

ISSN 1833-3850

International Journal of Business and Management

**Vol. 4, No. 5
May 2009**



Canadian Center of Science and Education

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Inter-Firm Cooperation and Firm Performance: An Empirical Study of the Lao Garment Industry Cluster

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Abstract

Inter-firm cooperation is one important instrument for the way of industrial cluster development in developing countries. We utilize the case of Lao garment industry in Vientiane Capital City to examine the relationship between types of cooperation and firm performance. In order to prove our hypotheses, factor analysis and multiple regression analysis methods were used for the information obtained from field survey. The results of the study suggest that cooperation with subcontractors, business associations and distant buyers influence firm performance. On the contrary, cooperation among garment firms and distant suppliers seems to be less effective in this study.

Keywords: Inter-firm cooperation, Firm performance, Industry cluster, Garment industry, Lao PDR

1. Introduction

The concept of industrial clusters has attracted much attention in developing countries during the last decade (Note 1). They have been viewed as important in developing countries because they play an important role in contributing to their economies in terms of employment, output, and exports. Therefore, there are a number of studies dealing with the characteristics and the growth paths of clusters in developing countries. These studies provide a wealth of information about the functioning of clusters, but more fundamentally demonstrate the prevalence of clusters across sectors and countries (Schmitz, 1995 and 1999; Rabellotti, 1995 and 1999; Cawthorne, 1995; Tewari, 1999; McCormick, 1999; Knorringa, 1999; Visser, 1999; Nadvi, 1999a, Weijland, 1999).

Industry clusters are defined as groups of geographically proximate firms in the same industry. They have a striking feature of the geography of economic activity (Krugman, 1991). Many scholars in the field of strategic management and economic development observe how clusters influence firm performance (Harrison, 1992; DeBresson and Amesse, 1991; Harrison et al., 1996; Shaver and Flyer, 2000).

The relevance of clustering as alternative strategy for industrial development in developing countries has dominated many discussions in economic development literature. However, the literature on the topic has mainly consisted of descriptive case studies (Cawthorne, 1995; Tewari, 1999; McCormick, 1999; Visser, 1999; Oyelaran-Oyeyianka, 2001). There are a few papers that have quantitatively investigated the effects of inter-firm cooperation on performance in clusters (Schmitz, 1999; Rabellotti, 1999; Knorringa, 1999; Nadvi, 1999a). These empirical studies illustrate a variety of results. They seem to be depending upon the conditions of industry and country.

Lao garment industry is relatively young and small, but its export accounting for about a third of Laos' total export (Note 2) (Banesaty et al., 2005). The effort to help boost exports come at a time of rapid change in the global economy, garment industry is the one priority sector that Lao government is boosting up on cluster development initiatives (DTIS, 2005). Previous survey of Lao garment industry suggested that the competitive strengths of local Lao garment firms are the ability to coordinate and cooperate with local key players such as Association of Lao Garment Industry (ALGI), exporters and subcontractors. On the other hand, FDI and joint venture firms have competitive advantage through their relationship with foreign counterparts (Bounthavy et al., 2007).

Many existing studies focus only cooperation of firms in the cluster, while neglecting both types of cooperation between cluster members and other (remote firms). Our paper overcomes some of these shortcomings by applying to the case of garment industry cluster in Vientiane Capital City (VCC), Lao PDR. In doing so, we aim at answering these two main questions: what are the Lao garment companies' cooperative behaviors with both cluster members and outside agents and then, do enterprises cooperate with others performed better than those which have not? The results of this study show that Lao garment firms have cooperation with both cluster members and outside agents (Note 3). Specifically, firm performance is influenced by some types of inter-firm cooperation. The paper proceeds as follows. The next section provides literature review. We then develop the relevance hypotheses, present methodology and empirical results. Finally, we present discussions and conclusions.

2. Theoretical background and literature review

An industrial cluster is a group of firms that are specialized by sector, or related industries located in geographically near to each other (Becattini, 1990; Brusco, 1990; Harrison et al., 1996; Storper and Harrison, 1991). Therefore, firms in the clusters have better access to information than other firms (Bianchi and Bellini, 1991; Porter, 1998; Pouder and St. John, 1996). In developing country context, an industrial cluster consists of small and medium-sized enterprises (SMEs). The keys for success of industrial cluster in developing countries are the cooperation among large firms and SMEs, the collective responsibility of local association, the relationship between the parties along the value chain and financial incentives by support industries (Fischer and Reuber, 2003).

The majority of the case studies on industrial clusters stress the need for joint action to overcome the new commercial pressures that many of the clusters have faced due to trade liberalization (Mexico; India), quality or environmental standards (Pakistan; palar Valley, India), increased global competition (Brazil), or loss of traditional markets (India) (Schmitz and Nadvi, 1999).

As the business environment changes, industrial clustering seems to encourage information sharing and opportunities for learning new techniques and designs (McCormick, 1999). Within cluster, firms also can gain economies of scale and scope and increased flexibility through specialization and inter-firm cooperation (Humphrey, 1995a).

There are number of case studies of industrial clusters in developing countries. These case studies provide the important information of the firm's behaviors to cope with the environmental change. Cawthorne (1995) studied Tirupper's cotton knitwear cluster in the South India town. Cawthorne posited that successful and dramatic expansion of this cluster has taken place over the last two decades. This cluster created more jobs for Indian people, limited technological improvement, quality improvement in yarn and fabric and increasingly diverse range of garments. Furthermore, the larger firms in the cluster access to export markets have been the driving force to improve their competitiveness.

