to be enacted over listed corporations: obligatory appointment of two external directors (section 239), obligatory appointment of an audit committee (section 114) and obligatory appointment of an internal auditor (section 146). The Companies Law stipulates that an audit committee shall concentrate on oversight of internal controls and approval of related party transactions (section 117).

In August 2004, the Israel Securities Authority (ISA) appointed a committee (Goshen Committee) to examine corporate governance in public companies in Israel. Its final recommendations were submitted in December 2006. According to a press release issued by the ISA in February 2007, given the process of globalization and the growing competition between financial markets, and given that Israel is considered an emerging market, the Committee places great importance on setting proper corporate governance standards and rules that align themselves with standards adopted in leading western economies.

Two key recommendations of the Goshen Committee include: (1) the independence of the board of directors and (2) composition and role of the internal audit committee.

In the Committee's opinion, independence of the board of directors is one of the cardinal principles of good corporate governance. In different countries that have adopted similar codes, various arrangements have been devised conforming to the characteristics of the capital market and cost/benefit considerations. The Committee believes that the issue of board independence necessitates a balance between objectivity, professionalism and risk-taking in corporate

management. This balance is required because the board of directors serves a dual function which may collide at times: formulation of the company's business policy and supervision of corporate management. While the first task requires a deep understanding of business and a close fiduciary relationship with corporate management, which facilitates the directors' ability to advise and help mold corporate strategy, the second task requires objectivity and an arms-length relation with management. After examining accepted practices abroad and the characteristics of Israel's capital market, it recommended that every public company have external directors, who will constitute one third of all directors, and the number of which shall not fall below two.

To compliment board of director independence, the Committee recommends consolidating the independence of the internal audit committee of public companies. The Committee states that "in light of the audit committee's importance, and as a complimentary step ensuring directors' independence, great significance is attached to the independence of the audit committee's members and their financial qualifications." Hence, the Committee recommends that a majority of the audit committee be independent directors (including external directors) and the chairman of the committee also be an external director. The Committee stipulates the duties of the audit committee in the process of approving financial statements and recommends that audit committee hold preliminary discussions on the company's financial statements and that its recommendations be brought before the board of directors. The board of directors is obligated to discuss the Committee's recommendations prior to approving the financial statements.

Additional matters concerning the audit committee, as stated in the draft bill in Amendment No.10 to the Companies Law, are as follows:

- The legal number of votes required to pass resolutions by the audit committee is a majority of audit committee members and a majority of the external directors (independent directors), who were present at the time when the resolution was passed.
- The internal audit process and external audit performed by the external auditor, agenda for the internal audit, resources at the disposal of the internal auditor, scope of the external audit work and external auditor's fees, will be discussed by the audit committee.
- The audit committee determines procedures for dealing with risks identified in managing the business.
- To promote open discussion, the audit committee will consult with the internal auditor and the external auditor outside the presence of the chairman and members of the board of directors at least once each quarter, and discuss matters pertaining to their work and risks that may have been identified.

### 3. Hypotheses Development

#### 3.1 Background and audit fee research

Two different perspectives exist in the audit fee literature: the demand-based perspective and the audit-risk perspective. The demand-based perspective (e.g. Goodwin-Stewart & Kent, 2006; Abbott et al., 2003; Carcello et al., 2002) suggests a positive association between corporate governance characteristics and audit fees. Firms with strong corporate governance structures demand additional assurance from their auditor to preserve their reputation and avoid potential litigation (Abbott et al., 2003; Carcello et al., 2002), resulting in a higher audit fee. Alternatively, the audit risk perspective (Muniandy, 2007; Tsui et al., 2001) suggests that auditors regard corporate governance as an internal control mechanism that influences the nature and extent of audit testing. In firms with strong corporate governance, auditors will reduce their audit risk assessment. They would consequently reduce their audit testing, leading to lower external audit fees.

Beasley et al. (2000) found that as opposed to the comparison group, fraud in financial statements was common in companies where the audit committee was less independent and did not meet frequently. Carcello and Neal (2000) found that the probability of receiving going-concern opinions for financially distressed firms increased along with the independence of the audit committee. This serves to emphasize the higher probability that an independent director would express an independent opinion and not automatically accept what management dictates.

Research conducted by DeZoort (1997) and by DeZoort and Salterio (2001) shows that skilled audit committee members apply the same considerations as the external auditor and have a better understanding of the risks the auditor faces.

Beasley (1996) found a negative relation between the rate of external directors on the board and financial statement fraud, while Dechow et al. (1996) found the same type of negative relation with respect to sanctions imposed by the SEC in response to overstating profits. Abbott et al. (2004) found that companies with independent and experienced audit committees that meet more frequently have a lower risk of restatement.

A review of empirical studies of the relationship between corporate governance variables and external auditing fees shows mixed results. Thus, for example, Carcello et al. (2002) found that the characteristics of the board of directors and not those of the audit committee are what influence the cost of the audit. In contrast, Abbott et al. (2003) found a

positive and significant correlation between the independence and experience of the audit committee and the cost of the audit. However, they did not find a significant relation between the frequency of audit committee meetings and the audit fee. Goodwin-Stewart and Kent (2006) found in Australia that the independence of the board of directors and the number of audit committee meetings had a positive and significant impact on audit fees. However, they did not find a significant correlation between the independence and financial expertise of audit committee members and the audit fee. Stewart and Munro (2007), using an experimental design, found that participants expect audit committees to increase audit fees, particularly when meetings are more frequent and the external auditor has to attend the meetings.

A recent study in an emerging market, Malaysia (Muniandy, 2007), found that the existence of CEO duality on the board, a proxy for board independence, is associated with higher audit fees and that this positive relationship is weakened in the presence of a strong independent audit committee. Another study on Malaysian companies (Yatim et al., 2006), found that audit fees are positively and significantly associated with board independence, audit committee expertise and the frequency of audit committee meetings.

### *3.2 The association between corporate governance variable and audit fees*

The literature review usually shows that firms with strong corporate governance are likely to demand additional assurance from the external auditor, resulting in higher audit quality and fees (the demand-based perspective).

The independence of directors contributes to their demand for quality from the external auditor, their understanding of the risks the auditor faces and the tendency to agree with the auditor's demands with respect to the scope of the audit and the fee. Boards of directors are more effective and uncompromising as the number of external directors increases, and at times even when the members of their audit committees are independent, experienced and meet more often. The audit committee plays a key role in supervising and controlling the company's activity, explaining why the effectiveness of control increases with the number of meetings. This also has a positive impact on the quality and cost of the external audit.

The aforementioned literature provides us with a theoretical framework for composing hypotheses regarding the variables on which we will focus in the study:

*H1.* There is a positive association between the board's level of independence and audit fees.

*H2.* There is a positive association between all or part of the characteristics of the audit committee (independence, experience, number of meetings) and audit fees.

### *3.3 The association between IFRS variables and audit fee*

In addition to our two main hypotheses, we develop a third hypothesis related to implementation of the IFRS in Israel. We selected two key balance sheet items that are influenced by the new accounting standards – Property, Plant and Equipment (PPE) and Investment Property. This is due to the intensive use of the fair value method, which has an especially strong impact on these two items with the shift to IFRS in Israel (Schuv & Ovadia, 2007). IFRS and the transition to fair value accounting increase the scope of the external auditor's work and responsibility. This is due to the fact that the IFRS are based on principles, are more subjective than in the past and therefore require more effort and expertise when auditing fair value of assets. The transition to IFRS and the increased scope of work and responsibility of the external auditors entails additional costs. Therefore, PPE and Investment Property are expected to have a positive effect on the external audit fees.

*H3.* There is a positive association between PPE and Investment Property and audit fees.

### *3.4 Control variables related to audit fees*

In line with previous studies, our control variables include variables related to company size, external audit risk and company complexity. Among the variables, we examine the following: comprehensiveness of the company's balance sheet, proportion of items with a relatively high audit risk that demand additional audit procedures – these include Inventories and Receivables (Simunic, 1980) and a number of the Company's activity segments. In large companies, where the audit risk is greater as is the complexity of the audit, the external audit fees increase, and therefore these variables are expected to have a positive effect on audit cost, as was found in most studies on this subject. We did not test other control variables such as Big 4 auditor and audit opinion due to the extremely low variance in these variables among the companies in our sample.

## **4. Methodology**

Following previous studies (e.g. Goodwin-Stewart & Kent, 2006; Abbott et al., 2003; Carcello et al., 2002), we use OLS multivariable linear regression to examine the association between the explanatory variables and the audit fees.

Due to data availability problems of small companies, in this preliminary research we used the data of the largest public companies in Israel. The sample we used includes the 100 largest public companies on the Tel-Aviv 100 Stock Exchange Index, with the exception of banks, insurance companies and dual-listed companies, which have a distinct set

of control and financial reporting rules. After eliminating companies with missing data, our final sample consisted of 60 large public companies.

The data was taken from the publicly issued 2007 financial statements through the MAYA service.

The following is the regression equation:

$$\text{LNFEET}_i = \alpha_0 + \alpha_1 \cdot \text{BDPOUT}_i + \alpha_2 \cdot \text{ACOUTP}_i + \alpha_3 \cdot \text{ACEXPP}_i + \alpha_4 \cdot \text{ACMEET}_i + \alpha_5 \cdot \text{LNPPE}_i + \alpha_6 \cdot \text{LNINVSTP}_i + \alpha_7 \cdot \text{LNTA}_i + \alpha_8 \cdot \text{RECINV}_i + \alpha_9 \cdot \text{SEGMT}_i + u_i$$

Where:

**LNFEET** - natural log of the audit fees; **BDPOUT** - percentage of external directors on the board of directors; **ACOUTP** - percentage of external directors on the audit committee; **ACEXPP** - percentage of directors with accounting and financial expertise on the audit committee; **ACMEET** - dummy variable representing the number of meetings held by the audit committee in 2007 (1 - above average, 0 - below average); **LNPPE**, **LNINVSTP**, **LNTA** - natural log of plant, property and equipment (PPE), investment property and total assets, respectively; **RECINV** - ratio of receivables and inventories to total assets; **SEGMT** - number of activity segments.

In line with the hypotheses we presented, we expect the corporate governance variables (**BDPOUT**, **ACOUTP**, **ACEXPP**, **ACMEET**) to have a positive relation with audit fees (quality of the audit).

We expect the two items influenced by IFRS - Plant, Property and Equipment (**LNPPE**) and Investment Property (**LNINVSTP**) will have a positive association with audit fees.

Finally, we expect that the control variables representing company size - its total assets (**LNTA**), items that are audit intensive - Receivables and Inventories (**RECINV**) and company complexity - number of activity segments (**SEGMT**), will all have a positive relation with audit fees.

## 5. Results

Table 1 presents descriptive statistics of the sample. The table presents a number of interesting findings. On average, the external directors constitute about one third of the board of directors and approximately 60% of the audit committee (the median is 2/3 - in other words, two external directors are on the audit committee out of the average of three committee members in the sample). This suggests that companies do the minimum required under the Israeli Companies Law (appointment of two external directors who will also be members of the audit committee). The average number of audit committee meetings is about three a year. This is a low number of meetings given the audit committee's many areas of responsibility. However, there is still a big variance between companies. The audit committee of Bezeq The Israel Telecommunication Corp. Ltd., for example, held 24 meetings in 2007.

Table 2 presents the Pearson Correlation matrix of the variables in the model. **LNFEET** is positively correlated with size (**LNTA**), complexity (**SGMTS**), frequency of audit committee meetings (**ACMEET**) and Property, Plant and Equipment (**LNPPE**).

To test for potential multicollinearity, we calculated the variance inflation factor (VIF). The highest VIF for any of the variables reported in Table 2 was 2.45 for **LNFA** suggesting that multicollinearity is not a significant problem.

The OLS regression results are reported in Table 3. The explanatory power of the model is quite high (Adj.  $R^2 = 0.77$ ), and the overall model is significant ( $F = 22.5$ ). As expected, we found a positive correlation between the weight of external directors on the board and audits fees. The variable coefficient, **BDPOUT** was found to be positive (2.08) and significant ( $p = 0.02$ ). Furthermore, a positive and significant relation ( $p = 0.03$ ) was found between the number of audit committee meetings (**ACMEET**) and audit fees.

However, no correlation was found between additional corporate governance variables that represent the percentage of external directors on the audit committee (**ACOUTP**) and the percentage of audit committee members with financial expertise (**ACEXPP**) and the audit fees.

In addition, partial support was found for the hypothesis that the transition to fair value accounting, as reflected in the scope of the items influenced by the new fair value model, led to an increase in audit fees. Only Plant, Property and Equipment (**LNPPE**) was found to be positively and marginally significant (at 8% level) with audit fees.

Finally, all of the other control variables had a positive and significant relation with audit fees, as has been found in most other studies worldwide. The size of the company (**LNTA**), number of activity segments (**SEGMT**) and the relative weight of the Receivables and Inventories items (**RECINV**) were all positively and significantly associated with audit fees.

The findings of this study with respect to the independence of board members and the number of audit committee meetings as supporting the quality of the external audit are in line with the findings of Goodwin-Stewart and Kent in Australia (2006).

Our study provides empirical support for the recommendations in the proposal for Amendment 10 to the Israeli Companies Law with respect to increasing the percentage of independent directors and expanding the role of the audit committee and, accordingly, an increase in the number of meetings.

In brief, we find that two corporate governance variables – board independence and audit committee diligence – are positively related to the audit fees of large public companies in Israel.

## 6. Conclusion

This study examined the association between corporate governance variables of large public companies in Israel in 2007 and the external audit fees, prior to the approval of Amendment 10 to the Israeli Companies Law. It was found that the percentage of external directors on the board of directors and the number of audit committee meetings are positively and significantly associated with the external audit fees. The results are consistent with the demand-based perspective of audit services, wherein firms with strong corporate governance characteristics demand additional assurance from the auditors and higher audit quality, resulting in higher external audit fees.

Furthermore, it was found that one of the items impacted by the transition to IFRS and fair value (Property, Plant and Equipment) is positively and significantly related to audit fees. It is possible that the transition to IFRS and the increased scope of work and responsibility of the external auditors in auditing fair value models entails additional costs.

And finally, all control variables exhibit the hypothesized results. Company size, complexity as reflected by the number of activity segments and the weight of audit-intensive items (Inventories and Receivables) had the expected positive and significant relationship with audit fees.

However, there are two main limitations in this preliminary research of Israeli companies. Firstly, the small sample covers one year of Israeli data, and the results may not be generalized over different time periods and countries. Secondly, only a few corporate governance variables were tested. Other variables such as managerial ownership and internal control can be considered in future research. Such a study could enhance our understanding of the association between corporate governance characteristics and audit monitoring in emerging markets.

The results of this initial study on Israeli companies support the proposal of Amendment 10 to the Israeli Companies Law, including: (1) Increasing the number of the independent directors on the board accordingly, (2) Expanding the role and responsibility of the audit committee – and thus dictating more meetings.

The results of this research may support the Israel Securities Authority (ISA) recommendations to strengthen the external auditing and corporate governance mechanisms at public companies in Israel. In addition, the findings of this study have implications for directors interested in reducing potential litigation by demanding a high-quality audit. This is especially important during the current financial crisis that requires the gatekeepers to be more effective than in the past.

## References

- Abbott, L. J., Parker, S., Peters, G. F. & Raghunandan, K. (2003). The association between audit committee characteristics and audit fees. *Auditing: A Journal of Practice & Theory*, 22 (2), 17-32.
- Abbott, L.J., Parker, S., & Peters, G. F. (2004). Audit committee characteristics and restatement. *Auditing: A Journal of Practice and Theory*, 23 (1), 69 – 87.
- Beasley, M. S. (1996). An empirical analysis of the relation between the board of directors composition and financial statement fraud. *Accounting Review*, 71 (4), 443-465.
- Beasley, M. S., Carcello, J. V., Hermanson, D. R., & Lapides, P. D. (2000). Fraudulent financial reporting: Consideration of industry traits and corporate governance mechanisms. *Accounting Horizons*, 14 (4), 441-454.
- Carcello, J. V., & Neal, T. L. (2000). Audit committee composition and auditor reporting. *Accounting Review*, 75 (4), 453 – 467.
- Carcello, J. V., Hermanson, D. R., Neal, T. L., & Riley, R. A. Jr. (2002). Board characteristics and audit fees. *Contemporary Accounting Research*, 19 (3), 365-384.
- Dechow, P.M., Sloan, R. G., & Sweeney, A. P. (1996). Causes and consequences of earning manipulation: An analysis of firms subject to enforcement action by the SEC. *Contemporary Accounting Research*, 13 (1), 1 – 36.
- DeZoort, F. T., & Salterio, S. E. (2001). The effects of corporate governance experience and financial-reporting and audit knowledge on audit committee members' judgments. *Auditing: A Journal of Practice & Theory*, 20 (2), 31-47.
- DeZoort, F.T. (1997). An investigation of audit committees' oversight responsibilities. *Abacus*, 33 (2), 208 – 277.
- Goodwin-Stewart, J., & Kent, P. (2006). Relation between external audit fees, audit committee characteristics and internal audit. *Accounting and Finance*, 46 (3), 387-404.

- Goshen Committee Report. (2006). *Corporate governance code in Israel*. Israel Securities Authority (ISA).
- Hamdani Committee Report. (2008). *Stimulating institutional investors' involvement in the capital market in Israel*. Ministry of Finance, Israel.
- Memo on proposal for amendment 10 to the Companies Law, 2008.
- Muniandy, M. (2007). CEO duality, audit committee effectiveness and audit risks. *Managerial Auditing Journal*, 22 (7), 716-728.
- Schuv, S., & Ovadia, A. (2007). Implications of IFRS in Israel: initial findings and conclusions. *Working Paper*, November.
- Simunic, D.A. (1980). The pricing of audit services: theory and evidence. *Journal of Accounting Research*, 18, (1), 161-190.
- Stewart, J., & Munro, L. (2007). The impact of audit committee existence and audit committee meeting frequency on the external audit: Perceptions of Australian auditors. *International Journal of Auditing*, 11 (1), 51-69.
- Tsui, J.S.L., Jaggi, B., and Gul, F.A. (2001). CEO domination, growth opportunities, and their impact on audit fees. *Journal of Accounting, Auditing and Finance*, 16 (3), 189-208.
- Yatim, P., Kent, P., and Clarkson, P. (2006). Governance structures, ethnicity and audit fees of Malaysian listed firms. *Managerial Auditing Journal*, 21 (7), 757-782.

Table 1. Descriptive statistics of the variables

<i>Variable</i>	<i>Average</i>	<i>Standard deviation</i>	<i>Median</i>	<i>Minimum</i>	<i>Maximum</i>
LNFEET	13.88	1.51	14.03	5.94	16.44
BDPOUT	0.33	0.55	0.25	0.00	1.00
ACOUTP	0.61	0.19	0.67	0.00	1.00
ACEXPP	0.72	0.30	0.67	0.25	1.00
ACMEET	2.98	3.45	3.00	0.00	24.00
LNPPE	19.04	2.88	19.91	9.74	23.87
LNINVSTP	12.15	10.69	18.53	0.00	24.45
LNTA	22.55	1.30	22.47	19.63	25.41
RECIVV	0.18	0.19	0.14	0.00	0.77
SEGMT	2.90	2.25	3.00	0.00	7.00

Where:

**LNFEET** - natural log of the audit fees; **BDPOUT** - percentage of external directors on the board of directors; **ACOUTP** - percentage of external directors on the audit committee; **ACEXPP** - percentage of directors with accounting and financial expertise on the audit committee; **ACMEET**- dummy variable representing the number of meetings held by the audit committee in 2007 (1 - above average, 0 – below average); **LNPPE**, **LNINVSTP**, **LNTA** - natural log of plant, property and equipment (PPE), investment property and total assets, respectively; **RECINV** - ratio of receivables and inventories to total assets; **SEGMT** - number of activity segments.

Table 2. Correlation Matrix of the variables

	LNFEET	BDPOUT	ACOUTP	ACEXPP	ACMEET	LNPPE	LNINVSTP	LNTA	RECIVV	SEGMT
LNFEET	1.000									
BDPOUT	-0.031	1.000								
ACOUTP	-0.319*	0.097	1.000							
ACEXPP	-0.010	0.013	0.001	1.000						
ACMEET	0.267*	-0.431**	-0.172	0.178	1.000					
LNPPE	0.619**	-0.287*	-0.285*	0.075	0.285*	1.000				
LNINVSTP	0.105	0.028	0.017	-0.046	-0.057	-0.262*	1.000			
LNTA	0.827**	-0.033	-0.306*	-0.050	0.185	0.517**	0.211	1.000		
RECIVV	-0.007	-0.217	-0.088	0.321*	-0.026	0.356**	-0.447**	-0.227	1.000	
SEGMT	0.492**	-0.095	-0.127	-0.001	0.143	0.304*	0.026	** 0.382	-0.107	1.000

\* significant at 5%.

\*\* significant at 1%.

Table 3. The association between audit fees (LNFEET) and the explanatory variables

<i>Variable</i>	<i>Coefficient</i>	<i>t- statistic</i>	<i>p-value</i>
Intercept	-3.945	-1.934	0.058
BDPOUT	2.080	2.386	0.020
ACOUTP	-0.148	-0.241	0.809
ACEXPP	-0.545	-1.234	0.222
ACMEET	0.473	2.194	0.032
LNPPE	0.087	1.819	0.074
LNINVSTP	0.014	1.418	0.162
LNTA	0.716	6.943	0.000
RECINV	1.638	2.376	0.021
SEGMT	0.126	2.888	0.005
<b>Adj. R<sup>2</sup></b>	0.767		
<b>F</b>	22.5		
<b>Significance</b>	0.000		
Number of companies	60		



## The Relationships between Technology and Different Teaching Role Attributes of Instructors in Malaysia

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### Abstract

The present study seeks to examine the influence of technology on these four roles. Two hundred and ninety two lecturers teaching in Malaysian tertiary educations were involved in this study. They were using different level of technologies for teaching. Questionnaires were used to solicit their responses which were distributed using various means; online, personal visits and regular mails. The measurement items were mainly adapted from Job Diagnostic Survey developed by Hackman and Oldham. The results from the findings revealed that technology was found giving significant positive impacts on technical and managerial roles. There is no evidence to support the significant influence of technology on the other two roles. The significant findings suggest that lecturers perceive their roles in managing the course and dealing with technical aspect of the job have been enhanced with the use of technology. However, the insignificant findings imply several major issues that are worth contemplating. The main implications of the study are discussed in terms of lecturers' teaching job design, training and performance appraisals.

**Keywords:** Technology, Education, Instructors, Job characteristics, Teaching roles

### 1. Introduction

Teachers' roles are becoming more demanding nowadays as they have to use various types of technology to aid the teaching and learning process. It is a fact that technology comes in various levels and features. Traditional instructional technology includes writing boards, writing tools and films; while new technology include computers, the internet and multimedia resources (Laurillard, 2006). In the past, numerous studies examining the use of new instructional technologies in education found mixed feelings and perceptions among instructors in tertiary education (Neo and Neo, 2009; Gratton-Lavoie and Stanley, 2009; Mitchell, 2009; Marlia, 2007; Agbonlahor, 2006; Hacifazlioglu, Sacli and Yengin, 2005; Ryan, Carlton and Ali, 2004; Hanson, 2003; Kewell and Beeby, 2003). These studies, however, did not explore how exactly the teaching job of instructors changed with the use of the technology. Teaching job is mainly made up of distinct roles that include course planning, designing, implementing and finally assessing students' progress. Each of these roles may differ in terms of autonomy, skill variety, feedback, significance and identity. Therefore, given the complexity in each role, examining the influence of technology on the whole teaching job is rather insufficient and

thus warrant a specific study that looks into the smaller components that make up the teaching job. In the context of the present study, the smaller components of instructors' job are reflected in the form of teaching roles.

In measuring the impact of technology on different teacher roles, one important premise is the ability to operationalize the teacher roles using measurable constructs. The literature provides ample evidence of research done by scholars identifying distinct roles of teachers. Among the important roles discussed in the literature revolves around four major ones: pedagogical, managerial, technical and subject-designing (Berge, 2008; Ryan, Carlton and Ali, 2004; Bennet and Lockyer, 2004; Jaffee, 2003; Barker, 2002; Goodyear, Salmon, Spector, Steeples and Tickner, 2001). Thus far, there were no empirical studies to assess these roles attributes. In the present study, in line with the objective to measure the distinct characteristics of each role, validated measurement instruments are used to operationalize all the four teacher roles. Ultimately, this study aimed to examine the relationships between technology level used by instructors and their teaching roles in order to determine the extent of technology influence on teaching job.

## 2. Literature Review

### 2.1 Technology and Job Attributes

Prior research showed mixed findings on the impacts of technology on employees' work attributes. In their studies, Bartel et al (2007) indicated technology has positive influence on employees' skill requirements particularly in technical and problem solving skills. However, there are studies that found contradicting results. Technology has been cited a significant factor that reduce the degree of job characteristics mainly in skill and autonomy (Feldberg and Glenn, 1987; Kraft, 1977; Shaiken, 1984; Zimbalist, 1979; Menzies, 1982; Glenn and Feldberg, 1977; Braverman, 1974).

In the education arena, instructors have been reported as being optimistic with the technology potential to enhance their teaching practice quality (Shen et al, 2008; Siragusa and Dixon, 2006; Ryan et al, 2004) despite their positive and negative comments about technology impact on their job (Marlia, 2007; Hacifazlioglu et al, 2005; Poon et al, 2004). Given the inconsistency in the influence of technology on job characteristics, it is interesting to examine the impact on instructors who are using different levels of technology that range from low to high level sophistication. More importantly, it is pertinent to find out whether technology has different degree of impact on the four major roles which are proposed as unique from each other.

### 2.2 The Roles of Instructors

The literature on the roles of instructors/teachers revolves around four major ones; *pedagogical, managerial, technical and subject designing* (Ryan, Carlton and Ali, 2004; Bennet and Lockyer, 2004; Jaffee, 2003; Barker, 2002; Goodyear, Salmon, Spector, Steeples and Tickner, 2001, McMann, 1994). These roles prevail regardless of the type of learning environment; traditional or online method, and thus suggesting that these roles may be distinct from each other in terms of its characteristics (Bennett and Lockyer, 2004; Goodyear et al, 2001; McMann, 1994). For instance, the design of the subject content and the technical role attribute in a traditional learning environment may differ from the one in an e-learning context. It is thus fair to claim that the four roles may have their own unique attributes in terms of skill complexity, autonomy, significance, identity and level of feedback. As suggested by Hackman and Oldham (1976, 1980), each job has its own attributes and the level of attributes may differ from one employee to another. Given the complexity of teaching, instead of examining the "whole teaching job" attributes, the present study sought to examine the attributes of the four major roles that make up the 'whole teaching job'. The following section explains further the individual roles of teachers in both environments; traditional and e-learning.

#### 2.2.1 Pedagogical Role

Miller and King (2003) noted that the key to success in any course, whether technology-based or not, is the instructors' pedagogical skill. Being a teacher, the person is responsible to explain, provide reinforcement and support, make announcements, gives directions, discipline students and many others that are related to imparting to students what the teacher possesses. In the traditional environment, most instructions are given face-to-face. There are human contact and personal touch from the instructors. The presence of verbal communication such as intonation and nonverbal communication like body language help to enrich the conveyance of messages. A teacher can always use different verbal and nonverbal communication style to express his or her opinion, to give remarks to students or even to encourage students to interact in the classroom. Such a luxury is absent in an online tutorial. Nonverbal communication like eye contact, gestures, facial expressions and other body languages are not visible to students. And most importantly, students are feeling isolated due to limited physical interaction. According to Newble and Cannon (1994), an instructor who uses the same approach in an online class will face difficulty as he has to find alternative ways to overcome the absence of nonverbal communication.

#### 2.2.2 Managerial Role

According to Sadker and Sadker (1991), an effective teacher must also be a good manager who is able to organize the academic content and instruction. Educators are no longer focusing on controlling student behavior, instead they have

moved to creating and maintaining an environment that supports learning (Evertson and Harris, 1992). Franklin (1988) and Hanson (1991) contend that teachers strongly feel that they are qualified to organize the learning process according to their own method. Despite the impersonal school rules that regulate the academic processes, once the teachers enter the classroom, the learning facilitation will accord their methods as they deem fit.

On the other hand, Flakes, Kuhs, Donnelly and Ebert (1995) mentioned the importance of time management to an instructor. Time management is about setting the timeframe to plan, implement and evaluate the course. The need to manage time is even more important in e-learning as students are given the freedom to be independent and the amount of face-to-face meetings is rather limited. In order to keep students on track, a structured schedule indicating important activities such as online or face-to-face discussion, meetings and deadlines must be planned ahead and communicated to students. The fact that students are geographically dispersed makes managing the course even more challenging.

Major significant difference between traditional and e-learning in respect of class management is mainly contributed by the type of technology used to facilitate the learning processes and activities. In the traditional environment, when the physical interaction is there, the instructors can always communicate and remind the students on the activities of the course. But in e-learning environment, the instructors have to rely on various tools such as electronic bulletin board and email to communicate messages to students about new activities, feedback on students' work, changes and latest update.

### 2.2.3 Technical Role

Given the various techniques and media, instructors need to choose the one that is most appropriate depending on the learning outcomes, practicality and the costs to develop or to use the method. Being the one who determines which technology or tools to be used in the classroom, the instructor should be able to assist and guide the students in using the equipment in such a way that facilitate learning. Inability to provide necessary assistance will lead to frustration among students. Everett (1998) points out that students' motivation to learn partly depends on their ability to persevere with technical problems and how these problems are resolved. Goodyear et al (2001) assert that instructors should have adequate technical skills and understand the capabilities and limitations of available technologies and tools.

In e-learning, Barker (2002) mentioned that online instructors should have the ability to use a range of different tools such as email, word processor, spreadsheet, database and Web page authoring tools. Bennet and Lockyer (2004) added that online instructors should develop skills to create and integrate electronic subject resources. Miller and King (2003) stressed that the instructor should be competent in using the technology so that he can decrease students' anxiety during the course and address technology issues that might arise.

### 2.2.4 Subject Designer Role

Jaffee (2003) who wrote on the transformation of pedagogical style from traditional environment to Web-based approach noted that in the former environment, the instructor will play as the 'sage on the stage' whose task is to actively deliver and the students to passively receive the information. Student-centered learning however, requires the students to be actively involved and be given the opportunity to apply their own understanding about the subject in order to come up with new ideas or knowledge. Under this environment, the course design should allow interactivity, collaboration and reflection. It also requires the instructor to rethink the course outcomes, content, assignments, supporting materials and evaluation methods. Bennet and Lockyer (2004) stated that the designer role of instructors in both settings; traditional and online, is basically the same. Instructors need to develop the overall design, identify assessment tasks and plan a sequence of activities and specific resources. In online settings, the instructors are expected to do more in order to make use of technology by integrating it in their designer roles to enhance learning. Here, the ability of instructors to design the course in such a way that creates learning and the same time utilizing the available resources is crucial.

## 3. Research Methodology

### 3.1 Samples and Data Collection

All public and private institutions of higher learning in Malaysia were identified and samples were drawn from faculties/department of interest. In each faculty, lecturers were chosen using simple random sampling. As this study was about teaching roles and responsibilities, only those academic staff or faculty members who have a teaching load of at least 50 percent of their total work load were included in the study.

Questionnaires were distributed through online, regular mail and personal visits. Online survey yielded the lowest response rate (only 80 online responses) and thus regular mail survey had to be employed. This method generated 137 responses. The subsequent method used was to personally distribute the questionnaire and this technique resulted in 75 responses. In total, 292 responses were collected and it took about 6 months to complete.

### 3.2 Measurement Instruments and Statistical Techniques

Prior studies examining the influence of technology on the roles of instructor mainly used qualitative research method. This study chose to employ a quantitative approach which could provide empirical evidence about technology influence. In this study, the levels of technology was operationalized using several sources such as Gavin (2003), Fallon and Brown (2003) and, Roberts and Jones (2000). These scholars suggested several levels of e-learning technology ranging from the lowest to the most sophisticated technology. In this study, we added a new level that indicates a stage of learning that uses traditional method with minimum or no technology application. This traditional stage of learning precedes the lowest e-learning method. Table 1 below describes the five levels of technology used in teaching.

The four teaching role attributes (pedagogical, managerial, technical and subject designing) were measured using the items in the Job Diagnostic Survey (JDS) developed by Hackman and Oldham (1980). Each teaching role attribute was measured using 15 items adopted from the JDS that reflect skill variety, task significance, task identity, autonomy and knowledge of work results. All the items are expressed on 7-point scales, where 1 is low and 7 is high. Brief explanations on each of the four roles were provided to ensure respondents understood the survey objectives and to make it clear to the potential respondents that they were required to evaluate the role characteristics individually based on the 15 items. The other section of the questionnaire asked for the demographic information of the respondents.

Statistical Package for the Social Sciences (SPSS) 15.0 for Windows was used to analyze the data. Pearson correlation tests and one-way ANOVA test were used to examine the relationships between variables.

## 4. Data Analysis

### 4.1 Respondents' Demographic Analysis

A total of 292 university instructors participated in the survey. The majority of the respondents were from public universities (47 percent, 28 percent were from private university colleges, 23 percent from private universities and the rest (2 percent) were from public university colleges. In terms of teaching experience, 29% of the instructors had more than 11 years, 36 percent have between 6 to 10 years and 35 percent have 1 to 5 years. Out of the 292 respondents, 176 of them (60 percent) possessed Master degree, 20 percent with doctorate, and 20 percent with bachelor degree. Majority of the respondents were from the age group of 30 to 39 years old (52 percent), 21% in age group of 40 to 49 years, 20 percent were between 20 to 29 years old and only 7 percent were those above 50 years of age.

### 4.2 Factor Analysis and Reliability Tests

The factor analysis output on the sixty items that measured instructors' four teaching role attributes resulted in 11 factors, which explained 71.21% of the total variance. The Bartlett test of sphericity is significant and that the Kaiser-Meyer-Olkin measure of sampling adequacy is 0.917 which was far greater than 0.6. Inspection of the anti-image correlation matrix revealed that all the measures of sampling adequacy were well above the acceptable level of 0.5. In selecting items for each scale, two criteria were used. First, items on a single factor with factor loading of .3 or less were dropped (Hair et al, 1998), and second to improve scale reliability, items with less than 0.3 item-to-total correlations were deleted from the scales (Nunnally, 1978).

The factor analysis output indicated unclear cut factor loadings and the items did not appropriately loaded in the expected groups. Several factors were found containing items from different teaching roles. Nevertheless, for the sake of the present study, regardless of the dimensionality, four factors with items which indicate common teaching role were used and seven others were dropped as they did not provide meaningful interpretation. Despite the high loadings, since all the items within the respective factors did not appropriately loaded in the expected group, all these factors had to be dropped for further analyses. Subsequently, reliability tests were conducted to measure the Cronbach's coefficient alpha for each factor items. Factor 1 consisted 10 items was labeled *subject design role attributes* with Cronbach's coefficient alpha of 0.936. Factor 2 that contained 8 items was named *pedagogical role attributes* and the reliability coefficient for the scale was 0.907. Factor 3 was labeled *technical role attributes* had 6 items with Cronbach's coefficient of 0.885. Factor 5 consisted of 8 items with reliability coefficient of 0.894 was labeled *managerial role attributes*.

### 4.3 Analysis of Variance across Different Technology Levels

One-way ANOVA tests were used to determine if there exist significant differences of role attributes in terms of technology used by the respondents. Based on the output in Table 2, significant difference was only found in *technical role attributes* across the five levels of technology ( $F=4.289$ ,  $p=0.002$ ). It could be concluded that technology level used by instructor exerted an influence on the *technical role attributes* for at least 2 of the 5 technology levels. However, the effects of technology level on *pedagogical role attributes*, *managerial role attributes*, and *subject design role attributes* were found to be insignificant.

A post hoc multiple comparisons was carried out to examine which level of technology significantly influenced *technical role attributes*. The results of the Tukey's test indicated that *traditional* users had significantly different

*technical role attributes* means with *medium technology* users (mean difference of -0.52511,  $p=0.014$ ). Tukey's test also showed a significant difference between *traditional* level and *pure e-learning* users (mean difference of -1.47348,  $p=0.022$ ). There were no significant differences in *technical role attributes* between *traditional* and *low technology* users as well as between *traditional* and *high technology* users. Table 4.6 details the result.

#### 4.4 Correlations between Technology Levels and the Four Teaching Roles Attributes

The relationships between technology levels and the four role attributes were assessed using Pearson Product Moment correlation as shown in Table 3 below.

As shown in Table 3, two role attributes (*managerial role attributes* and *technical role attributes*) were found to be significant and positively related to technology levels. The correlation between *managerial role attributes* and technology levels had an r-value of 0.122 and p-value of 0.019. A significant positive relationship was also found between technology level and *technical role attributes* with an r-value of 0.215 ( $p=0.000$ ). Technology levels were not significantly related to *pedagogical role attributes* and *subject design role attributes*. Despite the insignificant relationship, however, it was observed that technology level was negatively related to the two role attributes.

### 5. Discussion of Findings

The study's findings generally did not support the notion that there exist differences in terms of teaching role attributes across different technology levels used by instructors. The teaching role attributes in *pedagogical*, *managerial* and *subject-design* role did not indicate any significant differences despite the diverse levels of technology applied. The findings were inconsistent with the ideas proposed by most scholars that asserted that these three roles should differ significantly in terms of their degree of characteristics (Newble and Cannon, 1994; Mason, 1991; Kerr, 1986; Goodyear et al., 2001). However, significant differences were found in different technology levels in terms of *technical role* attributes. The significant difference captured in this study conformed to the views of the majority of scholars (Bennet and Lockyer, 2004; Goodyear et al., 2001; Miller and King, 2003; Kerr, 1986; Davie and Palmer, 1985). The findings further indicated that users of traditional technology for teaching were significantly different from those in medium and pure e-learning technologies. The former group of users was found to have relatively lower scores of *technical* attributes. Thus, it could be inferred that the higher the level of technology used in teaching, the higher would be the degree of characteristics in the *technical* aspect.

The insignificant findings in the other three teaching role attributes across the 5 levels of technology revealed an interesting fact. Despite the diverse technology used in their teaching practices, instructors do not differ much in terms of their pedagogical, managerial and subject design role attributes. This may be due to the fact that in most Malaysian higher learning institutions which are committed to adopting various technologies in teaching and learning, the major emphasis is only to ensure that they have the systems that enable information gathering, management, access, and communication in various forms (Hassan, 2002). The other crucial aspects like upgrading ICT knowledge and skills as well as redesigning the instructors' jobs are neglected. With less emphasis in those aspects, the instructors fail to acknowledge the fact that there are significant differences between the traditional teaching method and the technology-based methods.

Other major findings obtained by the study are the relationships between the four teaching role attributes and the technology level. The findings showed that only *managerial* and *technical role attributes* are significantly related to technology levels and the relationships are positive. The significant findings suggest that the higher the level of technology employed by instructors, the higher the degree of attributes in managerial and technical aspects of their teaching job. The findings are consistent with the majority views that state the more sophisticated the technology used in the teaching job, the higher would be the demand to manage instructors' job. Better management of communication among students in e-learning particularly in monitoring the flow of conversation, encouraging comments, synchronizing and handling information overload (Zafeiriou, 2000). In terms of the influence of technology levels on technical aspects of the job, the positive significant relationship signified that the higher the technology levels, the more would be the degree of technical aspect required from the job. This is also in line with the opinions that the higher level of technology used, the more would be the technical skills and competence required among the instructors (Bennet and Lockyer, 2004; Goodyear et al., 2001; Miller and King, 2003; Kerr, 1986; Davie and Palmer, 1985).

A possible explanation for the insignificant relationship between pedagogical and subject design roles lies in the fact that technology adopted by educational institutions is done without proper assessment on the needs and readiness of the instructors. Instructors may have low awareness in their changing roles in these two aspects and thus resulting in the old ways of doing things.

### 6. Implications of the Study on Policy Makers

The study's findings have three major implications relevant to policy makers in higher educational institutions and national regulatory bodies. First, to deal with lack of knowledge and skills among instructors in using higher technology in teaching, needs assessment has to be conducted to determine the type of training instructor needs with respect to their

readiness and competencies. Second, attention must be directed towards re-examining the instructors' jobs that involve higher technology use. Failure to redesign the job in accordance with the type of technology used would render the lecturers having low awareness of how their teaching job should change. Finally, there should be a clear link between the changing natures of teaching job with the performance evaluation scheme. Without clear association between the nature of the job and the reinforcement scheme, lecturers are unlikely to acknowledge the fact that they have to change the way they perform in line with the teaching methods used.

## 7. Conclusion

This study provides a better understanding about the impact of technology on teaching roles. The emphasis on the four teaching roles is timely given the diverse impacts that technology has on the role attributes. Based on the findings, policy makers could benefit by examining how the teaching job could be redesigned and re-evaluated. As for future research implications, further studies could be carried out to examine how non-teaching aspects like such research and publication as well as administrative duties are affected by technology.

## References

- Agbonlahor, R.O. (2006). Motivation for use of information technology by university faculty: A developing country perspective. *Information Development*, 22(4), 263-277.
- Barker, P. (2002). Skill sets for online teaching. In *ED MEDIA 2002 World Conference on Educational Multimedia, Hypermedia & Telecommunications Proceedings*, Denver.
- Bartel, A., Ichniowski, C., & Shaw, K. (2007). How does information technology affect productivity? Plant-level comparisons of product innovation, process improvement, and worker skills. *The Quarterly Journal of Economics*, 122(4), 1721-1758.
- Bennet, S., & Lockyer, L. (2004). Becoming an online teacher: Adapting to a changed environment for teaching and learning in higher education. *Educational Media International*, 41(3), 231-244.
- Berge, Z.L. (2008). Changing instructor's roles in virtual worlds. *The Quarterly Review of Distance Education*, 9(4), 407-414.
- Braverman, H. (1974). *Labor and monopoly capital*, New York: Monthly Review Press.
- Davie, L., & Palmer, P. (1985). Computer-teleconferencing for advanced distance education. *Canadian Journal of University Continuing Education*, 11(2), 56-66.
- Everett, D. R. (1998). Taking instruction online: The art of delivery. *Proceedings of SITE 98: Society for Information Technology and Teacher Education International Conference*, Washington, DC, March 10-14, 1998.
- Evertson, C. M., & Harris, A. H. (1992). What we know about managing classrooms. *Educational Leadership*, 49(7), 74-77.
- Fallon, C., & Brown, S. (2003). *E-learning standards: A guide to purchasing, developing, and deploying standards conformant e-learning*. Florida: St. Lucie Press.
- Flake, C. L., Kuhs, T., Donnelly, A., & Ebert, C. (1995). Reinventing the role of teacher: Teacher as researcher. *Phi Delta Kappan*, 76(5), 405-407.
- Gavin, T. (2003). Industry Report. *Training*, pp 21 – 45.
- Glenn, E. N., & Feldberg, R. L. (1977). Degraded and De-Skilled: The proletarianization of clerical work. *Social Problems*, 25, 56-64.
- Goodyear, P., Salmon, G., Spector, J. M., Steeples, C., & Tickner, S. (2001). Competences for online teaching: A special report. *Educational Technology, Research & Development*, 49(1), 65-72.
- Gratton-Lavoie, C., & Stanley, D. (2009). Teaching and learning principles of Microeconomics online: An empirical assessment. *Journal of Economic Education*, Winter, 3-25.
- Hacifazlioglu, O., Sacli, O.A., & Yengin, I. (2005). Lecturers' attitudes towards the use of technology: Alternative strategies for faculty administrators. In *Proceedings of the Second International Conference on eLearning for Knowledge-Based Society*, August 4-7, Bangkok.
- Hackman, J. R., & Oldham, G. R. (1976). Motivation through the design of work: Test of a theory. *Organizational Behavior and Human Performance*, 16, 250-279.
- Hackman, J. R., & Oldham, G. R. (1980). *Work redesign*. Addison-Wesley Publishing Co.
- Hair, J.F., Anderson, R.E., Tatham, R.L., & Black, W.C. (1998). *Multivariate data analysis*, New Jersey: Prentice Hall.
- Hanson, E. M. (1991). *Educational administration and organizational behavior*. Boston: Allyn and Bacon.

- Hanson, J. (2003). Encouraging lecturers to engage with new technologies in learning and teaching in a vocational university: The role of recognition and reward. *Higher Education Management and Policy*, 15(3), 135-149.
- Jaffee, D. (1997). Asynchronous learning: Technology and pedagogical strategy in a distance learning course. *Teaching Sociology*, 25(4), 262-277.
- Jaffee, D. (2003). Virtual transformation: Web-based technology and pedagogical change. *Teaching Sociology*, 31(2), 227-236.
- Kewell, B., & Beeby, M. (2003). Student and lecturer responses to the introduction of computer assisted learning (CAL) in a university business school. *Teaching in Higher Education*, 8(3), 413-430.
- Kraft, P. (1977). *Programmers and managers*. New York: Springer-Verlag.
- Laurillard, D. (2006). E-learning in higher education. In P. Ashwin (Ed.), *Changing Higher Education: The Development of Learning and Teaching* (1-12). London: Routledge.
- Marlia, P. (2007). E-learning in Malaysian public universities: Case studies of Universiti Kebangsaan Malaysia and Universiti Teknologi Malaysia. In *Proceedings of the 1<sup>st</sup> International Malaysian Educational Technology Convention*, November 2-5, Johor Bharu, Malaysia.
- Mason, R. (1991). Moderating educational computer conferencing. *DEOSNEWS*, 1(19).
- Menzies, H. (1982). *Women and the chip: Case studies of the effects of informatics on employment in Canada*. Montreal: The Institute for Research on Public Policy.
- Miller, T. W., & King, F. B. (2003). Distance education: Pedagogy and best practices in the new millennium. *International Journal Leadership in Education*, 3(3), 283-297.
- Ministry of Higher Education Malaysia. (2007). Statistik IPTA. [Online] Available: <http://www.mohe.gov.my> (June 27, 2007)
- Mitchell, R.L.G. (2009). Online education and organizational change. *Community College Review*, 37(1), 81-101.
- Neo, M., & Neo, T. (2009). Engaging students in multimedia-mediated constructivist learning – Students' perceptions. *Educational Technology & Society*, 12(2), 254-266
- Newble, D., & Cannon, R. A. (1994). *A handbook for teachers in universities & colleges: A guide to improving teaching methods*. London: Kogan Page.
- Nunnally, J.C. (1978). *Psychometric Theory*. New York: McGraw-Hill.
- Poon, W. C., Low, L. T., & Yong, G. F. (2004). A study of web-based lLearning (WBL) environment in Malaysia. *The International Journal of Educational Management*, 18(6), 374-385.
- Roberts, T. S., & Jones, D. T. (2000). Crossroads of the new millennium: Four models of online teaching. Proceedings of the *Technological Education and National Development Conference* on the April 8-10, Abu Dhabi, UAE.
- Ryan, M., Carlton, K. H., & Ali, N. S. (2004). Reflections on the faculty in distance learning and changing pedagogies. *Nursing Education Perspectives*, 25(2), 73-80.
- Sadker, M. P., & Sadker, D. M. (1991). *Teachers, schools, and society*. New York: McGraw-Hill.
- Shaiken, H. (1984). *Work transformed: Automation and labor in the computer age*. New York: Holt, Rinehart and Winston.
- Shen, R., Wang, M., & Pan, X. (2008). Increasing interactivity in blended classrooms through a cutting-edge mobile learning system. *British Journal of Educational Technology*, 39(6), 1073-1086.
- Siragusa, L., & Dixon, K.C. (2006). A research methodology: The development of survey instruments for research into online learning in higher education. *Issues in Educational Research*, 16(2), 206-225.
- Zafeiriou, G. (2000). *Students' perceptions of issues arising from and factors influencing group interaction in computer conferencing: A grounded theory approach*. Unpublished doctoral thesis, University of Sheffield, UK.
- Zimbalist, A. (Ed.). (1979). *Case studies on the labor process*. New York: Monthly Review.

### Acknowledgement

B dea is to give training to employees for the new responsibility and requirement task created - that equence they have to fo.

The authors would like to acknowledge the contributions of Prof Dr M. Saeed Siddiq and Assoc Prof Dr Ravindran Ramasamy during the completion of the study.

Table 1. Measuring the Level of Technology Use among Instructors

<b>Independent Variable: Level of Technology</b>	<b>Descriptions:</b> In performing my role as a teaching instructor...
Traditional	... I use <b>no / very minimal computer applications</b> or other related technology. We use face-to-face meetings and teaching aids used are like white/blackboard, overhead projector, and printed handouts/documents.
Low technology	...sometimes I use word processing, power point presentation and Internet. I only use <b>face-to-face</b> meetings and <b>asynchronous</b> communication channels. I <b>do not use synchronous</b> communication channels at all.
Medium technology	...I use word processing, power point presentation and Internet. I <b>use both synchronous and asynchronous</b> communication channels. Learning materials are available to students at our institution's website and also in digital forms. <b>Face-to-face</b> meetings are still <b>extensively</b> used.
High technology	...I use word processing, power point presentation and Internet. I <b>use both synchronous and asynchronous</b> communication channels. Learning materials are available to students at our institution's website and also in digital forms. <b>Face-to-face</b> meetings are conducted <b>only</b> when necessary.
Pure e-learning	...I <b>only</b> use <b>synchronous</b> and <b>asynchronous</b> communication channels. Students are learning independently. Learning materials are available to students at our institution's website and also in digital forms. There is no <b>face-to-face meeting at all</b> .

Sources: Adapted from: (1) Fallon, C. and Brown, S. (2003) *E-Learning Standards: A Guide to Purchasing, Developing, and Deploying Standards Conformant E-Learning*, St. Lucie Press: Florida. (2) Gavin, T. (2003) "Industry Report", *Training*, 21 – 45. (3) Roberts, T. S. and Jones, D. T. (2000) "Crossroads of the New Millennium: Four Models of Online Teaching," *TEND 2000 in Proceedings of the Technological Education and National Development Conference on the April 8-10, Abu Dhabi, UAE*.

Table 2. Analysis of Variance of Instructors' Roles Attributes Across Five Levels of Technology

		Sum of Squares	df	Mean Square	F	Sig.
Pedagogical role attributes	Between Groups	5.432	4	1.358	2.024	.091
	Within Groups	192.517	287	.671		
	Total	197.949	291			
Managerial role attributes	Between Groups	5.191	4	1.298	2.175	.072
	Within Groups	171.248	287	.597		
	Total	176.439	291			
Technical role attributes	Between Groups	14.813	4	3.703	4.289	.002
	Within Groups	247.791	287	.863		
	Total	262.605	291			
Subject design role attributes	Between Groups	5.045	4	1.261	1.309	.267
	Within Groups	276.616	287	.964		
	Total	281.662	291			

Table 3. Relationship between Technology Levels and the Four Teaching Role Attributes

		Pedagogical role attributes	Managerial role attributes	Technical role attributes	Subject design role attributes
Technology level	Pearson Correlation	-.002	.122(*)	.215(**)	-.062
	Sig. (1-tailed)	.483	.019	.000	.147
	N	292	292	292	292



# Constructing the Mechanism of Production-Learning-Research Integration

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**Abstract:** The key of the effective run of production-Learning-research combo is to set up and perfect its integration mechanism of cooperative process. The main contents include bidirectional selection, R&D, interest harmonization, personnel training and service security and the primary requirements are Compatibility, harmony and symbiosis.

**Keywords:** Enterprise, Production-learning-research combo, Mechanism, Research and development (R&D)

## 1. Introduction

In China, the cooperation of production-learning-research started from the township enterprises in the southern Jiangsu during 1960-1970 when they invited "Sunday Engineer" from Shanghai to solve technological problems. After Reform and Opening, it was further intensified, which promoted the technical progress and increased the economic benefit. In the mid to late 1990s, the cooperation of production-learning-research entered into the stage of production-Learning-research combo. Production-learning-research combo refers that for common desire, manufacturing enterprises, colleges and research institutions combine respective preponderant resources to organize the economic entity which is advantage mutually complementing, benefit sharing and risk bearing. They explore the new product, new techniques, new technology and new materials to implement the transform of technological achievements for mutual development. (DING, 2008) Now production-learning-research combo has become the main development form of the cooperation of production-Learning-research in China.

One important characteristic of production-learning-research combo is symbiotic. Advantage mutually complementing is its engendering premise. Common interests are its existing base and scientific management is its developing guarantee. To exert its symbiotic effect better, the integration mechanism of cooperative process of production-learning-research should be set up and developed according to the demand of integration of science and technology economy and following the rule of market economy. The key point for run is to establish the following mechanisms

## 2. The Mechanism of Bidirectional Selection

Production-learning-research combo is the cooperation of bodies with different interests. Therefore, the selection of partner is the premise to get the project success. In the process of selection, the focused problems are the complementation and compatibility of knowledge property, the technology innovation ability and the reputation of partners.

### 2.1 Choice of partner

The following aspects should be considered when choosing the partners.

One is that the field of the management or research should be convergent. The second aspect is the strength of cooperation. Enterprises need good social image, strong economic power, and extensive marketing distribution channels. The research party needs strong ability of R&D. The achievements in scientific research have advanced nature and market value. Researchers have the time to instruct in person and have the characteristics of cooperation and hard working. The third aspect is credibility which is the moral norms obeyed by all cooperation parties. Each party should insist on credibility and care about the interests of other parties and the public interest when carrying on the cooperation agreement. Cheating with hiding the truth to or concealing the illegal purpose with the legal behavior must be prohibited. The above are crucial to the transform of R&D and innovation achievements.

After choosing the partners with the principles of vantage mutually complementing and class matching, the cooperation parties will decide the modes of production-learning-research combo by patient negotiation. They discuss the details about resource sharing, risk bearing and benefit taking to make the basis for the normal operation of production-learning-research combo in the future.

## *2.2 The conception of core value*

Production-learning-research combo is the cooperation with the different management mechanisms, different enterprise systems and different culture backgrounds by two dependent entities. It is the organic unity working for the common goal. If the tangible production factors combine without the amalgamation of values and affections, the combination of factors will only be the representation. Therefore the common value conception is the guarantee of successful cooperation.

The core value conception of cooperation is social responsibility. During the process of innovation, there is such a situation that colleges and research institution seek academic value while enterprises pursue the commercial value. The effective method to solve this conflict is the integration of the social value, academic value and commercial value. The common goal of science and technology innovation is to satisfy the peoples' increasing physical and cultural demands, upgrade the industry level and accelerate the economy development. With this premise, enterprises as the principal part select the pivot project with innovation value according to the market demand and cooperate with college and research institutions to realize both goals of win-win and developing together.

## **3. Mechanism of Research and Development**

### *3.1 Top Design*

The top design of production-Learning-research combo is to make the overall design for its development from the top level, construct the energetic new mechanism, exhibit the blue print between the goal and the practice, identify the development procedure and measure and cooperate with each other for the common goal.

As for management system, production-Learning-research combo is the new economy entity organized by all the parties, so it should found the leading organizations with the common benefit to realize the uniform leading, intensify the collaboration and resource sharing in term of the requirement of corporation management structure. The combo needs to establish the management constitutions, divide the work reasonably, define the responsibility and work to the constitutions to make the good basis for the long-run higher level cooperation.

The strategic plan of the combo should be made carefully. Forming the combo needs to progress by stages. The development goals and stresses differ at the different stages, the same as the degree of the mutual trust and independence and the stability of the combo.

The management level of the combo should integrate the industry overall situation and development trend to design the stable development strategy. It should propose a set of development plans to upgrade the ability of strategic management and implementation and to guarantee the fulfilling of the strategic plan.

### *3.2 The choice of project*

Colleges and research institutions have strong research power, but they do not know the sufficient demand information of local industry and enterprises. Generally the technological achievements lack the right market positioning while stressing on the upriver experimental research. In addition, their financing ability is very limited, so the transition of the project is infeasible.

Although enterprises have not enough power to innovate, they know the market and the development trend of the industry. They are familiar with the exploration of the market. Therefore the construction of the production-learning-research combo should

Therefore, in the building production-learning-research combo, we should ally with strong forces and complement mutual advantages. Enterprises can not simply adopt "take-ism" to research projects. They should accurately identify the focus, in conjunction with features of industrial development, enterprise development planning and market demand prospects, cooperate actively with the major universities and institutions, propose research direction and issues boldly, and associate with experts and scholars to conduct product research and development to form the industrialization rapidly.

### *3.3 Building a high-level innovation team.*

Creative team is a research group formed on the basis of cooperation. In the production-learning-research combo, the misunderstanding should be eliminated that the innovation is the matter of research side and the production is the business of enterprises. In fact, the research side should work together with enterprises to determine the direction of technological innovation and development of innovative products based on market needs and production issues. To accelerate technological innovation, enterprises and universities, research institutes can jointly set up project innovation team to effectively combining all the best talents. Project's innovative team building needs to choose the right leader and absorb the staffs with relevant academic knowledge and innovative capabilities. The leadership of the team should be strengthened to shorten the chain of command and to ensure the direct and fast transmission of information. The goals of the team should be identified to implement self-management and to strengthen internal unity and cooperation.

The performance appraisal system should be established to intensify responsibility of team members and to stimulate innovation initiative. In addition, the combo should strive to meet the demands of the project's innovative team for personnel, financial, and material. In short, by building the project's innovative team, team members will produce more innovative ideas and achieve greater innovation power on this innovative platform with the exchange of the collision sparks of wisdom to maximize the team's an integrated force and collective advantages.

#### **4. Coordination Mechanism of Interests**

The distribution of interests is the most critical problem when running the production-learning-research combo and plays a vital role to its development. In practice, a number of production-learning-research combos have enterprises with strong power and the colleges or research institutions with technology, but the cooperative outcome is not satisfactory. One of the important reasons is that conflicts occur due to the distribution of benefits or ownership of intellectual property which leads to low quality of the development results, hard in-depth development of innovation and some even broke up. Therefore, the partners should deal with the relationship between short-term interests and long-term interests, partial interests and the overall interests, tangible benefits and intangible benefits based on the match principle of responsibilities, rights, and interests. The reasonable mechanism of interest distribution should be built up to impel the development of innovation activities and to arouse enthusiasm and creativity of innovators furthest.

Property right system is the core to build the mechanism of interest distribution.

The interest structure of the combo is subject to the institutional arrangements of property right. Their property right structure and the institutional arrangements of interest structure also restrict the distribution ways of the innovative proceeds of the combo. Generally, for the joint-stock Combos, enterprises invest with its equipments, capitals and labors, universities and research institutes invest with their own patented technology. No matter which type of the combo, the issues of pricing shares on the scientific research achievements, the investment ratio of all parties and their interest distribution, the ownership of the achievements should be clearly stated by contracts. In particular, intellectual property should be treated as the central link to solve the problem of interest distribution mechanism. Around all aspects such as creation, application and protection of intellectual property, all parties should identify their responsibilities, rights and interests to guarantee the interests of all parties to realize risk-sharing and benefit-sharing. (Wang, 2008)

Reward system is the basis of the mechanism of interest distribution.

The combo should set up effective, long-term incentive reward distribution system based on the establishment of the modern enterprise system with clear relationship of property rights, diverse main bodies of property rights and comparatively perfect corporate governance structure to motivate managers and technological backbones involved in innovation effectively and consistently through distribution methods such as the employee stock ownership, technology shares and stock options, etc..

The risk system is the key to build the mechanism for the benefit distribution

The risk of cooperation in the combo comes mainly from two aspects. First, the uncertainty of the maturity of technical results brought about technological risks. Second, the inaccurate prediction of product markets brought about marketing risks. In the production-learning-research combo, enterprises, universities and research institutes become main sources of investment. The cooperative parties should share the risks through consultations and form the cooperation mechanism to share benefits and risks. Therefore, in order to shape the situation of true joint ventures and integrative interests, the universities and research institutes should invest in shares with funds as much as possible besides with patented technology to closely linked their own interests to the development of the Combo.

The financial system is a guarantee to build the mechanism of benefit distribution

The independent financial accounting system should be established by the production-learning-research combo. In financial management, financial accounts should be open to the main body of investment and be consciously accepted the supervision of the relevant departments for savings and for reduction of consumption. The remuneration of R & D side should be linked to the economic benefit of the combo and a one-time settlement should not be taken to share profits, which is conducive to innovation and sustainable development of production and research co-operation

#### **5. Mechanism of Talent Cultivation**

The process to set up the production-learning-research combo is the process to graft their advantages. Grafting the existing advantages will complement advantages for resonance and create more advantages. The advantages of universities and research institutes are mainly embodied in human resources, technology and information, etc. The advantages of enterprises lie in providing the stage to display their talents and to transform new technology, certainly including a financial advantage. Thus the production-learning-research combo as a carrier is conducive to organic integration of talent development, talent training and talent use.

### *5.1 Attracting and gathering talents*

The production-learning-research combo is a platform for technological innovation. In the process of scientific research and new technology application, the production-learning-research combo makes full use of research strength of universities and research institutes to organize joint research, and to demonstrate decision-making for major projects and management. The researchers of universities and research institutions also look for research projects initiatively from the combo or promote the application of the research achievements in the combo. In this way, the production-learning-research combo as a platform for technological innovation has attracted and gathered a group of talents needed for corporate research and development, which provides a pool of talents for the new product R&D.

### *5.2 Accelerating the training of personnel*

Production-learning-research combo is the cradle to cultivate talents for university and research institutions and enterprises are the base for training and improving all kinds of talents. The various talents of universities and research institutions are received training to improve the practical application of knowledge and technology through the platform of the production-learning-research combo. In particular, universities make use of the combo as the platform to drive and lead the development of teaching and research with discipline construction, targeted to train technical personnel with practical abilities to meet the employment needs of university students better. Enterprises of the production-learning-research combo can give the continuing education to the workers by universities and research institutes, especially giving the training of new theories, new knowledge and new skills to the high-level personnel. In short, with the production-learning-research combo, the exploitation, cultivation and use of human resources can be speed up and talent advantages can be grafted as soon as possible, in order to build the foundation for the Combo's overall advantage. (Deng, 2008)

### *5.3 Establishing the mechanism of talent input and talent use*

The production-learning-research combo should make innovation to the mechanism of talent input and talent use, pay high attention to talent input and change talent input from a soft task to a hard indicator. It should carry out more flexible measures of talent mobility to attract more researchers to do the part-time jobs with salaries in the combo and play a greater role in the innovation and entrepreneurship. The talent incentive mechanism should be innovated upon according to performance and contribution to total compensation and the incentive mechanism of property rights should be actively explored. The incentive system of options and equity should be improved and the paying transfer system of talent capital and scientific research achievement should be established. The first-class talents and first-class contribution should get the first-class remuneration. The competitive advantages of the development of production-learning-research combo will be created and supported by the talent advantage.

## **6. Service Security Mechanism**

In promoting the building of production-learning-research combo, the government should promote the service support and the focus on building good "three platforms".

### *6.1*

The docking platform for cooperation. Promoting the cooperation between production and research and strengthening construction of carrier platform is an important part. The carriers of Production and research docking activities are diverse, such as the science and technology trade fairs, the achievement exhibitions, scientific and technological advance and other forms to provide the cooperation platforms for enterprises and research institutes.

### *6.2*

The technical service platform. Besides docking platform for the cooperation, the technical service platform is also the key for science and technology innovation. The Government can establish the service center for the production and research co-operation, with the "Six databases" (project database, expert database, service agency database, school-enterprise database, risk investment and venture capital organization database, strategic cooperation partnership database), "Two platforms" (integrated data platform, integrated service platform) and "a website" (production-learning-research service website) to provide enterprises and universities with information issuance, project recommendation and publicity, benefit assessment and market forecast, school-enterprise interaction, technology entrepreneurship and other services.

### *6.3*

Innovative supporting platform. The local government can vigorously develop science and technology business with the high-tech park as the core area to strengthen infrastructure construction for science and technology and to improve the supporting policies. It is committed to creating the first-class platform for innovative services, creating a sound environment conducive to production and research cooperation to promote the colleges, various types of research institutions and local businesses to gather to carry out production and research combination.

In short, government promotion is the essential external condition for the healthy development of production-learning-research combo. The Government should create the environment and build a platform by developing policy to guide and support this compact cooperation of the production-learning-research combo. It should co-innovate upon the means of management and allocation of resources and continuously improve the policies and measures to continue in-depth innovation in production-learning-research combo.

**References**

- DENG, Kai & Jiang, Yunsong. (2008). Discussion of Production and research cooperation in personnel training. *Technology and industry*, (4): 84.
- DING, Henglong. (2008). Study of the building of production-learning-research combo from symbiosis perspective. *Scientific management research*, (4): 1.
- Wang, Wenhua. (2008). The research of benefit distribution mechanism of production-learning-research combo. *Modern economy*, (9): 4.



# Study on the Industrial Ecological Compensation in Inter-basin Regions

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*The research is financed by the "Total Project of the Water Pollution Control in Liaohe River Drainage Basin" of the National Science and Technology Key Project of "Control and Treatment of Water Pollution" (No. 2008ZX07208-001). (Sponsoring information)*

## Abstract

Aiming at the inter-basin pollution of water sources, the meaning, the content, and the system of the industrial ecological compensation are proposed in this article and the corresponding inter-basin industrial ecological compensation institution is suggested to be established.

**Keywords:** Inter-basin, Industry, Ecological compensation

## 1. Meanings of Inter-basin Industrial Ecological Compensation

*1.1 To establish the industrial ecological compensation mechanism is the important part to perfect the ecological compensation mechanism*

It is the requirement for the human society to implement the complete, harmonious, and sustainable scientific outlook on development, and to establish the environment-friendly society, and to realize the harmonious development between human and nature for higher level and higher stage, and it is the urgent important task. The healthy and complete ecological compensation mechanism could offer system and mechanism guarantee for the construction of the environment-friendly society. At present, according to different standards, the methods and approaches of the ecological compensation mechanism of China can be classified differently. And the compensation modes include the capital compensation, the material compensation, the policy compensation, and the intelligent compensation. According to the compensation regions, the compensation can be divided into the vertical compensation and the transverse compensation. According to the space size, the compensation could be divided into the ecological environment factor compensation, the drainage basin compensation, the region compensation, and the international compensation (Li, 2007). But their essential is the result of the extensive growth of the economy and industry in China, so to solve the sources of the ecological environment problems at all, the new ecological compensation mechanism should be established from the view of industry.

*1.2 The industrial ecological compensation mechanism is the effective approach to reduce the pressure of the environment development*

At present, China is facing the new development opportunity, and many heavy and chemical industries need to be developed. These products are not only necessary for the economic construction, but also belong to the industries with high energy consumption and heavy pollution. This stage is the term that the environment pressure is most heavy, so the establishment of the industrial ecological compensation mechanism could effectively control the discharge of wastes and reduce the pressure of the environment.

*1.3 To establish the industrial ecological compensation mechanism is the guarantee to realize the internalization of the exterior cost of the environment for the enterprise*

The ecological compensation mechanism is the effective method to define the environment property right and the environment production factors, which could internalize the exterior environment cost of the production activities of the enterprise, and be the effective economic measure to promote the enterprise to protect the environment and assume the treatment tasks.

#### *1.4 To establish the industrial ecological compensation mechanism is the effective mode to adjust the relationship of the environment benefit*

The establishment of the industrial ecological compensation mechanism could not only treat the relation between environment and economy, but also make for the adjustment of the harmonious relation of the society, and drive the technical updating of other industries, enhance the employment rate and the talent cultivation, promote the regional economic mutual support, and offer system guarantee to adjust the development among economy, society, and environment.

### **2. Content of the Inter-basin Industrial Ecological Compensation**

#### *2.1 Main body of industrial ecological compensation*

The main body of the industrial economical compensation mechanism should include the compensating body and the compensated body of various unit ecological compensations, and they are respectively the right body and the obligation body of the ecological compensation mechanism in the basin.

Because the inter-basin ecological function has the characteristic of commonweal, the compensated body must represent the public benefit. And because numerous units or individuals benefit from the inter-basin ecological function, so it is very difficult to harmonize and complete the capture of the compensation charge, and only the government could assume this responsibility to harmonize and capture the compensations. Therefore, the beneficiaries of the inter-basin ecological benefit should pay the compensation charges for the government, i.e. pay the inter-basin ecological compensations (Feng, 2009, P.85-89).

The obligation body is the destroyer of the inter-basin ecological environment, and includes enterprises and individuals.

#### *2.2 Industrial ecological compensation modes*

##### *2.2.1 Mode of government compensation*

The government compensation means the compensation mode that the country or the upper government takes the regional government as the compensation object and takes the regional harmonious development as the target. And it gives priority to the payment of financial transfer, and the enterprise taxation is the important source.

##### *2.2.2 Mode of market compensation*

It is the regional compensation by the relationship of the industry chain and the value chain. By the market trade or payment, the value of the ecological (environment) service function and the marketization mode of optimizing and allocating the inter-basin resources are realized. This mode takes the Coase Theorem as references to implement the independent trade in the market based on clear property rights.

##### *2.2.3 Mode of benefit compensation*

Aiming at different economic development actualities in the basin, considering general demand of economic development, the benefit compensation mode mainly includes the support mode and the economic cooperation mode. And the economic operation mode is the optimal selection of the benefit compensation mode. In the region full of mine resources, the dominant industries of many administrative units are the mental or non-mental mining and processing industries. The mining and processing industries could produce water loss and soil erosion and destroy the water source. The development will of these regions is strong, so it is not practical to forbid the resource development in these regions, but only instruct and support them to develop the substitute industries, and cultivate new growth points of the local economy according to local conditions, and enhance the industrial compensation of the upper regions, and gradually optimize the regional economic structure, and encourage the enterprises benefiting in the region to develop the environment protection business in the weak ecological regions.

##### *2.2.4 Developing relative financial industries actively*

The government should also strengthen the association with the financial departments, and seek relative experts' help and technical supports, and establish the funds to seek and donation and supports from foreign non-governmental organizations, and issue the welfare lotteries to promote the participation of the whole society. All above measures could be adopted to promote the multi-development of the multi-financial industries.

### **3. Inter-basin Industrial Ecological Compensation Management Institution**

#### *3.1 Main functions*

##### *3.1.1 Integrating and transferring inter-basin resources*

The environment factor market should be cultivated, and the paid distribution mechanism of the pollution discharge index in the region should be established as soon as possible. The pollution discharge right trade under the control of government should be pushed gradually. The economic structure should be adjusted and optimized to develop the substitute industry and the special industries, push the clean production largely, develop the circle economy, drive the

industry transfer in the regions and the reasonable flow of factors, and promote the essential change of the ecological environment.

### 3.1.2 Exploring the standards of inter-basin industrial ecological compensation

The government should attempt to take the inter-basin resources as the prices of the production factors and the living factors, and start from the actual development of the basin to establish the standard of the inter-basin industrial ecological compensation, and gradually realize the scientific and standard market compensation mode. Taking the water source as the example, using the trans-state water right trade in west countries as the reference, Yiwu and Dongyang in Zhejiang adopted the market mechanism and realized the ecological compensation in the basin. After that, Shaoxing and Cixing also established the relation of the water source trade.

### 3.1.3 Establishing the cooperation mechanism of industrial ecological compensation

As viewed from the industrial development and diffusion, the inter-basin regional cooperation mechanism could harmonize the benefit relations among units, and complete the industrial ecological compensation layer by layer and stage by stage, and realize the real harmony among economy, society, and environment.

### 3.1.4 Establishing multiform and multi-channel financing mechanisms

The social and civil capitals should be encouraged to invest in the domain of ecological environment protection and treatment, and the threshold should be reduced, and the industrial monopoly should be broken, and the market admittance of the environment protection infrastructure should be opened.

The various current taxation policies protecting the environment should be perfected to offer financial guarantee for the establishment of the ecological compensation mechanism.

The administrative charge range should be extended, and the main pollute discharge enterprises should be supervised on line, and collect pollution discharge fees for those enterprises exceeding the discharge standards. The government should issue the policies that the beneficial regions offer economic compensation for the environment protection region, or the enterprises inducing the pollution accident offer compensation for the polluted region.

The government should also establish the special capital of the ecological environment construction, and list it into the financial budget of the government, strengthen the prevention and control of the regional and basin pollution, and largely support the new technology and application about the pollution control. At the same time, various governments should fully utilize multiple channels such as the government discount, investment assistance, and pollution charge to attract the social capitals to invest the ecological environment. The preferential benefit and the donation mechanism of the environment protection should be established, and the national debt capitals, the development credit and the loans or endows of international organizations and foreign governments should be actively utilized to form the multiple financial channels.

The caution money system should be established. The enterprises polluting or destroying the environment should establish the environment governance plans and concrete measures, and pick up certain proportion of the sales incomes of mineral products to be the environment caution money.

## 3.2 Composing

The Inter-basin industrial ecological compensation management institution is composed by various unit governments, relative management departments, non-government institutions, and experts in the inter-basin space, and it should establish the linkage mechanism with the highest administrative government in the basin (such as the provincial government) to implement the decision-making right, the execution right, and the supervision rights of the industrial ecological compensation in the basin.

## References

- Feng, Yanfen., Liu, Yihua & Wang, Fang. (2009). Progress of Ecological Compensation Practice in China. *Ecological Economy*. No.8. P.85-89.
- Li, Qun. (2007). *Study on the Ecology Compensation Mechanism of the Water Source Protection Zone of Dongjiang Drainage Area*. Lanzhou: Mater's Degree Thesis of Northwest University for Nationalities.
- WU, Yuyan & Zhang, Keyun. (2009). Study on the Regional Cooperation Mechanism Inter-District Drainage Area. *Lanzhou Academic Journal*, No.5. P.69-73.



## Inter-Organizational Strategic Cooperation: An Analysis of Pakistani Commercial Banking Sector

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### Abstract

Intense competition of this post computer era has made many organizations to come together and to collaborate in different fields where they have a competitive edge. Banks are also not left behind in this area and like other business ventures, are exploring new ways of having strategic alliances with other businesses. Keeping this growing strategic partnership trend in view, a study was designed to focus upon the nature of various business strategic ties of banks operating in Pakistan with the other active corporate business units of the region. Data were collected from the representative branches of the following four main categories of banks; nationalized / government owned banks, private banks, foreign banks and Islamic banks, located in the twin cities of Rawalpindi and Islamabad in Pakistan. Branch Managers of the said branches were interviewed through an interview guide developed for the present study that included open ended questions regarding the main research problem. The researcher was given access to secondary data too like promotion material published by the banks highlighting their inter-organizational business collaborations. Data were tabulated, analyzed and interpreted. The findings of the study indicated that out of the four categories of banks, foreign banks were found to have maximum strategic collaborations and special in consumer products. They opted for such inter-organizational cooperation to capture a bigger market share. Private banks had such partnerships in fewer products. The data revealed that very low or no collaborations were found in case of nationalized and Islamic banks.

**Keywords:** Inter-Organizational, Strategic cooperation, Analysis, Pakistani banking sector

### 1. Introduction

Beyond normal business activity, organizations look for some innovative ways to have competitive edge over others in this post computer era. Business expansion is one of the objectives behind various new ways of running business. One of such innovative approaches towards business is to develop strategic alliance. When independent organizations get together under some formal arrangement to reach their set objectives, the phenomenon is called strategic alliance or strategic collaboration or strategic partnership (Bateman and Snell, 2004).

Konke (2001) is of the view that there may be several forms of this inter organizational relationship like joint venture, equity investments, cooperatives, cartel, franchising, licensing, subcontractor net works and market relations etc. It all depends upon market forces, organizational / management philosophy, and nature of the business to decide which strategic collaboration to go for. There may be several motives behind this specific move of the organization. Todeva (2005) categorizes these motives into four broader areas i.e. organizational, economic, strategic and political.

Organizations are more interested in such an agreement when they realize that their counterparts are also of same level and enjoy the same market reputation in their specialized domain. Inter-organizational strategic partnership takes place in a win-win situation because the future of both partners is on stake. That is why organizations take special care in the selection of their partners. Like all other business organizations, financial institutions specially banks are also very active in developing strategic alliances with established business houses. There could be multiple objectives behind this collaboration like market penetration, market expansion, brand awareness and so on. Most of such alliances between financial institutions and other businesses have been in the area of consumer products. Some collaborations are designed to develop various resources like human, technical, financial, physical and natural. Inter-organizational strategic alliance is such a phenomenon that has hardly been addressed by the management researchers and requires primary investigations.

### *1.1 Statement of the Problem*

Keeping the growing strategic partnership trend in view, a study has been designed to look into various dimensions of the reality i.e. inter-organizational strategic alliance, in various sub sectors (public, foreign, private and Islamic) of the Pakistani banking sector.

### *1.2 Objectives of the Study*

Following are the objectives of the study:

1. To study inter-organizational strategic partnership phenomenon in the Pakistani Banking Sector.
2. To investigate the nature / bases of the strategic alliance e.g. consumer products, discounts etc.
3. To find out the types of organization with whom the banks develop their strategic collaborations.

### *1.3 Originality of the Study*

Business researches are usually designed to investigate that what happens within the organizations like motivation, productivity, quality management, efficiency, services and products etc. Very few researchers address the inter-organizational phenomena. The present study thus fills a visible gap in the body of knowledge highlighting the applied aspects of the research.

## **2. Previous Research**

The area of strategic partnership has not been widely addressed by the researchers so far. However, researches conducted by Villegas (1989), Hand (1997), Noorzoy (1982), Mirakhor (1990), Haroon (1998), Usmani (1999), Abdullah (1999), Chen and Ross (2000), Gulati and others (2000), Schaikh (2001), Hassan (2001), Bertola, Hochhuertel, and Koeniger (2005), Farooq (2007) and Abdul Mohsin (2008) highlighted the significance strategic partnerships for business growth and development and specially for banking sector.

## **3. Methodology**

Being an exploratory study, the data were collected from different branches of the all sub sectors of the banking sector i.e. public, foreign, private and Islamic, located in the twin cities of Islamabad and Rawalpindi, Pakistan. An interview guide was developed and used for data collection. Supplemented through the secondary data in the form of materials published by the banks in shape of promotion leaflets and web sites, highlighting their inter-organizational business collaborations. Data collected were tabulated as per the banking sub sector and interpreted and analyzed accordingly.

## **4. Data Analysis and Findings**

Based on the data analysis, following are findings of the research:

### *4.1 Inter-Organizational Strategic Cooperation of Commercial Banks (Foreign Ownership) in Pakistan*

The analysis (Table No. 1-A) indicates that the strategic alliance of Royal Bank of Scotland is commonly found in the area of consumer products ranging from electric appliances to edibles. Royal Bank of Scotland has strategic cooperation alliances with the following companies: Mitsubishi, Homage Electric Appliances, Kenwood Electric Appliances, Cross Road, Stoneage, Yellow, Cambridge, Hang Ten, Exist, Arizona Grill, Chatterbox, Papa Johns, Singapore Sling, Talking Fish, Bread People, Nirala Sweets, Pie in the Sky – Bakers, Qatar Airways. The products offered by the above companies are Electricity Generators, Inverters, Batteries, Water Dispenser, Split AC's, Washing Machines, Kitchen Elec. Appliances, Garments, Restaurant – Food Items, Sweets, Bakery items and Discount on Tickets.

### *4.2 Inter-Organizational Strategic Cooperation of Commercial Banks (Foreign Ownership) in Pakistan*

The data (Table No.1-B) reveal that the strategic partnership in case of Citibank is in the products of every day use. This particular strategy seems to be designed to attract maximum customers from all segments of the society. Citibank has strategic cooperation alliances with the following companies: Circuit, Axzezz, Studio S, HangTen, Clarks, Adidas, Puma, Slazenger, Samsung, United Mobiles, Almas Collection Jewellers, Subway, Cafe Zouk, Chenone, Irfan Sports, Centra Flora, Bonds Travel, Caltex, Citimobilink. The products offered by the companies are Sports Wear, Electric

Appliances, Mobile Phones, Jewellery, Food Items, Departmental Store, Sports goods, Flower Shop, Travel Services, Fuel Discounts and Credit Cards.

#### *4.3 Inter-Organizational Strategic Cooperation of Commercial Banks (Foreign Ownership) in Pakistan*

As indicated by the data (Table No. 1-C), Bank Alfalah, apart from edibles, is actively involved in telecommunication products. Citibank has strategic cooperation alliances with the following companies: Warid Telecom, Arena Family Recreational Club, Pearl Continental, Marriott, Holiday Inn, Down Town, Sogo Grill, Le Grand, and Domino Pizza. The products these companies offer are Telecom Facilities, Phone and Internet Connections, family Outing and Discount at Dinning.

#### *4.4 Inter-Organizational Strategic Cooperation of Commercial Banks (Foreign Ownership) in Pakistan*

Analysis of data (Table No. 1-D) indicates a deviation from the conventional strategic partnership of foreign banks i.e. food, things of daily use and electric appliances. Here we find collaborations in investments, insurance and travel services. Standard Chartered Ltd has strategic cooperation alliances with the following companies: EFU Life Insurance, NJI Life Insurance, American Express, PIA, Palson, JS Investments, National Investment Trust, BMA Asset Management, Arif Habib Investment, and KASB Asset Management. The products offered by these companies are Educational and Marriage Plan, Life Insurance, Travel Services, Kitchen / Household Appliances, Investment Opportunities for Customers and Discount at Purchasing.

#### *4.5 Inter-Organizational Strategic Cooperation of Commercial Banks (Foreign Ownership) in Pakistan*

The data (Table No.1-E) reveal that the nature of collaboration is communication solutions, investment and financial services. Hong Kong Shanghai Bank has strategic cooperation alliances with the following companies: Multinet, Malaysia, Czech ECA, Halmore Power Generation and Metro Cash & Carry. The products offered by these companies are Communication Solutions, Power Project in Pakistan and Financial Services.

#### *4.6 Inter-Organizational Strategic Cooperation of Commercial Banks (Foreign Ownership) in Pakistan*

The data (Table No.1-F) reveal a typical area of strategic collaboration i.e. electric appliances, financial services and food arrangements. Barclays has strategic cooperation alliances with the following companies: Mitsubishi, Sony, Pioneer, EFU Life Assurance, and Olive Garden Restaurant. The products these companies offer are Discount in Electric Appliances, Life Assurance Products and Dining,

#### *4.7 Inter-Organizational Strategic Cooperation of Commercial Banks (Private) in Pakistan*

The data (Table No.2) indicate the nature of strategic partnership of various private banks operating in Pakistan. Askari Bank was found to have collaboration in maximum areas like electric appliances, telecommunication products, insurance, funds transfer and automation etc. The distinguished position of Askari Bank among local private banks is due to its outstanding customer services for which the bank has been winning various awards for the last many years. While rest of the banks in above table indicate fewer strategic alliances. Askari Bank has strategic cooperation alliance with the following companies Household Building Finance Cooperation, Zong, Jasco, Kenwood. The products offered by these companies are Funds Transfer, Electricity Generators, Electric Appliances and some other different products.

Faysal Bank has strategic cooperation alliance with Global Investment House.

Soneri Bank Has Strategic Cooperation Alliance with Phoenix Security and Sun Micro Systems and the product the companies offer is Security Enhancement in Automation.

KASB Bank has formed strategic cooperation Alliance with Marraynch, MDS-ATM. The product offered by these companies is Investments – ATM.

Bank Al-Habib has Strategic Cooperation Alliance with New Jubilee Life Insurance and MCB. The products offered by these companies are Insurance Products and rupee Traveler Cheques.

NIB Bank has strategic cooperation alliance with Asian Financial Holdings PTE Ltd. The product offered by them is Project Investments.

Saudi-Pak Commercial Bank has strategic cooperation alliance with the following companies PSO and Bank Muscat. The products offered by these companies are Sale and Service through E-Banking and Strategic Stake.

Muslim Commercial Bank Ltd has Strategic Cooperation Alliance with Telenor and Bank Al-Habib. The products offered by these Companies are Phone Connections and Rupee Traveler Chouse.

#### *4.8 Inter-Organizational Strategic Cooperation of Commercial Banks (Public) in Pakistan*

The analysis (Table No. 3) indicates the nature of strategic collaboration of government owned commercial banks operating in Pakistan. The data reveal a clear difference in the range of products where partnership has been established. Most of such alliances target trade development in Pakistani market like export promotion, human resource development, promotion of micro finance products, on-line trading facilities and IT products. The emphasis is upon

macro issues relating to the economic development of the country rather than developing a broad base of customers interested in consumer products.

National Bank of Pakistan has strategic cooperation alliance with Japan Bank for International Cooperation and Sidat Hyder Morshed Associates. The products offered by these companies are promotion of trade within two countries and HR Consultation Services.

First Women Bank Ltd has strategic cooperation alliance with the following companies Canadian International Development Agency, National Rural Support Program and Super Net. The products offered by these companies are Training of Employees and Career Counseling, Promotion of Micro Finance Products and Internet Connections.

United Bank Ltd has strategic cooperation alliance with the following Companies Pakistan State Oil, EFU Life Insurance and U Phone. The products offered by these companies are Discount on Fuel, Insurance Products, Retirement Plans and Security Deposit Waiver. Allied Bank of Pakistan has Strategic cooperation Alliance with IFC and the product offered by them is Trade Guarantees.

The Bank of Punjab has strategic cooperation alliance with AMZ Securities and the product offered by them is Online Trading Services.

Habib Bank Ltd has strategic cooperation alliance with the following companies Symantec Enterprise and M Net. The products offered by these companies are Anti-Virus Solutions and IT.

#### 4.9 Inter-Organizational Strategic Cooperation of Commercial Banks (Islamic) in Pakistan

The data (Table No. 4) indicate almost half of the Islamic Banks which do not have any collaboration with other organizations whereas rest fifty percent do have strategic alliances but in limited areas. Meezan Bank has Strategic Cooperation Alliance with the following companies Suzuki Motors, Takaful Insurance. The products offered by these companies are Speedy Delivery and insurance Products. Dubai Islamic Bank has strategic cooperation alliance with the following companies American Express, Chekkerz Card Tech Ltd and Dream World Resort. The products offered by these companies are Travel Services, Car Tracking System, Credit Cards, and Holiday Discounts.

### 5. Conclusion

Following conclusions are drawn from the above interpretations and findings of the study.

- Strategic alliances in case of foreign banks were found more in the area of consumer products ranging from electric appliances to edibles addressing and targeting a particular life style. The nature of collaboration indicates that their market penetration, market development and expansion strategies through such partnerships.
- Strategic partnership of various private banks operating in Pakistan were found to be in consumer products but generally in limited range. It appears that private banks do get impressed by the intensive strategies of the foreign banks but due to other promotion means, they pay less attention to this particular area.
- Strategic collaborations of government owned commercial banks operating in Pakistan reveal a clear difference in the nature of partnership. The emphasis is upon the issues relating to the economic development of the country like trade promotion, human resource development, trade facilities etc. The government banks thus seem to play their national role in the economic development of Pakistan.
- The Islamic Banks were found to have fewer collaborations in limited areas.

### 6. Recommendations

Foreign banks should contribute to the national development too by developing strategic partnerships with the organizations engaged in the development projects.

Islamic banks should also participate in strategic collaborations with the institutions dealing with consumer products and issues of national concern.

### 7. Future Research

A study may be designed to develop a comparative analysis of the performance of the organizations with heavy strategic collaboration portfolio and the lighter ones.

### References

- Abdulla, E.G.M. (1999). Partnership (Musharakah): A new option for financing small enterprises. *Arab Law Quarterly*, 14(3), 257-267.
- Abdul Muhmin, G.A. (2008). Consumer attitudes towards debt in Islamic countries. *International Journal of Consumer Studies*, (32), 194-203.
- Bateman, Thomas S., and Snell, Scott A. (2004). *Management: Building Competitive Advantage*. Irwin McGraw Hill, New York.