In the case of woolen knitwear in Ludhiana, India; Tewari (1999) attributed the recovery of the cluster (after the collapse of the Soviet market) to the cluster's strong presence in the domestic market. The large and medium-sized enterprises created brands of their own for the domestic market that were of higher quality than those exported to the Soviet Union. This attention to design and quality for the up-scale domestic market made for an easier transition to exporting to the developed nations. Some evidence of literature shows that industrial clusters are facing new competition. Agra: Indian's knit footwear cluster is a good example. Knorrige (1999) has examined how producers in traditional Indian cluster have responded to major changes in internal and external markets. The study presented that most firms in this cluster increased cooperation with buyers on quality control, though more often in the export sector than in the domestic sector. Moreover, they have also increased cooperation with suppliers, subcontractors and local producers.

In Pakistan, Nadvi (1999a) raised the example of consistent export success as Sialkot stainless steel surgical instrument cluster. In this cluster, the major enterprise is SMEs which their main markets are United States and Western Europe. This author hypothesized that to meet such international quality assurance standards, local firms require to have greater cooperation with both among producers as well as between producers and their suppliers and subcontractors. Moreover, how inter-firm ties, both vertical and horizontal have changed also examined in this study. The results of this paper suggested that joint action has increased, but there remain significant areas of collective failure.

In the case of clustering at early stages of development, Weijland (1999) examined the importance of the case of cottage industrial cluster in rural Indonesia. He suggested that dismally poor but clustered rural micro enterprises may have a seedbed function for industrial development that may useful for clustering policy to bring about some success in Indonesia. Interestingly, Weijland argued that social capital is crucial for the achievement of transaction cost reductions, which attract traders to the clustered enterprises. Moreover, external economies arise from specialization and technical indivisibilities, but vary significantly by subsection.

In the Brazilian footwear cluster of the Sinos Vally, Schmitz (1995) documented the history and growth of the cluster from 1960s to the 1990s. During this period, the cluster grew from a protected infant industry producing for the domestic market into a powerhouse exporter with a substantial share of the world market for shoes. Export agents,

especially from the United States, played a large role in the development of the cluster as a major exporter. Cooperation among the firms has ebbed and flowed over the last thirty years. Prior to the end of 1970s, trust and cooperation founded in a common social identity was strong. During the 1970s and 1980s this cooperation waned as the cluster experienced rapid growth, but then re-emerged in the 1990s.

Moreover, Schmitz (1999) explored the recent initiatives for cooperation in the Sinos Valley in more detail. Greater cooperation between manufacturers and intermediate input producers improved the quality of goods and decreased delivery times and batch sizes of the footwear in response to the demands of foreign buyers in the United States. A joint action initiative intended to take action on marketing abroad and in Brazil failed because the five largest exporting firms (which were vertically integrated and had a close relationship with the largest U.S. buyers) defeated the plan by exerting their influence in the shoes manufacturer's association.

In the case of cluster in Mexico, Rabellotti (1999) focused on the Guadalajara cluster and how inter-firm relationships were affected by trade liberalization. This study found that firm performance was positively correlated with vertical and horizontal cooperation. Rabellotti confirmed that approximately half of firms cooperated with their suppliers in matters such as information exchange, negotiation of payment and delivery conditions, joint product development, quality improvement, and delivery time. On the other hand, there was evidence that vertical cooperation was still lacking in many aspects, despite the pressures of increased competition in international markets. For example, the survey found that manufacturers continued to have delivery problems with suppliers.

Apart from the single case studies as have been discussed, some preceding studies also have compared the behaviors of firm in the clusters from countries to countries, from clusters to clusters and performance of firms within clustered and dispersed location. Rabellotti (1995) compared shoe clusters in Guadalajara and Leon in Mexico to clustered shoe producers in Italy. She found backward linkages (or relationships between manufacturers and their suppliers) to be stronger in Italy than in Mexico, but found that forward linkages (into marketing and commercialization) were weak in both Mexico and Italy. Her study also determined that informal relationships took on a greater significance in the Mexico clusters than in the clusters in Italy.

In the case of African clusters, previous studies compared the behaviors of firms from cluster to cluster. Oyelaran-Oyeyianka (2001) investigated the basis for long-term sustainable development of industrial clusters in Lagos, Nigeria by comparing the metropolitan clusters with the Nnewi cluster that located in rural ethnic community. The main characteristics of clustering examined are the forms and intensity of inter-firm linkages, including formation of trade networks, and the role of business associations. The results of this study confirmed that there is a significant level of collaboration among firms in sharing utilities and modest forms of subcontracting non-core activities among Lagos firms, but this is less so at Nnewi. Moreover, networks such business associations are playing vital roles as information providers and as links into the global market although the benefits are yet to fully manifest.

McCormick (1999) compared six African enterprise clusters in Kenya, Kamukunji, Ziواني, Lake Victoria, Ghana and South Africa. She makes argument that geographic and sectoral clustering enables enterprises to overcome constraints to growth and development. More specifically, she underscored the strength of the collective efficiency framework, but found that certain anomalies could only be explained by other contextual variables. The six case studies revealed the important difference among them on playing in the way of industrialization processes. In the case of garment cluster in Peru, Visser (1999) compared the differences between clustered and dispersed firms. He suggested that clustered garment firms show higher performance than dispersed firms. The main reasons behind this are cost reduction and information spillover within cluster.

The literature of industrial clustering not only provide information in terms of case studies, some antecedents also provide the information of industrial cluster in overall of developing countries context. Schmitz and Nadvi (1999) suggested that clustering facilitates the mobilization of financial and human resources, leading to the gains of collective efficiency. Nadvi and Schmitz (1994) offer five lessons learnt in the last decade on the importance of clustering for developing countries. First, it is a significant form of industrial organization for small scale manufacturing. Second, clustering promotes different types of inter-firm linkages. Third, clustering is identified with diverse forms of social networks, which are associated with personal ties, and the notions of trust and reciprocity in competitive behavior. Fourth, clustering is not plans for intervention yet the state has a role in promoting it and finally, cluster experiences are vastly diverse and internally uneven.

In terms of inter-firm cooperation, there are several forms of inter-firm linkages in both developed and developing countries such as subcontracting, market linkages with customers and supplies, informal and formal collaborations (joint ventures, franchise), membership of professional and trade associations and movement of skilled staff from one firms to others (Oyelaran-Oyeyianka, 2001). Joint action within vertical linkages includes backward cooperation with suppliers and subcontractors (Lazerson, 1998) and forward cooperation with traders or buyers (Knorringer, 1996).

More specifically, Nadvi (1999b) pointed out that joint action within bilateral horizontal linkages between two or more

local producers include joint marketing of products, joint purchase of input, sharing of capacity, common use of specialist equipment, joint product development and enhancing know-how and trade information. In the case of joint action at the multilateral horizontal linkages include cooperation with trade associations, trade fairs, and technology and producer service centers (Nadvi, 1999b). As an important horizontal form of networking that has become increasingly important in facilitating joint action is industry or business association (Schmitz, 1998).

The relationship between inter-firm cooperation and firm performance is one interesting discussion point in literature. Therefore, our main concern is inter-firm cooperation matter. Some scholars in the field of economic development have already empirically investigated the relationship between types of cooperative behaviors and firm performance of industrial clusters in developing countries (Knorrige, 1999; Nadvi, 1999a; Rabellotti, 1999; Schmitz, 1999). For instance, Knorrige (1999) examined the relationship between vertical and horizontal cooperation and firm performance of knit footwear industry in India. The results of this study suggested that cooperation with suppliers, subcontractors, buyers and business associations have influenced firm performance.

These results are similar to the study of Schmitz (1999). In the case of the study of the shoe industry, Sino Valley, Brazil, Schmitz (1999) posited that firms within cluster that have cooperation with supplier, subcontractors, other shoemakers and business associations show higher performance more than those firms that have not cooperation. Another study (Nadvi, 1999a) concluded that cooperation with subcontractors and buyers have positively significant association with firm performance. Moreover, the results of this study showed cooperation with suppliers and business associations do not influence firm performance. In the case of footwear industry in Mexico, Rabellotti (1999) found that cooperation with suppliers, other footwear firms and business associations are positively associated to firm performance, but cooperation with buyers to not matter.

According to aforementioned, we need to conclude that cooperation between clustered firms and local suppliers are positively associated to firm performance (Knorrige, 1999; Rabellotti, 1999; Schmitz, 1999), while firms that have cooperation with suppliers cross country are not (Nadvi, 1999a). In contrast, firms that have cooperation with buyers in distant markets influence firm performance (Knorrige, 1999; Nadvi, 1999a), while firms that have cooperation with local buyers have no impact on the performance. This is due to international buyers have higher technology, know-how, assets and etc. more than buyers in domestic market have. Therefore, firms that cooperate with those agents seem to be effective.

Even though the relationship between types of cooperation among firms in clusters and firm performance has been investigated in some levels, all of the studies failed to investigate all types of cooperation in a single study, for instance, cooperation with local buyers (Schmitz, 1999), subcontractors (Rabellotti, 1999), other firms (Knorrige, 1999); Nadvi, 1999a). More specifically, Visser (1999) stressed that garment industrial cluster in Peru has limitation in terms of inter-firm cooperation beyond local borders and absent linkages with foreign agents. Therefore, as our aim at overcoming these shortcomings, we further develop the main hypotheses in next section.

3. Hypothesis development

As mentioned in the previous section, most scholars in the field of economic development focus on industrial cluster, specifically in terms of inter-firm cooperation among firms in the cluster as case studies. Only a few researchers have investigated the issue systematically. Table 1 provides the summary of empirical results from literature on the relationship of inter-firm cooperation and performance. As has been pointed out from prior researchers that cooperative behavior among firms influence performance. However, they depend on many factors such as types of cooperation, size of firm, industry and also the country's conditions. According to literature results, we observed that most types of cooperation have improved performance, although some few cases have not. In the case of Lao garment industry; we believe the cooperative behavior is an important factor of the way on industrial cluster development in the Lao PDR. As the results, inter-firm cooperation should have positive impact to performance. Based on aforementioned, we develop five hypotheses as below:

Hypothesis 1: *Backward cooperation with suppliers is positively significant associated to performance.*

Hypothesis 2: *Backward cooperation with subcontractors is positively significant related to performance.*

Hypothesis 3: *Forward cooperation in the export market is positively significant associated to performance.*

Hypothesis 4: *Horizontal cooperation with other garment manufacturing firms is positively significant related to performance.*

Hypothesis 5: *Horizontal cooperation with business associations is positively significant associated to performance.*

4. Methodology

4.1 Data source and sample

We collected information on inter-firm cooperation and performance by using a field survey of garment firms in VCC,

Lao PDR during August-September 2007. Field survey has been conducted by researchers and two lecturers of Faculty of Economics and Business Management, National University of Laos.