- Bertola, G., Hochguertel, S., and Koeniger, W. (Nov, 2005). Dealer pricing of consumer credit. *International Economic Review*, 46(4), 1103-1142.
- Chen, Zhiqi and Thomas W. Ross. (2000). Strategic Alliances, Shared Facilities and Entry Deteence. *RAND. Journal of Economics*, Vol. 31, pp.326-344
- Farooq, O.M. (2007). Partnership, equity financing and Islamic finance; Whither Profit and loss sharing. *Review of Islamic Economics*, (11), 67-88.
- Gulati and others. (2000). Strategic Networks. *Strategic Management Journal*. Vol. 21, pp.203-215.
- Hand, J.D. (1997). Statistical Classification Method in Consumer Credit Scoring: A review. *J.R Statistical Society*, 160(3), 523-541.
- Haroon, S. (1998). A Comparative study of Islamic banking practices. *J.KAU Islamic Economy*, (10), 23-50.
- Hassan, Z. (2001). Mudarabah as a mode of finance in Islamic banking: theory, practice and problems. *Munich Personal RePEc Archive*, 41-53.
- Khan, S.M., and Mirakhor, A. (Jan., 1990). Islamic banking: Experiences in Islamic Republic of Iran and Pakistan. *Economic Development and Cultural Change*, 38(2), 353-375.
- Konke, David. (2001). *Changing Organizations: Business Networks in the New Political Economy*, Boulder Co., Westview Press.
- Noorzoay, S.M. (Feb, 1982). Islamic laws on Riba (interest) and there economic implications. *International Journal of Middle East Studies*, 14 (1), 3-17.
- Schaik, V.D. (2001). Islamic Banking. *The Arab Bank Review*, 3(1), 45-52.
- Todeva, Emanuela., and Konke, D. (2005). Strategic Alliances and Models of Collaboration. School of Management, Enterprise and Strategy, University of Surrey, UK. [Online] Available: <http://epubs.surrey.ac.uk/entrepstrategy/11> (retrieved on Friday May 29, 2009.)
- Usmani, T.M. (1999). The concept of Musharakah and its application as Islamic method of financing. *Arab Law Quarterly*, 14(3), 203-220.
- Villegas, J.D. (Jul., 1989). The Impact of Usury Ceilings on Consumer Credit. *Southern Economic Journal*, 56(1), 126-141.

Table 1-A. Inter-Organizational Strategic Cooperation of Commercial Banks (Foreign Ownership) in Pakistan

<b>Bank</b>	<b>Strategic Cooperation with</b>	<b>Products</b>
Royal Bank of Scotland	Mitsubishi	Elec. Generators
	Homage Electric Appliances	Inverters, Batteries, Elec. Generators Water Dispensers
	Kenwood Electric Appliances	Split ACs, Washing Machines Kitchen Elec. Appliances
	CrossRoads, Stoneage Yellow, Cambridge Hang Ten, Exist	Garments
	Arizona Grill, Chatterbox Papa Johns, Singapore Sling Talking Fish	Restaurants – Food Items
	Bread People, Nirala Sweets Pie in the Sky – Bakers	Sweets and Bakery
	Qatar Airways	Discount on tickets

Source: Researchers' own processing

Table 1-B. Inter-Organizational Strategic Cooperation of Commercial Banks (Foreign Ownership) in Pakistan

Bank	Strategic Cooperation with	Products
Citibank	Circuit, Axzezz, Studio S, HangTen, Clarks, Adidas, Puma Slazenger	Sports Wear
	Samsung	Electric Appliances
	United Mobiles	Mobile Phones
	Almas Collection Jewellers	Jewellery
	Subway	Food Items
	Café Zouk	Food Items
	Chenone	Departmental Store
	Irfan Sports	Sports goods
	Centra Flora	Flower shop
	Bonds Travel	Travel Services
	Caltex	Fuel discounts
	Citimobilink	Credit Card

Source: Researchers' own processing

Table 1-C. Inter-Organizational Strategic Cooperation of Commercial Banks (Foreign Ownership) in Pakistan

Bank	Strategic Cooperation with	Products
Bank Alfalah	Warid Telecom	Telecom Facilities
	Wateen Telecom	Phone and Internet Connections
	Arena Family Recreational Club	Family Outing
	Pearl Continental, Marriott, Holiday Inn, Down Town, Sogo Grill, Le Grand, Domino Pizza	Discount at Dinning

Source: Researchers' own processing

Table 1-D. Inter-Organizational Strategic Cooperation of Commercial Banks (Foreign Ownership) in Pakistan

Bank	Strategic Cooperation with	Products
Standard Chartered Ltd.	EFU Life Insurance, NJI Life Insurance	Education and Marriage plan, Life Insurance
	American Express, PIA	Travel Services
	Palson	Kitchen / Household Appliances
	JS Investments, National Investment Trust, BMA Asset Management, Arif Habib Investment, KASB Asset Management	Investment opportunities for the customers
	Nokia	Discount at purchasing

Source: Researchers' own processing

Table 1-E. Inter-Organizational Strategic Cooperation of Commercial Banks (Foreign Ownership) in Pakistan

<b>Bank</b>	<b>Strategic Cooperation with</b>	<b>Products</b>
Hong Kong Shanghai Bank	Multinet, Malaysia	Communication Solution
	Czech ECA, Halmore Power Generation	Power Project in Pakistan
	Metro Cash & Carry	Financial Services

Source: Researchers' own processing

Table 1-F. Inter-Organizational Strategic Cooperation of Commercial Banks (Foreign Ownership) in Pakistan

<b>Bank</b>	<b>Strategic Cooperation with</b>	<b>Products</b>
Barclays	Mitsubishi, Sony, Pioneer	Discount in electric Appliances
	EFU Life Assurance	Life Assurance Products
	Olive Garden – Restaurant	Dining

Source: Researchers' own processing

Table 2. Inter-Organizational Strategic Cooperation of Commercial Banks (Private) in Pakistan

<b>Bank</b>	<b>Strategic Cooperation with</b>	<b>Products</b>
Askari Bank	House Building Finance Corporation	Funds Transfer
	Zong	Different Products
	Jasco	Electricity Generators
	Ken Wood	Electric Appliances
Faysal Bank	Global Investment House	
Soneri Bank	Phoenix Security, Sun Micro Systems	Security Enhancement in Automation
KASB Bank	Marrilynch, MDS-ATM	Investments – ATMs
Bank Al-Habib	New Jubilee Life Insurance, MCB	Insurance Products, Rupee Traveler cheques
NIB Bank	Asia Financial Holdings PTE. Ltd.	Investments
Saudi-Pak Commercial Bank	PSO, Bank Muscat	Sale and Service through E-Banking, Strategic Stake
Muslim Commercial Bank Ltd.	Telenor, Bank Al Habib	Phone Connections, rupee Traveler Cheques

Source: Researchers' own processing

Table 3. Inter-Organizational Strategic Cooperation of Commercial Banks (Public) in Pakistan

<b>Bank</b>	<b>Strategic Cooperation with</b>	<b>Products</b>
National Bank of Pakistan	Japan Bank for International Cooperation	Promotion of Trade within two Countries
	Sidat Hyder Morshed Associates	HR Consultation Services
First Women Bank Ltd.	Canadian International Development Agency	Training of Employees and Career Counseling
	National Rural Support Program	Promotion of Micro Finance Products
	Supernet	Internet Connections
United Bank Ltd.	Pakistan State Oil	Discount on Fuel
	EFU Life Insurance	Insurance Products, Retirement Plans
	U Phone	Security Deposit Waiver
Allied Bank of Pakistan	IFC	Trade Guarantees
The Bank of Punjab	AMZ Securities	Online Trading Facilities
Habib Bank Ltd.	Symantec Enterprise, M Net	Anti-Virus Solutions, IT

Source: Researchers' own processing

Table 4. Inter-Organizational Strategic Cooperation of Commercial Banks (Islamic) in Pakistan

<b>Bank</b>	<b>Strategic Cooperation with</b>	<b>Products</b>
Meezan Bank	Suzuki Motors, Takaful Insurance	Speedy Delivery, Insurance Products
Dubai Islamic Bank	American Express, Chekkerz, Card Tech Ltd.	Travel Services, Car Tracking System, Credit Cards
	Dream World Resort	Holiday Discount
Al-Baraka Islamic Bank	Nil	Nil
Dawood Islamic Bank Limited	Nil	Nil
Bank Islami Pakistan Limited	Nil	Nil

Source: Researchers' own processing



# The Future Developing Mentality Explore on Following Substitution Industries in Resource-Exhausted Cities at Old Industrial bases in Northeast

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## Abstract

resource-exhausted cities is the region in the serious job-seeking situation at old industrial bases in northeast at present, its following substitution industries issues has some features being differ from general cities. This article discuss how to promote the city with resource exhaustion to follow substitution industries from the angle of future developing mentality, propose the theoretical principle, policy basis and the existing problems with its resolving suggests in this developing mentality.

**Keywords:** Resource-exhausted city, Following substitute industry, Employment

As a world common topic, the transformation and development for resource-exhausted city is a major concern. Facing difficult position to our resource-exhausted cities, the Party Central Committee offered a strategic decision supporting continuing industrial development for these cities and brought about an unprecedented opportunity for sustainable development.

Keep government leads, market operating, mine city integrating and the policy of adjusting measures to local conditions; exert more efforts on industrial restructuring; speed up reform and openness; enhance ecology environment protection and management; complete infrastructures; do well comprehensive improvement in ore field and develop new type following industry. Put policies and measures into practice; set up compensation mechanism of resource development and the aid system of the declining industry; promote economic restructure and sustainable development for resources city. Do good job of industrial restructuring after coal natural resources dried up and job placement.

## 1. Manufacturing Industry

Manufacturing industry at old industrial bases in northeast present its macro-scale feature, while it is light type at some provinces in south. To enhance the quality competitiveness for the entire manufacturing in Liaoning province, it needs to exploit more products with high value-added, develop industry with light type and being competitive. It should promote new type manufacturing industry developing. The top three manufacturing with quite competence in turn are: communication equipment industry& IT with other electricity; universal equipment; instrumentation and civilization & official machinery industry. Communication equipment industry and IT with other electricity being the most competitive is the certain outcome and coming trend of scientific and technological development. The traditional manufacturing ever been relied on formerly in Liaoning has turned into non-mainstream industry as the times development, while old industrial bases especially resources cities are all in the progress of upgrading industries in recent years, has obtained a certain result lately.

### 1.1 Speed up the development of advanced equipment manufacturing industry

It is primary mission to revitalize old industrial bases that take a new road to industrialization by using information to drive industrialize, strive to develop equipment manufacturing industry to drive optimizing upgrade for raw materials. Substantially increase the proportion of equipment manufacturing industry on industrial added value, pull off leapfrog development for equipment manufacturing industry, use “Chinese equip” to sustain “manufactured in China”. Give full play to superiority of preferably base and rich technical force, take the time while world manufacturing accelerating shift and our boosting major equip to localization, speed up development of major equipment industry and supporting industry. Keep the combination of comprehensive propelling and break through them on emphases, exert development to base equip, complete equipment and transportation facilities.

### *1.2 Speed up the development of high degree of finish raw material industry base*

Give full play to superiority in further of raw material industrial base in resource city at old industrial bases in northeast, give great impetus to petrification, metallurgy and building materials etc to develop to intensification, hi-end, serialization and intensive processing, improve technical equipment level, products quality level and economic benefit. Realize the transform from traditional petrification industry base at old industrial bases to high degree of finish petrochemical industry base as early as possible, big push artificie integration, extend industry chain by building ethane and aromatic hydrocarbon, develop composite material, basic organic chemical raw material and fine chemical products. Build the project of 12 million tons oil refining and 1 million tons ethane at Petrification Company at Fushun branch, get Fushun city to be a major petrification base in north. Build the project of 800 thousands tons PAT for LIAOHUA Branch Company, get Liaoyang city to be a major aromatic hydrocarbon and chemical fiber material base nationwide.

### *1.3 lay emphasis on light industry development and labor intensive industry*

Actively develop the consumer merchandise such as textile, clothing, foodstuff, papermaking, home appliances, daily necessities, medicine and arts& crafts etc, form the pattern of harmonious development of investment and consummation by carrying out projects of biomass energy and biomaterial, constructing national level agricultural intensive processing base by course of agricultural science of park in Fuxin city. Quicken to foster construction market, improve equipment level, skill level and management level for construction unit entirely, and strengthen construction quality& production supervision, improve construction market order and promote construction development in healthy way.

## **2. Service Industry**

To develop service, it should expand scale; adjust structure, average up and from network. Prioritize modern service industries such as logistics, insurance, information, travel, conferences and exhibitions, real estate and intermediary services etc, to become a major force to pull economic growth and increase fiscal revenue. Keep on developing and optimizing traditional services such as trade and catering, transportation, communication and community service etc, play to the strength of driving employment. Increase the investment in base installation to community by taking the advantages of relative high urbanization; strive to develop community service by combining government supporting and market operating. Exploit and integrate tourism resource in whole province, enhance base installation in touring and supporting facility to construct designation strip tourism projects with influence and competitiveness at home and abroad, hence to foster tourism to be an important industry in vigor.

### *2.1 Strive to develop producer service*

Foster and develop transportation & logistics. Carry on centre city exposure by embracing competitive industries developing requirement, do well to science layout of logistics detail relying on railway, highway and port condition, mark out construction of logistics base, build logistic information platform and expand logistics enterprise and its scope. Develop modern commodities trading market such as rice, river crab, aquatic product, fruit vegetables and flowers etc to develop into a distributing centre with unique feature keeping a foothold in northeast and covering whole country. Promote financial service sector. Establish and complete modern credit system, construct financial environmental well, develop and expand guarantee organization with subjective private capital and all classes of financial institutions such as bank, insurance company, trust investment agency, finance lease company and financial corporation etc, enhance guarantee system to set up financial service system in favor of boosting small and middle industries. Enhance construction for public network, build e-commerce & government affairs network being integrity, unify and advanced to improve applying quality level for information within society. Actively develop commercial services such as information, plan, investment management, law, accounting, auditing, assessment and consulting etc.

### *2.2 Strive to develop tourism services*

Develop and expand tourism. Integrate top 5 tourism systems of tourism resource, constructing wetland area, eco-agriculture, oil field industry, history & culture with city construction etc, carry forward comprehensive development for future ecotourism city, make coast and reed sea relaxation base, play a role of international wet land touring festival, improve city influence, build PANJIN city as international wet land relaxation and ecotourism site. Reform and promote trade circulation industry. Speed up trade layout adjustment, set up city commerce system being reasonably structured, perfect function and high gathering, and strive to develop modern circulating and organizing pattern for chain business, franchise and logistics. Strive to develop culture creative industry and enhance culture soft power. Norm and promote living services of catering, entertainment, real estate and community service etc, improve service quality and level substantially.

### *2.3 Strive to develop community service*

Build community service system energetically being wide range trench, high employment capacity and complete function of convenience. Enhance planning and construing to community service facility and network, build "digital

community” by applying IT. Boost industrialization operating for community. Broaden service domain by developing health care & retirement, public service, cultural & sports entertainment and cleaning & security etc, do well demonstrating projects of retiring and community service. Complete 1000 standardizing community service plots and 150 thousands service network sides by 2010.

### **3. High and New Technology Industry**

Prioritize electronic information, bioengineering & pharmaceutical-tech and new material industry, boost high technology to production projects including numerical control system and whole set technologies device, high light emitting diode LED epitaxial slice system etc 100 key projects, establish the advantages for both integration and unique of high technology industry. Fully come into play to high and new tech area in ANSHAN city and set up the base in here with high tech researching, incubating and industrialization to foster and bring up the cradle for entrepreneur. Keep using information to drive industrializing development and extensive use high tech and advanced appropriate technology to promote traditional industry. Exert more effects to investment on major products by key industry and backbone business with embracing quality improvement, adding variety, and falling low consumption, substituting for imports and safety production, plan and prepare a major capital construction and tech renovation project which can drive local economy and industrial development. Enhance infrastructure construction for information, actively push forward information step for applying IT to all walks of life and in every field.

#### *3.1 Main construction on high and innovative tech base, strive to develop high and innovative industry with unique feature*

For software industry, prioritize internet applications facing national economy and society information, support software relative to network setting up with safety and embedded software matched digital facility. Open up international market facing global by taking Japan, Korea as a point of penetration, form international pattern step by step. E.g. the software industry at Anshan.

#### *3.2 Speed up industry chain construction, foster innovative and high technology industrial cluster*

For modern traditional Chinese medicine industrial chain, it needs to play the advantages of medicinal material in Fuxin city, boost the cultivate dimensions construction of ginseng, north schisandra chine sis product, Manchurian etc. Carry out projects such as refining from standard substance, co-compound Muji series and cultivating medicinal plant cell of snow lotus etc. For magnesium industrial chain, exploit high tech products such as magnesium oxide nanometer material, intelligence magnesium fire-proof material and synthetic mica etc.

#### *3.3 Strengthen capacity building for engineered and industrialization*

For steel industrial automation centre, focus on researches of a set of control system for blast furnace, converter, continuous casting, hot rolling etc formed within smelting and development for software modularity, commercialization. For function polymer centre, focus on researches of mature, suitable, advanced whole set tech and equipment for polymer modification, also provide them to business by relying on Liaoyang petrochemical corporation academy, thus develop new polymer with all the functions, achieve the purpose of upgrading for products.

#### *3.4 persist in keeping information working in province by taking equipment manufacturing industry as a point of penetration*

Hold an opportunity of “manufacturing industry with information project” provincial town in national level, speed up to promote information working and improve core competence by taking information in manufacturing as a point of penetration for work in Liaoning province, embracing the top major industries of electronic information, automobile, petrification, steel, equip manufacturing, transportation, light manufacturing, textile, building materials and trade etc at old industrial bases in north. Meanwhile, strengthen information construction on logistics of storage and transportation, commerce and trade, also of capital flow business such as bank, insurance company etc. Work up e-commerce among businesses based on public service network, give full play to e-commerce influence on rising trading efficiency, cost down and improving competitiveness etc, explore combinative model of both traditional industry and e-commerce, develop e-commerce experimental unit and trial project in petrification, steel and currency field.

#### *3.5 Boost networking progress on both urban area and rural side actively*

View Anshan city as a keynote, make great efforts to construct information mutual platform in public service, push community information progress vigorously and set up base frame for digital city in Liaoning province by setting target of improving entirely functions in city and service standard. Strive for the target of net play with 1 million peasants in 5 years and make network to be a major tool for industrial restructuring and becoming prosperous by boosting net engineering construction for millions of presents. Carry out on line popularization of science, on line education, distance leaning and medical treatment and boost information for science and technology, education and medicine domain vigorously.

### *3.6 Focus on information construction for social security*

Establish specific network for social security with unified covering old industrial bases, implement the information operating on endowment insurance, unemployment insurance, medical insurance, injury insurance, maternity insurance and labor employment, social relief, social welfare, preferential placement etc, offer convenient, efficient service for resident, enterprise and public institution, perform duty with high grade in high efficiency manner by government.

#### **References**

- Bao, Shoubai. (1999). The revolution and outlet for mining expertise city. *Economy science*, No.4
- Fang, Jia. (1997). *Chief Editor. Investigation on industrial structure*. Renmin University of China press.
- Luan, Huahe. (2000). The first exploration of industrial transformation for resources city in China. *Tech economy and management study*, No. 6
- Wang, Qingyun. (2002). The transformation of economical structure for resources city. *China economy news weekly*. No.40
- Wu, Chunyou. (2003). The first exploration of transformation for resources city. *Dalian University of Technology journal*, No. 3.
- Zhou, Dequn. (2001). The sustainable development issue and outlet for mining city in China. *China University of Mining and Technology journal*, No. 1.



## Supplementary Livelihood Strategies among Workers in Nigeria: Implications for Organizational Growth and Effectiveness

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### Abstract

This paper examines the impact of supplementary livelihood strategies among workers on organizational growth and effectiveness in Nigeria. 320 staff from University of Calabar, Calabar was randomly and purposively selected for the study. Data was gathered through questionnaires. Five hypotheses were postulated and tested using chi-square, independent t-test, z-test and spearsman's rho correlation. Findings revealed that educational qualification, income and household size influenced workers engagement in supplementary livelihood. The study also revealed that, there is a significant difference between male and female in the engagement on supplementary livelihood. The research further revealed that, workers engagement in supplementary livelihood affects organizational growth and effectiveness. It was recommended among others, that management should pay salaries as at when due and make policies that promote good condition of services.

**Keywords:** Supplementary livelihood, Organizational growth, Organizational effectiveness

### 1. Introduction

History and sociological considerations indicate that the most practical means of ensuring everyone's access to the goods of the earth is some system of private property (Weber, 1946). Such right to private property is derived from the collective right of the human race to use the good of the earth. Workers can maintain such private property by offering their labour power to get wages or salaries as reward (Marx, 1964). These wages/salaries enable workers to satisfy their direct needs for daily subsistence (Best, 1999).

In Nigeria, rather than provide the means by which workers can satisfy their lower order needs such as food, clothing and shelter, the deprivation of physiological needs are encouraged through salary insecurity, over taxed and delay in the payment of salaries or fringe benefits, and this have behavioural consequences. The phenomenon has inevitably resulted in high level of bureaucratic corruption, inefficiency and low morale among workers. Workers adopt any possible means to meet their basic needs even if it entails running down their organizations (Ushie, 2002).

It is definite that workers in Nigeria have not been able to cope adequately with their take-home-pay which constitutes the only justified means of livelihood opened to them and hence have been resorting to other means (supplementary ) to make ends meet. This situation threatened the effectiveness, growth and survival of organizations. This study therefore made conscious attempt to identify the various supplementary livelihood strategies that have been adopted by workers in Nigeria over the years and the reasons for the adoption of such alternative livelihood strategies; and its implications on organizational growth and effectiveness.

### 1.1 Study Area

The University of Calabar, where this study is carried out, is one of the second generation universities in Nigeria that has consistently turned out several graduates since its inception. Founded in 1975 under the National Higher Education Expansion Programme of the Federal Military Government, the university is ranked among the leading and largest of Nigeria's second generation Universities. Academic activities actually commenced in 1973/74 session, in what was a campus of the University of Nigeria. The University of Calabar witnessed phenomenal physical, academic, and staff growth in its first decade of existence. Those were the halcyon days of the petroleum revenue boom (University of Calabar Decree, 1979).

From its nucleus, the Duke Town Campus, the University rapidly expanded into a busy academic community that is housed in a vast constellation of modern academic blocks, students' residential halls and staff quarters. The students' population rose from 896 in 1976, spread in the Faculties of Arts, Science and Social Sciences, to over 30,000 full time and part-time degree and diploma students in the 2001/2002 session. The University now has one Graduate School, 9 Faculties and 3 Institutes. These are: Faculties of Agriculture, Arts, Education, Law, Science, and Social Science, Faculties of Management Sciences, Laboratory and Allied Health Services and the School of Medicine (Clinical Sciences), the Graduate School; the Institute of Education, the Institute of Oceanography; and the Institute of Public Policy and Administration. Academic Programmes of the University of Calabar aim at laying a sound and broad undergraduate foundation upon which further intellectual and professional pursuits can be based at the Graduate School Level (Graduate School Prospectus, University of Calabar). As at May/June, 2003 the academic and non-academic staff strength of the University stood at 2906 (Establishment Records, 2003).

Since its inception in 1975, the University of Calabar has been guided by certain fundamental considerations in its academic and other activities. Established at the peak of the national outcry against corruption, nepotism, indiscipline and indolence, the university sought a citizenry imbued with high sense of duty, conscious and responsibilities to the Nigerian nation. Thus, character receives as much emphasis in her training as academics. The university is perhaps the first in the country to establish an annual Pro-Chancellor's prize for the best-behaved student of the graduating class. Besides, as a federal institution, the University seeks to establish on the campus an atmosphere where Nigerians from all states and linguistic groups in the country can cultivate healthy social inter-group relations. Indeed, all states of the federation are represented in the student population of the institution. The university has also consciously sought to learn from the mistakes of old Nigerian Universities by adopting a rather flexible and forward-looking attitude with regard to academic programming (University of Calabar, Decree 1979).

Consequently, the University adopted the Four-Year integrated degree programme based on the semester system and the course system in its faculties, something that some of the older Universities are just beginning to do. The University also makes conscious use of local materials for instructional purpose in the sincere effort to make her programmes relevant to the needs of Nigeria. Though not responsible to the state in which it was located, the university is responsive to the genuine aspirations and interests of its immediate community and interacts freely with that community through its programmes in Adult and Continuing Education, Comprehensive Health Scheme, as well as Symposia, Seminars and Workshops organized not infrequently on and off campus. Founded at the peak of the cultural renaissance in the country and situated in an area of the country distinguished for her rich culture, the University prides itself as a significant academic custodian of the rich culture of the people through the performance of her Department of Theatre Arts, which, within the shortest period of its existence, has established an enviable record for itself in Nigeria and abroad (University of Calabar Decree 1979).

The Cross River State, where the University of Calabar is located, has "a unique inheritance of almost everything for those who are interested in the cosmos and cosmic laws, this land of the rising sun attract visitors. It falls within the tropical rainforest zone of Nigeria and is located at an altitude of 38 metres above sea level. The area lies between latitudes 4°57'N and 5°35'N of the equator and between longitudes 8°00'E and 8°25'E of the Greenwich meridian.

## 2. Literature and Empirical Review

Formal organization is a system designed to coordinate specialized activities of individuals towards the efficient achievement of set goals (Gross, 1969; Katz & Kahn, 1978). This is made possible when workers are willing to contribute their actions towards accomplishing the set goals (Burred & Morgan, 1979). Goals or objectives are central to all organizations. They exist in order to achieve objectives and to provide satisfaction for their members. Organizations enable goals or objectives to be achieved that could not be achieved by the efforts of individuals on their own (Gross 1969). It is through cooperative action, that members of an organization can provide a synergistic effect (Etuk, 1990).

Organizations perform or satisfy primary object in every society. These include – the creation and distributions of product or service, satisfaction of personal objective of the members such as – profit to owners, salaries and other compensation for employees. Psychic income for all including – pride in work, security, recognition, acceptance,

meeting community and social obligation such as – protection and enhancement of the human resources of society, protection and enhancement of the physical resources of society (Flippo, 1984). It is normally through the interaction of people that the goals or objectives are achieved. And in doing this some form of structures are needed by which people's interaction and efforts are channeled and coordinated through the process of management towards the pursuit of goals or objectives. Such goals/objectives can be those of profits maximization or rendering of essential services to society.

To achieve organizational goals, individual or unit is given specific job/responsibility to carry out. The performance of such a job will lead to the accomplishment of overall goal. When goals are not achieved, it means the individuals or the units are not doing their jobs. While management is keen about achieving objectives/goals, they should strive to blend the pursuit of profit objectives with equitable consideration for labour and the consumer. Workers should be encouraged through good personnel policies to develop their potentials to the full and thus contribute to the growth and effectiveness of the organization.

Organizational growth here refers to structural and positive physical change in amenities or welfare of an organization. It entails remarkable improvement in the physical structure, increased profitability, large salaries for workers, greater opportunities for advancement, more power and prestige for organizational participants and the ability of the organization to meet community and social obligations.

All organizations experience strong natural pressures to grow for a number of reasons. For instance, managers and chief executives are rewarded directly by the growth of the organization, in terms of larger salaries, greater opportunities for advancement, and more power and prestige (Perrow, 1970). Growth is also a particular way to deal with internal strain, when ambitious managers come into conflict (Katz & Kahn, 1978). Again, just as the system of competitive markets makes economic efficiency the natural goal of the owner, so too does the system of organization make growth the natural goal of the manager (Mintzberg, 1983). Growth enables the organization to meet system needs of survival, efficiency and environmental control. The small organization is vulnerable while the larger one is more secure. Efficiency also relates to economics of scale. In most organizations, especially ones reliant on elaborate or complex technical systems they must grow large to become efficient (Pfeffer & Salancik, 1978; Mintzberg, 1983; Galbraith, 1952).

Organizational efficiency or effectiveness refers to the overall performance of the establishment. It entails the degree to which the organization accomplishes its objectives. For instance, a business firm is effective, if it makes profit; a welfare agency is effective, if it provides professional service of high quality (Argyris, 1964; Kechey, 1984). Organization effectiveness is also seen from the perspective of benefactors, thus a business organization is effective if it reduces cost, because the owners have profit as their objective. While unions are effective if they have strong rank-and-file participation because the union is created to serve the need and aspirations of members (Blau & Scott, 1962).

Organizational effectiveness can be evaluated using four major approaches which include (1) its ability to accomplish set goals in terms of output; (2) its ability to successfully acquire resources needed from the environment (3) its ability to ensure the smooth and harmonious functioning of the internal structure and (4) its ability to keep their strategic constituencies satisfied (Cameron, 1980). Strategic constituencies refer to groups of people who have a stake in the organization, such as customers, workers and stockholders (Saal & Patrick, 1988).

The complexity as well as the extraordinary pressure in formal organization, the different backgrounds of people, in terms of needs, goals, skills, status, perception and other diverse aims affects organizational growth and effectiveness (Umoren, 2001, Jaja & Umezuruike, 2004; Buker, 1999; Onyeonuru & Bankole, 2001). For instance, the drive by workers to satisfy their physiological needs and seek additional salary affects their commitment to the organization as well as their adaptive habits towards supplementary livelihood (Fajana, 1991).

Supplementary livelihood entails engaging in other activities outside official responsibility with the aim of raising extra income to one's official salary in order to meet one's direct needs (Ushie, 2006). Job satisfaction also determined whether a worker would embark on supplementary job or not. Those who are not satisfied would engage on supplementary jobs (Heineck, 2003). Income insecurity and irregular promotion of staff influenced significantly workers engagement on supplementary livelihood (Croal, 1992). Any establishment where workers are giving to supplementary jobs would hardly ever be efficient, grow and achieve its goals (Blau, 1972, Mott, 1972, Kelly, 1980, Coch & French, 1960; Locke & Schweiger, 1979). The effectiveness and growth of formal organizations is therefore tied to workers cooperation (Okoh, 2003).

### **3. Theoretical Consideration**

This study utilized two theories-the Expectancy Theory and Anomie Theory of Crime. Expectancy theory is a contingency model, which recognizes that there is no universal method of motivating people towards achieving organizational objectives. The theory was propounded by Vroom (1964) in his study of staff motivation and job satisfaction. The underlying assumption of expectancy theory is that whether a person works hard will depend

essentially upon what he expects to get out of the effort put into work. A basic tenet of the theory is that human behaviour is instrumental in attaining an outcome and the subjective probability that the outcome will be forthcoming (Mitchell, 1973). Outcomes may be positive such as pay, security, companionship, trust, fringe benefits, a chance to use talent or skill, or negative such as fatigue, boredom, frustration, anxiety, harsh supervision, non-payment of salary, threat of dismissal among others (Mamoria, 1993). Expectancy theory therefore holds that, motivation of staff to work is closely affected by the amount of rewards that people derive from jobs, while their level of performance is closely affected by the basis for attainment of rewards. Individuals are satisfied with their jobs and are ready to put in their best for the attainment of organizational objectives to the extent that effective performance leads to the attainment of what they desire.

Expectancy theory in sum indicates only the conceptual determinants of motivation and how they are related. It is however, of value in understanding organizational behaviour and especially as will be applied in this study. For instance, workers in formal organization have their expectations. Therefore, in order to get their necessary cooperation for the efficient administration of the organization, which will lead to the attainment of organizational goals or objectives, the manager should strive to discover the workers' expectations and satisfy them accordingly.

Anomie Theory of crime was propounded by Merton (1968). The theory held that, deviance is a symptom of the dissociation between the goals that people are taught to aspire to and the means through which they can be achieved. Merton (1968) typology draws attention to the unequal opportunities and the strain that such inequality generates. It suggests that lower class people and members of disadvantaged minority groups are likely to engage in deviant or illegal behaviour, not because they have innately criminal characters, but because they face more obstacles to achieving the success goals of the dominant culture. What this means is that, all forms of deviance will be highest among people with the least access to legitimate means to achieve culturally valued goals (Hale, 1990). This study infer from the theory, that, workers who cannot adequately satisfy their economic, social and psychology needs either due to their salary scale or their position in the organization and establishment would most likely adopt supplementary means to enable them cope with responsibilities.

#### **4. Methodology**

Survey research design was adopted in this study. The decision to adopt the survey research in this study derives from its economic standpoint. It is economical in the sense that a study representative samples will permit inferences from the population that would be too expensive to study as a whole. The population of the study comprises of 2960 academic and non-academic staff of the University of Calabar, Calabar, Nigeria. Out of which 320 staff were sampled in the following ratio: 80 academic staff (male) and 80 academic staff (female), 80 non academic staff (male), and 80 non-academic staff (female) respectively. Random and purposive sampling technique was used in selecting the 320 respondents. Questionnaire, interview and participant observation were used to gather data from respondents.

The questionnaire instrument is divided into five sections. The first section consists of questions on demographic characteristics of respondents. These help the researchers to assess the level of engagement in supplementary livelihood strategies between male and female among old and young staff. Section two contains questions on socio-economic characteristics such as educational qualification, income and household size, and marital status. These enable the study to evaluate likely reasons why workers engagement in supplementary livelihood strategies. Section three of the instrument help the study to gather information on types of supplementary livelihood strategies; time spent carrying out these supplementary livelihood activities; and reasons given by staff for engaging on supplementary livelihood strategies. Section four gathered information on the impact of supplementary livelihood on organizational growth and effectiveness. While section five enable the study to gather data on means of enhancing organizational growth and effectiveness.

#### **5. Test of Hypotheses and Findings**

##### *5.1 Hypothesis one*

Socio-economic status is a significant factor in determining the extent of workers engagement in supplementary livelihood strategies.

The synopsis of Chi-square ( $X^2$ ) results of the socio-economic status of the respondents against workers' engagement in supplementary livelihood strategies are presented in Table I. The result indicate as follows; education qualification  $X^2$  calculated = 99.96,  $X^2$  0.05 = 67.50, df=50; income  $X^2$  calculated = 71.98,  $X^2$  0.05 = 55.76, df = 40; household size  $X^2$  calculated = 97.58;  $X^2$  0.05 = 55.76, df = 40. Except marital status that is not significant,  $X^2$  calculated = 44.34,  $X^2$  0.05 = 67.50, df = 50. This result revealed that educational qualification, income and household size are significant factors determining the extent of workers' engagement in supplementary livelihood strategies. While marital status was not a significant factor.

### 5.1.1 Hypothesis 2

Rank of staff is a significant factor determining the extent of workers' engagement in supplementary livelihood strategies. Result in Table 2 revealed that, rank of staff was not a significant factor in determining the extent of workers engagement in supplementary livelihood strategies. Unit results revealed that, rank of academic staff both junior and senior was not a significant factor in their adoption of supplementary livelihood strategies as the obtained  $X^2$  – value of 78.06 and 106.92 were less than the  $X^2$  critical value of 146.60 for junior and senior academic staff respectively, at 5% level of significance. Similarly, findings revealed that, the calculated  $X^2$  values of 86.63 and 103.38 respectively for Junior and senior non-academic staff was less than  $X^2$  critical of 146.60 using 5% level of significance.

### 5.1.2 Hypothesis three

There is a significant difference in the level of engagement in supplementary livelihood strategies between male and female staff.

Table 3, revealed that, there was a significant difference in the level of engagement in supplementary livelihood strategies between male and female staff. Z calculated value exceeded Z – critical value at 5% level of significance. Both male and female staff had adopted extra work habits but exhibited differences in interest, time and space. The differentials in the adoption may be due to interest, capability and biological ability in gender.

### 5.1.3 Hypothesis Four

There is a significant difference in the mean member of academic and non-academic staff involved in supplementary livelihood strategies.

Findings as revealed in Table 4, indicates that there is a significant difference in the mean number of academic and non-academic staff involved in supplementary livelihood strategies as reflected by t-calculated value exceeding t-critical value at 5% level of significance ( $P < 0.05$ ).

### 5.1.4 Hypothesis five

There is a significant relationship between workers engagement in supplementary livelihood strategies and organizational growth and effectiveness.

Table 5 revealed that there was insignificant negative relationship between workers engagement in supplementary livelihood strategies and organizational growth ( $r = -0.14$ ;  $df = 6$ ;  $p < 0.05$ ). This implies that the adoption to supplementary livelihood strategies by workers has far reaching deteriorating effects on organizational growth. Findings in Table 6 also revealed that, there is a significant negative relationship between workers engagement in supplementary livelihood strategies and organizational effectiveness ( $r = -0.03$ ;  $df = 7$ ;  $p < 0.05$ ).

## 6. Discussion

The result revealed that socio-economic status of (educational qualification, income and household size except marital status), significantly determine the extent of workers engagement in supplementary livelihood strategies. That is, workers engage in supplementary livelihood strategies to enable them get additional income. This finding is consistent to Fajana (1991) observation. Workers in Nigeria engaged in supplementary livelihood to get additional income. He argued that low income workers are fond of engaging in extra work activities to generate additional income to augment their meager salaries. Income size and insecurity in salaries push workers into supplementary jobs. However, according to Heineck (2003), under utilization of the workers may also influence their engagement in supplementary livelihood strategies. That is, a worker who is not receiving job satisfaction on his/her main job would likely cultivate extra work habit. The finding that marital status of workers does not determine their engagement in supplementary livelihood contrasted Fajana (1991) observation. He held that, marital status of workers significantly influence workers engagement in supplementary livelihood.

The study also revealed that, rank of staff was not a significant factor in determining the extent of workers engagement in supplementary livelihood strategies. The adoption of extra work activities by workers is unconnected to their cadre/rank. Most respondent who engages in other supportive trade to earn a living were senior staff. This shows that salaries paid workers are inadequate to cater for their basic needs. According to Best (1999) and Ushie (2002 & 2006) when workers salaries cannot satisfy their direct needs for daily sustenance, they are pushed into extra work to get support wages to their main salary. This scenario would impede the growth and development of the organization.

More so, the study revealed that, there is a significant difference in the level of engagement in supplementary livelihood strategies between male and female staff. This implies that, there is a sharp contrast in the adoption to extra work habits between male and female staff in formal organizations.

Furthermore, the study shows that, there is a significant difference in the mean number of academic and non-academic staff involved in supplementary livelihood strategies. The result revealed that higher proportion of academic staff is involved in other supportive work culture. Some are environmental, medical and attitudinal consultants with

government agencies and other corporate organizations. Some of the non-academic staff are also involved in supportive work. But their proportion is small. These activities could hinder the growth and development of the organization. According to Croal (1992), workers who are denied promotion or pay rise would justify their actions for embezzlement, theft and other unethical behaviour.

The study also revealed that, supplementary work habits of workers affect negatively on the growth and effectiveness of formal organizations. This implies that, increased in tendency of workers in extra work habits will have a corresponding decrease in the organizational growth and effectiveness. This corroborate Okoh (2003) and Best (1999) who held that, workers who engage in supplementary livelihood or who push their personal interest above organizational goals adversely affect the growth and effectiveness of the establishment. Similarly, Blau (1972), Mott, (1972) and Kelly (1980) observed that, when workers engaged in extra work to support their salaries, organizational goals and effectiveness would be affected. Furthermore, Coch and French (1960), Locke and Schweiger (1979), views corroborate this research finding. They posit that, involvement of workers in extra work activity derailed productivity, organizational growth and effectiveness.

## 7. Recommendations

Based on above findings, the following recommendations are made:

1. Government should immediately reassess the work and reward system in the country. Urgent steps should be taken to ensure that salary structures of staff are amended to meet employees' basic needs. Staff salaries should be reviewed upward to be consistent with the economic situation of the nation.
2. Far reaching measures should be undertaken to address policies initiative that are counter- productive. Decisions should be staff oriented and should be from bottom to top.
3. Policies should be made by management that would encourage workers training and ensure job satisfaction. Workers should be trained and developed to meet new challenges in work place. The work environment should also be redesign to enhance job satisfaction.
4. Disciplinary measures should also be put in place to discourage fraudulent practices. Those involve in such act should be brought to book.

## 8. Conclusion

The growth and effectiveness of any organization depends on the cooperation of workers. Socio-economic status of workers affects workers cooperation towards goals attainment in formal organizations. Consequently, supplementary livelihood strategies are adopted by workers to meet their basic needs, which is often at the expense of the organization's goals. Workers at all level engaged in extra work to make earns meet; this revealed that salaries are inadequate for staff and should be reviewed upward. Work environment should be design to promote job satisfaction.

## References

- Argyris, C. (1964). *Integrating the individual and organization*. New York: Wiley and Son.
- Best, E. G. (1999). *Readings in motivation and work in nigeria*. Jos: Midland Press.
- Blau, P. M., & Scott, W. R. (1962). *Formal organizations: A comparative approach*. San Francisco: Chandler.
- Blau, P. M. (1972). *International encyclopedia of the social sciences*, David L. Sills (ed). Vol. II, 298-304 .
- Buker, K. M. (1999). Crisis management in nigerian universities: Challenges to administrators. *Sahel Analyst Journal*, 1 (2), 122-133.
- Burrell, G., & Morgan, G. (1979). *Sociological paradigms and organization analysis*. England: Ashgate.
- Cameron, K. S. (1980). Critical questions in assessing organizational effectiveness. *Organizational Dynamics*, 9, 66-80.
- Coch, L., & French, J. R. P. (1960). Overcoming resistance to change. In D. Cartwright & A. Zander (Eds.), *Group dynamics: research and theory (2<sup>nd</sup> ed.)* Evanston: Row Peterson.
- Croal, H. (1992). *White collar crime*. Buchingham: Open University Press.
- Establishment Records. (2003). *Unpublished records from establishment unit of the university of calabar, calabar*.
- Etuk, J. E. (1990). *Foundations of modern business management*. Calabar: University of Calabar Press.
- Fajana, S. (1991). Moonlighting among graduates in nigeria. *Journal of Research for Development*, 1, 1-14.
- Flippo, E. B. (1984). *Personnel management (6<sup>th</sup> ed.)* New York: McGraw Hill.
- Galbraith, J. K. (1952). *American capitalism: The concept of countervailing power*. Boston: Houghton Mifflin.
- Gross, E. (1969). The definition of organizational goal. *British Journal of Sociology*, 20, 277-294.

- Hale, D. M. (1990). *Controversies in sociology: A canadian introduction*. Toronto: Copp Clark Pitman.
- Heineck, G. (2003). New estimates of multiple job holding in the uk. [Online] Available: [http://www.google.com.ng/search?hl=en&q=Heineck,+G.+\(2003\)&start=20&sa=N](http://www.google.com.ng/search?hl=en&q=Heineck,+G.+(2003)&start=20&sa=N) (December 28, 2003).
- Jaja, S. A., & Umezuruike, C. C. (2004). Managing support services in nigeria tertiary educational institutions. *The Colloquium: A Multi-Disciplinary Thematic Journal*, 1 (2), 122-133.
- Katz, D., & Kahn, R. L. (1978). *The social psychology of organizations*. New York: John Wiley.
- Kechey, M. (1984). Impartiality and participant – interest: Theories of organizational effectiveness. *Administrative Science Quarterly*, 29, 1-25.
- Kelly, J. (1980). *Organizational behaviour: Its data, first principles and application*. Illinois: Richard Irwin.
- Locke, E. A., & Schweiger, D. M. (1979). Participation in decision making; one more look. In M. Barry (ed.), *Research in Organizational Behaviour*. Greenwich, Conn: JAI Press.
- Mamoria, C.B. (1993). *Personnel management: management of human resources (12<sup>th</sup> ed.)*. Bombay: Himalaya Publishing House.
- Marx, K. (1964). *The economic and philosophical manuscripts*. In J. S. Dirk (ed.). New York: International Publishers.
- Merton, R. K. (1968). *Social theory and social structure*. New York: The Free Press.
- Mitchell, F. (1973). Work and measurement and work and incentives. *Industrial Engineering: American Institute of Engineering*, 19, 30-45.
- Mitzi, H. (1983). *Power in and around the organizations*. Englewood Cliffs, N. J.: Prentice-Hall.
- Mott, P. (1972). *The characteristics of effectiveness organization*. New York: Harper and Row.
- Okoh, A. O. (2003). Enhancing productivity through improved work attitude in the new millennium. *The Enterprise*, 5 (1), 1-13.
- Onyeonoru, I., & Bankole, A. (2001). Conflict management and university sustainability: the role of administrators and campus union. *Nigerian Journal of Social and Development Issues*, 1, (1), 107-115.
- Perrow, C. (1970). *Organizational analysis: A sociological view*. New York: Wadsworth.
- Pfeffer, J., & Salancik, G. R. (1978). *The external control of organizations: A resource dependence perspective*. New York: Harper and Row.
- Saal, F. E., & Patrick, A. K. (1988). *Industrial/organizational psychology: Science and practice*. California: Brooks Cole Publishing.
- Umoren, D. N. (2001). Comparative analysis of conflict management strategies among primary and post primary institutions in akwa ibom state. *International Journal of Educational Administration, Planning and Research*, 1, 115-125.
- University of Calabar. (2002). *Graduate school prospectus (2002-2005)*. Calabar: Graduate School.
- University of Calabar. (1979). *Decree no. 80*. Lagos: Federal Government of Nigeria.
- Ushie, E. M. (2002). *Human relations and human resources management: concepts, theories and applications*. Calabar: Unique Link Ventures.
- (2006). Supplementary livelihood strategies among workers in the university of calabar: implications for organizational growth and effectiveness. *Unpublished Ph.D Thesis of the University of Jos, Nigeria*.
- Vroom, V. H. (1964). *Work and motivation*. New York: John Wiley and Sons.
- Weber, M. (1946). *Essays in sociology, translated by H. H. Gerth & C. W. Mills*. Oxford: Oxford University Press.