Our questionnaire has adopted the works of Schmitz (1999) and Rabelotti (1999) as the basis. The pilot survey has been conducted through e-mail to five garment companies in VCC one month before the field survey has been done. Three questionnaires have returned to us within two weeks. The modification of questionnaires has been conducted by researchers based on the results of pilot survey.

According to the official report of ALGI to Vientiane Capital City Tax Office (VCCTO) in 2007, there are 52 garment manufacturing firms located in VCC and registered as member of ALGI. These number of garment firms are located in 7 districts of VCC. We utilize face to face interview method on the collecting information from 44 garment firms from all districts.

4.2 Variables

4.2.1 Dependent variable

In our questionnaire, performance was originally measured by several indicators including output (quantity), percent of exported, annual sales, net profit, lead time, productivity and quality of product. Principal Component Analysis (PCA) of factor analysis method was utilized for extracting factors. FAC1 is dependent variable for our analysis. FAC1 consists of all performance indicators except lead time (Note 4) and it has explained variability 60.8%.

4.2.2 Independent variables

The independent variables included in our regression model are indicators of the forms of cooperation. They are FAC2 (backward cooperation with suppliers), FAC3 (backward cooperation with subcontractors), FAC4 (forward cooperation with customers in abroad), FAC5-1 and FAC5-2 (horizontal cooperation with other garment firms) (Note 5) and FAC6 (horizontal cooperation with institutions). All these components also obtain from PCA method and factor score.

4.2.3 Control variables

Prior studies on the field of management and industrial organization identified a significant positive relationship between firm size, firm age and performance (Evans, 1987; Xayphone, 2006; Xayphone and Kimbara, 2007, 2008). We control for these factors by taking natural log of number of employees (LOGFS) and age of firm (LOGFA) to balance the variance of these two variables.

4.3 Analysis

4.3.1 Factor analysis

In order to aggregate data from the questionnaires, we performed a factor analysis on the variables representing firm performance (FAC1) and inter-firm cooperation (FAC2; FAC3; FAC4; FAC5-1, FAC5-2 and FAC6) by using principal component analysis (PCA).

Kaiser-Meyer-Olkin (KMO) was conducted to check whether or not the value is bigger than 0.5. All of KMO values of our analysis more than 0.7, which is sufficient for performing factor analysis (Sharma, 1996). Using the cutoff criterion eigenvalues >1, there are 7 factors were obtained (from 27 variables).

We obtained factor score of 7 factors from equation below:

$$F_{ik} = W_{i1} Z_{k1} + W_{i2} Z_{k2} + \dots + W_{in} Z_{km} \quad (1)$$

Where

Z_{ij} = Variable j of case k (standardized)

n = Sample size

m = Number of factor

W_{ij} = coefficient loading factor of variable j of factor i

F_{ik} = Factor score of factor i in the case k

4.3.2 Analysis model

$$FAC1 = b_0 + b_1 FAC2 + b_2 FAC3 + b_3 FAC4 + b_4 FAC5-1 + b_5 FAC5-2 + b_6 FAC6 + \text{Control variables} + \text{Dummy variable} + \text{Interaction terms} + \varepsilon \quad (2)$$

Where

$FAC1$ = Firm performance; $FAC2$ = Cooperation with suppliers; $FAC3$ = Cooperation with subcontractors; $FAC4$ = Cooperation with buyers; $FAC5-1$ & $FAC5-2$ = Cooperation with other garment firms and $FAC6$ = Cooperation with business associations. *Control variables* = The natural log of firm age and firm size; *Dummy variables* = Dummy for

firm size (number of worker less than 100, 300 and 500 respectively) and *Interaction terms*= The interaction between independent variables (statistically significant variables) and dummy variables.

5. Results

5.1 Survey of inter-firm cooperation

As can be seen in type (1) cooperation of table 2, for the majority of firms there has been backward cooperation between Lao garment firms and their suppliers. This is the clearest in all types of cooperation. The highest percentages of firms reporting cooperation in terms of quality improvement and respect of delivering time, respectively. In contrast, at least 15 percent of informants report there has not been cooperation with suppliers. Here, the highest percentages of firms reporting cooperation did not exist among manufacturing firms and suppliers are negotiating of payment and delivery conditions and exchange information and experience, respectively.

Type (2) cooperation of table 2 reports the survey results of the cooperation among garment manufacturers and their subcontractors. In the relationships between Lao garment manufacturers and their subcontractors there has been clear trend towards greater cooperation. Specifically, the cooperation in terms of quality control, exchange information and experience and joint labor training are the greatest percentages of firms reporting, respectively. Based on our survey results, more than 80 percent of firms in the sample report they have at least 3 subcontractors. However, the cooperation among them in terms of technological upgrading is the lowest level in Lao garment cluster.

Type (3) cooperation of table 2 illustrates the cooperation between garment manufacturers and their customers in international markets. As the survey results report, there also exists the forward linkage (cooperation) between garments firms and their buyers in abroad in Lao garment industry. As can be seen in table 2 (type 3), the highest percentages of firms reporting cooperation between garment firms and buyers are setting of product specification and quality control, respectively. However, the cooperation among them in terms of technological upgrading is also the lowest level in Lao garment cluster.

The horizontal cooperation among Lao garment manufacturers has been summarized in type (4) cooperation in table 2. Our survey results suggest that horizontal cooperation among garment firms in the cluster was particular low. Most firms report that they were too involved with day to day survival, and were not able to have interaction with others. The forms of cooperation which high percentages of firms reported are machinery lending, exchange information and experience and joint labour training, respectively. A few informants indicate they cooperate with other garment firms in terms of sharing order and joint purchase materials.

Type (5) cooperation of table 2 shows the cooperation among garment manufacturers and institutions (Lao National Chamber of Commerce and Industry (LNCCI) and ALGI). Our survey results confirmed that the cooperation between garment firms and institutions (business associations) has been increasing over time. Particularly, in terms of sharing information, training participation and accessing to new market are the highest percentages of firms reporting. Based on our interview, institutions play an important role in collaboration within cluster. Specifically, ALGI plays the role in linking between international customers and garment manufacturers in the Lao PDR.

The performance of the surveyed firms is illustrated in figure 1. It shows that the percentage of firms increasing output (in quantity), exported, annual sales, net profit, productivity and quality is higher than that decreasing all of indicators. The survey results report that all firms of the sample have improved their performance by more than 60 percent. Moreover, there are around 50 percent of all informants stated that their lead time has been decreasing over time, while 43 percent of them reports it has not changed and the rest of informants answer it has been increasing (see figure 1). Noteworthy, the clearest results are the high percentages of firms indicating increases in quality improvement and annual sales, respectively.

From what has been said so far we need to conclude that cooperation exist within Lao garment cluster in VCC. Most surveyed firms report that they cooperate with others in both vertical and horizontal cooperation. Even though some types of cooperation are particular low, the trends seem to be increasing over time. Therefore, we further empirically investigate the relationship between cooperation and performance of firm in Lao garment cluster in next section.

5.2 Inter-firm cooperation and performance

In order to test the relationship between types of cooperation and performance, we construct the analysis in two stages. First, we investigate the relationship between two by classifying firms as strong performers (those firms reporting increase performance) and poor performers (those firms reporting decrease performance) and using Kendall coefficient to test the significant level of those relationship in detail. Later, we construct the multiple regression analysis to investigate relationship between types of cooperation (five factor loading variables) and performance in five models.

Table 3 provides disaggregate between different types of inter-firm cooperation and their relationship with performance. The results of the survey show that garment firms in Lao cooperate both vertically and horizontally. The clearest results are backward cooperation with subcontractors and horizontal cooperation with institutions (ALGI and LNCCI). All

indicators of these two types of cooperation have positively significant association with performance at 1% level, except in terms of negotiation of payment and delivery of cooperation with subcontractor ($p < 0.05$). The cooperation with customers shows the moderate level. Most indicators of the type of cooperation are positively significant associated with performance ($p < 0.001$), except in terms of negotiation of payment and delivery and technological upgrading (coefficients are positive but insignificant). The results show a few indicators of cooperation with other garment are positively and significantly: they are lending machinery and joint labor training. In terms of cooperation with suppliers, the results indicate positive coefficients in all indicators, except negotiation of payment and delivery (negative coefficient), but all of them are insignificantly related to performance.

In order to test our five hypotheses systematically, we utilize multiple regression analysis method to prove these hypotheses. But at first, we provide the basic statistics of correlations between main variables (dependent and independent variables). As has illustrated in table 4, the correlations among independent variables are particular low and insignificant, therefore the bias of multicollinearity would not exist in our models. However, we would further check this bias with other methods by observing Durbin-Watson and Variance of Inflation Factor (VIF) in running models process.

Table 5 provides empirical results of regression analysis of independent variables, additive variables (Note 6) and dependent variables (performance). In model 1, we incorporate the different types of cooperation including six factors loading (five types of cooperation) and one factor loading of performance.

The results of model 1 indicate three independent variables are statistically significant and positively associated to performance. Those significant variables are FAC3 (cooperation with subcontractors), FAC4 (cooperation with buyers in distant markets) and FAC6 (cooperation with institutions), which significant at 1%, 10% and 5% level respectively. Based on the results, hypothesis 2, 3 and 5 were strongly accepted. On the contrary, as has been seen in model 1 results there are three variables that are not significantly related with performance including FAC2 (cooperation with suppliers), FAC5-1 and FAC5-2 (cooperation with other garment firms). Therefore, by following this results we need to state that hypothesis 1 and 4 were not supported. From what has been said so far, we want to interpret that firms which have stepped up cooperation with subcontractors, buyers and institutions (business associations) have improved their performance more than those which have not. These findings suggest not only cooperation among clustering firms but cooperation with external agent such as distant buyers also matters. This is the one unique result found in the Lao garment industry.

In model 2, we insert control variables (the natural log of the number of employees: LOGFS and the number of firm age: LOGFA). The aim of including these variables to the model is to avoid the effect of firm size and firm age on the relationship between the types of cooperation and performance. As the results show in model 2 of table 4, the coefficients and significant levels do not change compared to the results of model 1. However, LOGFS has statistically significant and positively related with performance. This implies that larger firms enjoy higher performance than smaller ones.

In later three models (model 3, 4 and 5), we insert dummy variables and interaction terms between dummy variables and statistically significant independent variables (FAC3, FAC4 and FAC6). In order to test size of internal heterogeneity, we classify firm size of the sample into three levels: small and medium-sized enterprises (SMEs) which have number of employees less than 100 and large firms have number of employees less than 300 and 500, respectively. To avoid the bias of introducing many variables in the case of small sample size in the one model; we analyze these size classifications separately. The main objective of dividing firm size into three categories is to test whether or not the degree of the relationship between inter-firm cooperation and performance depends on size of firm.