Table 1.

Variable (Socio-economic status)	Observed frequency	Expected frequency	Degree of freedom	X <sup>2</sup> cal	X <sup>2</sup> critical
Educational Qualification	308	540.42	50	99.96*	67.50
Income	308	497.18	40	71.98*	55.76
House- hold-size	308	537.00	40	97.65*	55.76
Marital status	308	449.13	50	44.34	67.50

\* p &lt; 0.05

Chi-square (x<sup>2</sup>) results showing the socio-economic status of workers and their level of engagement in supplementary livelihood strategies.

Table 2.

Variable (Rank of staff)	Observed frequency	Expected frequency	Degree of freedom	X <sup>2</sup> cal	X <sup>2</sup> critical
A Academic staff:					
Junior	84	212.92	120	78.06	146.60
Senior	68	222.10	120	106.92	146.60
Non-academic staff					
B					
Junior	60	187.42	120	86.63	146.60
Senior	96	259.93	120	103.38	146.60

\* p &lt; 0.05

Chi-square (x<sup>2</sup>) results showing rank of staff and extent of workers engagement in supplementary livelihood strategies.

Table 3.

Variable (sex of staff)	N	X	SD	Z-cal	Z- critical
Male X <sub>1</sub>	155	14.09	8.09	4.65*	1.96
Female X <sub>2</sub>	106	10.60	3.85		

\* p < 0.05; Z-critical =  $2_{1-0.05/2} = 1.96$ 

Z-test results showing level of engagement in supplementary livelihood strategies between male and female Staff.

Table 4.

Variable (staff)	A	B	C	D	E	F	G	H	I	J	K	MEAN	STD	T <sub>CAL</sub>
Academic staff X <sub>1</sub>	50	86	84	71	90	-	67	94	7	13	82	64.40	31.42	
Non Academic staff X <sub>2</sub>	11	5	-	-	13	10	7	9	-	3	-	8.29	3.24	2.30*

\*  $p < 0.05$   $df = 5$ ;  $t_{\text{critical}} = 2.13$ .

Independent t-test results showing differences in the mean number of academic and non academic staff involved in supplementary livelihood strategies.

Key:

- A = Consultancy services in and outside the University
- B = Charging staff for any extra work done;
- C = charging students for any extra work done (seminar, project supervision etc)
- D = Selling handouts/textbooks to students
- E = Operating business/shops on /off campus
- F = Running taxi/Motorcycle during and after work
- G = Buying and selling, items on campus (example minerals and snacks)
- H = Other business outside campus (example drinking joint/restaurant, hair dressing saloon and sewing);
- I = Establishment of private school or teaching in private schools;
- J = Establishment of churches or pastor in a church;
- K = Organizing tutorial classes for under graduate students.

Table 5.

Variable	N	$\sum d^2$	R	t <sub>cal</sub>
Supplementary livelihood strategies	8			
		96	-0.14	0.35
Organizational growth	8			

\*  $p < 0.05$ ;  $df = 6$ ;  $t_{\text{critical}} = 2.45$

Spearman's rho analysis shows the relationship between workers engagement in supplementary livelihood strategies and organization growth.

Table 6.

Variable	N	$\sum d^2$	R	t <sub>cal</sub>
Supplementary livelihood strategies	9			
		124	-0.03	0.08
Organizational effectiveness	9			

\*  $p < 0.05$ ;  $df = 7$ ;  $t_{\text{critical}} = 2.36$

Spearson's rho analysis of the relationship is between workers engagement in supplementary livelihood strategies and organization effectiveness.



## A Research on Distinctive Industries and Spatial Organization

### Model of Interbasin Cells

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*The research is financed by the “Total Project of the Water Pollution Control in Liaohe River Drainage Basin” of the National Science and Technology Key Project of “Control and Treatment of Water Pollution” (No. 2008ZX07208-001). (Sponsoring information)*

#### Abstract

In order to solve the pollution to water resources caused by Chinese industry, this paper proposes to select and develop distinctive industries based on industry performance, to establish a clustering model for the spatial organization of distinctive industries based on market behavior and to construct a network of industrial clusters with special characteristics.

**Keywords:** Interbasin cells, Distinctive industry, Spatial organization model

Foundation item: a project named “Overall Scheme of Water Pollution Control in Liao River Basin” (2008ZX07208-001) funded by the national major S&T project of “Control and Management of Water Pollution”

China is still suffering from the extensive mode of growth with high input, high consumption, high discharge, disharmony, non-recyclability and low efficiency, leading to serious pollution, superimposed effects of water pollution between upstream and downstream and therefore conspicuous structural, complex and compressed issues on pollution.

The most important aspect in governing water environment is to improve the interaction between ecological benefit and social benefit, to base economic benefit on ecological and social ones. In view of China’s current economic development, involving the interaction among economic, social and ecological benefits, the adjustment and optimization of interbasin industrial structure is a hot potato. In this situation, it is a development path to develop distinctive industries in order to integrate economic, social and ecological benefits, to enhance interbasin communication, to achieve the network development of interbasin distinctive industrial clusters based on the idea of industrial cluster development.

Based on his research on market behavior, market performance as well as the effects of the macro and micro environment, Scherer summarizes the accomplishments in market behavior, especially in price formation, advertising activities and R&D and develops SCP Model (Structure-Conduct-Performance) (Dong, 2005). According to SCP, this paper aims at conducting an analysis on the selection, development and spatial organization model of interbasin distinctive industries at the aspects of structure, behavior and performance and proposing corresponding countermeasures on the development of distinctive industrial clusters, which, surely, are of great theoretical and practical significance for harmonious interbasin economic, social and ecological development.

#### 1. Selection and Development of Distinctive Industries Based on Coupling Performance Evaluation

In order to be adapted to the transformation of current world economy, industries with regional characteristics are expected to face up to economic globalization as well as increasingly fierce regional competition through innovation.

In view of the serious damages to China’s water resources caused by its extensive mode of economic growth, first of all, the reality of a region should be based on and coupling performance evaluation on economic, social and ecological benefits should be conducted to have different development strategies when choosing interbasin distinctive industries.

Second, industries with regional characteristics should be the result of the coupling among industrial basis, market demands and innovative environment. (Yu, 2007).

In accordance to the current industrial reality as well as the market performance of specific industry, we can confirm relevant policies for industrial development: industries to be developed with special emphasis, industries to be transformed and industries to be developed on a large scale. As a result, industries with regional characteristics can be developed, hence effectively improving productivity and developing advantages in regional competition.

(1) Industries to be developed with special emphasis: having quite significant status in the local region due to their high contribution rate to local economy and the society as well as low contribution rate to pollution.

(2) Industries to be transformed, especially those resource industries, which should be transformed from mining and processing with low added value into deep processing with high added value; in addition, mining and processing techniques can be constantly improved through technological innovation, hence improving the utility degree of the existing resources, to lengthen the usage period of resources and to offer more time for the transformation process.

(3) Industries to be developed on a large scale: for those industries with small scale and serious pollution, countermeasures for large-scale development can be employed to expand scale through industrial merger and union in order to enable relevant enterprises to convert external cost into internal cost when dealing with pollution.

The development of all distinctive industries must center on the improvement of knowledge absorption and innovative ability. Finally, a distinctive industrial structure will come into being with the integration of economic, social and ecological benefits.

## **2. Spatial Organization Model of Distinctive industry Clustering Based on Market Behavior**

In the era of industrial economy, certain industries could gain competitive advantages by implementing the low cost strategy with their rich local resources, while in the era of knowledge economy, more industries mainly depend on their unique regional cultural environment and innovative strategies to stand out from the crowd. Due to their diversified development backgrounds and conspicuous regional characteristics, most industries of this kind have established their regional brands, which are industries with regional characteristics. On the other hand, a majority of the current distinctive industries are located in concentrated areas, that is, a group of companies or associated institutions in the same or relevant industries get together due to their commonness and complementarity, which is clustering industrial development (Wang, 2001).

Corresponding actions can be taken in different industries:

(1) Giving priority to some industries---industrial clustering and innovation: performing technological reform, promotion and other development actions.

(2) Transforming some industries--- developing raw material-based industrial clustering into a more profound level; achieving parallel development of technological reform and promotion.

(3) Developing some industries on a large scale---closing those enterprises with poor economic and social benefits or with high contribution rate to pollution and attaching importance to developing large-scale enterprises.

The role of industrial chain network: relations should be established among enterprises from different areas in or out of certain basin to form relevant network. In this way, a structure dominated by core enterprises or market-oriented clusters composed of a leader and necessary network will come into being naturally.

## **3. The Network of Distinctive Industry clusters**

First, industry clusters in a small region should be formed with the goal of improving performance. Then, through their communication and division of labor, comprehensive network development of distinctive industry clusters in and out of a basin can be formed by visible and invisible flows, nodes and networks including industry chain, value chain, innovation chain as well as supplies chain, hence forming the network structure of regional industry clusters.

### *3.1 Establishing Individual Industry Clusters*

According to industrial basis and market requirements, clusters dominated by the core or the market should be constructed in a concentrated area.

Different paths for the construction of industry clusters should be flexibly employed in different industries, including moving enterprises into a concentrated area, establishing ecological industrial parks or recycling eco-parks to accomplish the construction of industry clusters.

### *3.2 The Basin Network of Distinctive Industry Clusters*

The spatial organization of distinctive industry clusters in a basin is as follows: taking advantage of the industrial basis and transport strengths to construct individual distinctive industry clusters as well as core ones, such as constructing riverfront economic zones and promoting the construction of distinctive brands in a basin and so on.

### *3.3 The Regional Network of Distinctive Industry Clusters*

Different network relations should be established at different regional levels. A network structure should be established with core relevant industry clusters based on industry chain, value chain, innovation chain and supplies chain according to the current development of industry clusters and the reality of the industry clusters in some core domestic economic zones. During the process of attracting investments, with the industry chain in the domestic industry clusters as the base, more efforts should be made to approach the high-end value chain as well as innovation chain and to improve the status

and innovation relations of value chain if the domestic value chain and industry chain have been one part of the foreign ones.

#### **4. Interbasin Countermeasures**

##### *4.1 Interbasin Governmental Cooperation and Management Model*

Interbasin governmental cooperation and management should be promoted in interbasin industry clusters. Management institutions and corresponding measures should be established in the city-basin areas to improve the cooperation between local governments. External issues on the relations between cities and local governments should be solved; a universal method of finance and tax reduction should be offered to promote the industrial development of all cities in the basin so that they will contribute to the basin they belong to more effectively.

##### *4.2 Establishing Universal and Strict Industrial Management and Supervision System*

First, interbasin project admittance system with universal standards of ecological protection should be established. The industries applying to enter a basin should be examined strictly and ecological benefit should be considered comprehensively and evaluated from the perspective of ecological protection, hence preventing some cities and areas from introducing high-pollution industries in order to achieve their short-term economic benefits and therefore causing serious damages to the whole basin system.

Second, information-based platforms for interbasin spatial management should be constructed to have comprehensive performance monitor. According to the principle of joint development and sharing as well as universal technological standards, joint efforts should be made to construct information platforms for interbasin spatial management to offer more reliable spatial information guarantee for the coordination and decision making of interbasin governments at all levels. This system is mainly employed to clear the existing spatial information resources, to establish universal technological standards, to have technological integration of a variety of spatial resources; a coordination system of spatial information resource management should be established and special institutions should be set up to conduct its construction and maintenance; governments at all levels ( especially at the provincial and city levels) are expected to impel the project at the same pace.

#### **References**

- Dong, Weigang. (2005). Harvard School of Industrial Organization Theory. *Journal of Liaoning Taxation College*, 17(2): pp19-22.
- Wang, Jici. (2001). *The Space of Innovation: Enterprise Clusters and Regional Development*. Beijing: Beijing University Press.
- Yu, Bin. Zeng, Juxin & Luo, Jing. (2007). Spatial Organization Innovation of Regional Competition Advantages and the Development of Distinctive Industries: Taking Wuhan City Circle as an Example. *Journal of Huazhong Normal University (Natural Science)*, 41(2): pp287-291.

Table 1. The Network Development Pattern of Distinctive Industry Clusters

Cooperation Pattern	Cooperation Advantage	Elementary cooperation method	Advanced cooperation method	Development priority	Ultimate goal
Cooperation between individual industry clusters and a city's internal relevant clusters	Universality of Spatial neighborhood and policies	Industry chain and innovation chain	Industry chain (core role), innovation chain	Improving local economic, social and ecological benefits	Harmonious development of economic, social and ecological benefits
Cooperation between individual industry clusters and relevant clusters in the same basin	Basin transport advantage and spatial neighborhood advantage	Industry chain	Industry chain, value chain (high-end), innovation chain	Improving ecological benefits in a basin	
Cooperation between individual industry clusters and relevant clusters in domestic core economic zones	Regional transport advantage, regional preferential policies and spatial neighborhood advantage	Industry chain, value chain, innovation chain	Value chain (high-end), industry chain, innovation chain	Improving industrial status, innovative ability and regional brands in a region	
Cooperation between industry clusters in a basin and foreign relevant clusters	Distinctive industry competition advantage and economic globalization	Industry chain, value chain	Value chain (high-end), innovation chain	Improving industrial status, innovative ability and regional brands home and abroad	

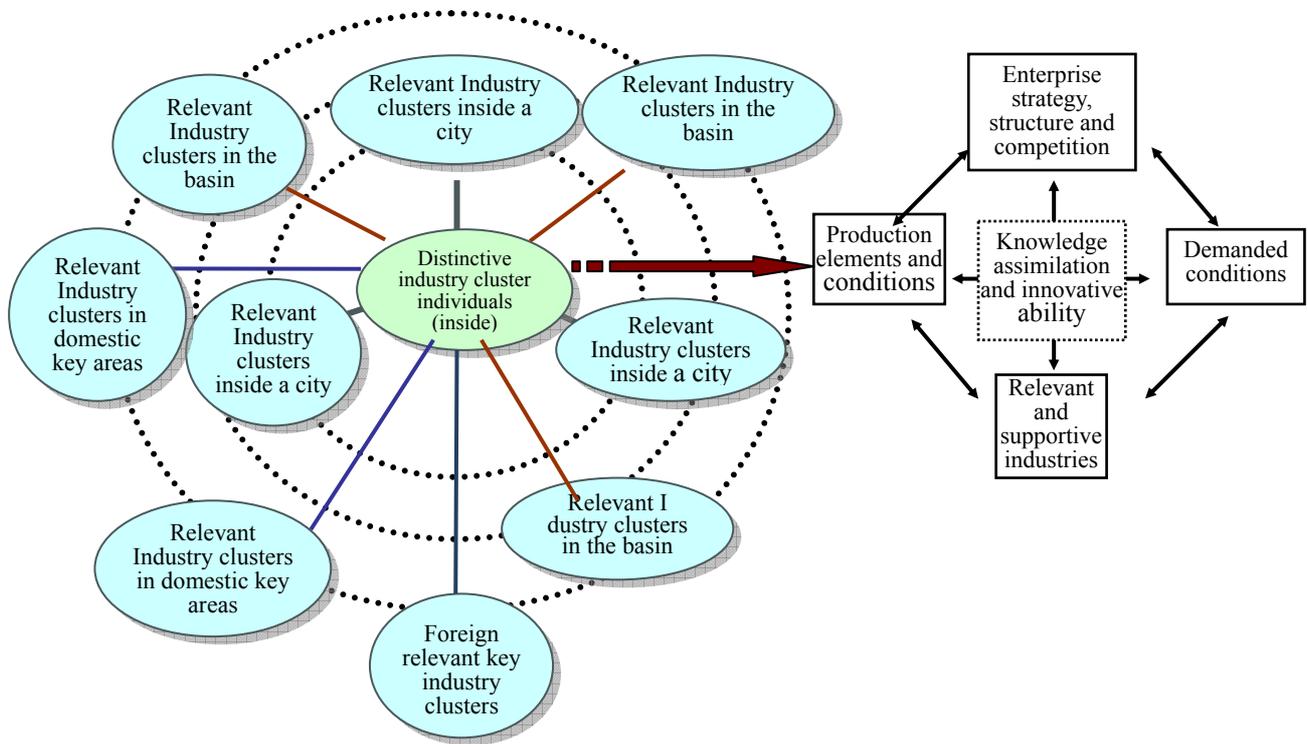


Figure 1. The Network Development of Individual Distinctive Industry Clusters as well as Relevant Domestic and Foreign Industry Clusters



# Study on the Water Conservation Management Measures in Thermal Power Plants

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## Abstract

First, the water consumption actuality of the electric power industry of China is analyzed in this article, and the necessity of the water-saving transformation in thermal power plants is proposed. Second, the type of water consumption in thermal power plants is analyzed, and eight parts of water consumption in thermal power plants are summarized in the production of thermal power plants. Finally, aiming at the characters of thermal power plant in China, the measures of water conservation and the methods of technical reform of water conservation are proposed to reduce the water consumption in the thermal power plants of China and offer solutions for the energy conservation and emission reduction.

**Keywords:** Thermal power plant, Water conservation, Technical reform, Energy conservation and emission reduction

The generated electrical energy amount of the thermal power plants occupies above 70% of the total electrical energy in China, and the thermal power generation industry is one of largest industry which consumes waters in China, and the development of the water conservation will directly influence the production management and sustainable development of thermal power plants. As viewed from the water consumption of the thermal power industry from 2000 to 2005, though with the increase of the total thermal power installed capacity and the generated electrical energy, the water consumption of the thermal power plants in China increased, but the repeated utilization rate of the industrial water is enhanced year by year, and the water consumption rate of unit generated electrical energy is reduced gradually.

According to incomplete statistics, the average water consumption rate of the large thermal power plant adopting the circulating cooling system in 1980s in China was 1.42-1.56 cubic meters/ (s. million KW), and the average water consumption rate of the large thermal power plant of 0.3 million KW or 0.6 million KW built in 1990s could achieved 0.915 cubic meters/ (s. million KW). And the comparison of the water consumptions in the thermal power industry and the total national water consumption from 2000 to 2005 is seen in Table 1.

There are deficient freshwater in the north of China, and the water consumption and water conservation argumentation of new project is the key part of the water conservation to reduce the total water consumption, reasonably use water and reduce the pollution discharge.

## 1. Water Consumption Type of Thermal Power Plants

The thermal power plant is the big user of industrial water, and the thermal power plant mainly includes the boiler, the steam turbine, the coal clinker and the cooling tower, and the water consumption of the thermal power plant mainly contain following aspects.

### 1.1 Boiler feed-water

The operation process of the thermal power units can be described as that, first the high-pressure pump push water into the boiler to heat as the high-temperature steam, and the steam enters into the steam turbine to produce energy, and in this process, the pressure and temperature gradually reduce, and the steam turns into water finally by the help of exterior force, and then the high-pressure pump pushes the water into the boiler to heat. In fact, it is a continually circular process of "water- steam- water". In this closed circular process, the steam and water will be lost to some extents, such as the boiler pollution discharge loss, the boiler ash-blowing loss, and the steam leaking loss.

### 1.2 Circulating cooling water

After the steam produces energy in the steam turbine, the pressure and temperature of steam will be reduced very low, but it still needs water or air to cool it to make it turn into water. Turning the steam to the water at same temperature needs to release much potential heats, which needs the heat-eliminating medium to take these potential heats away, and general thermal power plant uses the cooling water to turn the steam into water by the condenser, and each ton of steam needs about 50 tons water to cool. After this heat exchange is completed, the temperature of the cooling water will be

enhanced about 15 centigrade degrees. To recycle the cooling water, the cooling tower needs to be built to reduce the temperature of the cooling water. When the cooling water is cooled in the cooling tower, small part of it will be turned into steam, and blew away by the north wind, which is the “white smog” from the cooling tower seen by people usually. The wind-blowing loss of the cooling tower is the largest one in the water consumption of the thermal power plant. From the cooling tower suited for the thermal power units of 0.3 million KW, 300 tons water would be blew away by the north wind in one hour. If there is large water surface such as the big lake near the power plant, it can be utilized to cool the steam, and here, the loss of cooling water will be very small.

### *1.3 Water consumption for ash and residue removal*

It is a big user of the thermal power plant. The water removal of ash and residue is to rush the ash collected in the smog and the residue from the boiler to the ash yard, and this operation mode is very simple to the thermal power plant. But it is difficult to computer the water consumption in the practice, in fact, the ash yards in many thermal power plants are a big reservoir, and in history, they collapsed and flooded several villages.

The present large coal-fired units all equip with the dusting equipment, and the fly ash collected by the dusting equipment is good building materials, and some thermal power plants grind the fly ash with the clinker produced by the cement factory to obtain the cement of No. 400. And mixing 15%~18% of fly ash into the concrete could enhance the quality of the concrete, for example, when building the big dam, the concrete is regulated to be mixed by certain proportional fly ash, which can increase the fluidity of the concrete and the anaphase strength, and save the using of cement. When the fly ash meets water, the activity will disappear, and the recycle value will lose, so to rush the fly ash by water not only wastes water but also is pity. The dry fly ash removal should be adopted, and this mode compresses the fly ash collected by the dusting equipment into the ash tank by the compressed air first, and then transports it to other place or the ash yard.

### *1.4 Cooling water for assistant equipments*

It means all cooling waters such as the oil cooling water, the hydrogen and water cooling water in the generator, the cooling water of various blowers and water pumps except for the cooling water of the condenser of the steam turbine, and these cooling water consumptions are not large, and the indirect air cooling method could be adopted, i.e. building a small air cooling tower, to make the cooling water of the assistant equipment to circle closely, which could consume little water.

### *1.5 Water for desulfurization*

To protect the environment, most present coal fired power plants need to equip the desulfurization equipment, and many plants adopt the wet smog-air desulfurization technology, i.e. gushing the mixes of water and limestone powders into the smog and gas to remove the sulfur dioxides in the smog air. The desulfurization effect of this method is very good, and 99% sulfur could be removed, and part of water can be recycled. In addition, to save the water consumption of the thermal power plant, the dry desulfurization could be adopted to save water. For example, to grind the limestone and coal and gush the mixes into the furnace, and add the limestone ash at the region of about 800 centigrade degrees in the furnace, could remove 75% sulfur.

### *1.6 Dusting water in coal yard*

Most coal yards in China are outdoor yards, and they need sprinkling waters to bury dusts continually. How to save water and solve this problem? In fact, one or two large capacity tower coal storage bunker can be constructed, and the coals could be sent to the bunker directly after they are exploited. In this way, water is not needed in the coal yard again.

### *1.7 Living water in power plants*

In the large thermal power plants, there are less employees and workers now, so the living water will be reduced (employees still need to be educated for saving waters anywhere). The production waters in many power plants are recycled water and dry water of coal, and because the living water requires higher quality and less quantity, so it should be solved independently such as the urban water supply when the plant is near the city.

## **2. Main Water-Saving Measures in China**

### *2.1 Reforming the circulating cooling water treatment system*

#### *2.1.1 Reasonably enhancing the concentration rate*

The concentration rate is an important control parameter in the circulating cooling eater system management, and it can reduce the compensation quantity of the antisludging agent and the inhibitor in the system. But the high concentration rate would require higher-quality treatment of fresh water and circulating water, and accordingly increase the charge of water treatment. Generally, according to the water saving requirements and the water treatment technology, the optimal concentration rate should be in 4~5. From the statistical data, the concentration rate of above 80% Chinese thermal power plants is lower than the optimal concentration rate. The enhancement of the concentration rate of the thermal

power plant could significantly reduce the water consumption index, and the concrete measures include (1) adopting the antisludging and antiseptics agents with better effect, and the acidification or the lime acidification technology and the weak acid resin treatment technology, to enhance the circulating water concentration rate above 3, (2) adopting the circulating water classification concentration series makeup technology.

#### 2.1.2 Enhancing the efficiency of the cooling tower and reducing the consumption of circulating cooling water

The water consumption of the thermal power plant mainly is the water consumption of the cooling tower (about 70% of the total water consumption of the thermal power plant), and it includes the evaporation loss, the wind-blowing loss and the pollution discharge loss. The quantity of the water loss in the cooling tower is mainly decided by the circulating water quantity. To enhance the efficiency of the cooling tower and reduce the water consumption of the circulating cooling water, following measures can be adopted. (1) Replacing the cement filling as the high-performance plastic filling, and replacing the porcelain-mouth-porcelain-dish spraying equipment as the plastic reflecting spraying equipment. (2) Strengthening the maintenance, and clearing the cooling tower periodically and repairing the damaged equipments, and replacing the damaged filling and spraying equipments, to ensure the efficient water drenching area and degree. (3) Installing the water collect to reduce the wind-blow loss. (4) Setting up the water-level gauge in the pool of the cooling tower to link the water-level signal with the weak acid treatment system, and correspondingly increasing or reducing the water level of the weak acid treatment system according to the water-level of the pool. (5) Setting up the water-level control threshold in the water-makeup pipe of the cooling tower to avoid the flooding of the circulating water.

#### 2.1.3 Using the air cooling units in the coal-rich and water-deficient regions

The air cooling system is also called as the dry cooling system, and it utilize the radiator composed by the air cooling wings with high-efficiency radiating effect to transfer the heat to the air and make the steam turbine to exhaust stream for condensation. The air cooling system could be divided into the direct air cooling, and the indirect air cooling with mixed condenser, and the indirect air cooling with the surface condenser. The water consumption of the air cooling system is very small, and comparing with the wet cooling units with same capacity, its cooling system could save above 97% of water itself, and save above 70% of the whole factory, and the water saving rate of the 200 MW units is about 65%, and the water saving rate of the 300 MW units is about 70%, the water saving rate of the 600 MW units is about 75%, and the water saving rate of the individual unit could achieve 90%. The air cooling system is fit for the power plant where the water is deficient seriously, and the price of the coal is very cheap. Though the air cooling units of the thermal power plant could make the water saving rate of the whole factory to achieve above 65%, the cost of the dry cooling tower is 2~4 times of the general cooling tower, and the cooling efficiency is bad, and the pressure of the steam turbine is higher, and the efficiency of the power plant could be correspondingly reduced (about 5%), and the coal consumption will increase 4%~5%, so the electrical generation cost will be increased, and when the temperature is higher in the summer, the operation power will be reduced. So it should consider various influencing factors to decide whether adopting this technology. In recent years, the dry/wet comprehensive cooling system is researched and developed, and the proportion of the dry part and the wet part are decided by the water supply and the climate of the place of the power plant.

#### 2.1.4 Using seawater once through cooling technology or the seawater desalting technology in coastal regions

In the once through cooling water system, the cooling water only passes the heat exchange equipment once, and then will be discharged, but the temperature rise of the discharged water is very small, and various minerals and ion contents in the water hold the line. Because the once through cooling water system has no losses such as evaporation, wind-blowing and pollution discharge, so its water consumption is much less than the circulating cooling power plant with same capacity, and this system needs less investments and simple operation.

### 2.2 Reforming the ash and residue removal system

The ash and residue removal system in the thermal power plant is another largest user of the water than the wet cooling system. According to the statistics, the ash removing water consumption of the thermal power plant of China is 0.98 billion cubic meters, and except for the evaporation and the leaking loss of the ash yard, the annual ahs removal water discharge is about 0.34 billion cubit meters, and the penalty each year could achieve about 30 million Yuan. In addition, the water quality of the ash removal water is bad, and the treatment charge is higher, so it is hard to be recycled, and it will induce the second pollution of the ground water and the surface water, and the ash residue will lose its activity when it contacts with the water, and the content of the calcium oxide in the ash water is higher, and the water scale in the system is very obvious. Therefore, the recycle of ash removal water would not only save water but also protect the environment. (1) The technical core of reducing the ash-water rate and save the ash removal water is to reduce the ash-water ratio and enhance the concentration of the ash slurry, and the ash-residue system adopts the ash-residue respective-removal method, and the ash removal system adopts the high-concentration water-power ash removal method, and the ash-water ratio is in 1:1 ~ 1:4. (2) The dry ash and residue removal system adopts the dry ash and

residue removal method without water, and both the fly ash and residue produced by this technology can be recycled.

### 2.3 Establishing the wastewater recycle system

#### 2.3.1 Comprehensive treatment and recycle of wastewater

The thermal power plant is the big water user, and produce quite large industrial wastewater, so the recycle of the industrial wastewater from the thermal power plant could reduce the pollution of wastewater to the environment. The wastewater recycle mode includes the decentralized treatment and the centralized treatment, and the thermal power plant with the single unit of the capacity of 600 MW should adopt the centralized treatment mode of wastewater. Because the centralized treatment mode has perfect establishments and good water quality, it has been gradually accepted by many power plants such as the Baogang Power Plant, the Waigaoqiao Power Plant, and the Sanhe Power Plant. Because the water quality of wastewater from the power plant is very complex, and various equipments and systems use different standards of water quality, so for different wastewaters, different treatment methods should be adopted.

#### 2.3.2 Using the urban recycled water as the circulating cooling water

The water treatment charges taking different water sources as the circulating cooling water are different, and when the concentration rate of the system is 2.0, the treatment charge using recycled water is 0.48 Yuan/ton, and the treatment charge using water supply is 0.54 Yuan/ton, and when the concentration rate is 5.0, the treatment charge using recycled water is 0.35 Yuan/ton, and the treatment charge using water supply is 0.65 Yuan/ton. It is obvious that it is better to use the recycled water as the circulating makeup water than the water supply.

### 2.4 Perfecting the water management

It is an important measure to strengthen the water management of the thermal power plant, which could help to save water and reduce the consumption for the thermal power plant.

(1) Equipping the flow meter of the water consumption. The measurement of various main water consumption systems in the plant should adopt the first-class (water entering into the plant) meter (measuring the instantaneous flux and the accumulated flux) which supervision rate could achieve 100%. The measurement of various workshop water consumption systems in the plant should equip the second-class (production water) meter which supervision rate could achieve 95%. And the measurement of the water equipments in the plant could equip the third-class (living water) meter which supervision rate could achieve 90%.

(2) Periodically correcting the flow meters. The flux precision of the water flow meters should exceed  $\pm 2.5\%$ , and the flux precision of the drainage should exceed  $\pm 5.0\%$ .

(3) Periodically testing the water consumption balance of the whole plant, and making the water consumption balance chart of the whole plant, the water users flow and distribution chart to record users' water consumption, and make the water consumption standards according to the practical situation, and exam the water consumption periodically and punish those users exceeding the standards.

(4) According to the water consumption balance of the plant, different waters with different qualities should be used differently to make the water consumption of the plant more reasonable and minimal.

The application of representative water conservation technologies in domestic thermal power plants is seen in Figure 2.

### References

- Huang, Yuanding. (1986). *Wastewater Disposal in Thermal Power Plants*. Beijing: Hydraulic and Electric Power Press.
- Li, Qing & Gong, Weiping. (2006). *Energy Conservation and Index Management Technology of Thermal Power Plants*. Beijing: China Electric Power Press.
- Liu, Ruyi & Huang, Yukun. (1990). *Water Using and Water Saving in Power Plants*. Beijing: Hydraulic and Electric Power Press.
- Liu, Zhenqiang. (2006). Important Water Conservation Measures in Power Plants. *Electrical Equipment*. No.7(9). P.100-101.
- Niu, Dongxiao, Wang, Yongli & Duan, Lidong. (2009). Research on SVM-based Power Plant Construction Project Impact Evaluation Systems. *East China Electric Power*, No. 37(1). P.59-63
- Wang, Peizhang. (2005). Application of New Technique of Save on Water in Steam Electric Plant. *Electric Power Survey & Design*, No.1. P.74-77.
- Wang, Peizhang. (2004). Capacity of Water-saving and Zero-discharge of Waste Water in Large Air-cooling Power Plant with 600 MW Unit. *Power Station Auxiliary Equipment*, No. 88(1). P.23-26.
- Yang, Dongfang. (1991). Probe into the Water Conservation in Thermal Power Plants. *Thermal Power Generation*.

No.2. P.40-52.

Zhang, Guixiang, Dong, Jianguo & Li, Zhimin. (2003). A New Water-saving and Pollution Control Procedure for Fossil Power Plant-staged Concentrating and Cascade Water Makeup Technology for Circulating Cooling Water. *Hebei Electric Power*. No.22(5). P.52-54.

Zhang, Hongjie. (2007). Discussion on Water-saving Scheme in Thermal Power Plant. *North China Electric Power*. No.10. P.39-42.

Table 1. Comparison of the water consumptions in the thermal power industry and the total national water consumption from 2000 to 2005 (0.1 Billion Cubic Meters)

Year	Total national water consumption	Total industrial water consumption	Water consumption of thermal power	Water usage of thermal power
2000	5,497	1,139	455	45
2001	5,567	1,142	470	47
2002	5,497	1,150	509	49
2003	5,320	1,177	521	53
2004	5,548	1,248	597	58
2005	5,578	1,278	635	63

Table 2. Introduction of representative water conservation technologies

Application of representative water conservation technologies in domestic thermal power plants						
Item	Investment (ten thousands Yuan *(m <sup>3</sup> /h)-1)	Technology	Power plant	Installed capacity /MW	Water conservation technology	Water conservation rate
Circulating water treatment	4.26	Air cooling	Datong Power Company	2 × 200	Mixed indirect air cooling system	65
			Zhangshan Power Company	2 × 300	Mechanical draught direct air cooling system	75
		High concentration rates	Xibaipo Power Plant	4 × 300	Subsection condensed series using water treatment	26
Ash residue disposal system	3.65	Dry ash residues	Sanhe Power Plant	2 × 350	Cooling hot residues by air, and removing ashes by air	24
		Air ash removal	Taiyuan First Thermal Power Plant	2 × 300	Macawber air ash-removing technology	24
		Dry ash repository	Ezhou Power Plant	2 × 300	Stacking dry ashes by ash removal and belt conveyor	24
Waster water recycle	3.24	Utilizing urban wastewater	Beijing Thermal Power	712(4)	Wastewater regenerated water as the make-up water	60
		Cycle water zero discharge	Xibaipo Power Plant	4 × 300	Series using of cycle water	26



## A Comparative Study of Interfirm Influence Strategies of Truck Manufacturers in Iran and India

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### Abstract

This study aims to compare the interfirm influence strategies of distribution channels of truck manufacturers in Iran and India. Paired t-test and Computing Pearson Correlation Coefficients used to analyze the collected data from the dealers of truck manufacturers, of Iran and India. Manufacturers in both countries use indirect influence strategies more frequently than direct influence strategies toward their dealers. Recommendations are used more often than information exchange in India, but in Iran both are used almost equivalently. When direct influence strategies are applied by manufacturers, promises are used most often and threats are used least for both countries. When foreign firms especially western firms enter a market of an Asian country like India, they should be careful that the same influence strategies can not be applied in another Asian country like Iran. This is the first empirical study to compare the interfirm influence strategies of truck manufacturers in Iran and India.

**Keywords:** Distribution Channels, Truck manufacturers, Influence Strategies, India, Iran

### 1. Introduction

Over the past three decades, channel relationships have become a major marketing research topic. Relevant studies have addressed on the power use, conflict, satisfaction, opportunism, and, most recently, trust and commitment (Geyskens, Steenkamp, & Kumar, 1999). Of these, influence strategies (within the reign of power use) and their relationships with satisfaction have attracted the attention of many scholars (Frazier, Gill, & Kale, 1989; Frazier & Summers, 1986; Geyskens & Steenkamp, 2000; Geyskens et al., 1999). Automotive manufacturers and dealers are confronted with an increasingly competitive environment wherein too many competitors offer an excessive supply of an increasingly redundant and deflationary product to a saturated market.

To increase sales and profit margins, manufacturers and dealers have been forced to adopt strategies that may conflict with one another, the manufacturer's international and national strategies are often at odds with the dealers' regional and local competitive requirements. Using the right influence strategies by supplier would help to attain its business goal, but which would also keep the intermediaries satisfied, motivated, and performing. Influence strategies are communications directed by a supplier toward a dealer with an intention to impact on or change the dealer's behavior (Frazier & Summers, 1984). The influence strategies commonly used in the West may not be effective in the Iranian and Indian markets and local adaptations need to be made. In this article, the researchers report a study that examines the patterns of truck manufacturers' strategies in Iran and India to influence their dealers and the consequences of using influence strategies in terms of achieving an optimum, effective and efficient manufacturer-dealer relationship. The results would be of interest to foreign marketers intending to enter the Iranian and Indian markets through intermediaries of these countries.

## 2. Conceptual Background

### 2.1 Taxonomy of Influence Strategies

Most studies of influence strategies have been performed in western countries that are predominantly individualistic. Therefore, the results are very likely not to be applicable to oriental or more collectivistic countries (Geyskens & Steenkamp, 2000). For example, the assumption that channel members will feel happy when they guide their own behavior may not be applicable to collectivistic context. Influence strategies are communications directed by a source firm toward a target firm with an intention to cause a change in the latter's behavior (Frazier & Summers, 1984).

Influence strategies taxonomy by (Frazier and Summers, 1986)

Indirect Influence Strategies:

- a) Information exchange strategy: The source discusses general business issues and broad operating philosophies with the target without making specific statements about what it would like the target to do.
- b) Recommendations strategy: The source predicts that the target firm will be more profitable if the target follows its suggestions about some specific action or set of actions.

Direct Influence Strategies:

- a) Requests strategy: The source informs the target of the action(s) it would like the target to take without mentioning or directly implying any specific consequences of the target's subsequent compliance or noncompliance.
- b) Promises strategy: The source pledges to provide the target with a specified reward contingent on the target's compliance with its stated desires.
- c) Threats strategy: The source communicates to the target that it will apply negative sanctions should the target fail to perform the desired action.
- d) Legalistic pleas strategy: The source contends that the nature of the formal legal contract and/or informal binding agreement between the parties either requires or suggests the target should perform a certain action.

### 2.2 Use of Interfirm Influence Strategies

Most of the empirical research on interfirm influence strategies has been conducted in the United States. In a study of the automobile distribution channel in the United States, Frazier and Summers (1984, 1986) found that manufacturers relied mostly on information exchange and requests in their interactions with dealers. Recommendations, threats, legal pleas, and promises were used much less frequently.

According to Bandyopadhyay Soumava, (2004), indirect influence strategy use was found to be greater compared to direct influence strategy use in India. The suppliers in India used recommendations more than they did information exchange when they had to choose between the two types of indirect influence strategies. Also he found suppliers in India appear to believe that offering a reward in exchange for compliance would be effective in making the dealers act according to their desires.

From an organization theory point of view, dyadic trust seems to be a key element in maintaining harmonious channel climate leading to a long-term and solid channel relationship between dyadic channel members. Herein, dyadic trust refers to the mutual belief held by dyadic channel members in which the corresponding partner is reliable to fulfill its obligations in the interest-induced exchange process. Applying noncoercive influence strategies, dyadic channel members seem to readily communicate with each other without pressure, and this may facilitate the positive channel climate, (Tung-Lai Hu and Jiu-Biing Sheu,2005).

A franchisor asks franchisees to undertake certain actions, some of which franchisees might not agree with, will cause tension and frustration among franchisees, this tension and frustration will breed conflict in the relationship (Frazier and Rody, 1991). Not all types of influence, however, cause conflict.

The (Kale, 1986), has argued the more powerful suppliers in a sellers' market are perceived to rely on threats, promises, and legalistic pleas to influence their dealers. Less powerful suppliers are perceived to use low pressure means of influence such as information exchange, request, and recommendations.

## 3. Hypotheses

### 3.1 Indirect influence strategies

Information exchange which is about general aspects and recommendation is related to specific aspects, dealers are smaller and need suggestions. Suggestions are likely to drive greater benefit from directive recommendation than general information exchange, which they may not know what to do with.

Now the following hypotheses are formulated.

H1: In Iran manufacturers use recommendation more frequently than information exchange when they use indirect influence strategies toward their dealers.

H2: In India manufacturers use recommendation more frequently than information exchange when they use indirect influence strategies toward their dealers.

### 3.2 Direct influence strategies

Tendency in exchange of desired actions are common in many countries like Iran and India. When a manufacturer does promise to its dealers for performing specific act will return some incentives back.

The promise strategy is likely to be used quite frequently in interorganization communications in such countries. Request strategy likely to be used less than promise which does not specify any reward for any act by dealer. Legal pleas are not likely to be used widely in countries like Iran and India. The threat strategy is likely to be used even less because it is intimidatory by definition.

The above discussion leads to the following hypotheses:

H3: In terms of frequency usage, manufacturers in Iran use threat, request, legal plea and promise, in ascending order toward their dealers.

H4: In terms of frequency usage, manufacturers in India use threat, request, legal plea and promise, in ascending order toward their dealers.

H5: In Iran there is a positive relationship among the use of threat, legal plea and request strategies by the manufacturers.

H6: In India there is a positive relationship among the use of threat, legal plea and request strategies by the manufacturers.

### 3.3 Indirect versus Direct Influence Strategies

Due to eight years war between Iran and Iraq, the economic conditions of Iran was in such a way that, it's economy was a seller's market. Also prior to the economic liberalization in the 90s, the economy of India was a seller's market for most products too. In the seller's market manufacturers were more likely to employ direct influence strategies, but the market conditions are quite different now due to more competition, the economic conditions of Iran and India are different too.

The above discussion leads to the following hypotheses:

H7: In Iran manufacturers use direct influence strategies more frequently compared to manufacturers in India.

H8: In Iran manufacturers use indirect influence strategies more frequently compared to manufacturers in India.

## 4. Research Methodology

### 4.1 Sampling Frame

The population was comprised of dealers of trucks. The dealers were surveyed about their communication patterns with their manufacturers. The owner and manager in each dealership was responsible for communicating with manufacturers was asked to complete the survey instrument. This survey is a comparison between automobile (trucks) industry Iran and India. In case of India among the Tata company and Ashok Leyland company, the Ashok Leyland company was selected and in Iran, among the Saipa Diesel company and Iran khodro Diesel company, the Saipa Diesel company was selected.

Ashok Leyland has got 208 dealers according to it's website, the questionnaires were sent to all 208 dealers. The mail survey method was used due to geographical dispersion of India. 82 usable responses were returned by Indian dealers. But in case of Iran (Saipa Diesel Company) there were 60 dealers which were involved in both sale and services, the questionnaires were personally delivered to the dealers and collected from those who agreed to respond, 30 usable responses were returned by Iranian dealers.

### 4.2 Construct Measurement

Multi-item scales were used to measure the influence strategies (six types). The reliability measurement is shown in Table 1. It is seen that all the multi-item measures had acceptable reliabilities (Cronbach's alpha).

### 4.3 Influence Strategies

The multi-item influence strategy scale used by (Boyle et al. 1992) was adopted. The manufacturer's representatives used each of the six influence strategies in their interaction with the dealer on a 5-point Likert scale (1=never, 5=always).

## 5. Test of Hypotheses

The statistical tests to test hypotheses H1-H2 are presented in Table 2. Hypotheses H1 and H2 were tested by paired t-test to compare the use of the two indirect influence strategies: information exchange and recommendations. The mean

value for recommendations of Iran (3.8333) was not significantly differ ( $t=1.2$ ,  $p$  value=0.12,  $p<0.05$ ) than the mean for information exchange of Iran (3.9667), therefore hypothesis H1 was not supported.

The mean value for recommendations of India (3.735) was significantly higher ( $t=2.3$ ,  $p$  value=0.014,  $p<0.05$ ) than the mean for information exchange of India (3.538), therefore hypothesis H2 was supported.

To test hypotheses H3 and H4, paired t-tests were performed to compare among the means of all four direct influence strategies (requests, promises, threats and legal pleas), one pair at a time. The differences between all pairs of direct influence strategies were found statistically significant in case of Iran, threat strategy (mean value=2.622,  $P$  value=0.002, request strategy (mean value=2.7917,  $p$  value=0.045), legal plea (mean value=2.9200,  $p$  value=0), and promise strategy (mean value=3.3333,  $p$  value=0), (all at  $p<0.05$ ), therefore hypothesis H3 was supported. In case of India threat strategy (mean value=1.869,  $p$  value=0,  $p<0.05$ ), legal plea strategy (mean value=2.406,  $p$  value=0.001,  $p<0.05$ ), request strategy (mean value=2.947,  $p$  value=0.237,  $p>0.05$ ) and promise strategy (mean value=3.079,  $p$  value=0.237,  $p>0.05$ ). The data, therefore support partially to H4, (Table 3).