The results of model 3 suggest that firm size has negatively significant association with performance. This confirmed that larger firms are strong performers. Interestingly, the interaction terms between firm size and cooperation with business associations is positively significant associated to performance. The interpretation of this result is that SMEs cooperate with business associations improved performance more than those large firms cooperate with business associations. On the other hand, among SMEs, this result implies that those firms have cooperation with business associations have higher performance than those firms have not. However, other variables remained the same as previous models' results (model 1 and 2).

As has been seen in table 5, the results of model 4 indicate firm size in this category (number of workers less than 300) also has negatively significant association with performance. This means that larger firms enjoy higher performance. Other significant variables are interaction terms of cooperation with subcontractors, distant buyers and firm size (FAC3xDI1 and FAC4xDI1, respectively). These two variables are positively significant ($p < 0.05$) related with performance. These imply Lao garment firms in this category have cooperation with subcontractors and buyers in distant markets improved performance. However, other variables remained the same as previous models' results (model 1, 2 and 3).

The results of the last model suggest consistent evidence with previous models (model 3 and 4) in terms of the relationship between firm size and performance. The clearest results from this model is that interaction term between cooperation with subcontractors and firm size has positively significant ($p < 0.001$) association with performance. More interesting, the coefficient of this interaction term is the highest one in our all results ($b = 0.86$). It is reasonable to note that large firms those have cooperation with subcontractors improved performance more than those large firms have not. On the other hand, larger firms cooperate with their subcontractors outperform those small firms cooperate with their subcontractors. Another interpretation of this result is firm size matter. Without control for firm size, large firms have more positive impact on the relationship between types of cooperation and performance. As has been seen in model 5, all types of cooperation have not statistically significant related with performance since we insert dummy large firm (number of employees less than 500) to the model. Regarding this evidence, it is our challenge for giving implication to policy makers and donors which will be placed in the last section of this paper.

6. Discussion and Conclusion

Our main aim is to identify the relationship between inter-firm cooperation (Note 7) and firm performance. Many existing previous studies concluded both vertical and horizontal cooperation matter for industrial clusters. The results seem to vary from country to country and case studies. Our empirical results confirm that firms have cooperation with subcontractors and business associations enjoy higher performance than firms those have not. More specifically, large firms which have number of employees between 100 and 500 workers show the highest performance in terms of cooperating with subcontractors. On the other words, SMEs which have number of employees less than 100 workers cooperate with business associations have higher performance than other sizes of firm and firms those have not cooperation with business associations. From what have been said so far, we need to interpret that inter-firm cooperation (linkage) with subcontractors and business associations are the bases for long-term sustainable development of industrial cluster of garment industry in Lao PDR.

As mentioned in the previous section, our analysis is to not only investigate the cooperation among firms within cluster, but also the cooperation among cluster member firms with outside agents such as distant suppliers and buyers. Our results suggest that firms have cooperation with distant buyers also outperform those firms have not. This result is similar to some previous studies that concluded the cooperation among cluster firms and buyers abroad is more effective than cooperation with local buyers. The main reason is foreign buyers have high capacity such as assets, technologies, know-how more than local buyers. Therefore, when cluster firms cooperate with those buyers, these capacities should be transferred to the firms in some levels.

According to our empirical results, we did not find any evidence to support the relationship between the cooperation with suppliers, other firms and performance. In terms of cooperation with suppliers, some previous evidences from other countries have already posited that cooperation with outside cluster suppliers does matter. Our results also support this argument. The reasons are that all suppliers of Lao garment firms are in different countries such as China (Note 8), India, Thailand etc. Almost Lao garment firms order input materials through the agents in Thailand (Note 9), which means Lao garment firms have indirect relationship with their suppliers. This might be one reason that cooperation between cluster firms and their suppliers have not influenced firm performance.

Surprisingly, the cooperation among Lao garment firms have no relationship with firm performance. This result seems to be unique compared with industrial clusters in other developing countries. Why is that, as we have discussed in previous section that the cooperation among Lao garment firms themselves is particular lower than other types of cooperation. As has been shown in table 2, there are two forms of cooperation (leading machinery and joint labor training) that have positive correlation with firm performance. Many informants pointed out that they are very busy with day-to-day survival and they have no time to cooperate with other firms in both informal and formal relationship. This information is likely to be one main reason reflected to our results.

In sum, several interesting results have been obtained regarding inter-firm cooperation and performance both among cluster members and outside agents. Inter-firm cooperation would be the predominant factors of the industrial cluster development in Lao PDR, specifically, in terms of cooperation with subcontractors and business associations' forms. Both types of cooperation were significant in the regressions of firm performance as well as cooperation with distant buyers. Firms that have cooperation with external economies (Note 10) have higher performance than firms that have not. However, we have lack of evidence to support the relationship between suppliers, other firms and firm performance in our sample.

As an industrial cluster provide employment for large numbers of people in developing countries, and have become significant exporters. Case studies highlighting the successes of developing country clusters in these respects have led to enthusiasm on the part of development practitioners about the prospects of clustering as a strategy to promote private sector development and reduce poverty. Regarding this, there are some policy implications to practitioners and policy makers as well as donors. Firstly, the development of SMEs is one important strategy that would lead to industrial cluster development due to the fact that subcontracting firm is SMEs. To promote SMEs (Note 11), business association

is a key actor in providing many kinds of support such as information, trade fairs as well as financial support. Secondly, linkage or cooperation among cluster members and outside agents are critical factor of industrial cluster development and these factors improve firm performance. Therefore, owners/managers should take the issue into account whether they do every things or every process by themselves or collaboration with others. Lastly, one problem of industrial development in Lao PDR, especially garment industry lacks of skilled human resources. Based on the information from many owners/managers of garment firms, the vocational schools in Lao PDR are somehow takes long time (Note 12). To provide a specific skilled labor to labor market (garment industry), policy makers should take this information into account and how to solve this problem for garment industry is one challenge for both policy makers and donors.

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Notes

- Note 1. Authors observed from two issues of journal *World Development* (Vol. 23, No. 1 (1995) and Vol. 27, No. 9 (1999)).
- Note 2. Lao garment industry started in 1990. There are 58 manufacturing firms and 55 branches and subcontractors which employ 27,000 workers in 2005. Lao garments export is the third industry after hydropower and mining industry.
- Note 3. Suppliers and customers in abroad.
- Note 4. Lead time has low correlation with other indicators
- Note 5. FAC5-1 includes exchange information and experience, machinery lending, joint training and joint import materials. While FAC5-2 includes joint order, joint product development and market cooperation.
- Note 6. Additive variables include control variables, dummy variable and interaction terms.
- Note 7. Not only cooperation with cluster members but also cooperation with outside agent such suppliers and buyers
- Note 8. China includes Hong Kong and Taiwan.
- Note 9. Many Lao garment firms have headquarter in Thailand [10] Subcontractors, Business associations and buyers
- Note 11. The situation of SMEs in Lao PDR, see Xayphone and Kimbara, 2007, 2008.
- Note 12. At least three years (Owners/managers interview).

Table 1. Empirical results of literature

Authors	The relationship between cooperation and performance				
	C&P1	C&P2	C&P3	C&P4	C&P5
Knorriga (1999)	√	√	√	-	√
Nadvi (1999a)	X	√	√	-	X
Rabellotti (1999)	√	-	X	√	√
Schmitz (1999)	√	√	-	√	√

Note: C&P1= Cooperation with Suppliers; C&P2= Cooperation with Subcontractors; C&P3= Cooperation with Buyers; C&P4= Cooperation with Other Firms; and C&P5= Cooperation with Business Associations.

√, X and - = Positively significant, not significant and not available, respectively.

Table 2. Inter-firm cooperation's behaviors

Typology of inter-firm cooperation	A lot (%)	A little (%)	Never (%)
<u>(1) Cooperation with suppliers</u>			
Exchange of information and experience	55.40	18.18	27.27
Negotiation of payment and delivery	45.50	20.45	34.09
Joint product development	50.00	27.27	22.73
Quality improvement	65.91	18.18	15.91
Speeding up delivery	59.09	22.73	18.18
<u>(2) Cooperation with subcontractors</u>			
Exchange of information and experience	56.82	18.18	27.27
Negotiation of payment and delivery	47.73	36.36	29.55
Technological upgrading	25.00	45.45	29.55
Quality control	63.64	25.00	11.36
Joint labour training	50.00	31.82	18.18
<u>(3) Cooperation with customers</u>			
Exchange of information and experience	54.55	25.00	20.45
Negotiation of payment and delivery	50.00	29.55	20.45
Technological upgrading	29.55	43.18	27.27
Quality control	68.18	20.45	11.36
Setting of product specification	72.73	20.45	06.82
Product management	50.00	36.36	13.64
<u>(4) Cooperation with other garment firms</u>			
Exchange of information and experience	54.55	15.91	29.55
Sharing order	09.09	84.09	06.82
Joint product development	20.45	50.00	29.55
Lending machine	65.91	20.45	13.64
Joint marketing	15.91	59.09	25.00
Joint labour training	47.73	43.18	09.09
Joint purchase of materials	09.09	79.55	11.36
<u>(5) Cooperation with institutions</u>			
Joint products exhibition in abroad	31.82	38.64	29.54
Joint products exhibition in local market	22.73	56.82	20.45
Accessing new markets	50.00	34.09	15.91
Training participation	65.91	09.09	25.00
Sharing information	70.45	11.36	18.18

Source: Authors' survey

Table 3. Correlation between inter-firm cooperation and performance

Typology of inter-firm cooperation	Strong Performer (Sales, %)	Poor Performer (Sales, %)	Kendall Correlation Coefficient	Sig. level
<u>Cooperation with Suppliers</u>				
Exchange of information and experience	59.1	4.5	0.203	0.151
Negotiation of payment and delivery	52.2	7.8	-0.115	0.411
Joint product development	56.9	2.3	0.163	0.246
Quality improvement	63.6	4.5	0.142	0.318
Speeding up delivery	54.3	6.8	0.020	0.885
<u>Cooperation with Subcontractors</u>				
Exchange of information and experience	59.1	4.5	0.393	0.005
Negotiation of payment and delivery	50.0	5.5	0.293	0.038
Technological upgrading	55.6	0.0	0.329	0.019
Quality control	60.0	6.8	0.396	0.006
Joint labour training	59.1	2.3	0.582	0.000
<u>Cooperation with Customers</u>				
Exchange of information and experience	63.6	4.5	0.518	0.000
Negotiation of payment and delivery	54.6	5.8	0.148	0.290
Technological upgrading	47.7	4.5	0.208	0.137
Quality control	65.9	5.8	0.407	0.004
Setting of product specification	63.6	5.8	0.530	0.000
Production management	56.8	2.3	0.422	0.003
<u>Cooperation with Other Garment Firms</u>				
Exchange of information and experience	61.3	4.5	0.157	0.266
Sharing order	13.6	2.3	0.122	0.402
Joint product development	38.6	0.0	0.127	0.368
Lending Machine	63.7	6.8	0.272	0.056
Joint Marketing	34.1	2.3	0.215	0.130
Joint labour training	50.0	2.3	0.412	0.004
Joint purchase of materials	15.9	0.0	0.117	0.417
<u>Cooperation with Institutions</u>				
Joint products exhibition in abroad	52.2	2.3	0.434	0.002
Joint products exhibition in local market	46.3	4.5	0.263	0.062
Accessing new markets	56.9	6.8	0.405	0.003
Training Participation	65.9	9.1	0.497	0.001
Sharing information	68.2	6.8	0.510	0.000