Hypotheses H5 and H6 were tested by Computing Pearson Correlation Coefficients, among the use of threats, legal pleas, requests, the results appeared in Table 4. Statistically significant positive correlation were found for data of Iran between threats and legal pleas ( $r=0.628$ ,  $p$  value=0.005,  $p<0.05$ ), legal pleas and request ( $r=0.404$ ,  $P$  value=0.027,  $p<0.05$ ) and between threats and requests ( $r=0.504$ ,  $p$  value=0.005,  $p<0.05$ ). Thus hypothesis H5 was supported.

For data of India, threats and legal pleas ( $r=0.574$ ,  $p$  value=0.004,  $p<0.05$ ), threats and requests ( $r=0.245$ ,  $p$  value=0.17,  $p>0.05$ ), legal pleas and requests ( $r=-0.047$ ,  $p$  value=0.796,  $p>0.05$ ). Thus hypothesis H6 was not supported.

Hypotheses H7 and H8 were tested by paired t-test to compare the respective strategies, (Table 5). In Iran manufacturers use direct influence strategies (mean=2.917) more frequently than direct influence strategies in India (mean=2.575), In Iran manufacturers use indirect influence strategies (mean=3.9) more frequently than indirect influence strategies in India (mean=3.636), In Iran manufacturers use indirect influence strategies (mean=3.9) more frequently than direct influence strategies in India (mean=2.575) and, In Iran manufacturers use direct influence strategies (mean=2.917) less frequently than indirect influence strategies in India (mean=3.636) and, therefore, H7 and H8 were supported.

## 6. Discussion and Managerial Implications

Manufacturers in Iran used information exchange a little more (not significantly) than recommendation (H1), when they had to choose between the two types of indirect influence strategies, but they can not make critical business decisions. It was also found in this study that dealers in India used recommendations more than they did information exchange among the two types of indirect influence strategies, (H2). It seems the dealers do not have much expertise to make critical business decisions so the manufacturers leave dealers to make their own decisions.

As far as direct influence strategies were concerned, promises were used more frequently than other strategies, Hypotheses (H3 & H4). Manufacturers of both countries appear to believe that offering a reward in exchange for compliance would be effective in making the dealers act according to their desires. In Iran legal pleas come for second option after the promises, while in India requests come for second option. In Iran manufacturers pay more attention on legal pleas than requests but in India is reverse. In both countries threats come last.

A positive correlation was observed however, among the uses of requests, legal pleas and threats (H5), this suggests that, dealers in Iran are likely to assume that a request from manufacturer, if complied with, might result in some kind of reward, even though the request strategy does not explicitly specify so. Also, dealers perceive legal plea as a threat if they do not follow the agreement's rules, and they assume that some negative sanction for non-compliance is implicit. Similarly, dealers may also perceive a request or a legal plea as a threat if they do not compliance with. The blurring of the distinction among requests, legal pleas and threats will probably depend on how the language used by the manufacturer in its influence attempt is perceived by the dealer. Hence, manufacturer will need to be careful in their choice of words when they use requests or legal pleas, to ensure that the "right" message is conveyed. In case of India a positive correlation was found only among the uses of threats and legal pleas but a negative relationship between them and requests. This suggests that, dealers in India are likely to assume that a request from manufacturer, if not complied with, might not result in some kind of reward, even though the request strategy does not explicitly specify so. But dealers perceive a legal plea as a threat if they assume that some negative sanction for non-compliance is implicit, (see Hypothesis H6).

In both countries manufacturers use indirect influence strategies more frequently than direct influence strategies, in Iran, it is found that manufacturers use direct influence strategies more frequently than in India, (Hypotheses H7 & H8).

When foreign firms especially western firms enter a market of an Asian country like India, they should be careful that the same influence strategies cannot be applied in another Asian country like Iran. The empirical test presented in this paper illustrates the pattern of intrachannel influence strategy use in Iran and India.

The key is to keep local dealers satisfied and active that, foreign manufacturers will have to use influence strategies that be different from what they use in their domestic markets, and be different from country to country in Asia. By using the right influence strategies in dealing with dealers, manufacturers will be able to achieve their goals.

### 7. Limitations of Study

This study has the usual limitations associated with most survey research. The empirical test was conducted in channel of distribution for automobile industry of Iran and India. Caution must be exercised before generalizing the results across other industries. Also, only one side of the manufacturer-dealer dyad was considered for empirical test. This too indicates the necessity for caution before generalizing the results.

### 8. Conclusion

Despite its limitations, this study has some significant theoretical and practical contribution in that it tries to guide manufacturers that seek to enter the markets of Iran and India into appropriate influence strategies toward local dealers. Appropriate influence strategies will help manufacturers manage their relationships with local dealers better, and that will make the manufacturers more competitive. This study can be regarded as a step toward a better understanding of interfirm communication strategies in general, and influence strategies in particular, in the markets which geographically and culturally very different from each other and have changed substantially over the past decade.

### References

- Bandyopadhyay Soumava. (2004). Interfirm influence strategies within distribution channels in the emerging Indian market. *Advances in Competitiveness Research publication*.
- Boyle, B., Dwyer, R. G., Robicheaux, R. A., and Simpson, J. T. (1992). Influence Strategies in Marketing Channels: Measures and Use in Different Relationship Structures. *Journal of Marketing Research*, 56, pp62-73.
- Frazier, G. L., and Roby, R. C. (1991). The Use of Influence Strategies in Interfirm Relationships in Industrial Product Channels. *Journal of Marketing*, 55, pp52-69.
- Frazier, G.L., and Summers, J.O. (1984). Interfirm influence strategies and their application within distribution channels. *Journal of Marketing*, Vol.48, pp. 43-55.
- Frazier, G. L., and Summers, J.O. (1986). Perceptions of interfirm power and its use within a franchise channel of distribution. *Journal of Marketing Research*, Vol. 23, pp. 169-76.
- Frazier, G.L., Gill, J.D., and Kale, S.H. (1989). Dealer dependence levels and reciprocal actions in a channel of distribution in a developing country. *Journal of Marketing*, Vol. 53, pp. 50-69.
- Geyskens, I., & Steenkamp, J. E. M. (2000). Economic and social satisfaction: Measurement and relevance to marketing channel relationship. *Journal of Retailing*, 76(1), 11–32.
- Geyskens, I., Steenkamp, J. E. M., & Kumar, N. (1999, May). A meta-analysis of satisfaction in marketing channel relationship. *Journal of Marketing Research*, 36, 223–238.
- Kale, S. H. (1986, November). Dealer perceptions of manufacturer power and influence strategies in a developing country. *Journal of Marketing Research*, 23, 387–389.
- Tung-Lai Hu and Jih-Biing Sheu, (2005). Relationships of channel power, noncoercive influence strategies, climate and solidarity: A real case study of the Taiwanese PDA industry. *Journal of Industrial Marketing Management*, vol. 34, Issue 5, pp. 447-461. [Online] Available: <http://www.ashokleyland.com/salesandservice.jsp>  
[http://www.saipadiesel.com/eng\\_home.htm](http://www.saipadiesel.com/eng_home.htm)

Table 1. Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items
0.640	0.622

Table 2.

	Variables	Mean	St. Deviation	Paired t	Significance p-value
<b>H1:</b>	Recommendations	3.8333	0.5225	1.2	0.12
	Information Exchange	3.9667	0.313		
<b>H2:</b>	Recommendations	3.735	0.541	2.3	0.014
	Information Exchange	3.538	0.603		

Table 3.

		Mean	St. Deviation	p-value
<b>H3:</b>	1. Threats	2.6222	0.2834	0.002
	2. Requests	2.7917	0.3154	0.045
	3. Legal Pleas	2.9200	0.4055	0
	4. Promises	3.3333	0.3977	
<b>H4 :</b>	1. Threats	1.869	0.513	0
	2. Legal Pleas	2.406	0.625	0.001
	3. Requests	2.947	0.575	0.237
	4. Promises	3.079	0.661	

Table 4.

<b>H5: For Iran</b>	Influence Strategies	Threats	Legal Pleas
	Legal Pleas	0.628 (0.005)	
	Requests	0.504 (0.005)	0.404 (0.027)
<b>H6: For India</b>	Influence Strategies	Threats	Legal Pleas
	Legal Pleas	0.574 (0.004)	
	Requests	0.245 (0.17)	- 0.047 (0.796)

Table 5.

(H7 & H8)	Mean	St. deviation	p-value
Indirect (Iran)	3.9	0.305	0
Direct (Iran)	2.917	0.248	0.008
Indirect (India)	3.636	0.518	0
Direct (India)	2.575	0.276	0



## Analysis of Management Strategies of Corporate Public Relation Crisis

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### Abstract

Public relation crisis management has been an important research task in the modern management. Starting from the harms of the public relation crisis, the causes, management methods and principles of the public relation crisis are analyzed in this article. For public relation crisis management, enterprises should admit it timely so as to benefit from it.

**Keywords:** Public relation crisis, Public relation, Crisis Management

Under the complexity and uncertainty of the modern management environment, the public relation crisis may happen at any moment for each enterprise, such as the shrinking of "Sanzhu", the drinking of "Qianchi", the wing-broken of "Feilong", and the "Sanlu Powdered Milk Scandal", and similar tragedies occur again and again, and the effect of the public relation crisis management will directly influence the survival or extinction of the enterprise, and it is the key part of the development of modern enterprises. The public relation crisis management has been a new important research topic in the field of modern management.

### 1. Harms of Public Relation Crisis

The public relation crisis means the crisis related to the enterprise because of poor quality, labor dispute, legal wrangling and catastrophic failure exposed by the medias, and it will seriously affect the reputation of the enterprise. And it will often bring large loss, and damage the image of the enterprise, and even make the enterprise go bankrupt, such as the classical Jinan "Sanzhu", Shandong "Qinchi", Shenyang "Feilong", "Toshiba" Laptop event, Nanjing "Guan Sheng Yuan", Belgium Coca Cola Poisoning event.

Public relation crisis has many characteristics such as abruptness, uncertainty, and variability. Because of the abruptness and uncertainty of the public relation crisis, it will largely harm the enterprise. In the society of information, many social conditions such as the modern information transfer and multi-channel spread make the influences of the information become more and more important, and if the enterprise lacks in the management experiences in the market economy conditions, the possibility that the public relation crisis happens in modern enterprises is much higher than it in the past. Because of the variability of the public relation crisis, it will occur by different faces in different periods. Although some public relation crises may be small, but improper management will extend it to be the disaster of the enterprise and some of them may weaken the enterprise at once and be the explosive disaster of the enterprise.

### 2. Causes of Public Relation Crisis

In the market economy system, each enterprise tries to pursue the maximization of benefits, and to drive the sustainable development of enterprise, no enterprise wants to get involved in the public relation crisis. However, the change of things is not often be changed by human will, and facing the complexity and uncertainty of the modern enterprise management environment, each enterprise should realize that the public relation crisis may happen at any moment. To get rid of the public relation crisis, and keep healthy development, enterprises should analyze and study the causes of the public relation crisis.

There are two main causes of the public relation crisis. One comes from the exterior of the enterprise, i.e. the social environment which supervises the enterprise too much, because the competitive opponents of the enterprise give attention to the weak part of the enterprise at any moment. The other one comes from the interior of the enterprise, i.e. the non-scientific management system and unhealthy management mechanism of the enterprise, because most enterprises lack in preventing measures for the public relation crisis management. Some enterprises can not realize the existence of the public relation crisis, and some enterprises can not realize the public relation crisis sufficiently, and more enterprises have not established effective early warning system. For these two aspects, the former composes the

exterior factor of the public relation crisis, and the latter composes the interior factor of the public relation crisis.

Just as the fort always collapses from the interior, most enterprise public relation crises come from the interior factors of the enterprise, i.e. the daily work of the enterprise. These interior factors may be induced by long-term management faults, or one small mistake. And the exterior factor is often the fuse which leads to the public relation crisis of the enterprise.

Exterior causes take on their role through internal causes. In the mutual influences of interior causes and exterior causes, when the public relation crisis happens, enterprises should actively face and win the exterior causes, and the crisis may be beat. And if enterprises passively face the crisis, and the exterior causes are stronger than the interior causes, the enterprises may get in the large mess. When analyzing the causes of the public relation crisis, if enterprises could ascribe crisis to exterior causes, they will have large confident to win the crisis. On the contrary, if the crisis is more ascribed to interior causes, the confidence of the enterprise will be weakened. However, whether the public relation crisis comes from interior causes or exterior causes, enterprises should actively face it and try to avoid many passive ideas such as “a clean hand wants no washing” or “seeing but can not make up its mind”.

### **3. Public Relation Crisis Management**

The public relation crisis management has two functions, i.e. the prevention function and the management function. The prevention function includes all prevention works before the crisis. Though the avoidance of the crisis is the best approach of the crisis management, the prevention function is much more important. The management function includes all works after the crisis. Therefore, the two functions supplement each other and compose the complete system of the public relation crisis management. The public relation crisis management can be regarded as a “defensive war”, and the prevention function is the first defense line, and active defensive strategies should be adopted. And the management function is the second defense line, and the firm defense strategies should be adopted, and the difference is that in the public relation crisis management, the implementation of the public relation crisis means the crisis has been broken out, and the organization or individual has been harmed to some extent.

The public relation crisis management is the main part of the crisis disposal. Once the public relation crisis happens, the crisis disposal of the enterprise is very important, because it directly influence the existence and survival of the enterprise itself. Therefore, in the daily marketing, enterprises should take the public relation crisis disposal as one important part of the management work. In the public relationship crisis disposal, enterprises should keep their eyes peeled, or else, they will lose clients’ trusts, even the whole market. So following measures should be adopted when enterprises face the public relation crisis.

#### *3.1 Making the facts clear and studying the countermeasures*

When enterprises face the public relation crisis, they should not let well alone, and they should survey and control the development of the crisis at once. First, enterprises should organize relative personnel especially the general manager to participate in the survey of the crisis, and lead the public relation crisis disposal group, and make a comprehensive analysis to the crisis, such as what are the causes of the public relation crisis, whether they belong to the exterior causes or the interior causes, what are the state and the tendency of the crisis, which public will be impacted by the crisis, who are the direct victims of the crisis, and who are the indirect victims, and what the degree that the influence achieve, and what are the issuance channel and range of the information of the public relation crisis? And these problems should be made clear, because they are the direct references of the enterprise to adopt the remark measures.

#### *3.2 Requesting mediums to clarify the facts*

The facts of the public relation crisis should be declared to the media and the public as soon as possible. After the public relation crisis happens, except for the enterprise, the media, victims and competitive opponents all care about the crisis. For the media, a new drumbeating hotspot occurs, and it is easy to sympathize in the weak and more talks for victims, and is in the opposite state of the enterprise. For the victims, they try to request that the enterprise to offer a satisfactory answer for the crisis. And for the competitive opponents, they have a more competitive weight. Therefore, after the crisis happens, the enterprise should try to make clear the facts of the crisis as soon as possible, and spread the factors by virtue of the media. Only the facts can avoid various suspects and rumors. Truth is the best strategy of the enterprise facing the crisis. If the enterprise only covers up its errors, it will suffer the consequence of this own doing finally.

#### *3.3 Validated by the authorities and strengthening the reliability*

Enterprises should utilize the authority of relative institutions to solve the public relation crisis. In many instances, the authorized opinions will finally decide the disposal of the public relation crisis. Therefore, on one hand, enterprises should be humble and self-abuse and face the music and always put the public benefit on the first state, on the other hand, enterprises should persist in the principle. Only in this way, enterprises can not only control the crisis effectively, and enter a new progress.

#### 4. Conclusions

The public relation crisis management is a comprehensive and multi-polarized complex problem, and the enterprises should follow some basic public relation crisis management principles, i.e. the prevention is more important than the management, the active communication should adhere to the public relation, clients' benefit should be put on the first state in the concrete management, and the timeliness should persist. The achievement and implementation of the public relation crisis solution will not mean the end of the crisis. For enterprises, one important crisis management part is to summarize the lessons and experiences.

##### *4.1 Confirming in time is the start of the public crisis relation management*

For some enterprises, the key to success is to identify the weak part of the enterprise and judge whether it is small problem or potential "inflammable goods". Though some public relation crises are difficult to be predicted, but an accident, a mistake or some warning signals all will occur before most public relation crises happen, so enterprises could avoid these crises effectively if they realize these small mistakes. The problem is that most warning signals will be ignored completely. In the survival process of enterprises, warning signals will occur at any time, the ignored problem today may become the crisis tomorrow. Because our leaders are too busy in the daily management to spend time in stamping the "fire", we always care about some easy affairs, but ignore the warning signals. To confirm the crisis in time, enterprises should identify the warning signals before hand, including some potential problems and weaknesses. If some things are not normal in the enterprise, some enterprises should think about whether they should adopt actions to prevent the development of the crisis. The managers who can identify the weaknesses and are wise will think of the old advertisement about the Fram Petrol Filter, "you can pay it now, or in future". You can deal with the small problem now to avoid large problem, or you can hope that small problem will be dispersed itself, but that might cost you much more. Of course, not all weaknesses or warning signals will turn into crises, but a good manager will believe that the warning signals may become crisis. Therefore, the warning signals must be emphasized, and relative opportunities should be offered to consider the short-term and long-term influences induced by these warning signals. In this stage, even the chemical students without experiences warn you "when you smell the odorless gas, it may be the carbon monoxide", you should care about the right aspect in this information. In total, you must understand others' opinions and validate it with yours. Undeniably, the costs may be large, and too much energies and materials need to be invested, but just as one old proverb tell us, "if you think it is not worth to do it, you can try nothing".

Enterprises should not evade the public relation crisis, and should not avoid the important points and dwell on the trivial for the consequence of the crisis, and should assume the responsibilities, and be practical and realistic to solve the crisis, and forthwith settle the crisis once find it. Once small problems occur, enterprises should check the whole management to grasp the causes of the crisis. If the crisis comes, the enterprise should inform the media immediately, and tell the society the real facts of the public relation crisis. The will and powers of all departments in the enterprise should be centralized to treat the crisis, and the survival is the most important thing at this moment.

##### *4.2 Right management is the unique approach to get rid of mess for enterprises*

The enterprise in the public relation crisis may "face hostility on all sides", such as news exposal, government criticism, client criticism even withdrawal, and public opinions, and the enterprise will bear large pressure. But this situation will not last all along, and there must be an "end", because the society is developing continually, and new things and crises will emerge in endlessly, and the public will not pay attention to certain one enterprise or crises, and people's attention will change with the time. But before the public's attention has not changed, the enterprise is still in the "critical period" like a heavy patient. Improper measure will arise the anger of the public, even ruin the future of the enterprise. In fact, facing the public relation crisis, any avoidance, disguise and cover are useless, and the wisest method is to face the facts practically and realistically, open necessary information channel to the public, and try to obtain the understanding and trust of the public as soon as possible.

##### *4.3 It is the important part of the public relation crisis management to benefit from the crisis*

Each public relation crisis contains not only the cause of failure, but the seed of success. Discovering, saving and cultivating will help to obtain this potential opportunity of success, which is the soul of the public relation crisis management. For enterprises, the development of the public relation crisis is not a good thing, but it can help the enterprise to drumbeat itself at the same time, only this drumbeating has large risk. If enterprises could treat the crisis calmly, and obtain the clients and the public's understanding by an active attitude, and adopt proper measures to save the adverse situation, and summarize lessons and experiences, and actively and intentionally improve the occasions to make the enterprise reborn in the crisis. In addition, the public relation crisis has happened, the enterprise can only face the facts, and use the facts to perfect the image of the enterprise, which is completely possible, because in the period of the public relation crisis, the enterprise is the focus of the news, and the hotspot of the public. Though the public care about the enterprise with hostility, it is also a kind of attention. Therefore, the enterprise should grasp the opportunity to turn the bad public relation crisis into an opportunity of drumbeating the enterprise.

The public relation crisis management is a comprehensive and multi-polarized complex problem, and the enterprises should follow some basic public relation crisis management principles, i.e. the prevention is more important than the management, the active communication should be persisted in public relation, clients' benefit should be put on the first state in the concrete management, and timeliness should be adhere to.

**References**

Robert Heath (US), Interpreted by Wang, Cheng. (2001). *Crisis Management*. Beijing: China Citic Press.

Steven Cohen (US), Interpreted by Wang, Qiaoling. (2003). *The New Responsible Administrator*. Beijing: China Renmin University Press.

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## Marketing Channels Effectiveness in Iran: an Overview

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### Abstract

Marketing plays very important role in corporate sectors. The result of this study shows that dealers, wholesalers and retailers of electronic home appliances and the individual group of customers are concerned, the researcher presents the research results for each group separately and then for total market.

The findings obtained from the analysis of information (Data) regarding the dealers of durable electronic home appliances are as follows:

1. Employees employed by dealers do not have adequate technical background while dealers have sound experience in the field of marketing and distribution. This is a strong point here.
2. Pricing system does not have any uniformity and rationale. Pricing system varies with the manufacturer, dealer or with the syndicate of dealer. This eventually affects the marketing of products.
3. Dealers guess the demand only through the customers and their choices/tastes/needs.
4. Manufacturers choose the dealers by appraising their financial status and this makes the market more monopolistic than competitive.

**Keywords:** Marketing, Marketing channels, Dealers

### 1. Introduction

After the Second World War, the size and character of markets changed enormously. There was a substantial increase in population. The disposable income of the average family registered an increase.

Now industrial concerns sprang up rapidly; a great variety of new products and services strengthened the rapidly developing consumer market (Thomas et al., 1995). At the same time, selling of products and services became unusually difficult, because of the high intensity of competition. It was a situation of abundant choices to the consumer and the consumer began to occupy a place of unique importance.

In particular, the consumer in the affluent world, educated as he was, and endowed with a good discretionary income at his disposal, found himself in to position to bargain in the market and get the best return for every penny he spent.

The businessmen realized that it was not enough if they somehow made a one-time sale of their product, to the consumer (Srivastava, 1991).

They found it necessary to ensure that the man who purchased their products once, comeback to them again and again whenever he needed the product.

They also had to ensure that the product was made available at a place convenient to the consumer. In addition they had to make available their products at a price that was advantageous to the consumer.

They also had to ensure that any complaint from the consumer about the e product was attended to promptly; if it needs replacing, it had to be replaced; if it required after sales servicing, it had to be provided, and that meant the emergence of marketing.

In the field of marketing, channels of distribution indicate routes or pathways through which goods and services flow, or more from producers to customers.

The most producers do not sell their goods, directly to the final users. Between producers and the final users stands a marketing channel. Thus, distribution channel has a key role in the development of marketing and it provides variety of goods in the markets for producers and manufacturers (Sherlerkar, 1991).

According to some authors distribution system has two subdivisions:

1. Channel of distribution
2. Physical distribution

In the channel of distribution we encounter with middlemen or intermediaries processors as well as merchant middlemen, agents and facilitators.

In this chapter we discuss about merchant middlemen, who perform all marketing functions, such middlemen are specialized in one or a few marketing functions. These middlemen facilitate (provide) the process of exchange and create time, place and possession utilities through matching and sorting process.

As such, they are able to transfer the best of information from markets, customers, competitors, goods, situation in the market, suggestion for new brand (product) to manufacturers or producers (Sharma, 1995).

Intermediaries or middlemen play an important role in the marketing of product. Making the product available to the customer in the most convenient pack size is a function, which only the middlemen can perform.

The physical distribution looks after handling of goods and assures maximum customer's service. It aims at offering delivery of right goods at the right time and place to customers.

Definitions of marketing channel or channel of distribution:

Marketing channels can be viewed as sets of interdependent organizations involved in the process of making a product or service available for consumption or use.

“Marketing channels are sets of independent organizations involved in the process of making a product or service available for use or consumption (Rostogi, 2000)”.

Now we'll have a standard definition from encyclopedic dictionary of marketing management.

A channel of distribution is the route along which goods and services travel from producer/manufacturer through marketing intermediaries such as wholesalers, distributors, and retailers to the final user.

The most people think in words, at least most of the time. Therefore, if the words are fuzzy (dark), so is the thinking. To sharpen our thinking one good step is to sharpen the word meanings in our vocabulary. To illustrate this point, a channel of distribution is sometimes referred to as a 'pipeline' to provide distribution of goods from manufacturer to consumers. It implies that the goods flow through it. And yet, the channel of distribution relates to the path taken by the title to the goods, not the goods themselves. They flow through a pattern of physical distribution, which can be significantly different from the channel of distribution and is a complex problem of distribution, but are a part of physical distribution (Ramaswamy, 1990).

This is an entirely different concept. It includes production and change in form, and covers what happens from beginning to end.

Perspective is always a most important part of decision making. It should be noted that the concept of channel of distribution may be an oversimplification of reality, an academic tool less used by businessmen than is implied.

It implies, further, a purity of choice made by the manufacturer between eagerly receptive middlemen.

### *1.1 Channel functions and flows*

Under the systems approach the channel is now recognized as a (Porter, 1985) system involving flow of:

(a) Information (b) Promotion (c) Negotiation (d) Ordering (e) Financing and (f) Risk taking.

#### **(a) Information:**

Middlemen have a role in providing information about the market to the manufacturer: developments like change in customer demography, psychology, psychography, media habits and the entry of a new competitor or a new brand and changes in customer preference are some kind of information that manufacturers want.

Since these middlemen are close to the customer and present in the market place they can provide this information without spending cost.

#### **(b) Promotion:**

The development and dissemination of persuasive communications designed to attract customers to the offer. Promoting the product/s in his territory is another function that middlemen perform. Many of them design their own sales incentive programs aimed at building customer traffic at their outlets (Little, 1979).

#### **(c) Negotiation:**

The attempt to reach final agreement on price and other terms so that transfer of ownership or possession can be affected.

#### **(d) Ordering (Physical flow):**

Marketing-channel members communicate of intentions to buy to the manufacturers.

**(e) Financing (Payment Flow):**

The acquisition and allocation of funds required to finance inventories at different levels of the marketing channel.<sup>10</sup>

**(f) Risk taking (Title):**

The assumption of risks connected with carrying out the channel work. The most middlemen take title to the goods and services and trade in their own name. This also enables middlemen being in physical possession of the goods, which enable them to meet customer demand at the very moment it arises.

**2. Emergence of Marketing Channel in Marketing**

The emergence and arrangement of the wide variety of distribution oriented institutions and agencies, typically called intermediaries, because they between production on the one hand and consumption on the other hand, can be explained in terms of four logically related steps in an economic process.

Intermediaries arise in the process of exchange because they can improve the efficiency of the process.

Channel intermediaries arise to adjust the discrepancy of assortment through the performance of the sorting processes.

Marketing agencies hang together in channel arrangement to provide for the reutilization of transactions. Channels facilitate the searching process.

The four steps are explained as follows:

**A- Efficiency Rationale for Intermediaries:**

In primitive cultures, most household needs are produced within the household.

At an early stage in the development of economic activities, however, exchange replaced production as a means of satisfying individual needs. Exchange is facilitated when there is a surplus in production over current household requirements, and when this surplus cannot be held for future consumption because of the perishable nature of the products or the lack of storage facilities. Thus, if numerous households are able to effect small surpluses of different products, a basis for exchange is developed.

These conditions of exchange are more easily met when production becomes specialized and the assortment of goods broadened.

Obviously, one must account for differences, indirect and direct communication costs, in the effectiveness and efficiency of the institutions involved in the transaction, and in the quality of the contact between the channel members.

**B- Discrepancy of Assortment and Sorting:**

In addition to increasing the efficiency of transactions, intermediaries smooth the flow of goods and services by creating possession, place and time utilities.

These utilities enhance the potency of the consumer's assortment. One aspect of this smoothing process is that intermediaries engage in sorting function. This procedure is necessary in order to bridge the discrepancy between the assortment of goods and services generated by the producer and the assortment demanded by the consumer.

The sorting function performed by intermediaries includes the following activities:

- i. Sorting out: This involves breaking down a heterogeneous supply into separate stocks that are relatively homogeneous.
- ii. Accumulation: Concerns bringing similar stocks from a number of sources together into a large homogeneous supply.
- iii. Allocation: Refers to breaking a homogeneous supply down into smaller and smaller lots.
- iv. Assorting: This is the building up of an assortment of products for resale in association with each other.

**C- Reutilization:**

Each transaction involves ordering of, and paying for goods and services. The cost of distribution can be minimized if the transactions are reutilized; otherwise every transaction is subjected to bargaining, with an accompanying loss of efficiency.

Moreover, reutilization facilitates the development of the exchange systems. It leads to standardization of goods and services whose performance characteristics can be easily compared and assessed. Because of reutilization, a sequence of marketing agencies can perform more efficiently together in a channel.

**D- Searching:**

Buyers and sellers are engaged in a double-search process in the market place.

The process of searching involves uncertainty because producers are not certain of consumers' needs, and consumers are not certain that they will be able to find what they want.

Marketing channels facilitate the process of searching, as when for example

- i. Wholesale and retail institutions are organized by separate lines of trade such as drug, hardware, and grocery.
- ii. Products such as over-the-counter drugs are widely available through thousands of drugstores, supermarkets, convenience store and even gasoline stations.
- iii. Hundreds of thousands of parts are supplied to auto motive repair facilities from local jobbers within hours of the placement of orders.

### 3. Role and Importance of Distribution Channels

Distribution channel play a decisive role in the successful marketing of most products, especially consumer products.

There are several important roles for distribution channel as following.

1. Channels provide distributional efficiency to the manufacturers: In the first place, the channels bring together the makers and the users in an efficient and economic manner.

2. Channels offer the products in assortments that are usable by and acceptable to the users:

The distribution channels combine the products and components manufactured by different firms and offer them in the form of assortment's or 'packages' of items that are 'usable by' and 'acceptable to' to users.

3. Channels provide the vital input of salesmanship: The distribution channels also provide the vital input of salesmanship. In particular, they help in establishing new products in the market.

4. Channel help in merchandising: Merchandising is another important function performed by the distribution channel. Through merchandising, the channels help the principals to reinforce the awareness about the product among the customers.

5. Channel also helps implement the price mechanism: The channels also help implement the price mechanism in the market; they assist in arriving at the price level that is acceptable to the maker as well as the user.

6. Channel also promotes transfer of technology and act as change agents: In certain cases, the distribution channels go far beyond the conventional functions of distribution or distribution plus service.

### 4. The Nature of Middlemen

There are three types of middlemen that facilitate flow of goods and services from the manufacturer to the customer:

#### 4.1 Merchant middlemen:

These are the intermediaries who take title to the goods and services and resell them in market. They are such as dealers, wholesalers, and retailers and are called merchants.

Merchant middlemen are very necessary for distribution system because of their role in the markets.

#### 4.2 Agents

These are those intermediaries who do not take title to the goods and services but help in identifying potential customers and even help in negotiations.

They do not share risk with the manufacturers, as they do not take title to goods and services.

Thus, their names are such as, brokers, jobbers, manufacturers, representatives and sales agents. They also act on behalf of the producer only to the limited extent of prospecting, warehousing and redistributing the products.

#### 4.3 Facilitators

These are independent business units that facilitate the flow of goods and services from the producer to the customer without taking title to them or negotiating for them on behalf of the producers.

They are such as transportation companies, independent warehouses, banks and advertising agencies.

The main objective of this study is to evaluate the various aspect of distribution management (marketing channels) in Iran. The following highlight the detailed objectives of the study:

- 1- The study of work force quality at the level of dealers and distributors in durable electronic home appliances.
- 2- The study of the present marketing operations at the level of dealers and distributors in durable electronic home appliances.
- 3- The identification of the competitive methods at the level of dealers and distributors, in durable electronic home appliances.

- 4- The analysis of the kind of policy that has been used by dealers and distributor in durable electronic home appliances.
- 5- The measurement of the customers' satisfaction or dissatisfaction in dealing with dealers and distributors of durable electronic home appliances.

### 5. Research Questions of the Study

The research questions driving this Study are as follows:

- 1-How is the condition of work force quality at the level of dealers and distributors?
- 2-What is the condition of marketing mix at the level of dealers and distributors?
- 3-What kind of competitive methods are used by the level of dealers and distributors?
- 4-What kind of polices are followed at the level of dealers and distributors?
- 5-What is the level of the customers' satisfaction or dissatisfaction?

### 6. Research Methodology

In this kind of research the most common method is survey and descriptive method. Needless to say that, this method is being considered as the essence and basis of research in this thesis.

In this regard, the researcher has made an endeavor to enrich the present research by referring to a good number of books and journals relating to research methodology in human and behavioral science, specifically in commerce and business.

The research aims at making a systematic survey of marketing channels in order to characterize the role of dealers and distributors of durable consumer electronic (household) home appliances in Iran.

In the field of marketing, distribution is considered to be a link from producers to consumers. Moreover, distribution channel is being regarded as the set of interdependent marketing institutions participating in the marketing activities involved in the movement of the flow of goods or services from primary producer to the ultimate consumer.

Therefore, the study would follow the distribution channel system comprising two flows viz.

A. Channel of distribution.

B. Physical distribution.

The channel members such as mercantile agents, wholesalers and dealers are middlemen in distribution and such middlemen ale specialized in the most of the marketing functions.

These middlemen facilitate the process of exchange and create time, place and possession utilities through marketing and sorting process.

In connection with electronic appliances, the researcher will consider only home appliances as a focus.

The mode of distribution of these commodities in connection with channel members and the method of mediation of number of distributors is also being studied in terms of the efficiency as well as its impact on marketing of these commodities.

The research methodology used m this study is based on both *survey and descriptive* method.

The researcher has sought an answer to research questions in order to enable himself to review area of study from realistic angels and further to gain and access optimum information.

Methodology gives a brief technical account of procedure adducted by Study. The methodology includes sampling design, designing of questionnaires, administration of the questionnaires, existing variables, and the statistical analysis of the date including the tests of significance employed for testing the research questions these are discussed as follows.

### 7. Sampling Design

The samples for this study have been selected from two broad types of areas: Distribution management (marketing channels) and Customers Tehran The sampling design for both the areas involved two- stage process:

**Stage I:** Selection of channels of distribution, and selection of customers.

**Stage 2:** Selection of Respondents.

The purposive sampling and stratified random sampling techniques have been used at stage one for the selection of distributors and customers in Tehran

In stage 2, sample respondents have been selected by using simple random and stratified random sampling techniques and cluster sampling.

**Stage 1:****(a) Selection of Distributors:**

Distributors who have been chosen in the durable consuming electronic home appliances as business in Tehran market can be classified into three groups:

1 -Dealers

2-Wholesalers

3-Retailers

Though several distributors of these three-categories are engaged in management of distribution in Tehran, it was not possible to include all of them in the study because of the limitations of resources and time.

Therefore, it was decided to restrict the study to merely fifty (50) 25 dealers, 10 wholesalers and 15 retailers, (table 3.1).

**(b) Selection of Customers of Tehran City:**

A hundred (100) customers from the city have been selected. These customers are using electronic appliances in their houses. These customers have been selected from two sources as follows:

1 -According to the pin-code

2-And then according to house numbers in each area.

**Stage 2:****Selection of sample respondents:**

The respondents for this study were the dealers, whole sellers, retailers and customers. For these four groups (denoted as group A, B, C and D respectively), sampling techniques have been followed as:

**Groups A (Dealer):** The dealers who have been recognized and listed by syndicate of electronic home appliances (Cooperative Dealers) have been selected randomly from the list. The sample size is 25.

**Group B (wholesalers):** The wholesalers, who have been identified by researcher and distributors in Tehran market, have been selected 10 as a sample size randomly.

**Group C (retailers):** The retailers who have been identified, by researcher which are approximately 100 retailers. So sample size of retailers has been selected 15 randomly.

**Group D (customers):** The customers were all families who have stayed in Tehran. Stratified random sampling technique has been applied to include families from all the categories from area house numbers. The sample size that has been selected is 100 families.

In the case of all sample groups, additional respondent have been selected, keeping in mind that some respondents may be unavailable or unwilling to give interview. Unavailable or unwilling respondent have been replaced by the respondents from additional lot, which have not been added to total sample so that sample size remained unchanged.

Sample size of the four respondent groups in Tehran and the total sample are illustrated as under:

Insert Table 1 about here

**The Sources and kinds of Data:**

Keeping in view of the survey method in this survey, the researcher utilized the two sources of information (data):

**A-Primary data      B-Secondary data**

**A-Primary data:** The collection of the primary data, the researcher has applied three different techniques, which are as follows:

1 - Observation

2- Interview

3- Questionnaire

Personal interview method was followed for the collection of primary data. The purpose of the study was briefed to the respondents before they were requested to fill up the questionnaires so as to ensure their full co-operation, they were assured that the information supplied by them shall be kept strictly confidential and shall lose individual identity and shall be only used for the purposes of statistical analysis. Hundreds and fifty Respondents were interviewed by this method.

Interviews were also conducted for the verification of information from the questionnaires.

**B-Secondary Data:** Analysis has been based on not only on the primary data but also on a careful study of pertinent secondary materials including books, journals, encyclopedia specialized commercial (business) and marketing directories, and reference to the library of Chamber of Commerce and Industry.

The researcher has made an attempt to locate the list and addresses of distributors and dealers, and the electronic appliances handed by them in the City of Tehran.

#### **The Existing Variables in the Research:**

With a view to judge the importance, significance and working of each one of the variables, researcher has dealt with two variables groups as follows:

1- Dependent variables; such as “The role of dealers and distributors in the marketing”.

2- Independent variable such as “Work force quality, Condition of marketing operation, Competitive methods, Adopted policy and Sources of customer satisfaction/dissatisfaction”.

#### **Designing the Questionnaires:**

Keeping in view the objectives of the study, four sets of Questionnaires were prepared:

a- Questionnaires ‘A’ was drawn for the ‘Group-A’ respondents-it aimed at bringing general and professional information and data relating to existing quality of work force, marketing operations, competitive methods and policies at the level of dealers.

#### **Pre-testing of the questionnaires:**

All the questionnaires were pre-tested with a view to determining the strengths and weaknesses of the questionnaires before a full-scale survey was made. As a result of pre-testing, some of the items were dropped and some others included as deemed relevant for the Study. It also helped in discovering and eliminating the ambiguity in some questions.

In this process the researcher made an attempt to prove the validity of questionnaires, on the basis of two methods as follows:

#### **A. An Armchair Validity:**

In this connection, the researcher embarked upon designing questionnaires by using his knowledge in respect to marketing and distribution with consultation and deliberation with concerned professors and authorities on the subject.

#### **B. Sampling Validity:**

The method of sampling validity used by the researcher, before embarking on distribution of questionnaires was tested on few chosen members. Few of typical members are selected randomly and accordingly questionnaires were distributed amongst them at two different times.

Therefore, the validity of questionnaires was confirmed by comparing them to one another.

#### **Universe of Research:**

The universe in this research is all of the dealers and distributors (retailer & wholesaler) of durable consuming electronic home appliances and people who are staying as household as customers in Tehran.

As a whole these groups of the marketing channel members, take the risk of sales and distribution of above-mentioned appliances.

### **8. Data Analysis**

The data collected through the questionnaires was tabulated, analyzed, and interpreted. However, before starting the work of tabulation and analyzing all the questionnaires were edited very carefully for completeness.

To maintain accuracy and uniformity as far as practicable all possibilities of statistical errors and bias were minimized. In some questionnaires in which all the questions were not answered the respondents were requested to supply the missing information. The tabulation of the information supplied in the questionnaires was done both manually and through electronic devices. The tabulated data was analyzed with the help of some statistical tools.

In order to measure the qualitative responses such as opinion, attitude, perception etc, the qualitative scale was converted to quantitative one.

For example; to the response, if a respondent ranked on attribute in any place of five point Likert-type scale comprising of: Poor, fair, good, very good and excellent, that was converted to quantitative scale by taking poor as one; Fair as two; good as three; very good as four; and excellent as five.1

This was based on the assumption that the difference between poor and fair, is the same as between fair and good and very good and excellent i. e., the difference between different categories were treated as equally spaced.

By quantifying the qualitative scale it became possible to make use of statistical analysis.

#### Use of Statistical Tools

Simple statistical tools like percentage mean, mode, variance; tests of significance have been used to analyze data. These are as follows:

##### a) Weighted mean score:

'Weighted mean score' has been used to measure the level of the attributes, opinions, which were scored by individual respondents on the five - point Likert – type scale.

##### b) Variance:

It is a powerful tool to test the research questions such as finding out the equality of two means or several means.

It is widely used in large- sealed samples. In this study multiple regressions has been implemented to test and to measure the significant co-relation between attributes and opinions of the respondents (customers).

The *first* research question may be put as follows:

“How is the condition of work force quality at the level of dealers at Tehran market?”

In order to study and generalize this research question the researcher should analyzed and tested the questions; 1, 2, 3, 4 respectively.

Insert Table 2 about here

According to the answers to question 1, given by dealers, the issue of academic background can he report as below?

56% of them have non-technical background.

44% of them have technical background.

The value extracted from the mono-sample test  $\chi^2$ , which is 0.360 in value with the d.f. I also reveal that there is no significant difference between dealers with technical background and dealers who have non-technical background. This makes no important distinction between dealers.

Insert Table 3 about here

According to the answers to question 2, given by dealers, the importance of education can be illustrated as following:

17.4% of them introduced the accountants as the most educated staff in their staff-designation.

47.8% of them regarded the salesmen as most advocated.

34.8% of them believed that the manager is the most educated staff.

The value extracted from the mono-sample test  $\chi^2$  which is 3.2 17 in value with the d.f.2 also reveals that there is no significant difference among these three above-mentioned groups at the level of  $\alpha=0.05$ .

Insert Table 4 about here

According to the answers to question 3, given by dealers, the role of experience can be shown as follows:

4% of dealers have gained experience of less than one year.

16% of them have experience of 1-5 years.

24% of them have 5-10 years experience.20% of them possess 10-15 years, background,

36% of them have been in such a profession in a period of more than fifteen years.

The value extracted from the mono-sample test  $\chi^2$  which is 6.800 in value with the d.f 4 also reveals that there is no significant difference among the discussed groups at the level of  $\alpha=0.05$ .

So we cannot generalize that the majority of dealers have less or much experience in marketing and distribution.

Insert Table 5 about here

According to the answers to question 4, given by dealers (see table-5), the relation of education with dealing can be analyzed as follows:

8% of them believed that there is a relation between them.

4% of them maintained that there is less relation between them.

16% of them argued that there is a relative relation.

40% of them declared that there is much relation between education and dealing.

32% of them stated that there is very much relation between their education and present job.

**9. Conclusion**

As far as the analysis of the three groups of distributors namely; dealers, wholesalers and retailers of electronic home appliances and the individual group of customers are concerned, the researcher presents the research results for each group separately and then for total market.

The findings obtained from the analysis of information (Data) regarding the dealers of durable electronic home appliances are as follows:

1. Employees employed by dealers do not have adequate technical background while dealers have sound experience in the field of marketing and distribution. This is a strong point here.
2. Pricing system does not have any uniformity and rationale. Pricing system varies with the manufacturer, dealer or with the syndicate of dealer. This eventually affects the marketing of products.
3. Dealers guess the demand only through the customers and their choices/tastes/needs.
4. Manufacturers choose the dealers by appraising their financial status and this makes the market more monopolistic than competitive.

**References**

Porter, Michael. (1985). *Competitive Advantage*. Publisher, Michael, E. Porter.  
 Rostogi, Rajiv. (2000). Electronic and Information Technology Production Trend in 2000. *The Journal of Electronics Information Planning*, Vol. 28, No. 3 December.  
 Sharma, S. D. (1995). *Encyclopedic Dictionary of Marketing*. Anmol Publication, P.T.V. L.T. D, Vol-2.  
 Sherlerkar, S. A. (1997). *Marketing Management*. Himalaya Publish House.  
 Srivastava, K. P. (1991). *Marketing Management in Developing Economy*. Published by S. K. Ghai, New Delhi.  
 Thomas, T. Nagle., and Reek K. Holden. (1995). *The Strategy and Tactic of Pricing*. Prentice- Hall.

Table 1. The distribution of sample

Total	D: Customers	C: Retailers	B: Wholesalers	A: Dealers	Groups Sample size
150	100	15	10	25	Samples
150	100	15	10	25	Total

Q.1- Would you please advise me about your academic background?

Table 2. Measuring the academic background

Cum Percent	V.P	Percent	Frequency	Value
56	56	56	14	1
100	44	44	11	2
	100	100	25	Total

Means: 1.440  
 Mode: 2  
 Variance: 514  
 Std. Dev: 717

Table 3. Frequency distribution of education

Means: 2.174

Mode: 2

Variance: 514

Std. Dev: 717

Cum Percent	V.P	Percent	Frequency	Value
17.4	17.4	16	4	1
65.2	47.8	44	11	2
100	34.8	32	8	3
	No Response	8.0	2	0
	100	100	95	Total

Table 4. Measuring the experience

Means: 3.680

Mode: 5

Variance: 1.560

Std. dev: 1.249

Cum Percent	V.P	Percent	Frequency	Value
4.0	4.0	4.0	1	1
20.0	16.0	16.0	4	2
44.0	24.0	24.0	6	3
64.0	20.0	20.0	5	4
100	36.0	36.0	9	5
	100	100	25	Total

Table 5. The connection between job and education

Means: 3.840

Mode: 4

Variance: 1.390

Std. dev: 1.179

Cum Percent	V.P	Percent	Frequency	Value
8.0	8.0	8.0	2	1
12.0	4.0	4.0	1	2
28.0	16.0	16.0	4	3
68.0	40.0	40.0	10	4
100	32.0	32.0	8	5
	100	100	25	Total



## Leadership Spirituality in Banking Professionals and Its Impact on Organizational Commitment

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### Abstract

Spirituality has been found as the key indicator in enhancing and increasing multiple levels of organizational success and accomplishment. The present study explores the relationship between the spirituality and Job satisfaction of 121 branch managers, area managers and regional managers of various private and public sector banks of Pakistan. For the purpose of study an independent spirituality assessment scale (iSAS) developed by Rojas (2002) was used. Spirituality is found quite significant in predicting the affective commitment among the employees. Managerial implications, Limitations and future guidelines have also been provided for future research.

**Keywords:** Work spirituality, Organizational commitment, Leadership spirituality

### 1. Introduction

Work Spirituality has been proved a sanctified and blessed intangible asset for an organizational long term progress and survival. The philosophy of spirituality prevails Gods values at working place i.e. peace, love, care, affection, interconnectedness and association which resultantly build a strong connection between employees and their organizations. The work spirituality is a determinant of affective organizational commitment as it adjusts employee's behaviour and cognition towards work, thus creating a strong association and a sense of wholeness among them. According to Aydin and Ceylon (2009) spirituality asserts the influence on learning capabilities of employees with the prior involvement of affection, care and loyalty which not only impacts their productivity but also increases the level of organizational commitment. The spiritual values are found quite significant in upgrading employees morality, behaviour helping them in strengthening their connection with the organization. Mario, Frederick, and Geroy (2009) are of the view that spiritual leadership promotes transcendence by the effective demonstration of affection, care and empathy towards followers and helping them in process of meaning creation which as a result develops a strong inner connection with work place making them more committed, attached and loyal with the organizations. The stronger is the spiritual culture stronger will be the affective organizational commitment.

### 2. Literature Review

The term spirituality is a religious philosophy that empowers an organization in multiple dimensions of work, intrinsic motivation and imparts delightful impact on overall organizational behavior. According to Chopra (2002), both leadership as well as spirituality have a very strong influence on organization's overall performance. Spirituality in leadership have been one of the core issues that significantly impacts the productivity, commitment, mutual collaboration at work and job satisfaction. According to Stadler (1998), the leadership spirituality significantly associates the employee's commitment and prospect's an organizational change with optimal progression of common and shared perception and vision. Leadership and work spirituality ensures the high commitment, job satisfaction and overall organizational productivity. (Baldrige National Quality Program, 2005; Fry & Matherly, 2006; Kaplan & Norton, 1992, 1996, 2004) Stated that Organizational commitment, job performance, job satisfaction and high productivity endurance is an evident feature of work and leadership spirituality at organizational level. Today organizations are deliberately seeking leadership spirituality that would influence in prevailing the intrinsic motivation, inspiration, moral, ethical and altruistic values that compel an organization towards vision accomplishment. According to Manuel Castells

(1998), global organizations in the present sophisticated and technological setup are seeking to comply with more significant and deliberate impacts of work spirituality. Where spirituality upgrades the morality and modifies the individual thinking by introducing the concept of self actualization in their lives. According to Conger (1994), it is the spirituality that actualizes our true self as it explains our emotions, explores our inner strengths and identifies what we are deep down and how much we are divinely blessed, evidently calling it as the knowledge of heart.

Where spirituality impact's on the behavior, attitude, morality and ethical wellbeing of individuals that incorporates self realization along with the job satisfaction and organizational commitment. Brandt (1996) states that the motive of work spirituality is to enlighten the individual psychology with awareness, knowledge and dissemination in relation with universal values of ethics ,which eventually with an invasion of inner happiness prompts the betterment of personal and work life. As spirituality subsequently promulgates the spiritual survival that has a distinct and valuable features in various aspects of organization behavior. (Hillard, 2004), posits a view that spiritual grounds provide the roots for most of organizational activities, decisions and practices, thus stimulating a growing patterns of spiritual realm which solves our psychological ethical and moral ambiguities. Where Spiritual cause aligns the individual and organizational values for organizational success. (Duschon & Plowman, 2005; Fry et. al., 2005; Malone & Fry, 2003), posits a view that high productivity, stake holder's reliance and commitment endurance is an assertion of work spirituality which could be feasible only when organizational cultural values and its visionary aspects conveniently matches with employees personal potentials and spiritual connotations. Where leadership spirituality associates with loyalty, attachment, cares for work and for others at work place. According to (Power, Higgins, & Kohlberg, 1989), leadership spirituality disseminates the followers with work ethics, norms, procedures, guidance, rules, meanings and values, creating a synergy of employees for their moral personification. Where spirituality is a collective bargaining that purposely seeks the stupendous outcomes for the organizations with unanimous rationality. (Eggert, 1998), is of the view that leadership spirituality promulgates the subordinates with rationality, nobleness, meaning accomplishment, group thinking, sociability and mutual collaboration at organizational level.

Where the leaders with traits like optimism and rationalism and high morality get more prominence in their organizations. According to (Rinpoche, 1993, p. 209), the elegance of perfunctory spiritual leader ship always benefits the organizations with subsequent altruistic and intellectual disseminations. As the spirituality owes the concept modification, manifestation and self development there by conjuring the multiple facets of job satisfaction and commitment. There is clear evidence proclaiming the significance between the various features of leadership spirituality i.e. altruistic love, aesthetics, meaning creation, wholeness, ethical, moral up gradation and individual's productive characteristics of the organizations (Fry, Vitucci, & Cedillo, 2003; Malone & Fry, 2003; Townsend, 1984).The more commitment is enhanced if the psychological association of employees and their organizations increases along with a significant increase in their self identity. Lilius *et al* (2005), states that emotional and psychological affiliation with work place is a result of employees significant and exclusive commitment and determination in their organizations. Where spirituality creates a balance between work and personal life with a splendid charm. According to (Vicari, 2003), majority of experts claim that individual's personal life and life at work is strongly influenced by the spiritual dogmas. Where spirituality has become an essential factor for the organizational survival in long run. The organizations cannot survive and retain their consistant performance in the long run, until the individual and organizational competencies are not enhanced repeatedly and if required knowledge literature, meanings, attributes, values and dissemination of spirituality are not properly diffused in the work place. (Miller in Hesselbein ,1997). Where affective commitment is significantly related to the individual personal values in relation with the values imposed by the organizations. Barrett (1998, 2003), posits a view that affective commitment, satisfaction and performance of individuals and of organization is infect the subsequent productive coalition of three types of values i.e. values belonging to self, to organization and work and individuals perceived values. Where spirituality modifies the individual emotional attachment with their work place irrespective of the attachment with financial gains from the organizations.

Means and measures of spirituality not only align individual and organizational vision and goals but also creates a frame work that links personal an well as work life of individuals , inspiring them to work with the deliberate intentions of organizational accomplishment rather than seeking lucrative benefits. (Miller, 1998). Orientation of spirituality in the organizational set up and culture builds strong association and affiliation of employees with organizations. Klein (2001), stated that managers should allow the wider diffusion of spiritual values in organizational culture as it will lead to employee's strong affiliation and commitment with their organizations where as narrowing down its impact leading to lower emotional association. For a greater societal impact in organizations, it requires spiritual domains to be progressed. According to (Bhindi & Duignan, 1997; Conger, 1994; Fairholm, 1996; Rogers & Dantley,2001; Vaill, 1998; Wheatley, 1994), For creating a reasonable balance in the working community and employees, organizations are deliberately seeking a liberalized leadership essentially for developing their organizational setup, that will merge the organizational values and vital aspects of religion and spirituality such as altruistic love, wholeness, dissemination ,procurement ,care; there by owing a multifold organizational accomplishment. Where spirituality lessens the burden of work, anxiety, pressure and individual differences, as it aids in helping the leader ship to deprive the

pressure and other psychological dilemmas and enhances the level of productivity. According to Frew (2000), the spirituality at work not only reduces the burden and delirium but also aids in coping with the stress and pressure. It is the spirituality that catches sustainability, enhances our authenticity in long term growth and development towards our work. Klein and House (1995), stated that it is the spirituality of leader ship that resolutes the subordinates thus generating numerous, optimized and valuable outcomes with an elegance of self personification, intensified will power and strong organizational commitment. It is as though the intrinsic motivation coming out of leadership spirituality that drives individual's, devotion, determination, dedication, honesty, care and commitment towards work. (Benware &Deci, 1984; Deci & Ryan, 1985) posited the view leader ship spiritually imposes delightful impact on meaning creation, learning, optimal levels of productivity as well as it allocates a significant growth, development and wellbeing at work and in personal life.

In the light of above review the following hypotheses are deducted.

*H1: The Intrapersonal aspect of spirituality of bank managers is positively and significantly correlated with Organizational Commitment.*

*H2: The Interpersonal aspect of spirituality of bank managers is positively and significantly correlated with Organizational Commitment*

*H3: The superapersonal aspect of spirituality of bank managers is positively and significantly correlated with Organizational Commitment*

*H4: The ideopraxis aspect of spirituality of bank managers is positively and significantly correlated with Organizational Commitment*

*H5: Spirituality has a significant and positive impact on Organizational Commitment*

### **3. Methodology**

The present study aims at exploring the impact of leadership spirituality on organizational commitment of banking professionals. These banking professionals include branch managers, area managers and regional managers both from public and private sector. All these banks possess centralized management and hierarchal structure, formal working conditions, transparent regulations and strong organizational culture. The managerial staff of these banks is trained on a regular basis with both managerial and operational training programs and various technical courses relating to credit, accounting and financial management. All of these banks are being regulated and controlled by the state bank of Pakistan there by showing similarity in nature of work and organization culture that resultantly formulates a homogenous population, and selecting a sample of branch managers, area managers and regional managers from the banking sector of a large city of Gujranwala can be considered as sample representing the entire population of branch managers area managers and regional managers of rest of Pakistan. For the purpose of study, a convenience sampling technique was used to record the responses of the 121 bank managers. A total of 130 questionnaires were distributed to branch managers, area managers and regional managers of various banks, out of which 121 questionnaires were returned which were completely usable at a response rate of 92%.

### **4. Defining Variables**

#### *4.1 Intrapersonal Aspect*

Intrapersonal aspect is an aspect of spirituality that enlightens the essence of inside world of individuals. There are five modes of interpersonal aspect of spirituality which include fulfillment of self, self determination, self control, discovery of self and enrichment of self. An independent spirituality assessment scale iSAS developed by Rojas (2002) was used to measure the intrapersonal aspect of spirituality. A Likert scale from 1 (strongly disagree) to 5 (strongly agree) was used to record the responses.

#### *4.2 Interpersonal Aspect*

Interpersonal aspect of spirituality explains spiritual relationship of an individual with other. There are four modes of interpersonal aspects of spirituality which include partnership mode, small group mode, organizational mode and movement mode. An independent spirituality assessment scale iSAS developed by Rojas (2002) was used to measure the interpersonal aspect of spirituality. A Likert scale from 1 (strongly disagree) to 5 (strongly agree) was used to record the responses.

#### *4.3 Superapersonal Aspect*

The superpersonal aspect of spirituality explains the effectiveness of relationship between a manager and his subordinate. There are three modes superapersonal aspect of spirituality which include transactional mode, transformational mode and transfiguration mode. An independent spirituality assessment scale iSAS developed by Rojas (2002) was used to measure the superapersonal aspect of spirituality. A Likert scale from 1 (strongly disagree) to 5 (strongly agree) was used to record the responses.

#### 4.4 Ideoproxis

The ideoproxis aspect of spirituality explains the resemblance between individual's philosophy and life as a whole. An independent spirituality assessment scale iSAS developed by Rojas (2002) containing three items, was used to measure the ideoproxis aspect of spirituality. A Likert scale from 1 (strongly disagree) to 5 (strongly agree) was used to record the responses.

#### 4.5 Job Satisfaction

Job satisfaction is defined as the degree to which an individual gets feelings of fulfillment and accomplishment from the work. A Job satisfaction survey designed by Moorman (1993) comprises a ten items questionnaire derived from the Minnesota Satisfaction Questionnaire (MSQ). A Likert scale from 1 (strongly disagree) to 5 (strongly agree) was used to record the responses.

#### 4.6 Affective Commitment

The affective commitment is the inner strength of relationship between individual's identity and attachment with their organizations. A six itemed organizational commitment questionnaire designed by Meyer et al. (1989) was used to measure the affective commitment. A Likert scale from 1 (strongly disagree) to 5 (strongly agree) was used to record the responses.

### 5. Analysis and Results

For the purpose of analysis, SPSS 15 software was used to analyze the coded data. Cronbach's reliability alpha for all the scales was found ranging between 0.70 to 0.89. In all of 121 respondents, 116 were males and 5 were females. Majority of the respondents about 48% belong to the age group ranging between 31-40 years. Where minimum number of respondents i.e. 10% respondents belong to the age group between 51-60 years. The numbers of respondents who are married were 102, where as the 19 respondents were unmarried. Most of the respondents 89 (74%) belongs to the private sector where as the rest of 32 respondents belong to public or governmental sector. About 25 % of respondents have the working experience between 3-5 years, 23% have working experience between 5-10 years and only 15 respondents have working experience of more than 10 years in their organizations.

The means and standard deviations of several modes of four aspects of spirituality are given in the table 1. All four aspects of spirituality have the mean values 3.91, 3.35, 3.57 and 3.63. Where the intrapersonal aspect of spirituality has the highest mean value  $M=3.91$  which provides a strong evidence that the five modes of intrapersonal aspect of spirituality are the most overriding and major aspects of spirituality which reflects strongly committed inner side of banking professionals. Among all the various modes of spirituality the mean value of the self determination is found to be the highest  $M=4.32$  having a standard deviation of 0.46 where as the mean value is found to be least in the partnership mode of the spirituality  $M=3.16$  with a standard deviation of 0.66. The high mean value of organizational commitment indicate the managers internal locus, affiliation, attachment and loyalty with their organizations.

The results in table 2 show the Pearson's Product Moment Coefficient Correlation, among aspects of spirituality and organizational commitment. All the correlations are found to be significant as there is strong positive correlation between interpersonal and interpersonal aspect of spirituality, where among all the aspects, intrapersonal aspect of spirituality is found to be more significantly correlated with organizational commitment  $r = .386$   $p < 0.01$  which enlightens the patterns of manager's strong spiritual behavior, high levels of, internal locus and psychological attachment with their organizations. A little correlation exists between the ideoproxis aspect of spirituality and organizational commitment  $r = .154$ ,  $p < 0.05$ . Which means that they are quite stereotypical in nature and not very creative and innovative.

The integrity and goodness of fit can be checked through ANOVA given below in the table 3. In the table the proportion of variance in the dependent variable is measured and explained due to variation in the independent variable. Goodness of the fit can be determined through p values and is presented in the ANNOVA table below. As lesser the p-value the greater will be the level of confidence consequently stronger will be the goodness of fit of the model. Goodness of the fit of the model can be checked by the F value i.e.  $F=7.94$  and the p value which is less than 0.01 which ensures the fitness of data in model.

In the table 4 the TSS, ESS and RSS values are found. TSS indicates the total deviation in the dependent variable (organizational commitment) and ESS indicates the deviation explained by this model. In this model the value of R square measures the percentage of variation in the dependent variable as a result of variation in the independent variables. R square can be found by ratio ESS/TSS and is .215. Results shows that the value of R square which shows that only 21.5% of the variation in the dependent variable is explained by the regression model.

In the table 4, the variation in dependent variable by the model is explained. Like value of the R square which is 21.5 % value of adjusted R square is 18.8 % which explains that 18.8% of variance in the dependent variable is measured due

to the variation the independent variable (organizational commitment). A total of 40.3% of variance is explained in the table. The value of standard error of estimate is found to be 3.61 which is quite significant towards results.

The table 5 explains the proportion of variance in dependent variable due to individual variables, as the reliability of individual coefficients. The “t” value and value of “sig.” thus provide the confidence with which we can support the estimate. Here the p value is less than 0.01, so we can affirm the trueness of “B” as it falls in confidence level of 0.95. If the value of p ranges between 0.05 to 0.01 than in such condition the “B” is acceptable and makes it statically significant, but for any value of sig. greater than 0.01 the “B” will no longer remain significant. Where the range of individual coefficients given in the table indicates that the intrapersonal aspect falls between -0.96 to .234, interpersonal 0.30 to .273 superpersonal 0.83 to .511 and ideopraxis -.571 to .357. All these values have a confidence level of 95%.

## 6. Discussion

The current study explores the impact of Leadership spirituality on organizational commitment of branch managers, area managers and regional managers. The results show a strong and positive correlation between aspects of spirituality and organizational commitment. Spirituality serves as the essence for the meaning creation, altruistic love, affiliation, wholeness, care, affection and develops an inner interaction of employees with others and organization, resultantly it develops an internal locus which imparts delight full effect on organizational commitment. It mostly concerns and emphasizes on the issues of individual development rather than focusing on the material issues in the organization that resultantly enhances the productivity and strong organizational attachment of employees. Among all the banking professionals, the managers with high scores possess high spiritual values and are more intrinsically motivated and ethically developed. They are careful for the development of future of their organizations which indicates their high levels of organizational commitment and association.

The results of the study have shown significant contribution towards hypotheses acceptance. We posited five hypotheses towards significant relationship between four aspects of spirituality and organizational commitment. All the correlations are found positively and significantly correlated, where H1 is accepted as  $r = .298$   $p < 0.01$ , H2 as  $r = .386$   $p < 0.01$ , H3 as  $r = .383$   $p < 0.01$  and H4 as  $r = .154$   $p < 0.05$ . The H5 is accepted as spirituality has significant impact on organizational commitment i.e.  $F(4, 116) = 7.94$   $p < 0.01$  as 21.5% variation is explained by spirituality. The results of the study are quite similar to the studies conducted previously. Majority of the managers have strong inner connection with their organizations as their commitment level with their workplace is increasing day by day. Those managers are productive, satisfied and well performing more whose lives are governed according to their cognitive philosophy of life. Where as the managers with strong interpersonal and spiritual relations with their organizational employees are more significantly committed and loyal to their organizations.

The mean values of all the four aspects of spirituality are given as 3.91, 3.35, 3.57 and 3.63 in which the mean value of intrapersonal aspect is maximum than rest of three. This indicates managers are deploying their full abilities, utilizing talents, and energy while working. Their higher levels of commitment is a result of their strong will power, determination as they face all the difficulties with courage, hope and adapt well even in the face of difficult and stressful situations. They are self motivated and motivate intrinsically their subordinates and entire working environment and act like a strong community in order to face the worst and unfavorable situations. Resultantly their productivity, behaviour at work and commitment always keeps a consistent rise. Also they keep on enhancing their level of work spirituality as they are want to find more about themselves and have devoted towards seeking more and more knowledge as a way of adjusting their attitudes, which ensures the fact that majority of the bank managers have a huge thirst of getting knowledge about themselves in order to adjust their spiritual behaviour in their respective organizations.

Majority of the managers have strong passion for what they do at work as they deploy wisdom and enthusiasm for doing good at work which is a sign of their affective job involvement. The results show that among various modes spirituality the mode of self determination has the highest scores with highest mean values  $M = 4.32$  and standard deviation .46. This means that the banking professionals have strong determination and motive behind their working activities and no matter how hard the circumstances they are ready and determined to face the situation. As burden of work in banks are too much and requires lot of involvement, concentration and time so the little score in partnership mode of spirituality indicates that managers don't take guidance in strengthening further their relationship with God very often. Also there is a reason that these managers are mature enough and belong to high age groups having enough knowledge of religion, so they don't want to spend more time on getting some religious guidance from any source very often. On the whole, the managers are found good in practicing spiritual values and they have a strong sense of attachment with their organizations.

## 7. Managerial Inferences

Due to the glowing and benefit oriented impact of work spirituality the policy makers and top management should orient spiritual culture in their organizations in such a way that spiritual values help in adjusting the employee's behavior and attitude by enhancing multifold commitment towards work. Employee's affiliation and attachment with

their organizations would be stronger when they found a match between personal and organizational vision. Orienting spiritual values in organizational culture improves communication, character and interpersonal relationships of employees by prevailing the values of affection, altruistic love and care in the organization. The orientation of newly hired employees should be done in such a way that more focus on developing ethical, moral and spiritual values should be given in order to develop sense of wholeness and organizational attachment which would resultantly generate strong commitment.

### 8. Limitations and Guidelines for Future Research

The limitations of the research should be noted that our sample belongs to financial sector of the economy, if more sectors were involved in the study the results could be more generalizable. Also the generalizability of the study could be achieved if multi sampling technique is used and if the data is collected on the time series basis. However the future guide lines for the study suggest that both financial and economic position of employees should also be considered for further investigation. Like the leaders, the context of spirituality in employees and subordinates should also be investigated.

### References

- Aydin, B., & Ceylan, A. (2009). The effect of spiritual leadership on organizational learning capacity, *African Journal of Business Management*, 3(5), 184-190.
- Baldrige National Quality Program. (2005). *Criteria for performance excellence*. National Institute of Standards and Technology, Department of Commerce.
- Barrett, R. (1998). *Liberating the corporate soul*, Boston: Butterworth-Heinemann.
- Barrett, R. (2003). *Culture and consciousness: Measuring spirituality in the workplace by mapping values*. In R.A. Giacalone., & C. L. Jurkiewicz (Eds.), *Handbook of workplace spirituality and organizational performance*, (pp. 345–366), New York: M. E. Sharp.
- Benware, C., & Deci, E. L. (1984). Quality of learning with an active and passive motivational set. *American Educational Research Journal*, 21, 755–765.
- Bhindi, N., & Duigan, P. (1997a). Authenticity in leadership: An emerging perspective. *Journal of Educational Administration*, 35(3), 195-209.
- Bhindi, N., & Duigan, P. (1997b). Leadership for a new century: Authenticity, intentionality, spirituality and sensibility. *Educational Management & Administration*, 25(2), 117-132.
- Brandt, E. (1996). Corporate pioneers explore spirituality, *HR Magazine*, 41, 82-87.
- Castells, M. (1998). *End of Millennium*. Blackwell Publishers Ltd.
- Chopra, D. (2002). The soul of leadership. *School Administrator*, 59(8).
- Conger, J.A. (1994). *Spirit at work*. San Francisco, Jossey- Bass.
- Deci, E. L., & Ryan, R. M. (1985). *Intrinsic motivation and self-determination in human behavior*. New York: Plenum.
- Dushon D., & Plowman, D. A. (2005) Nurturing the spirit at work: Impact on unit performance. *The Leadership Quarterly*, 16(5), 807-834.
- Eggert, N. (1998). *Contemplative leadership for entrepreneurial organizations: Paradigms, metaphors, and wicked problems*, Quorum Books, Greenwood Publishing Group, Inc.
- Fairholm, G. (1996). Spiritual leadership: Fulfilling whole-self needs at work, *Leadership & Organization Development Journal*, 17(5), 11-17.
- Frew, E. J. (2000). Stressors, strain, and spirituality at work, *Dissertations Abstract International*, DAI-A61/04, 1506.
- Fry, L. W. (2005). *Toward a theory of ethical and spiritual well-being and corporate social responsibility through spiritual leadership*. Forthcoming in Giacalone, R.A. and Jurkiewicz, C.L., (Eds), *Positive psychology in business ethics and corporate responsibility*, Greenwich, CT: Information Age Publishing.
- Fry, L. W., Vitucci, S., & Cedillo, M. (2003). Transforming the army through spiritual leadership, *Unpublished manuscript*, Tarleton State University-Central Texas, Killeen, TX. Available: <http://www.tarleton.edu/~fry/resources.html>.
- Fry, L., & Matherly, L. (2006). *Workplace spirituality, spiritual leadership, and performance excellence*, In S. Roglberg & C. Reeve (Eds.), *The Encyclopedia of Industrial and Organizational Psychology*, San Francisco: Sage Publishing.
- Hesselbein, Francis. (1997). *Leading for Innovation and Organizaing for Results*, Marshall Press.

- Hillard, J.C. (2004). Inspired by the Golden Rule: Business ethics titles bring religions principles into the workplace. *Publishers Weekly*, 21, S12.
- Kaplan, R. S., & Norton, D. P. (1992). The balanced scorecard--Measures that drive performance. *Harvard Business Review*, 70, 71-79.
- Kaplan, R. S., & Norton, D. P. (1996). Using the balanced scorecard as a strategic management system. *Harvard Business Review*, 74, 75-76.
- Kaplan, R. S., & Norton, D. P. (2004). *Strategy maps: Converting intangible assets into tangible outcomes*, Boston: Harvard Business School Press.
- Klein, E. (2001). Values, gifts, and legacy: The keys to high performance and high fulfillment. *The Journal for Quality & Participation*, 24(1), 32-33.
- Klein, K. J., & House, R. J. (1995). On fire: Charismatic leadership and levels of analysis. *Leadership Quarterly*, 6(2), 183-198.
- Lilius, J. M., Worline, M. C., Dutton, J. E., Kanov, J., Frost, P. J., and Maitlis, S. (2005). *Exploring the Contours of Compassion at Work*, Working Paper Series, Centre for Positive Organizational Scholarship, Ross School of Business, Michigan USA.
- Malone, P. F., & Fry, L. W. (2003). *Transforming schools through spiritual leadership: A field experiment*, Paper presented at the Academy of Management, Seattle, WA.
- Mario, F., Frederick, B., & Gary, G. D. (2009). The spiritual dimension in leadership at Dilmah Tea. *Leadership and Organization Development Journal*, 30(6), 522-539
- Meyer, J., Paunonen, S., Gellatly, I., Goffin, R., and Jackson, D. (1989). Organizational Commitment and job performance: It's the nature of the commitment that counts. *Journal of Applied Psychology*, 74, 152-156.
- Miller, L. (1998). After their checkup for the body, some get one for the soul. *The Wall Street Journal*, A1, A6.
- Moorman, R. H. (1993). The influence of Cognitive and Affective based Job Satisfaction Measures on the Relationship between Satisfaction and Organizational Citizenship, Behavior. *Human Relations*, 46, 759-776.
- Power, F. C., Higgins, A., & Kohlberg, L. (1989). *Lawrence Kohlberg's approach to moral education*. New York: Columbia University Press.
- Rinpoche, S. (1993). *The tibetan book of living and dying*. Harper One Publishers.
- Rogers, J. L., & Dantley, M. E. (2001). Invoking the spiritual in campus life and leadership. *Journal of College Student Development*, 42(6), 589-603.
- Rojas, R. R. (2002). Management Theory and Spirituality: A framework and validation of the Independent Spirituality Assessment Scale. *Doctoral Dissertation*, University of Argosy.
- Stadler, F. (1998). The Network Paradigm: Social Formation in Age of Information. *Information society*, (14)4.
- Townsend, J. S. (1984). The development of the spiritual leadership qualities inventory. *Journal of Psychology and Religion*, 12, 305-313.
- Vaill, P. V. (1998). *Spirited leading learning: Process wisdom for a new age*, San Francisco: Jossey-Bass.
- Vicari, S. K. (2003). *Spirituality in educational leadership*, Illinois State University.
- Wheatley, M. J. (1994). *Leadership and the new science: Learning about organizations from an orderly universe*, San Francisco: Berrett-Koehler.

Table 1. Descriptives for aspects and relational modes of spirituality and Organizational Commitment (N=121)

Aspects of Spirituality	Relational Modes of Spirituality	Min	Max	Sum	Mean	SD
	Fulfillment of Self	1.67	4.67	423.67	3.50	.52
	Self Determination	3.00	5.00	523.33	4.32	.46
	Self Control	2.00	5.00	440.33	3.64	.55
	Discovery of Self	2.00	5.00	463.00	3.83	.66
	Enrichment of Self	2.67	5.00	516.67	4.27	.48
<b>Intrapersonal</b>		<b>3.13</b>	<b>4.60</b>	<b>473.40</b>	<b>3.91</b>	<b>.31</b>
	Partnership Mode	1.33	5.00	382.00	3.16	.66
	Small Group Mode	1.00	5.00	428.33	3.54	.87
	Organizational Mode	1.33	5.00	393.33	3.25	.87
	Movement Mode	2.00	4.67	418.00	3.45	.60
<b>Interpersonal</b>		<b>1.92</b>	<b>4.75</b>	<b>405.42</b>	<b>3.35</b>	<b>.54</b>
<b>Ideopraxis</b>		<b>2.00</b>	<b>4.67</b>	<b>432.67</b>	<b>3.57</b>	<b>.52</b>
	Transactional Mode	2.33	5.00	462.00	3.82	.54
	Transformational Mode	2.00	4.67	436.67	3.61	.62
	Transfiguration Mode	2.00	5.00	418.00	3.45	.66
<b>Suprapersonal</b>		<b>2.67</b>	<b>4.56</b>	<b>438.89</b>	<b>3.63</b>	<b>.40</b>
<b>Organizational Commitment</b>		<b>1.67</b>	<b>5.00</b>	<b>477.33</b>	<b>3.94</b>	<b>.67</b>

Table 2. Pearson's Correlation among aspects of Spirituality and Organizational Commitment (N=121)

Variable	1	2	3	4
Intrapersonal Aspects				
Interpersonal Aspects	.503(**)			
Suprapersonal	.389(**)	.408(**)		
Ideopraxis	.348(**)	.251(**)	.395(**)	
Organizational Commitment	.298(**)	.386(**)	.383(**)	.154

\*. Correlation is significant at the 0.05 level (2-tailed).

\*\* . Correlation is significant at the 0.01 level (2-tailed).

Table 3. ANOVA<sup>b</sup>

Model		Sum of Squares	df	Mean Square	F	Sig.
	Regression	415.677	4	103.919	7.946	.000 <sup>a</sup>
	Residual	1517.100	116	13.078		
	Total	1932.777	120			

a. Predictors: (Constant), Ideopraxis, Interpersonal Aspects, Suprapersonal, Intrapersonal Aspects  
b. Dependent Variable: Organizational Commitment

Table 4. Regression Model

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.464 <sup>a</sup>	.215	.188	3.61641	.215	7.946	4	116	.000
a. Predictors: (Constant), Ideopraxis, Interpersonal Aspects, Suprapersonal, Intrapersonal Aspects b. Dependent Variable: Organizational Commitment									

Table 5. Coefficients<sup>a</sup>

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	95% Confidence Interval for B	
	B	Std. Error	Beta			Lower Bound	Upper Bound
(Constant)	4.678	4.459		1.049	.296	-4.154	13.509
Intrapersonal Aspects	.074	.086	.086	.862	.391	-.096	.243
Interpersonal Aspects	.152	.061	.244	2.472	.015	.030	.273
Suprapersonal	.297	.108	.266	2.750	.007	.083	.511
Ideopraxis	-.107	.234	-.042	-4.56	.649	-.571	.357
a. Dependent Variable: Organizational Commitment							



## An Empirical Investigation of Maintenance Performance of Lubcon Ltd. Ilorin, Kwara State, Nigeria

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### Abstract

The focus of the study is empirical investigation of maintenance performance of a fast growing independent lubricant blending company in Nigeria. The study was designed primarily to determine whether or not the company has met its maintenance performance targets. Nominal Group Technique (NGT) was used in composing the overall criteria on which maintenance activities of the company were evaluated. The criteria were manpower utilization, plant and equipment performance, amount of services provided and degree of planning. These criteria were assessed using the following performance ratios: equipment availability, cost of spares and supplies, maintenance to production, equipment shut - down intensity, emergency shut - down intensity, and break - down workload. The study revealed that the company was able to operate fairly within the targeted performance ratios set by the company.

**Keywords:** Performance, Target, Ratios, Satisfactory, Unsatisfactory

### 1. Introduction

Maintenance is defined as a combination of actions carried out to retain an item or restore it to an acceptable standard. This standard includes safety, reliability, and quality of output. The primary function of maintenance is to ensure that production facilities (equipment structure etc) are in good and safe condition and are available for production at minimum cost. Efficient and effective utilization of installed production facilities is a contributory factor to the promotion of industrial growth. One of the prerequisites to ensure availability of installed production for effective use is to have effective maintenance engineering system. With the advent of mechanization and automation coupled with high cost of capital investment, this prerequisite seems to be claiming more attention than in the past. Other factors which make effective maintenance system to be very important include the needs for increased production level, increased machine utilization and market competition.

Lack of effective maintenance system in a manufacturing enterprise gives rise to several undesirable consequences, some of which are excessive machine breakdown, frequent emergency maintenance, shortened life span of the production facilities, disproportionate investment in spare parts and maintenance materials, poor utilization of maintenance staff, loss in production output, failure to meet delivery dates, lower quality products, excessive overtime cost and ever rising of manufacturing cost. (Gopalakrishnan and Banerj, 1991)

All these lack of effective maintenance consequences contribute to high costs of production and loss of profit, which is basically due to long duration of plant down - time. In planning for availability of production capacity of plant, some elements of down - time need to be taken into consideration, because that down - time will result in loss of production. If down - time can be minimized, the company stands to improve upon output and revenue, reduce production cost, and thus improving profit. This presupposes that other factors of production are available and that company can sell all that she produces.

If however, due to absence of an effective maintenance system, the down - time increases more than what has been planned, the level of activity will reduce. This will result to loss of the budgeted profit. Increase in down - time will also lead to increase in volume of maintenance tasks to be undertaken. This will increase the overall budgeted maintenance costs and therefore further reduces the budgeted profit. The aim of effective maintenance system therefore is to achieve increased plant availability through better management at low cost relative to increased profit.

Maintenance can be categorized into: (1) Emergency maintenance, planned maintenance, corrective maintenance and preventive maintenance (BSI, 1974). Emergency maintenance is necessary to put in hand immediately to avoid serious consequences. Serious consequences could be loss of production, extensive damage to assets, or for safety reason;

(2) Planned maintenance is the one that is organized and carried out with forethought with the use of records to a predetermined plan;

(3) Corrective maintenance is a maintenance carried out to restore (including adjustment and repairs) an item which has ceased to meet an acceptable condition;

(4) Preventive maintenance is carried out at predetermined intervals or to other prescribed criteria, and intended to reduce the likelihood of an item not meeting an acceptable condition. It is normally planned.

Number of employees in maintenance department depends upon the size and nature of the activities. For example in processing organizations like thermal power stations, cement plants, iron and steel making where there is continuous work throughout the year the maintenance department is big and work round the clock. In mass production industries it will be moderate and in medium and small industries maintenance staff will be in single digit. The designation of department head varies from maintenance engineer to General manager or Chief Maintenance Engineer, depending upon importance and size of the company. Badi and Badi (2006) listed some of the main responsibilities of maintenance department as evaluation/inspection, engineering and development, total maintenance work, power supply, administrative work, automobiles and safety. The specific responsibilities to be carried out are enumerated below under each of the main responsibilities.

**a. Evaluation/ Inspection**

- Periodic check of plant facilities to examine their working condition to take corrective action.
- To check safety factors for machinery and operators.
- Ensure that important spares like belts, bearings, bushes which are frequently required as per quality and quantity.
- To check if spares purchased for imported and high value machinery are from original source.
- Obtain information from senior operators, absorb any unusual sound or trouble from machines.
- Components and other maintenance items received as spares to be checked thoroughly by specialists.

**b. Engineering and Development**

- Maintenance engineers should be innovative and think for changes in arrangements to improve machines' utility and quality of workmanship.
- In civil/mechanical/electrical installations maintenance staff should take it up like a project assignment and take better care of cost and time factors.
- If production engineers find deviations are due to machines the maintenance engineers should involve in trouble shooting to keep machines in efficient condition.

**c. Total Maintenance Work**

- Taking care of breakdown maintenance (repair work), planned productive maintenance of machinery and equipments.
- Scheduled overhauling of major equipment.
- Maintenance of building facilities stores yard compound for safety and better work environment.
- Attending project assignments for know how on future maintenance needs.
- Replacement, reconditioning disposal decisions.

**d. Power Supply**

- Duration and distribution of power to plant, machinery and colony (wherever applicable).
- UPS for computer section and minimum lighting.

**e. Administrative Work**

- Personal and Administration work of the department.
- Records, drawing specifications of various department related work.
- Spares list for various machines, import list; budget costs etc. files to be maintained.
- Record of machinery insurances to be kept.

**f. Automobiles**

- Up – keep in running condition of buses, cars, trucks etc. belonging to the company.
- Keep spares generally used for these vehicles

**g. Safety**

- Safety from fire, water, pollution etc
- Housekeeping, maintenance of building and open yards.

According Chary (2007), in order that the maintenance in general should succeed, the following conditions are necessary:

1. Good cooperation and coordination between the production and maintenance functions, in general, is essential.
2. Maintenance function should not be under production management.
3. Proper equipment records should be kept giving details such as breakdown-statistics, and maintenance carried out.
4. Spare parts inventory should be controlled properly, so that adequate numbers are available for maintenance purpose.
5. To ensure good control, the maintenance work (preventive and breakdown) should be standardized as much as possible.
6. Good research in materials is a helpful accompaniment to maintenance.
7. Many plants have reported excellent results with good operator training in inspecting his own machine /equipment and carrying out minor preventive maintenance job on it.

Output in maintenance is intangible which makes maintenance performance difficult to assess. In evaluating maintenance performance, surrogate measures are most commonly used. Such measures have been found to correlate strongly with other performance criteria, such as productivity, efficiency, effectiveness among others (Oloruniwo and Lorentz, 1991). In sharp contrast to production, the performance of maintenance activity does not lend itself easily to expression in simple unified figures.

Priel (1974) classified surrogate measures as those that give the most effective means by which the maintenance performance of industrial organizations can be measured. In this study, the criteria surrogate measures are used.

Benefits of good maintenance are mostly immeasurable and sometimes intangible and the quality of the service cannot be assessed except indirectly. Even, if we could show management total value of the service performed compared to what a contractor would have charged, this would show only the cost of the service but not the many benefits derived. The effects of good maintenance on the work force such as improved morale and less accidents cannot be quantified. Neither can we measure the value of the neat appearance of plant, improved housekeeping and smoother operation in production. Another benefit that is equally elusive but nevertheless important is the improved decision – making process at various levels of management as a result of reliable maintenance data (Lawal and Adeyemo, 2002).

Although the output of the maintenance department can be quantified in hours, frequencies and cost, total benefits remain immeasurable. For example, what is the value of routine check which intercepts a serious failure? If as a result of an inspection we carry out a certain repair, have we just spent money or did we contribute to savings? Therefore, there is no answer to management's quest of a justifiable expenditure.

Another obstacle in understanding the benefits of good maintenance is the fact that the merits and shortcomings of a service are not immediately apparent (British Standard Institute, 1984). The first year of a good lubrication system will pay off in the following years and the effect of poor lubrication is seen when a mis-hap occurs. Thus it is hard to give credit or lay the blame for what was done many years ago unless a clear cut connection does exist. Many factors play an interactive role and the adverse ones cannot be identified. This is in contrast to production where a faulty output can easily be traced to either tools, materials or the operators and promptly corrected. An action (such as the replacement of a component or an overhaul) will be seen to have been corrected not only in retrospect and not when it takes place.

Also according to Redford and Richardson (1977), conditions are never stable. Trouble – free running can either be credited to sustained good servicing, to a change in operating conditions or to a needed type of lubricant. The non – occurrence of a failure cannot be relevant to one simple cause. More importantly still, a non occurrence cannot be recorded. Figures may show a decrease in the frequency of break downs or in their severity but that could have been due to the latest operator – training programme or to recent improved supervision. Thus, because of the time lag effect, maintenance cannot “sell” itself. Priel (1974) however, affirmed that difficulties in appraising maintenance value can be overcome by instituting a well organized system if proper control is exercised and plotted on a chart. According to Priel, this will substitute facts for vague erroneous impressions and thus pave the way for a better understanding.

## 2. Statement of Research Problem

Despite the role that effective maintenance system or management can play in manufacturing organizations, there is common assertion in the business circle that maintenance departments of Nigerian manufacturing organizations have not been able to meet their performance targets. Maintenance is always neglected. It is only when a machine breaks down that maintenance is considered important. This always leads to low availability and utilization of plant equipment which always result in increase in production cost.

Judging from the importance of meeting maintenance performance targets by manufacturing companies, it is surprising to note that no meaningful research has been carried out to appraise any of the manufacturing companies in Nigeria regarding meeting their maintenance performance targets. A critical look at the scenario depicted so far would indicate that there is need to embark on a study to assess one of the companies in Nigeria regarding the extent to which they have met their performance targets.

## 3. Research Objective

The study aims at determining whether or not one of the leading manufacturing companies in Nigeria has met her maintenance performance targets. The specific objectives are the evaluations of the following performance ratios: equipment availability, cost of spares and supplies, maintenance to production, equipment shut - down intensity, emergency failure intensity, and break - down workload.

## 4. Research Setting: LUBCON LIMITED

The company chosen for this study is LUBCON LIMITED. The company was incorporated on the 8<sup>th</sup> of August 1991 as a limited liability company to carry out the business of blending automobile and industrial lubricants together with lifting, distribution and sales of petroleum and allied products that meet international standards. These include: automotive lubricants, industrial lubricants of all grades and types, marine lubricants of all grades, custom blended products, greases, gear oil etc, marketing of petroleum and allied products and retail development. The company commenced business on the 3<sup>rd</sup> of January 1995.

The company is the biggest and fastest growing independent lubricant manufacturing company in Nigeria. The company has a technical partnership agreement with REPSOL YPF Spain (a leading oil and gas company in Europe). In 2002, the company became the first indigenous company to be certified by the Standards organization of Nigeria (SON). The company is a member of Independent Lubricant Manufacturing Association (ILMA) of USA. In 2000, the company product (Performa XY 50) became the first lubricant brand to win the Nigeria Industrial Standard (NIS) certification for product quality. The company has an ultra modern blending plant of 10 000 000 litres capacity per annum and a mini plant of about 2.5 million litres capacity per annum.

## 5. Research Methodology

Data related to production and maintenance activities in the company were acquired by administering questionnaires and interviews to maintenance, production and account/finance Personnel of the company. Nominal Group Technique (NGT) suggested by Oloruniwo and Lorentz (1991) was used in composing the overall criteria on which maintenance activities of the company were evaluated. The criteria are manpower utilization, plants and equipment performance, amount of services provided and degree of planning. These criteria were assessed using the following performance ratios:

- i. Equipment availability =  $\text{Running - time} / \text{Running - time} + \text{Down - time}$
- ii. Cost of spares and supplies =  $\text{Total cost of supplies and} / \text{Total maintenances expenditure}$
- iii. Maintenance to production ratio =  $\text{Total maintenance direct hours} / \text{Total Production hours}$
- iv. Equipment shut - down intensity =  $\text{Down - time from shutdown} / \text{Active time}$
- v. Emergency failure intensity ratio =  $\text{Down - time from frequent failure} / \text{Operating time}$
- vi. Break - down workload =  $\text{Total hours spent on break - down repairs} / \text{Total clocked maintenance hours}$

For each of the performance ratios, the company gave target. These enabled us to evaluate maintenance performance against the targets. The quarterly data collected for the period between 2001 and 2006 were summed up to find the average for each year. The summed up averages as well as the company's targeted ratios for 2001 to 2006 are depicted in tables 1 – 6.

The following research questions were formulated to serve as a guide in achieving the stated objectives of the study: 1. What were the target ratios set by the company for the maintenance department? 2. What were the performance ratios achieved by the maintenance department? 3. To what extent did the company's maintenance department achieve performance target ratios? and 4. What were the problems which might have hindered the maintenance department from meeting the performance target ratios?

For each of the six ratios employed for assessing the performance of the company, an hypothesis that the performance ratios achieved by the company were not significantly different from the targeted ratio was formulated.

Student t – test was employed to test the hypotheses.

## 6. Results and Discussions

The summaries of results of the findings of the performance ratios measured are presented in tables 1 -6 Table 1 shows Equipment availability Ratios and percentages of performance target ratios achieved by the company. The company achieved a ratio of 0.74 (92.50%) in 2001. Thereafter, the ratio rose such that by 2004 it was 0.88 (110%). It stood at 0.88(110 %) in 2005 before it declined to 0.80 (100 %) in 2006. From the table, it is glaring that the availability of equipment throughout the period covered by the study was above the target except in 2001 when it was below the target and in 2006 when it was the same as the target. According to the company, the below target ratio achieved in 2001 was a result of frequent breakdown caused by mal - operations of some operators on the job training.

Table 2 shows cost of spares and supplies ratios and percentages performance target ratios achieved by the company. The company achieved a ratio of 0.85 (141.67 %) in 2001. Thereafter, the ratio declined such that by 2005 it stood at 0.61(101.67 %) before it rose to 0.75 (125 %) in 2006. From the table, it is obvious that the cost of spares and supplies ratio were higher than the company's target throughout the period covered by the study. According to the company, the reduction after 2001 was as a result of the step the company took to machine some of the spare parts which subsequently reduced the cost of spare parts. The implication of this is that the company ought to have increased its performance target ratios in order to make allowance for reduction of the cost of spare parts.

Table 3 shows maintenance to production ratios and percentages of performance target ratios achieved by the company. A close look at the nominator and denominator of the ratio will show that ratio which value is above target ratio is not satisfactory while ratio which value is below the target ratio or equal to the target ratio is not satisfactory. Based on the above, a ratio of 0.17 (106.25%) recorded in 2001 was not an acceptable one, while the ratios achieved in 2002 to 2006 were satisfactory.

According to the company, the improvement in performance of the company's maintenance staff is as a result of in – house training organized for them.

Table 4 shows equipment shut - down intensity ratios and percentages of the performance target ratios achieved by the company.

An examination of the nominator and denominator of the ratio will indicate that ratio which value is above the target ratio is not satisfactory. Based on the above, the ratios of 0.14 (116.67 %), 0.13 (108.33 %) and 0.13 (108.33 %) recorded in 2001, 2004 and 2006 respectively were not satisfactory, while the ratios of 0.12(100 %), 0.11(91.67 %) and 0.12 (100 %) achieved in 2003, 2004 and 2005 respectively were satisfactory.

The reason given by the company for low performance in 2001, 2002 and 2006 was frequent equipment/machinery shut - down as a result of avoidable and unavoidable delays aside maintenance. This shut - down, according to the company, was due to lack of raw material and incessant power outage from the utility power that led to frequent shutdown of production machines.

Table 5 shows emergency failure intensity ratios and percentages of performance target ratios achieved by the company. A close look at the nominator and denominator of the ratio will indicate that any ratio that is above the target ratio is not satisfactory, while the ratio that is below or equal to the target ratio is satisfactory. Based on the above, the performance of the company was not satisfactory in 2001 and 2002. This is an indication that the machines broke down most frequently in 2001 and 2002. According to the company, the factors responsible for lack of satisfactory performance in 2001 and 2002 were: the company not shutting down all its production operations just to repair and service the machinery and equipment.

Table 6 shows Break - down workload ratios and percentages of performance target ratios achieved by the company. An examination of the nominator and denominator of the ratio will show that any value of the ratio that is above the target ratio is not satisfactory, while ratios which value is less or equal to the target is satisfactory. In view of the above, the ratios of 0.27(122.73 %) and 0.26 (118.18 %) recorded by the company in 2001 and 2002 respectively were not satisfactory, while the ratios of 0.19 (86.36 %), 0.15 (68.18 %), 0.16 (72.73 %) and 0.16(72.73 %) recorded by the company in 2003, 2004, 2005 and 2006 respectively were satisfactory. The company ascribed lack of satisfactory performance in 2003, 2004, 2005 and 2006 to the following factors: not shutting down all its production operations just to repair and service the machinery and equipment, lack of preventive maintenance program and not having schedule for maintaining and servicing all the machinery and equipment.

Table 7 shows the result of the hypotheses tested.

At 1% level there were no significant differences between the performances achieved and the targeted performances of the company regarding all the ratios assessed by the study.

At 5% level there were no significant differences between the performances achieved and the performance targets of the company in respect of all the ratios assessed except for spare parts to production ratio.

## 7. Conclusion and Recommendations

In the foregoing, an attempt has been made at appraising the maintenance performance of a fast growing independent lubricant blending company in Nigeria (Lubcon Limited, Ilorin Kwara State) between 2001 and 2006.

The study indicates that the company's performances were satisfactory regarding equipment availability and maintenance to production ratios in 2002 to 2006, cost of spare parts ratio in 2001 to 2006, equipment shut – down intensity ratios in 2003 to 2005 and emergency failure intensity ratio as well as breakdown workload ratio in 2003 to 2006. The failure of the company to achieve equipment availability target ratio in 2001 was due to frequent breakdown of some machinery as a result of some operators who were on the job training. The company's inability to meet the maintenance to production target in 2001 was caused by inadequate training of maintenance staff. The company failed to attain equipment shut-down intensity target ratio in 2001, 2002, and 2006 as a result of shortage of raw material and incessant power outage from the National electric power grid. In 2001 and 2006, the company could not achieve emergency failure intensity target ratio because it did not at any time stop production operation to repair its machinery and equipment. The company failed to achieve performance target regarding breakdown workload ratio in 2003 to 2006 because it did not at anytime stop production operation to repair its machinery and equipment and lacked preventive maintenance programme for its production facilities.

The results of the test of the hypotheses formulated shows that there was no significant difference between the performance ratios achieved and performance target ratios for all ratios assessed except for the cost of the spare parts and supply ratio at 5% level of significance. The implication of the results of the hypotheses tested is that the company's performance was best in respect of the cost of spare parts and supplies ratio during the period covered by the study. To enable the company obviate the shortcoming of not achieving the maintenance performance ratios enumerated above in future, the following recommendations are made: the company should make it's maintenance staff to undergo appropriate training that would equip them with knowledge and attitude required for comprehensive maintenance of the company's production facilities regularly. Equipping the maintenance staff with training and installation of planned and scheduled maintenance program by the company will assist the maintenance staff tremendously towards avoidance of repeating failure of not meeting equipment availability ratio experienced in 2001. To equip itself against the occurrence of inability of not meeting the equipment shut -down target in 2001 and 2006, the company should take steps that will enable it to secure regular supply of raw materials in future and should acquire dependable electric generator that will keep its machinery and equipment running whenever there is power outage by the National electric grid.

The installation of planned and scheduled maintenance program earlier recommended will also assist the company immensely towards obviating the incidence of not meeting emergency failure intensity target ratios in 2001 and 2006 and breakdown workload ratios in 2003 to 2006. This type of maintenance program will minimize costly unscheduled down workload, unscheduled down – time, reduce maintenance costs, increase machine productivity and safety.

## References

- Badi, R.A., and Badi, N.V. (2006). *Modern production management*. Delhi: Vrinda Publication (P) Ltd.
- British Standard Institute. (1984). *BSI 381, Glossary of Maintenance Terms in Technology*. London: BSI.
- Chary, S.N. (2007). *Prevention and operations management*. New Delhi: Tata McGraw – Hill Publishing Company limited.
- Gopalakrishnan, P., and A.K. Banerji. (1991). *Maintenance and spare parts management*, New Delhi: Practice –Hall of India.
- Husband, T. M. (1976). *Maintenance Management and Terotechnology*. London: Savon house.
- Lawal, K. O., and Adeyemo, S. B. (2002). Maintenance Performance Appraisal in a Local Production Organisation. *Nigerian Journal of Engineering Management*, 1(1) 65 – 75.
- Nnamdi, A. (2002). *Research Methodology in the Behavioural Sciences*. Ikeja Nigeria: Longman. PLC.
- Oloruniwo, F. O., and Lorentz, R. (1991). Composite Surrogate Productivity Measures for Maintenance Performance. *Proceedings of 22nd meeting of Midwest, Decision Sciences Institute*, Pp 271 – 275.
- Pin – Hung, L and Chin – Chi, W. (2000). A Group Decision Making Technique for Appraising the performance of organizations. *International Journal of the Computer, the Internet and Management*, 8 (2): 39 -49.
- Priel, V. Z. (1974). *Systematic Maintenance Organization*. London: Macdonald and Evans Limited.

Redford, J. D., and Richardson, D. B. (1977). *The Management of Manufacturing System*. London: Macmillan Press Limited. White, E. N. (1979). *Maintenance Planning, Control and Documentation*, 2nd Edition. Great Britain: Gower Press Ltd.

Table 1. Equipment availability ratios and percentages of performance target ratios achieved

Year	Performance ratios achieved	% of performance target ratios achieved
2001	0.74	92.50
2002	0.82	102.50
2003	0.85	106.25
2004	0.88	110.00
2005	0.88	110.00
2006	0.80	100.0

Annual performance target ratio was 0.80

Source: Researchers' survey 2007 – 2008

Table 2. Cost of spares and supplies ratios and percentages performance target ratios achieved

Year	Performance ratios achieved	% of performance target ratios achieved
2001	0.85	141.67
2002	0.78	130.00
2003	0.75	125.00
2004	0.62	103.33
2005	0.61	101.67
2006	0.75	125.00

Annual performance target ratio was 0.60

Source: Researchers' survey 2007 – 2008

Table 3. Maintenance to production ratios and percentages performance target ratios achieved

Year	Performance ratios achieved	% of performance target ratios achieved
2001	0.17	106.25
2002	0.15	93.75
2003	0.15	93.75
2004	0.14	87.50
2005	0.14	87.50
2006	0.16	100.00

Annual performance target ratio was 0.16

Source: Researchers' survey 2007 – 2008

Table 4. Equipment shut - down intensity ratios and percentages of performance target ratios

Year	Performance ratios achieved	% of performance target ratios achieved
2001	0.14	116.67
2002	0.13	108.33
2003	0.12	100.00
2004	0.11	91.67
2005	0.12	100.00
2006	0.13	108.33

Annual performance target ratio was 0.12

Source: Researcher's survey 2007 – 2008

Table 5. Emergency failure intensity performance and percentages of performance target ratios achieved

Year	Performance ratios achieved	% of performance target ratios achieved
2001	0.28	112.00
2002	0.26	104.00
2003	0.13	52.00
2004	0.10	40.00
2005	0.11	44.00
2006	0.15	60.00

Annual performance target ratio for 2001 – 2006 was 0.25

Source: Researchers' survey 2007 – 2008

Table 6. Break - down workload ratios and percentages performance of target ratios achieved

Year	Performance ratios achieved	% of performance target ratios achieved
2001	0.27	122.73
2002	0.26	118.18
2003	0.19	86.36
2004	0.15	68.18
2005	0.16	72.73
2006	0.16	72.73

Annual performance target ratio for 2001 – 2006 was 0.22

Source: Researchers' survey 2007 – 2008

Table 7. Results of the Hypotheses in Respect of Performance Ratios

RATIOS	$\bar{d}$	Sd	ese(d)	Test statistics	t- table values	
					Levels	
					1%	5%
Equipment availability	0.028	0.054	0.022	1.273	4.032	2.571
Cost of spare parts to production	0.127	0.094	0.038	3.3.42	Ditto	Ditto
Maintenance to production	-0.088	0.012	0.005	-1.600	Ditto	Ditto
Equipment shut – down intensity	0.005	0.010	0.004	1.250	Ditto	Ditto
Emergency failure intensity	-0.078	0.078	0.032	-2.438	Ditto	Ditto
Breakdown workload	-0.022	0.053	0.022	-1.00	Ditto	Ditto



## Study on the Customer Loyalty of Chinese Commercial Banks

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### Abstract

Based on relative researches about customer loyalty, the empirical research method is used to analyze the customer loyalty of Chinese commercial banks, and corresponding measures to enhance the customer loyalty of Chinese commercial banks are proposed according to relative analysis in the article.

**Keywords:** Commercial banks, Customer loyalty, Enhancement measures

As everyone knows, with the opening of the bank industry of China since 2006, the system structure and the market competition situation of Chinese bank industry has greatly changed, and the market competition has turned white hot, and the phenomenon of product homogeneity is variously serious, and the traditional bank quality management has gradually lost the competitive advantage. Various banks increasingly pay attention to the customer relationship management, and they turn the emphases of marketing from the “product-oriented” trading marketing to the “customer-oriented” trading marketing in order to establish stable and long-term cooperation relationship with customers, but some reports also show that the large gap of customer loyalty still exists between Chinese commercial banks with foreign commercial banks, and the proportion of customers who not only satisfy but also are loyalty with banks is very small. Based on that, the empirical method of small samples is used to study the customer loyalty of Chinese commercial banks, and corresponding enhancement measures are proposed in this article.

### 1. Research Method and Sample Acquirement

#### 1.1 Theoretical base of research

Based on empirical researches, Germle & Borwn (1996) put forward that the customer loyalty meant customers' repeated purchase behavior for special service supplier, and their active attitude tendency to the supplier, and the tendency when the demand of this service increased, customers continually took this service supplier as the unique selection object. And according to the degree of customer loyalty, the customer loyalty can be divided into three different layers such as behavior loyalty, intention loyalty and emotion loyalty. Where, behavior loyalty is customers' actual repeated purchase behavior, and it emphasizes the repeated purchase. Intention loyalty includes customers' possible purchase intention, price tolerance and recommendation possibility in the future. Emotion loyalty is customers' attitude to enterprises and their products including accepting the face of product, actively propagandizing and recommending the products of the enterprise, and firstly considering and purchasing these products. Based on Germle & Borwn (1996)'s subsection of customer loyalty, Zhu Ailing (2007) established the customer loyalty evaluation index system based on empirical researches in her article of “The Evaluation System of Customer Loyalty Degree”, which has important instruction function for the customer loyalty of Chinese commercial banks.

#### 1.2 Sample collection

Based on above theoretical guidance, to evaluate the customer loyalty of commercial banks and know the customer loyalty of Chinese commercial banks and offer empirical and theoretical reference to enhance the customer loyalty of Chinese commercial banks, the customers of Chinese commercial banks are surveyed by the mode of questionnaire. And 560 effective questionnaires are returned in 600 questionnaires in this survey.

### 2. Analysis of Customer Loyalty of Chinese Commercial Banks

By cleaning up effective questionnaires and analyzing the validity and reliability of various indexes and data in the questionnaires, the result shows that the validity of questionnaires designed in this article is very high, and the interior integer, the reliability and the authenticity of the questionnaires are very high, and the questionnaires could truly reflect customers' evaluations to the bank products and services. Based on survey data, the customer loyalty of Chinese commercial banks will be analyzed as follows.

### *2.1 Customer loyalty analysis of different sorts of consumers*

In the data of Table 1, for the sex, male customers' behavior loyalty, intention loyalty and emotion loyalty are all higher than female customers' a little, and for the marriage, married customers' behavior loyalty is a little lower than unmarried customers', but married customers' intention loyalty and emotion loyalty are higher than unmarried customers', and the married customers' intention loyalty has achieved 33%, and for the educational background, customer loyalty has not obvious proportional relationship with the educated level, and the customers' emotion loyalty with the educational background of junior college has achieved 38%. For the family income level, customers' behavior loyalties on different levels have few difference, but the proportion of customers' emotion loyalty with above 7500 Yuan of per capital family income is relatively high, and achieves 45%, and at the same time, the customers' intention loyalty and emotion loyalty increases with the increase of per capital family income. By analyzing the total samples, in the various consumers, the proportions of customers in Chinese commercial banks are less and less from behavior loyalty to intention loyalty and then to emotion loyalty. Where, the proportion of customers' behavior loyalty is higher, and exceeds 80% and the proportion of intention loyalty all exceeds 60%, but the proportion of emotion loyalty is only about 20%. The result of data processing basically accords with Germlle & Borwn's layer subsection from shadow to deep.

### *2.2 Customer loyalty analysis of patronage because of different factors*

The data in Figure 1 show that in the customers of Chinese commercial banks, the customers who enter into Chinese commercial banks occupy quite proportions because of "near distance" and "appointed card", and these two proportions respectively are 26.1% and 24.7%, and the second reason is "good service", and the proportion of customers who enter into Chinese commercial banks because of this reason is 15.6%, and the "convenience" is also the important reason, and its proportion is 12.4%.

The data in Figure 2 show that in the customers of Chinese commercial banks, the proportion of customers who enter into banks with behavior loyalty is the highest one because of "high security", "good service" and "brand", and achieves or approaches 100%, and the proportions of intention loyalty and emotion loyalty are all higher than other reasons, especially the proportions of emotion loyalty respectively achieve 50%, 40% and 35%, and the second reason is "special product", and the proportion of emotion loyalty also achieves 30%, and the proportions of customers' behavior loyalty, intention loyalty and emotion loyalty because of "appointed card" are all the lowest proportion, and the next reasons are "near distance" and "many net sites".

## **3. Corresponding Measures to Enhance Customer Loyalty for Chinese Commercial Banks**

By analyzing various sorts of customer's customer loyalty, it is obvious that the customer loyalties of different sorts of consumers who enter into banks because of different reasons have different characters, and the proportions of customer loyalty are obviously different, and based on above analysis, the measures enhancing the customer loyalty of Chinese commercial banks are proposed as follows.

### *3.1 Fractionize the customer market and make layered marketing*

From above analysis, the customer loyalties of different sorts of customer in Chinese commercial banks have different characters, so in the strategic development of commercial banks, the customer market must be fractionized, and according to different fractionized markets, the layered marketing and the customer database should be established, which can offer different services aiming at different fractionized markets, and effectively enhance the customer satisfaction. At the same time, by continually treating and analyzing database, banks should not only fully know customers' credit status and consuming habits, but also confirm customers' profit contribution, so banks can offer individualized services aiming at different customers, and accordingly consumers' dependence and loyalty for banks will be enhanced.

### *3.2 Strengthen the cultural construction of bank service and implement the brand strategy*

Customer loyalty not only is derived from bank products or the demand of service, but has deeply emotional color. Banks are important public service department, and they must pay attention to the management concept of enterprise, employees' behavior mode, and establish the "customer-centric" service concept, but the permanence of the service concept and the service mode needs to depend on long-term edification and ablation of bank service cultures. Of course, the establishment of culture is a systematic long-term engineering, and it requires that bank enterprises should always pay attention to establish long-term and interdependent relationship with clients, and build customers' sustainable satisfaction by continual encouragement and durative digging and value transfer. And banks can finally hold customers and implement the customers' emotion loyalty by repeated communication between client and bank.

Brand represents the character, the benefit and the persistent promise of the products offered by the enterprise for customers, and good brand is the guarantee of good quality. Above data also show that brand has important function for the customer loyalty of commercial banks. As the public service enterprise, commercial banks should not only ensure customers' benefit, scrupulously abide by credit and establish the brand of enterprise, but also pay attention to the client

relationship management, implement the individualized character service, give prominence to the character of products, offer high cost performance and good-quality band products to customers, and accordingly realize brand loyalty. At present, the large gap still exists in the brand construction between Chinese commercial banks and international commercial banks, and the branding strategy needs to be realized for a long term.

### 3.3 Enhance the innovation ability of bank products and give prominence to the characters of products

Because the bank products are very easy to be simulated, the similitude degree of the products of Chinese commercial banks is very high, and the homogeneity phenomenon is very serious, and the core competitive ability of commercial banks is not product, but the more important ability is the innovation ability of product and service. Based on the subsection of the bank customer market, banks should exactly grasp clients' demand and market development tendency, design financial products, and satisfy the demands of various subsection market by diversified and individualized products, and hold customers by special products, and accordingly enhance the customer loyalty of banks.

### 3.4 Enhance the quality of bank service and provide band products with high cost performance

As service enterprises, banks can not have customer loyalty without the guarantee of service quality. Good service is the essential to attract and hold customers. When the market competition is not so drastic, banks can hold numbers of customers only by various conversion costs not by high-quality services, but most of these customers may only have behavior loyalty, not intention loyalty or emotion loyalty. After the bank industry of China opened to the outside world in 2006, the competition of Chinese commercial banks is increasingly drastic, and customers' conversion costs reduce, and their conversion benefits increase, which induce many customers flow away, so it is very important to enhance customer loyalty, and good-quality service is one important measure to hold customers for long for banks. To enhance the service quality, banks should first satisfy customers' demand, so Chinese commercial banks should consider customers' demand in various parts of the service product, and regard customers as the "god" of the bank. Under the premise of guaranteeing good-quality service, Chinese commercial banks should also reduce customers' costs, save money cost, time cost and psychology cost by various methods such as simplifying service flow, reducing charge, and increasing the added value of product, which is extremely important to enhance customer loyalty for Chinese commercial banks.

### 3.5 Utilize the conversion barrier reasonably

To utilize the conversion barrier of Chinese bank industry reasonably could increase customers' conversion cost, prevent customer flow and enhance customers' behavior loyalty to some extent. It is not the final target to enhance customers' behavior loyalty by the conversion barrier, and the final target should convert customers' behavior loyalty into intention loyalty even emotion loyalty by measures such as enhancing the service quality, and accordingly hold customers for a long time.

### 3.6 Establish the customer communication platform and high-effective emergency disposal mechanism

For any enterprise, customers' demand is very important, so are Chinese commercial banks. To establish the platform of effective communication with customers and fully grasp customers' demand and demand trends, banks should not only offer the products or services with more pertinence, but also fully respect customers, and keep the interaction with customers, which are the important measures to enhance customers' emotion loyalty. High-efficiency emergency disposal mechanism is the key for successful modern enterprises, and banks are service enterprises, and customer complaints are inevitable. By providing high-level compensation service for customers in the shortest time, banks could acquire customers' favors and trusts, increase customer loyalty, carefully consider and analyze the causes of customer complaints, and perfect the products and services by continually improving and optimizing services in the shortest time.

## References

- Gremler, D. D., & Brown. (1996). Service Loyalty: Its Natural Impotence and Implications, Advancing Service Quality. *A Global Perspective*, 1996.
- Hu, Yuhui. (2006). The Improvement of Customer Loyalty in Commercial Banks. *Commercial Research*, No.6.
- Lei, Dazhang. (2005). Study on the Management of Customer Loyalty. *Modernization of Management*, No.5.
- Sun, Yanfeng. (2007). Influencing Factors and Countermeasures of Customer Loyalty for Commercial Banks. *Northern Economy*, No.12.
- Zhao, Kai, Li, Yanjun & Lin, Zhijian. (2007). Analysis on Customer Loyalty of Commercial Banks. *Communication of Finance and Accounting*, No.3.
- Zhu, Ailing. (2007). *Study on the Comprehensive Evaluation System of Customer Loyalty*. Master's Degree Thesis of Tianjin University. Dec of 2007.

Table 1. Statistics of customer loyalty of different sorts of consumer (%)

	Sex		Marriage		Educated experience					Family per capita income (Yuan)					
	Male	Female	Married	Unmarried	Junior high school and below it	Senior high school	Junior college	Under graduate	Post-Under graduate	>1500	1501-3000	3001-4500	4501-6000	6001-7500	Above 7501
Behavior loyalty	86	85	82	86	100	88	87	86	84	84	84	91	80	88	83
Intention loyalty	65	60	66	62	50	67	59	62	68	60	61	66	66	68	63
Emotion loyalty	17	15	33	19	10	22	38	19	17	16	22	23	42	28	45

Table 2. Statistics of customer loyalty of patronage because of different factors (%)

	Close distance	Appointed card	Convenience	Good service	High security	Brand	Many net sites	Special product	Others
Behavior loyalty	80	80	87	98	100	96	86	88	92
Intention loyalty	60	56	66	75	82	74	69	73	73
Emotion loyalty	17	14	23	40	50	35	18	30	25

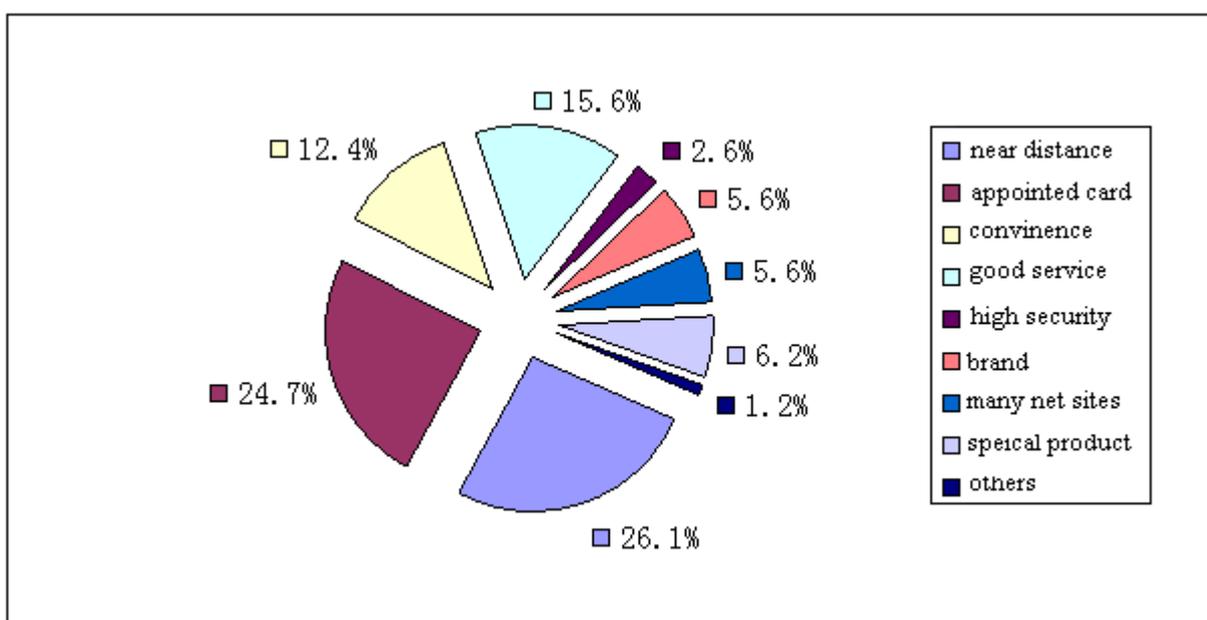


Figure 1. Statistics of the patronage causes for banks



## The Deficiencies and Improvement in The System of China's Modern Agricultural Industry

### *In Contrast With Modern Agricultural Industrial Systems of Developed Countries*

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#### **Abstract**

China's agricultural system deficiencies lead to contradictions in agriculture system, it is necessary and reasonable to resolve institutional arrangements and policy options. In this paper, through the analysis of the modern agricultural industrial systems in developed countries, writers put forward China's system of agricultural land, agricultural protection system and the lack of agricultural technology systems and propose countermeasures.

**Keywords:** Modern Agricultural Industry, Deficiencies, Improvement

#### **1. The Current Situation of Modern Agricultural Industrial System in Major Developed Countries**

##### *1.1 Agriculture land system in developed countries*

###### 1.1.1 Clear property rights in agriculture are the Common feature of developed countries and regions

From the form of ownership, agriculture in developed countries and regions are not identical. Some of them were private property, such as the United States, Japan, Britain and so on; Some of them were state-owned system, such as Australia, Canada, etc. However, no matter what kind of form, its property rights are very clear.

###### 1.1.2 Give the production operators the right to use the full

Producers manage their own business is the promotion of agricultural development. The right to make their own decisions is an important sign of the right to use agricultural land. Countries, where agricultural development is faster, have attached great importance to agricultural producers' right to make their own decisions.

###### 1.1.3 The implementation of a series of laws and policies to promote the expansion of the scale of agricultural operations

The United States allows the farm to register as a company or partnership, etc. to expand the scale of land management and eliminate the fragment of agricultural land. The law provides the family members' right to own or inherit farm land and shares, but can not withdrawal the shares or use shares as mortgage, only allow internal transfer, in order to ensure the intergenerational transmission; Britain gives encouragement policy for the expansion of farm size; French encourages middle-farms and provides the transfer of land are inseparable but can only be inherited or transferred as a whole and can only be inherited by one child, etc.

###### 1.1.4 Develop the social service system vigorously

To promote the concentration of agricultural land and business of property rights changes in the process, some agricultural countries and region establish a variety of organizations, such as the United States Farm Management Services Company, France's agricultural land groups, in particular, Japan's "hold onto the rationalization of agricultural legal person" has played a very important role in realizing of agricultural land rent-seeking activity.

### *1.2 The system of agricultural science and technology in developed countries*

The development of agriculture in developed countries largely due to their historical experience and trends of strong agricultural science and technology. These states sponsor agricultural education, research and promotion, to enhance the competitiveness of agriculture. In order to reduce and even eliminate differences between workers and peasants, between urban and rural areas, to ensure sustained and stable development of agriculture, the Western countries give great support on agricultural education, research and extension, which is a fundamentally key measure to protect agriculture. American agriculture and education promote the Trinity system. This is its key to realize agricultural modernization. From since the mid-1950s, the American agricultural research funding is for an average annual growth rate of 8%. To promote science and technology in the rural areas, the United States is basically free of charge. Farmers may at any time to research institutions and university research organizations to get guidance and help on science and technology. In recent years, the United State's investment on higher education in agriculture is reaching 100 billion U.S. dollars. Budget for agricultural research is over more than 40 billion U.S. dollars annually, the agricultural research officer has more than 70,000 U.S. dollars in research funding on average.

#### *1.2.1 Attach importance to the development of agricultural high-tech*

Since 1980s', the U.S. government had taken the development of the high-tech applications in agriculture as a potential force for agricultural development policies in science and technology development, and taken agricultural biotechnology, agriculture information technology as two major high-tech technologies in 21 century. Currently, the U.S. supports biotechnology industry at the policy level. First, setting up a special organization and leadership of institutions; the second is to develop a series of conservation and to encourage the development of biotechnology policy and law; the third is to build a variety of financing channels to achieve the support to the biotechnology industry.

#### *1.2.2 Attach importance to environmental protection, taking the way of sustainable agricultural development*

In the United States, for those who are unable to obtain short-term direct economic benefits, while social and ecological benefits of projects and basic research are significant, the Government will give priority and support, such as agriculture soil environment, crop germ resources, agricultural biotechnology and agricultural basic researches.

## **2. China's Deficiencies in Agricultural System, in Contrast with the Developed Countries**

### *2.1 Deficiencies in the agricultural land system*

#### *2.1.1 China's current property rights of land system is incomplete*

These mainly include: first, the hypothetical ownership. Second, the ownership is of disorder. Third, stability is poor. Fourth, the land transfer property is poor.

#### *2.1.2 The ambiguity and non-exclusive of rural land property rights*

From the perspective of property rights economics, China's agricultural land ownership is not clear, in addition to absence of rural land owners, also because exclusion of farmers' land using rights, income rights and the transfer right are even worse. Ambiguity of rural land property is mainly caused by the non-exclusive property rights. Exclusion of rural land property rights is poor mainly because of the operation of administrative means, rather than the law related.

#### *2.1.3 The indivisibility and non-transferability of rural land property rights*

Rural land is collection of a variety of properties and a variety of rights, under the existing system, farmers have a right to contract land can manage or abandon land, but can not mortgage or transfer the land. Farmers have no right to lend different properties and different rights to other people. Thus, the contract of the land property rights is indivisibility. It is precisely because of this indivisibility, that land has been tied to an existing contractor, even if other people have better knowledge and skills can not be the land users. Scare rural land can not flow from low-productivity areas to high productivity areas, resulting in the current dilemma in rural areas where lands with no one to farm and people with no land to plant.

### *2.2 Deficiencies in China's agricultural science and technology system*

In generally, China's barriers in current slow progress of agricultural science and technology system are mainly in the following areas.

#### *2.2.1 The institutional obstacles*

History of the world economic development has proved that the market economy is an efficient allocation of economic resources to the institutional arrangements. Competitive pressures in market-based economic system can effectively promote enterprises seeking to develop momentum from the technological progress. China's current agricultural technology system remains essentially formed under the traditional planned economy system. With the gradual deepening of market economy, its shortcomings become more apparent: (1) Market-oriented research activities are not appropriate. (2) Poor access to agricultural scientific research. (3) The administration of the management of scientific

research institutions. (4) Promotion of agricultural technology is left behind.

### 2.2.2 Funding obstacles

Funds in China's agricultural science and technology innovation is seriously lacking of. Since 1980s', the Chinese government's investment in agricultural research appeared in a downward trend. In 1996 the government investment in agricultural R & D was only 0.20%, far from the average 1/10 in developed countries. In addition, the Chinese Government's investment in agriculture promotion was only 60% -70% of developed countries. In recent years, due to various reasons, funds of technological innovation in China's agricultural enterprises are more inadequate. On the one hand, small-scale agricultural enterprises and low cost-effectiveness result in a shortage of own funds; On the other hand, due to inefficient agricultural enterprises and low social credit, it is also difficult to raise funds from banks.

### 2.2.3 Lag of agricultural technology market

Technology market is an important intermediary link between diffusion and promotion of technology. Overall, the development of China's agricultural technology market is still relatively slow, the market system is not perfect, agricultural technology and trade account for a lower proportion of the total technology transactions. The outcomes of technological innovation in agriculture are products of enterprises and farmers, but these products need to develop, produce, sell or transfer out, in order to achieve genuine economic and social benefits, they must go through market segments.

## 3. Suggestions for the Improving the System of China's Modern Agricultural Industry

### 3.1 Suggestions for agricultural land system

#### 3.1.1 Diversify ownership of agricultural land

It can be seen that a single pattern of property rights system generally reduces a low degree of efficiency but high fairness. The key is to rectify this shortcoming is to promote diverse ownership of agricultural land, clarify property boundaries, which is an effective measure to improve the efficiency of property rights, fair can also be guaranteed by efficiency.

#### 3.1.2 Provide family the property of land contract

Practice has proved that the household contract responsibility system is comparably adapt to the current land management, and made remarkable achievements, also have been recognized by hundreds of millions of peasants. Take into account both efficiency and fairness, such a system can not be easily changed. The next step of reform should focus on the long-term effectiveness of the right to contract, and further through the definition and maintenance of property rights to stimulate people's enthusiasm for agricultural inputs and to promote its accumulation.

#### 3.1.3 Logistics of property rights to agricultural land

Transaction of ownership of agricultural land is the objective requirements of the inherent law of the land, it must be to guide and regulate as soon as possible. To cultivate transfer mechanism of agricultural land using, to speed up separation of agricultural land ownership and right to use, and to promote the appropriate scale of operation of agricultural land.

### 3.2 On Agricultural science and technology system

#### 3.2.1 Establish agricultural research, education and complicated government agency

For a long time, China's agricultural research and production practices are not closely linked. In particular, they are out of line with the market, partly due to grouped mode is not conducive to the promotion of agriculture and the use of scientific and technological achievements. The complex of agricultural science and technology innovation system ensures close integration of agricultural research and production, in order to promote the transformation of agricultural research achievements into productive forces.

#### 3.2.2 Establish a multi-level, comprehensive, divided clearly agricultural research and innovation system

Comparative studies have shown that developed countries have formed multi-level agricultural science and technology research institutions that collaborated by the government, local authorities, enterprises or farmer organizations. All of them have attached considerable importance to the investment of agricultural science and technology R & D, and also developed layers of promoting scientific and technological innovation and popularization. China should learn from developed countries, find the actual situation of China's agriculture containing many levels and division of labors in agricultural research and innovation system.

#### 3.2.3 Clarify priority areas of agricultural technology improvement and allocate same proportion of investment to scientific researches

The developed countries have a combination of their actual situation with a variety of agricultural high-tech and develop sustainably. China is a developing country with limited national resources, so we should find areas of priority

to develop of agricultural science and technology, combined with China's national conditions. In line with the "Do something, not do something" principle, distribute the proportion of agriculture and scientific research scientifically, to create the most efficient scientific and technological products.

3.2.4 Raise the investment on agricultural research and open up a wide range of financing channels for agricultural science and technology

U.S. federal government's investments on agricultural research, education and promotion are in the ratio of relative stability. The Ministry of Agriculture study put 2% -4% of the total budget to researches. The average level of the world is of 1%, while China is only about 0.2%. It is clear that the intensity of China's agricultural research investment is far lower than those in developed countries, and that of the world average investment and also lower than investments on other fields. Making efforts to increase investment in agricultural research in China is necessary conditions for constantly improving.

#### References

- Kos, etc. ( 1994 ). *Property rights and institutional change*. Shanghai People's Publishing House.
- Lin Yifu. (1994). Economic Theory of Institutional Change: Change and the mandatory nature of induced changes. *Property rights and institutional change*. Shanghai People's Publishing House.
- Liu Mujun and Zhang Jianbin. (2007). The Economic Analysis of the innovation in China's agriculture. *Economies of the North*, (04).
- Luo Yongfu. (2007). Economic analysis of the changes in China's rural land system. *Xinjiang University Philosophy and Social Science Edition*, (06).
- Xu Guihua. (1996). *Ownership structure and property system in China Studies*. Inner Mongolia University Press.



## Analysis Based on Principle-Agent Model: the Application of Motivation Theories in Labor Safety Regulation

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### Abstract

Labor safety regulation is the major content in social regulation and it main concerns laborer's life, health and sustainability. The central government cooperates with local government and other relative monitoring organization by the way of improving labor safety standard in all walks of life, however, the frequency of production accident exposed the underlying problems during producing, that is: it appears weaken regulation vigor, put enterprise without satisfying safety standard under local government's protection even occurred collusion while implementing the thorough safety regulation & supervising issued by central government. This article will analyze from the point of Principle-Agent.

**Keywords:** Principle-Agent model, Motivation theory, Game theory, Safety regulation

### 1. Forward

Labor safety regulation is the statute made by government and a institutional arrangement conducted, monitored & managed to operation business and labor as like through assigning facility, for the sake of ensure life, healthy and safe. Labor safety regulation is an important content of sociality regulation with its specific, because it comes down to life and health of human and would bring about irreversible loss once an accident arises. Its definite content indicated as later.

The link chain is composed by 4 nodes of central government, local government; line operation business and labor which is also form two main parts of regulator and being regulated. The government as regulator follows the basic principle of "national-supervising, local-monitoring and enterprise in charge" all the time, central government cooperates with local government at all levels and other relative monitoring organization, which improved the labor safety level all kinds of industries of greatly, but according to the data from National Statistical Division, it occurred 30 serious accidents with 392 death; 2 special serious accidents with 108 death, 2 coal mine accidents among them with 108 death, 1 accident and 73 death increased over the same period of the previous year, arising 100% and 208.6% separately. The problem within deep level during producing has been exposed while frequent accidents: why accidents arising constantly though there is thorough laws and regulations and labor safety supervising content? It can be found the reason through analyzing the combination of inspecting result and labor safety regulation: the situation of imperfect regulation dimension appears during executing, even the enterprise without up to the safety standard been protected or "collusion" case exists; operation business do not comply with the labor safety regulation, several of them try to cut down the necessary input and maintains by rash advance or the way of "rent-seeking" from regulator; some businesses are short of labor training and protection, conceal accident or desert afterwards so as to reducing cost. The government plays a very important role no matter wherever the link is within this regulation. As regulator, the government has its division: the central government establishes the rules and regulations, local government undertake & carry out it definitely. This article makes analysis from the former two links of regulation and looks out the inconsistency between central and local, find the cause for it behind through entrust-acting model so come up with resolve strategy.

### 2. Analytical Framework of Principle-Agent Model in Labor Safety Regulation

The entrust side indicate central government and the agent side indicate local government herewith, that is: during the implementation process of this regulation, central and local clear and definite the aim of it and what measures should be taken, as it were symmetrical when "signing a contract"; local government does regulating work, central government acquire the executing status by the way of knowing accident rate, applying work injury insurance funds and daily inspection like that; but the central government cannot on top of status for regulation being carried out definitely and as agent side, the local government might acting in favor of itself in some cases. This agency relations is a moral hazard model hiding acting, is a kind of specific game, it causes the result of regulation is not completely independent of

initiative of central government, but been affected by the attempt of local government. The following analysis by applying entrust-acting model covers three main parts:

### 2.1 Production Technology

The production technology here is referring to regulated effect by local government to enterprise safety status, not a production functions within general economical area. It has three variables in the process of safety regulating:

- (1) The action taken by local government during regulating marked as  $a$ : it is reflected in inspecting on labor safety, and finds the existing hidden trouble or punish unlawful act etc.
- (2) The effect (output) of local government regulating marked as  $r$ : it is reflected in improving labor safety level and decreasing accident rate etc.
- (3) The uncontrollable fortuitous event marked as  $\theta$ : It means natural disaster in sudden with not controlled by client and agent, often cause personnel injury and property damage after occurred accident.

These three variables play a part in labor safety regulation model on following sequence:

First, central and local government define the specific content of regulation jointly, disclosure what responsibilities and power the local government has as agent, with rewards and punishment rule by the way of law, legislation and regulations etc; next, local government choose what action they would take as  $a$ , but as client, central government cannot observe or cannot observe completely what local government choose to act; third, the event  $\theta$  with out of controlled by local appeared; fourth, action  $a$  and event  $\theta$  determine regulation effect  $r$  together; Fifth, central government conduct rewards or punishment through effect  $r$  can be observed and what did in first step, or adjust regulation made their self.

There are two important assumptions:

- (1) The effect from local labor safety regulation, also called output function  $a$ , is a one-dimensional strive variable, it can be formed as:

$$r = a + \theta$$

- (2) Mean value of  $\theta$  is zero, variance is a positive distribution random of  $\sigma^2$ , represent uncertainty factors. The strive level of local determines the mean value of regulation effect, but without effect on variance:

$$E(\theta) = 0 \quad V(\theta) = \sigma^2$$

Exogenesis variable  $\theta$  been implemented when local government choose action  $a$ ,  $a$  and  $\theta$  come into being a result  $r$  ( $a, \theta$ ) observable, in which, the direct ownership of income belongs to client-central government, the expenses spent by local while regulation marked as  $c(a)$ .

### 2.2 Contract/ Agreement

Local government at all levels work out executing scheme of regulation based on the labor safety objective of central and combine the features of local business, pass on to central. With the year of access, central conducts rewards and punishment on the basis of actual regulating result to local. Since local is in charge of the labor safety work and with all-important meaning for priming of economy and harmonious social development, no matter how the final affect it is, central would afford encourage or reward properly, just with variable range of intensity, positive or negative, and marked as  $g$  with fixed value here, being unrelated with regulating effect.  $\beta$  Refers to intensity coefficient, and is related with labor regulating effect  $r$ , when  $r$  increase one unit, the reward of local would increase  $\beta$  units. Assume the risk between client and agent is indifferent; the reward of local is the linear function for labor safety regulation effect. Reward marked as  $w(r)$ , then:

$$w(r) = g + \beta \times r$$

### 2.3 Earnings/profit

Assume the earnings for central to regulating is  $\pi(a, \theta)$ ,  $\pi$  is strict ascending function of  $a$ , given  $\theta$ , the more serious supervised by local, the more clearer the effect is, but the marginal benefit of regulating is diminishing.  $\pi$  is strict increasing function of  $\theta$ .

$$\pi = r - w(r)$$

Assume the Von Neumann and Morgenstern expecting utility function for both central and local are  $v(r - w(r))$  and  $u(w(r)) - c(a)$  separately, in which  $v' > 0, v'' < 0; u' > 0, u'' < 0; c' > 0, c'' > 0$ . It's been assumed that client is risk neutrality, and then  $E(v(r)) = v(E(r))$ . It can be known as pre above (1),  $E(r) = E(a + \theta) = a$

The exceptive effect of central as client is equal to exceptive income:

$$\begin{aligned} E(r - w(r)) &= E(r - g - \beta \times r) = -g + E((1 - \beta) \times r) = -g + (1 - \beta)E(r) \\ &= -g + (1 - \beta) \times a \end{aligned}$$

The actual income of local as agent is:

$$w(r) - c(a) = g + \beta \times (a + \theta) - c(a)$$

Assume that agent is risk neutrality, and then exceptive income is:

$$E(w(r) - c(a)) = E(w(r)) - c(a)$$

$c(a)$  Does not take any expected value, because the local government as agent can fix on strives cost, the more serious of monitoring, and the higher of cost. While  $w(r)$  lies on  $r$ , and  $r$  lies on uncertainty variable  $\theta$ , so only take exceptive value of  $w(r)$ , then:

$$E(w(r) - c(a)) = g + \beta \times E(r) - c(a) = g + \beta \times a - c(a)$$

### 3. The Optimal Action Analysis of Local Government in Principle-Agent Relation

By setting entrust-acting model for central and local, the optimal action of local can be obtained as:

$$\max_a [E(w(r) - c(a))] = \max_a [E(g + \beta \times (a + \theta) - c(a))]$$

The necessary factor for optimal action value  $a^*$  existed can be got by means of optimization first order term:

$$c'(a^*(\beta)) = \beta$$

The optimal action value taken by local within entrust-acting relations is: the marginal cost of labor safety regulation equals to marginal income  $\beta$ . In the meanwhile,  $\beta$  is also a motivation coefficient, when  $\beta$  is increasing, the greater exceptive value  $E(w)$  is; in return stronger encourage action  $a$  can be on local government. The action taken by local government during the regulating process has strong relationship with motivation coefficient, stronger motivation, more force on regulation, and more better effect ideally reached. The inconsistent objective between local and central can be found intuitively on the issue of labor safety regulation via entrust-acting model and its relative academic content, because utility functions of local and central are different. Since local government has the impulse for achieving self-interest, that leads to weaken force of regulating by central.

### 4. Strategy Study

The Nobel Prize winner Morris think that many special issues faced to China needs to be resolved by means of special analysis. Encouragement issue is a core problem is faced with all economies; it seems that the encouragement issue is the one being solved by economic reformation in China. The inconsistency of objectives of regulating is due to the existence of "encourages vacancy" through the analysis on entrust-acting model, to depress the benefit inconsistency and the agency cost creative by information asymmetry, it needs to create encouraging reward model based on agent's achievement, motivate agent working hard by means of sharing risk and inspiring.

(1) Set up specific objective for labor safety regulation, refining monitoring work. Divide work target to operational staff and draw up ration indicator. Ration does not mean how many businesses got out of line or how much penalty it is, but rather refining working content. Therefore, central government should definite what duties and obligations local government have, local government at all levels should record labor safety status of all businesses under administration and do task decomposition; for branch in charge, require each of them confirm the number of business inspected annually, reach appointed standard for reforming hidden trouble, increase the frequency of inspect for hazardous industry, set the rule of accident and the amount of penalty clearly. Refining indicator is the only way to reach regulating target, improve the efficiency of regulation through the way of quantification.

(2) Complete incentive system, enhance individual motive power. From uniform motivation scheme by central to adjust flexible by local according to practical situation, refining assess award indicator and clear cut award level & standard, emerge a kind of "dominant incentive mechanism". In addition, look out the relationship between award and individual expected value. Generally, when there is no obvious differ between award and individual expected value, income is the direct way to regulated staff, it should not ignore the motivation on material matter while spirit incentive been conducted on monitoring staff. With the rapid expansion in economy, it exist a variety change among all orders of society, the status of lower income level on monitoring staff not only affect their enthusiasm but also provide the opportunities of "rent-seeking" and "rent-demand". For example, the higher accident rate in coal mine industry has a significance bearing on power-for-money deal with bureaucrat. So it is necessary to raise income level for monitoring staff and strengthen benefit incentive. Certainly, fat salary does not necessarily lead to efficient, material matter incentive can not achieve favorable alone, must keep within bounds at the same time. At present, "central accumulation

fund” in Singapore and “retire security deposit” in Hong Kong are the rather successful method, that is accumulate “reserve fund” on the basis of variable detain of different duties, years of experience and salary level, once they violate the law and discipline, not only “reserve fund” been subtracted but also lose the right for drawing retire security deposit. This “reserve fund system” can be used for reference in our country so make the incentive and restrict to monitoring staff more effective.

(3) Expand the scale of incentive; give full play to the initiative to all monitoring staff. The assess mechanism is used for civil servant now, but with the limitation of awarded staff and the majority been promoted as their conducting regulation well, so lesser the incentive to staff on average, and that most of works on basic level is done by general staff. Therefore, it should strive to fair on drawing up incentive policy, extend awarding level and scale into the majority and balance what they put into given what they gains to improve regulating effect.

(4) Depress the hierarchy agency relation by authorization of incentive. There is multiple agency relation between central and local government at all levels, what is more, local government face jointly agency relation for multi-client. The more of client, the stronger substitution of strive cost to different agent duties at all level local government, the function of dominant incentive is getting little at public sector. Local government takes charge for economic development, social stability, safety production etc, and take in inspect by central even more, more basic level with more supervising. Under the impeccable incentive system, central government can work out and authorize to local based on relative laws and regulations, stimulate subordinate to bear the responsibilities for certain industry and deal with promptly by applying strategy in practice. Certainly, authorization in not equal delegation, the aim is lessening intervene and reducing the status of lower efficiency due to multi-level agency relation.

To this end, set up incentive system both in external and interior; the external incentive system is mainly used for prevent agent deviating client’s goal due to benefit prime mover, while the interior incentive system arisen when sense of honor, a sense of responsibility and sense of era mission appears. The formation of interior incentive system has an important meaning on solving the problem in which local and central behavior differs, but the setting up is not the work of a single day, it needs to form with in usualness, durability instruction, training and good social atmosphere together.

**References**

Chen, Zhao. (2005). *Information and Motivation Economy*. Shanghai People Press, p. 23-25

He, Yingqi. (2006). Theory Basis and Development Trend of Power System Research. *Ji Nan Journal(Philosophy Social Science)*, No.6, p.50

Zhang, Weiyong. (1996). *Game Theory and Information Economy*. Shanghai People Press, p.405

Uekusa Mashu., & Zhu, Shaowen. (1994). *Micro-Regulation Economy*, China Development Press, p. 123

Xia, Yonxiang, & Wang, Changxiong. (2006). Policy Game Theory and Administration of Central and Local Government, *Economy and Management Research*, No.2, p.45-51.

State Administration of Work Safety. (2008). China Safety Production Brief Status Report (2008.1.1-11.9). [Online] Available: [http://www.chinasafety.gov.cn/newpage/Contents/Channel\\_6210/2008/1110/40116/content\\_40116.htm](http://www.chinasafety.gov.cn/newpage/Contents/Channel_6210/2008/1110/40116/content_40116.htm) (December 7, 2009)

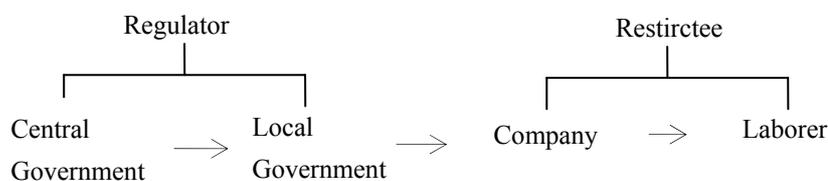


Figure 1. Regulation Chain



# An Empirical Analysis of Relationship between Export and Energy Consumption in Shandong Province

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*The paper is the result of Soft Science Research Fund of Shandong province of China under Grant B2006038 and Science Research Fund of Shandong Economics University — the construction of Shandong Forerunner Area in China-Japan-South Korea Free Trade Zone.*

## Abstract

In this paper, the relation between the energy consumption and the export of Shandong is analyzed by co-integration and Granger causality test. The research result as follows: there is a positive relationship between the export and energy consumption. On the other hand, the growth of the export is cause of increase of the energy consumption. Therefore the increase of Shandong's export promotes energy consumption and also is restricted by its energy consumption.

**Keywords:** Energy consumption, Export, Co-integration test, Granger causality test

## 1. Introduction

Since beginning of opening up policy, the economic development of China has been increasing rapidly, but energy consumption has been growing fast rapidly. Currently, China's energy consumption becomes the second largest one in the world. Shortage of energy is taking more and more side effects on China's economic development. More and more people are paying attention to the problem. Meantime, China's export developed so rapidly that its ratio of dependence on export has arrived at 33 percent by 2006 which account for 33 percent China's GDP. Obviously, both energy and export have paid very important role in China's economic development. On the one hand, the export is a great power to drive its economic development. On the other hand, smoothly developing of export of China depends on the energy supply. In this paper, we will take Shandong province of China for example, to analyze the relationship between the export and energy consumption.

## 2. Econometric Analysis of Relationship between the Export and Discharge of Industrial Pollutants

### 2.1 Methodology

Due to most of time series not being stationary, if they are simply regressed, spurious regression may take place to reduce the reliability of research result. To solve the problem, Granger (1967) introduced time series analysis that is called co-integration test. Granger causality test (Granger & Sims, 1972) used in time series analysis to examine the direction of causality between two economic series has been employed in many econometric studies for the past three decades. In this paper, co-integration test and Granger causality test are used to analyze the relationship between the export and energy consumption.

### 2.2 Unit root test

Before conducting co-integrating and Granger causality test, unit roots of a time series should be examined. Campbell and Perron (1991) provided rules for investigating whether a time series contains unit roots. The formation is as follows.

$$\Delta y_t = \alpha + \delta t + \omega y_{t-1} + \sum_{i=1}^p r_i \Delta y_{t-i} + \varepsilon_t \quad (1)$$

Where  $\Delta$  is the first difference operator,  $y_t$  is random variable,  $\alpha$  is constant,  $t$  is a time,  $p$  is lagged difference, and the null hypothesis of no co-integration amongst the variable is ( $H_0: \omega=0$ ) against the alternative hypothesis ( $H_1: \omega<0$ ). If ( $H_0: \omega=0$ ) is accepted, but ( $H_1: \omega<0$ ) is rejected, the unit root of variable  $\{y_t\}$  is existent, i.e.,  $y_t$  is non stationary series and vice versa.

### 2.3 Cointegrating test

If series  $x_t$  and  $y_t$  are non stationary and both of them are integrated with same order, we can use OLS to estimate equation (2) and then test whether the residual of regression equation (2) is stationary. If the residual is stationary, there exists a co-integrating relationship between  $x_t$  and  $y_t$ , and vice versa.

$$x_t = c + \beta y_t + \mu_t \quad (2)$$

### 2.4 Granger causality test

Within a bi-variant context, the type of Granger causality test states that if a variable X Granger causes Y, the mean square error (MSE) of a forecast of Y based on the past value of both of X and Y is lower than that of a forecast that we use only past value of Y. This Granger test is implemented by running the following regression equation (3). Similarly, by testing equation (4), we can find that whether a variable Y is Granger causes of X.

$$y_t = \alpha_0 + \sum_{i=1}^m \alpha_i y_{t-i} + \sum_{i=1}^m \beta_i x_{t-i} + \varepsilon_t \quad (3)$$

$$x_t = \alpha_0 + \sum_{j=1}^m \alpha_j x_{t-j} + \sum_{j=1}^m \beta_j y_{t-j} + \varepsilon_t \quad (4)$$

### 2.5 Data

Shandong's export from 1980 to 2006 is from China Foreign Trade Statistical Yearbook and its energy consumption is from Shandong Statistical Yearbook. Table 1 shows the changes of the export and energy consumption of Shandong. In order to remove the error of autocorrelation, the variables in the model will be in logarithm.

## 3 Empirical Results

### 3.1 Results of ADF test

By using Augmented Dickey-Fuller (ADF) to tests unit roots of these series, we get results of ADF test (See Table 2). The results indicate that unit roots testing values of the level series are greater than the critical values. Therefore the null hypothesis of non-stationary could not be rejected, but after first differencing of these variables, the T-bar test statistics are well less than the corresponding critical values at either 5% or 1% signification level, which indicate that the null of hypothesis of non-stationary should be rejected and the alternative hypothesis of stationary be accepted. In other words, the variables (lnEC, lnEX) are integrated of order two or I(2).i.e., these two variables become stationary after being first differenced.

### 3.2 Results of co-integration test

By using OLS, the equation (5) is obtained. Results of ADF testing on unit roots of the residues in the equations show that the residue is stationary series (See Table2). So there is a long and dynamic relationship between the export and energy consumption. The coefficient in the equation which are elastic of export to energy consumption shows that the energy consumption will increase to 0.1539% when the export of Shandong grows 1%

$$\ln EC = 7.0873 + 0.1539 \ln EXP + (AR(1) = 0.7717) \quad (5)$$

(16.947\*\*\*)                      (5.2152\*\*)                      (3.1210\*)

$$R^2=0.8935 \quad \text{adjusted, } R^2=0.8722 \quad DW=1.9469$$

Note: (1) values in the brackets are t-statistic.

(2)\*, \*\*, \*\*\* represent significant at level of 10%, 5% and 1% respectively.

### 3.3 Result of Granger causality test

The result of Granger causality test as follows: The null hypothesis that "Changes of energy consumption does not Granger cause the change of the export" is accepted at the least of 10%, but the null hypothesis that "the change of the export does not Granger cause the changes of energy consumption is rejected at the least of 5% signification level. Therefore, the growth of the export is cause of increase of the energy consumption.

## 4. Conclusions and Suggestion

Through studying on the relationship between the relationship between Shandong's export and its energy consumption, we find that on the one hand, there is a positive relationship between the export and energy consumption, on the other hand, that the growth of the export is cause of increase of the energy consumption. So the increase of Shandong's export promotes energy consumption s its energy consumption.

Under the short supply of energy in Shandong, some countermeasure should be taken. On the one hand, the export product structure should be adjusted and the export products which cost more energy should be decreased, On the other hand, enterprises producing export products should update their technology level in order to reduce the energy

consumption of export products.

**Acknowledgement**

The paper is supported by the Soft Science Research Fund of Shandong province of China under Grant B2006038 and Science Research Fund of Shandong University — the Construction of Shandong Forerunner Area in China-Japan-South Korea Free Trade Zone.

**References**

Arye & Hillman.W.Bull. (1978). Energy the Heckscher Ohlin Theorem, and U.S International Trade. *American Economic Review*, (3), p 96-106.  
 Jose Goldemberg. (1984). Energy Problems in Latin America e. *Science, New Series*, Vol. 223, (3), p1357-1362.  
 T.O. wen. (1982). Energy Planning in Latin America: A Brief Review of Selected Countries. *Latin American Research Review*, Vol.17, No. 3., p148-172.

Table 1. Results of ADF test

Variable	ADF statistic	Lags	1% Critical Value	5% Critical Value	Stationary or not
lnEC	-0.6375	1	-3.0294	-3.8304	No*
lnEX	1.4286	1	-3.0294	-3.8304	No*
d <sup>2</sup> lnEC	-4.3948	1	-3.0521	-3.8877	Yes
d <sup>2</sup> lnEX	-5.5404	1	-3.0521	-3.8877	Yes

Notes: (1) The optimal lags for conduction ADF test were decided by AIC(Akaike information criteria)

(2) EC and EX represent energy consumption and export respectively.

\* Represents signification at 1% level.

Table 2. Result of unit root testing residues in equation (5)

ADF statistic	ADF statistic	ADF(5%)	ADF(1%)	Conclusion
None	-3.4257	-1.9583	-2.6819	Stationary
Intercept	-4.0187	-3.0114	-3.7856	Stationary
Trend and intercept	-6.3124	-3.6454	-4.4691	Stationary

Table 3. Results of Granger causality test

Null Hypothesis	Lags	F-statistic	Probability
lnEC does not Granger Cause lnEXP	1	3.8999	0.0647
	2	13.3235	0.0000
lnEXP does not Granger Cause lnEC	1	0.1455	0.1455
	2	0.1777	0.1777

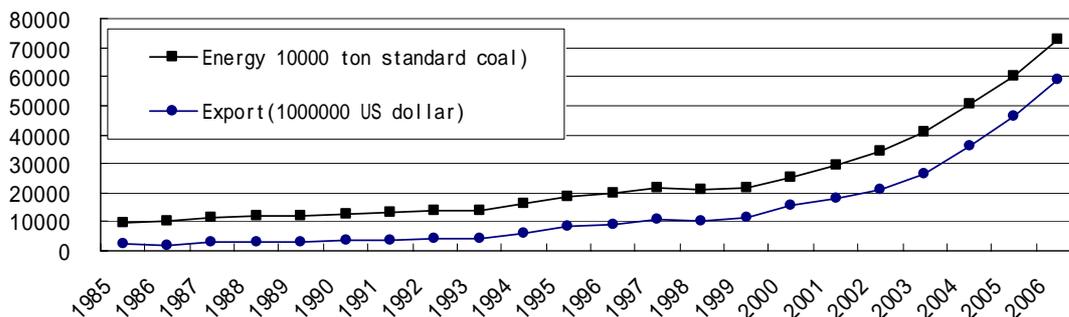


Figure 1. Changes of the export and energy consumption of Shandong from 1985 to 2006



## Study on Construction of Knowledge Management System Based on Enhancing Core Competence of Industrial Clusters

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### Abstract

Under the background of the knowledge economy and globalization, knowledge becomes the firm's strategic resources, enhancing the core competence of industrial clusters requires knowledge management. In this paper, firstly, the connotation of the core competence of industrial clusters is analyzed. The mechanism of knowledge management affecting the core competence of industrial clusters is studied. Finally, the knowledge management system that helps to enhance the core competence of industrial clusters is constructed.

**Keywords:** Industrial clusters, Core competence, Knowledge Management System

### 1. Introduction

Era of knowledge economy, knowledge becomes an important enterprises' factor of production and an important source of competitive advantage. Therefore, the effective knowledge development, management and integration can improve the competitiveness of enterprises. At present, the industrial clusters have become an economic organization form, many countries and regions have implemented the industrial clusters strategy. How to enhance the core competitiveness of industrial clusters has become an important issue, thus, this article will be based on enhancing the core competitiveness of industrial clusters, according to the existing research results, further discuss the mechanism of knowledge management to enhance the core competence of industrial cluster and try to build industry clusters' knowledge management system.

### 2. Analysis on the Core Competence's Connotation of Industrial Clusters

Industrial clusters generally refer to the spatial concentration phenomenon that a number of related industries and institutions are concentrated in a particular region. The competitiveness of industrial clusters is the main source of competitive advantage in industry, which is the driving force of economic development. According to the "China City Competitiveness Report NO.1", industrial clusters can promote the economy development, such as expanding the industrial scale, promoting the derivation of new enterprises, building a competitive value chain, ensuring the continuous innovation of industry, overcoming the industry recession, etc. So that they can promote the industry competitiveness (Su xuechuan, 2004). Thus, to enhance the core competitiveness of industry clusters is very important for the economy development.

Porter's diamond model concerning industrial clusters states that the competitiveness of industrial clusters depends on six interrelated factors (Michael, 2004): factors of production, demand conditions, related industries and supporting industries, business strategy and structure and its competitors, opportunities, government effect. Enterprises in the industrial clusters are both in competition and cooperation with each other, forming a network-like organizational structure (Sun and Li, 2006). Research scholars believe that the core competitiveness of the enterprise should be attributed to the unique resources and its optimal allocation of resources and use. Then, as an economic body, the core competitiveness of industrial clusters is also the unique resources owned by it and its optimal configuration and use. Era of knowledge economy, knowledge is the company's core resource, knowledge and knowledge management is the source of the core competitiveness. Similarly, the industrial clusters' resources are undoubtedly a unique knowledge and

resources, especially tacit knowledge within the cluster and some explicit knowledge. Therefore, the key to enhance the core competitiveness of industry clusters is how to effectively manage, develop and integrate knowledge resources. An efficient knowledge management is not only able to cultivate the core competitiveness of industrial clusters, and enable it to continue to gain a competitive advantage.

### **3. The Mechanism on Knowledge Management to Enhance the Core Competitiveness of Industrial Clusters**

Knowledge is the source of the core competitiveness of industrial clusters. The fundamental solution to enhance the core competitiveness is to implement knowledge management. The process of knowledge management includes knowledge acquisition, sharing, application and innovation. Knowledge management is of the four process-related activities for effective planning, organizing, leading and controlling, so that knowledge in the course of its flow is changed into productive forces and achieving innovation, so as to enhance the core competitiveness of the clusters.

#### *3.1 Classification and Characteristics of Knowledge*

Knowledge mainly includes two categories: explicit knowledge and tacit knowledge. According to the British philosopher Michael Polanyi, explicit knowledge mainly refers to the structure knowledge expressed by text, images and symbols, which can be taught verbally and learned by textbooks, reference materials, databases, etc. Tacit knowledge only exists in people's minds, which is difficult to express by words, symbols, images media. The management of explicit knowledge is relatively easy, you can use information systems, such as code and database to set knowledge base. The explicit knowledge is achieved through teaching, training. Its sharing depends on electronic information systems. The explicit knowledge is the basis for innovation. But the management of tacit knowledge is relatively more difficult. Tacit knowledge contains many knowledge cheats such as the work of know-how, experience, perspective and values, which implies more innovative ideas. They are the essence of the core competitiveness, which are imitative.

To enhance the core competitiveness of industry clusters lies in how to effectively manage the tacit knowledge. Therefore, the main features of tacit knowledge should be deeply understood, the management law of tacit knowledge should be grasped in order to enhance their management efficiency. The characteristics of tacit knowledge are: (1) The unspeakable nature: tacit knowledge can't clearly be expressed by language, text, graphics or symbols which is human non-verbal intellectual activity results. This is the most essential characteristic of tacit knowledge. (2)The individual nature: tacit knowledge exists in the human brain. Its main carrier is an individual. It can't be passed by the formal education. (3)The cultural nature: tacit knowledge has a stronger cultural identity compared with explicit knowledge, and is always associated with a certain cultural value systems. (4)The relative nature: the existing form of explicit knowledge and tacit knowledge is relative. Under certain conditions, tacit knowledge can be transformed into explicit knowledge.

Tacit knowledge is the power source of the core competitiveness. The important task of knowledge management is to promote tacit knowledge dominance in order to increase the sharing of tacit knowledge, realizing knowledge innovation.

#### *3.2 The cultivation of core competitiveness during the knowledge management process*

Knowledge management process includes the knowledge production process, sharing processes, applications and innovation process. Knowledge is in the ongoing transformation during the flows of knowledge. According to the studies of Nonaka and Takeuchi, the four kinds of mode of knowledge conversion are: socialization, externalization, internalization and combination. Socialization is the conversion of tacit knowledge into tacit knowledge, externalization is the process of tacit knowledge into explicit knowledge, combination is the conversion between explicit knowledge, internalization refers to the transformation from tacit knowledge to explicit knowledge. Transformation and innovation of knowledge among these four models is continuous. These four transformation models formed the SECI (Socialization Externalization Combination Internalization) process. It is shown in Figure 1. The constant flow of knowledge, alternating between tacit knowledge and explicit knowledge and the knowledge spiral make the value of knowledge generate value added, into productive forces.

##### **3.2.1 The production process of knowledge is the basic source of formation and upgrading the core competitiveness of the cluster**

The process is the collection of existing knowledge, coding, classification and storage process. Knowledge is achieved by the form of external repository, and is organized according to classification framework or standard. The powerful search tool, database management systems and document management systems are used during the knowledge production process. Among them, search tool is used to search and download other information resources in the Internet; knowledge base management system and document management system are used for classification, encoding and storage of the collected knowledge. The result of the production of knowledge is that knowledge with similar characteristics are together, so that knowledge can be effectively concentrated, forming an knowledge base of stimulating creative inspiration. Thus, this result is the base of upgrading the core competitiveness of industry cluster.

### 3.2.2 Knowledge-sharing process is the key to form and enhance the core competitiveness of industrial clusters

Knowledge-sharing process is the dissemination and sharing of knowledge. A strong and accurate knowledge search engine is built on the base of knowledge generated, which provides a variety of knowledge-sharing channels, such as seminars, study sessions, training, discussion groups, electronic conferencing, e-mail. Knowledge sharing can make knowledge seekers have a more convenient access to the necessary knowledge, greatly improved the efficiency of knowledge acquisition. Knowledge-sharing makes the static knowledge stored in the database of knowledge match dynamically with knowledge carriers, realizes knowledge innovation and use, as achieve the goal of value-added and enhance the core competitiveness of the cluster.

### 3.2.3 Knowledge application and innovation process is the decision part of forming and enhancing the core competitiveness

Application and innovation process of knowledge includes the management of knowledge innovation and application. It is the ultimate goal of knowledge management. Knowledge innovation is a complex business processes and organizational processes. Its fundamental purpose is to realize the value of knowledge and create new wealth for the organization and the community by seeking new inventions, acquiring new knowledge, exploring and mastering the new rules. Application and innovation of knowledge can bring enterprises technology advantages and market advantages. It directly affects the ultimate effect of the core competitiveness of industrial clusters.

The production, sharing, application and innovation process of knowledge management, are respectively the basic link, key link and decisive link of the core competitiveness of industrial clusters. They fully tell the inner mechanism of knowledge management affecting enhancing the core competitiveness of industrial clusters in. Figure 2 indicates the affecting process.

## 4. Constructing Knowledge Management System for the Purpose of Enhancing the Core Competitiveness of Industrial Clusters

Knowledge management system is to achieve the goal of knowledge management implemented by enterprises and industrial clusters by means of information technology. The knowledge management system includes both some hard environmental conditions such as the information technology equipments, and a series of soft environment conditions such as clusters culture, organizational system.

The construction of knowledge management system for each enterprise as well as industrial clusters has no specific and concrete model, but their core model framework is the same. Usually the beginning is from a client interface based on web-browser, the next layer is a variety of knowledge classification systems as well as the knowledge database. A more complete structure of knowledge management system is shown as in Figure3. Knowledge management system is divided into both internal and external Web-based level by knowledge maps, knowledge of precipitation and enterprise portal, that is network to connect all categories of personnel in various business and information technology to support system functions. The main framework of the system has two parts of the knowledge center and information center. The knowledge center is the core of knowledge management system, which consists of the knowledge base, knowledge-precipitation systems, knowledge maps and network system. The information center has two components of a database management system and database system.

### 4.1 The Outer of Knowledge Management System

#### 4.1.1 Intranet

Intranet is the virtual network used to connect internal system, and is the network of personal connections that all enterprises and employees within the cluster deposit, share, use knowledge and mutually cooperate. Enterprises and their employee access to knowledge map to retrieve the knowledge they need through the Intranet; access to knowledge-precipitation system in order to keep the record of auditing, processing the accumulated knowledge during work; access to enterprise portals to acquire all enterprises' information and non-core knowledge. Intranet users largely are confined enterprises and their employees within a cluster.

#### 4.1.2 Internet

Internet is the logic structure connecting the client with business through network. Customers and businesses within the cluster can use a variety of accessing via, such as Web pages, voice, network television, in order to manage and collect every kinds of knowledge. Finally, the provision and collection of knowledge is achieved. The cluster external users have the only right to access to enterprise portal.

#### 4.1.3 Extranet

Extranet is the virtual network used to connect enterprises within the cluster with clusters of external organizations (such as business partners, and the seller). The organizations outside clusters can offer a great deal of potential and available intellectual resources for clusters. That will enable the enterprises in the cluster and other organizations to

effectively carry out the exchange of knowledge and sharing.

#### 4.2 The Middle Layer of Knowledge Management System

The middle layer consists of knowledge maps, knowledge precipitation systems, and enterprise portal. It serves as a link between the outer and inner layer, which is user interface for employees to access the knowledge of the cluster.

##### 4.2.1 Knowledge Maps

Knowledge Maps play an important role in the knowledge management systems, different from the general retrieval system, capable of more accurate positioning of knowledge. Knowledge Maps offer only a repository of knowledge and does not provide knowledge itself. Thus, it is called knowledge guide. The other end of the knowledge maps connects to the expert system, knowledge base or expert with a particular expertise such as engineers.

##### 4.2.2 Knowledge Precipitation Systems

The main functions of knowledge precipitation systems are knowledge acquisition, collection, analysis. Sources of knowledge in precipitation systems: (1) staff personal potential; (2) organization meetings, e-community, etc.; (3) enterprise database; (4) market information and the related competitive intelligence acquired by partners and external customers. Knowledge that has been recognized can be directly deposited in repositories such as enterprise systems, conference documents. Other instructions or information to be audited must first be deposited in enterprise database, and then transformed into knowledge through the deposition system into knowledge base.

##### 4.2.3 Enterprise Portal

Enterprise Portal is the enterprise site for release information. It connects with business and industry cluster database. Through enterprise portals, the enterprise within clusters and its employees communicate with each other to obtain all the information in the enterprise database. Enterprise Portal is an interactive system, through which external customers and partners of businesses within the cluster are available to some of the database information according to their permissions, at the same time, their own needs and supply information is conveyed to the enterprises within the clusters.

#### 4.3 The Inner of Knowledge Management System

The inner layer of enterprise knowledge management system is the main tool that enterprises within the clusters use to implement knowledge management. It includes mainly expert systems, knowledge search, data mining system, knowledge base, database management systems and databases.

##### 4.3.1 Expert Systems

Expert System is an intelligent programming system, which has the ability like expert level to solve problem in the relevant fields. It can use the accumulated experience and expertise over the years and simulate human experts' thinking processes, to resolve difficult issues that only experts can solve.

##### 4.3.2 Knowledge Search and Mining Method

Knowledge search methods mainly refer to agent-based knowledge search methods and search engine. The main methods of data mining are statistics, neural networks, rough sets and fuzzy clustering and so on. Possible changes of the system characteristics can be accurately predicted by using neural network technology; some imprecise or uncertain knowledge is classified by using rough set theory, whose algorithm is simple and easy to operate; the fuzzy clustering method is knowledge fuzzy reasoning, judging and handling to make it closer to reality.

##### 4.3.3 Knowledge base

Knowledge base mainly includes three categories:

- (1) External knowledge base: it is used to mainly store knowledge acquired from the enterprise network, most of which is data and factual content, involving more complex technology and management;
- (2) Structured knowledge base: the development methodology of it is the same as the traditional database, using a structured way to store knowledge;
- (3) Unstructured internal knowledge base: it is a less structured knowledge base. It's mainly used to realize the management of tacit knowledge, for the purpose of transferring tacit knowledge from employees' minds to the knowledge base, thereby accelerating the socialization of knowledge. The establishment of effective knowledge base will promote internal knowledge conveyance and use, and stimulate knowledge creation and innovation, and improve enterprise operational efficiency.

In addition, the database management system and database are to manage the enterprise information, namely the information management system. It is the base of enterprise knowledge management system.

#### References

Michael. E. Porter. (2004). On Competition, *HarvardBusinessReview*, United States, pp50-89, 2004.

Su, xuechuan. (2004). Agglomeration of Factors, Industrial Cluster and Megalopolis In the Urbanization. *Journal of Central University of Finance & Economics*, Vol 1, pp49-51, 2004(in chinese)

Sun, yu and Li, jingcheng. (2006). Analysis on the core competence of industrial clusters. *Journal of Northwestern Polytechnical University (social sciences)*, Vol. 26 No. 3, pp14-18, 2006 (in chinese).

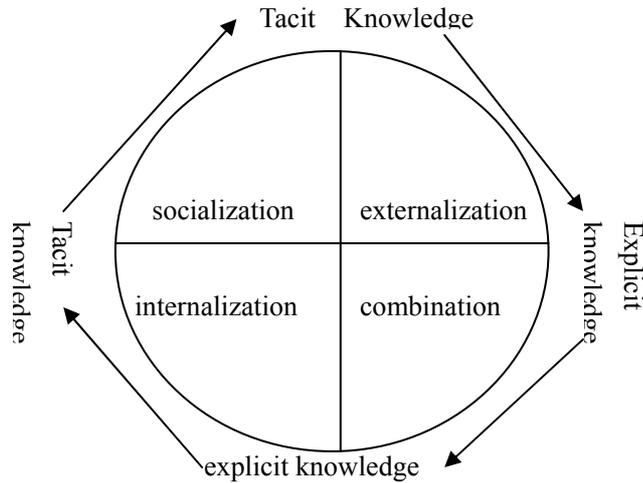


Figure 1. SECI Model

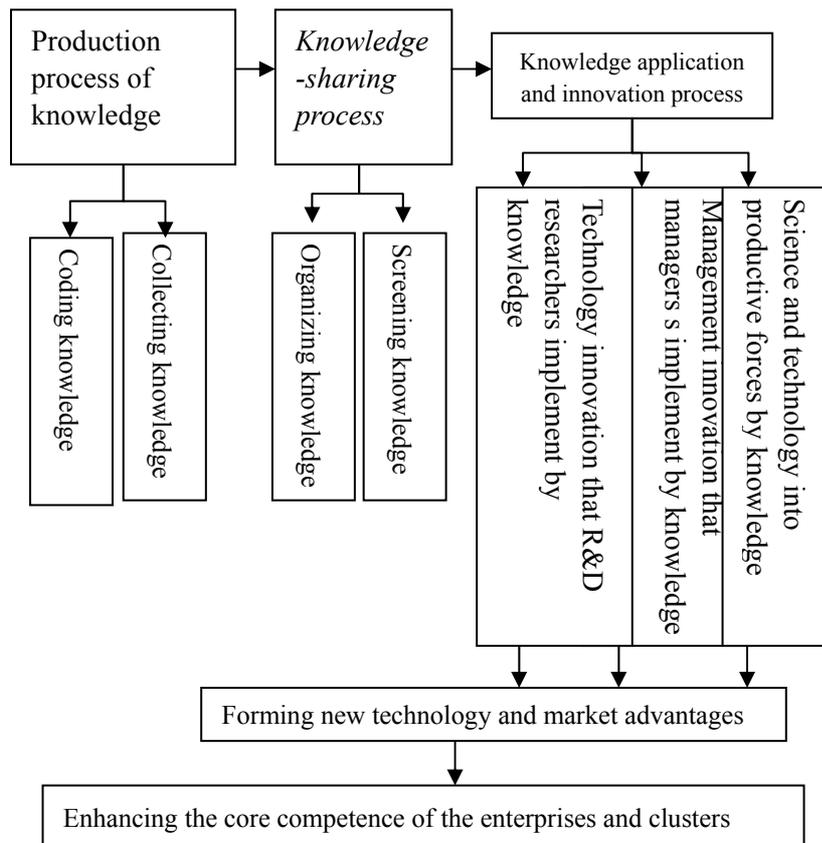


Figure 2. The Mechanism of Knowledge Management Affecting Enterprises and Clusters

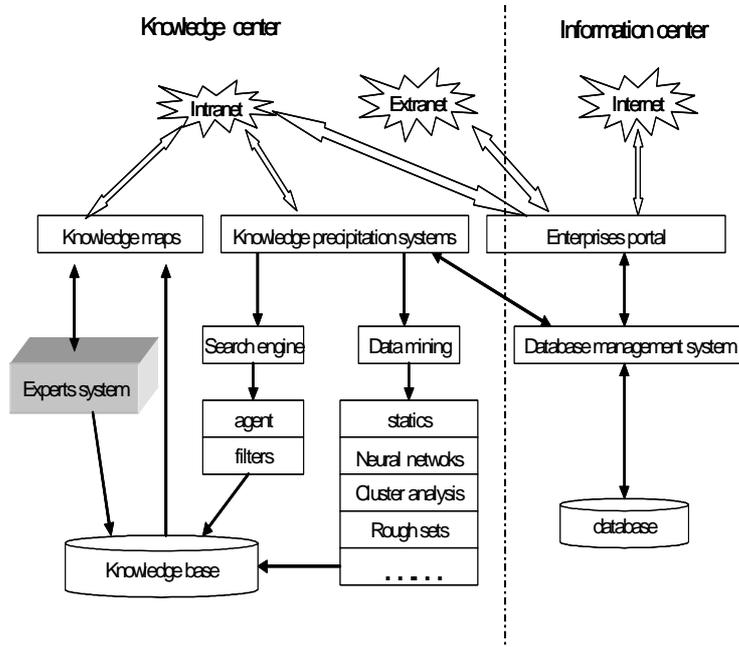


Figure 3. The Framework of Knowledge Management System



# The Research on Issue and Countermeasures of Accounting Information of SMES

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## Abstract

The accounting information is accompanied by the rapid development of information technology; the development is the further deepening of computerized accounting. The large-scale enterprises put more emphasis on development of accounting information, while accounting for the majority of SMES in China because of many problems, there is no implementation of the accounting information or the results are poor, which for economic development of China is a significant impact, thus improving the level of accounting information of SEMS is very necessary. This paper describes in detail the problems faced by accounting information of SEMS and how to resolve these issues to make it a better service for SMES

**Keywords:** SMES, Accounting information, Accounting computerization

## 1. An Overview of the Accounting Information

As economic development of China and the continued improvement of science and technology, accounting computerization has obviously not meet people's requirements, but there are many problems. Complying with the development of the time, the accounting information has been into the accounting field. Based on the electronic computer accounting Information is the short of modern electronic technology and information technology applied to the accounting practices and It uses modern information technology, restructures the traditional accounting model and on the basis of the reorganization of modern accounting builds a modern accounting information system which is highly integrated and fully open in information technology and accounting disciplines. It is not just information technology applied to accounting change, but it is more representative of a modern information technology environment to adapt to the new accounting ideas.

Current accounting information is already very popular in China, the development is very rapid, and large-scale enterprises generally have achieved accounting information, and through surveys of SMES in China we find that the implementation of accounting information is not very optimistic, and because of various reasons, the majority of SMES unable to find a suitable way of accounting information, thereby affecting the speed of development of the entire national economic information.

## 2. The Main Problems in the Process of Implementation of Accounting Information for SMES

Accounting Information has made initial success after the development of 20 years in China, but limited to various aspects of the reasons there have arisen some problems in the process of development, specific features are as follows:

### 2.1 *The lack of software matched with the actual situation of SMES*

At present it is difficult to buy accounting information software matched with the actual situation of small and medium enterprises. The reasons are relatively significant:

#### 2.1.1 Developers cannot make the medium-sized software for SEMS

In China, due to a very large number of SMES, their business volume, the business side are very wide, and each company has its own operating characteristics and mode of operation, which makes the IT service providers are very difficult to meet the needs of SMES although work hard, and makes it impossible for IT service providers to develop the software matched with the actual situation of SMES in-one correspondence.

#### 2.1.2 The development of software is not in place

Since the accounting information is closely integrated between the accounting and information technology which requires developers who are proficient in accounting and information technology, but now the developer is often difficult to achieve this requirement. Some developers of financial software lack of accounting knowledge which makes

software's features are not comprehensive, and some software developers have an only short-term training on only the content of basic accounting. Such software is difficult to meet needs of the business accounting information and internal control.

## *2.2 The internal managers of the SMES have not adequate attention*

### *2.2.1 The objective aspect*

For the small and medium enterprises, because of its small size, its poor strength, especially for the just started small businesses, the cash-strapped, the limited human resources, combined with the procurement, market development, and many other difficulties, make the managers of SMES have no time to take into account the implementation of accounting information.

### *2.2.2 The subjective aspect*

As the main manager in enterprises, because of their lack of knowledge and vision, they do not know what is the accounting information or know of accounting information, but does not understand or recognize the advantages it brings, and think there is no need to introduce financial software to replace the manual accounting, largely reluctant to put too much cost on it. If introduce the advanced financial software, they must equip with professional staff, or spend money on staff training. They think these expenses are not much need for their business. Another factor for consideration could be the implementation of accounting information is not conducive to their escape the tax administration.

## *2.3 SMES can not evaluate their conditions of accounting information correctly and objectively*

SEMS which are preparing for the implementation of accounting information have a widespread problem that they can not properly evaluate their own businesses before introduction of financial software to prepare for the implementation of accounting information, that is to say they have no clear understanding of the actual situation of this company, such as the level of management, the level of computer hardware and software, technical level, and so on, but they have chosen blindly a software in large number of financial software which is not suitable for the actual situation of the enterprise. In this way it not only will not bring benefits to the enterprise, it will add more non-essential costs.

## *2.4 SMES lack of multi-talented*

Accounting Information Management is a very systematic and comprehensive work, if an enterprise prepare to implement accounting information, it needs the people who not only are able to master modern electronic technology, network technology, accounting, information technology, but also understand the company own operating characteristics and shortcomings. At present, overall quality of accounting personnel is still very low in our country. Accounting information for them was something new; they can not master the advanced management methods in time and can not quite understand the performance of the financial software, making the implementation of accounting information system hard. But SEMS especially the small businesses is difficult to attract talent, on the one hand because employers don't look the employment of private enterprises as a real job, worrying that the employment of private enterprises is vulnerable to social discrimination, on the other hand, companies are reluctant to spend more money to attracting the talent, and they contend the existing people and equipments have been ready to run the enterprise. These are contrary to accounting information technology required today, so an urgent need needs to be improved and enhanced.

## **3. How to Accelerate the Pace of Accounting Information for SMES**

The many problems of small and medium enterprises are obvious; in order to solve these problems, and better implement accounting information in the small and medium enterprises, needing to do the following:

### *3.1 Regulate the market and increase depth of software development for SMES*

In the design of financial software, the developers as far as possible take into account the characteristics of small and medium enterprises and the combination of enterprise development and the actual situation to make the function of financial software growing and a organic combination of financial accounting, financial management and modern information technology, and fully consider how to deal with personalized demand, master the degrees for demand control, analyze the impact these individual needs have brought to the fast realization of accounting information. And try to drive down the cost of application software, in order to make small and medium enterprises achieve the accounting information at the fastest speed. At the same time according to the needs of different period of enterprises' development, they should meet the needs of the software upgrades and re-development, help SMES train accounting people' operational capability, resolve all the problems arising in the use of the software and do after-sales service.

### *3.2 Strengthen the responsibility of the administering authority*

Accounting information is a systematic project; the implementation is very difficult, so it needs corporate managers' great attention and they must organize, lead and supervise the process of implementation of accounting information.

First of all, they must improve their quality and aware of the accounting information is an important part of business, Second, they should require employees to change their thinking and do in-house publicity and education to enable all workers of enterprises to recognize the need of the accounting information technology, under the circumstances of combination of modern information technology, which will greatly improve economic efficiency of enterprises. After the common understanding, they must give the necessary action and in the process of implementation of the project they need mutual cooperation and coordination among the various departments.

### 3.3 Evaluate the accounting information conditions of enterprises objectively

Preparations for the implementation of accounting information for small and medium enterprises, the most important thing is that form the objective circumstances of the enterprise, truly, accurately evaluate the enterprises' current conditions of the implementation of accounting information, analyze the types of enterprise and at present the level of corporate computer hardware and software, management level and the overall quality of the staff. After a full understanding on the enterprise, we can go to choose suitable financial software for our enterprise' development. If you choose financial software suitable for the enterprise's development, it will bring huge economic benefits and benefit the entire enterprise and there will be a great improvement for the level of the enterprise's management or the overall quality, of course, it forms a virtuous circle. However, if we don't analyze the actual situation of the enterprise well, blindly implement the accounting information, so that will not be able to bring benefit, on the contrary, it will bring great losses to there company because the implementation of software requires large investment costs, human and material resources.

### 3.4 To increase the educational depth of accounting information

Enterprise is a information system which is composed of people, goods, capital and information. People are decisive factor in the development of accounting information technology. High-quality accounting personnel are essential for achieving accounting information, so the state should adopt various forms to improve the quality of accounting information technology professionals.

#### 3.4.1 Strengthen the educational depth of software developers

Increase the depth of modern information and accounting information technology and other professional in higher education to cultivate multi-talented rapidly to build a high-quality, high-tech team of software development.

#### 3.4.2 Strengthen training of managers of small and medium enterprises.

In China we should establish gradually a talent pool of managers and enhance our country's overall level of business operations.

#### 3.4.3 Strengthen the training of SMES employees.

The use of higher vocational education, vocational secondary schools and specialized secondary schools, technical schools and other training methods at different levels, the enterprises cultivate multi-level accounting information personnel for the SME to improve enterprises' quality.

## References

- Chi Bencai. (2006). Some thinks on enterprises continuing education. *Continuing Education*, (3), 52 - 53.
- Chen, Shunquan. (2007). The problem in application of SMES accounting information. *Mudanjiang College of Education*, (5), 160-162.
- Zeng, Tiegang. (2007). The problems and countermeasures in the process of accounting information. *Heilongjiang Science and Technology Information*, (6), 77-77.
- Gu, Wenrong. (2008). Problems and countermeasures on implementation of accounting information technology of our country small business. *Accounting Research*, (11), 44-45.
- Wang, Yongqi. (2009). The principal problems and countermeasures of the current accounting information of. *Business culture*, (2), 49-50.

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