Source: Authors' survey

Table 4. Correlation Matrix

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)
FAC1	-						
FAC2	0.07	-					
FAC3	0.61**	-0.08	-				
FAC4	0.34*	0.16	0.22	-			
FAC5-1	0.24	0.06	0.23	0.06	-		
FAC5-2	-0.03	0.02	-0.06	-0.01	0.19	-	
FAC6	0.55**	-0.11	0.23	0.17	0.29	0.12	-

** and * statistically significant at 1% and 5% level, respectively.

Table 5. Estimated of the relationship between inter-firm cooperation and performance

Explanatory variables	Models				
	(1)	(2)	(3)	(4)	(5)
FAC2	0.13	0.13	0.13	0.13	-0.07
FAC3	0.61***	0.61***	0.61***	0.61***	0.15
FAC4	0.21*	0.21*	0.21*	0.21*	0.15
FAC5-1	-0.06	0.10	0.10	0.10	0.11
FAC5-2	-0.04	0.00	0.00	0.00	-0.06
FAC6	0.30**	0.30**	0.30**	0.30**	0.25**
LOGFA		0.12			
LOGFS		0.25**			
Ds (less than 100 workers)			-0.20*		
FAC3xDs			0.14		
FAC4xDs			0.16		
FAC6xDs			0.25**		
DI1 (less than 300 workers)				-0.24**	
FAC3xDI1				0.32**	
FAC4xDI1				0.23**	
FAC6xDI1				0.12	
DI2 (less than 500 workers)					-0.23**
FAC3xDI2					0.86***
FAC4xDI2					0.11
FAC6xDI2					0.08
Adjusted R ²	0.422	0.422	0.455	0.422	0.509
df	6	1	1	1	1
Durbin-Watson	1.678	1.578	1.822	1.578	1.679
P-value	0.00	0.00	0.00	0.00	0.00

***, ** and * statistically significant at 1%, 5% and 10% level, respectively.

Variance Inflation Factor (VIF) of all variables vary from 1.00 to 3.78

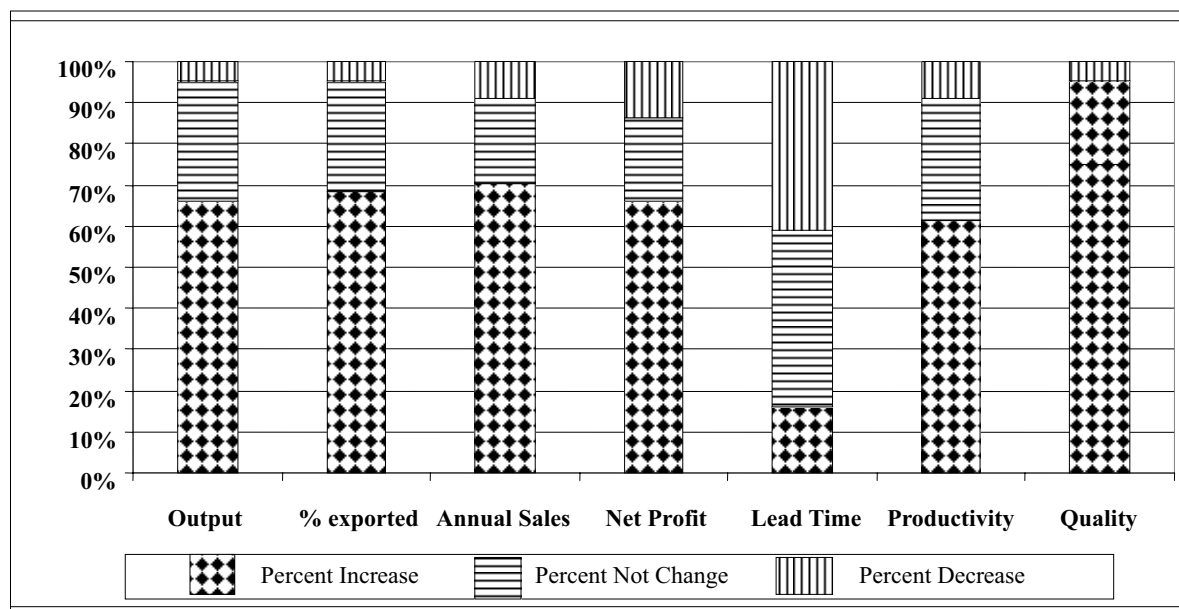


Figure 1. Performance improvement

Source: Authors' survey



Okun's Coefficient for Four Mediterranean Member Countries of EU: An Empirical Study

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Abstract

In this paper, we estimate Okun's coefficients for four Mediterranean countries of EU using real GDP and unemployment rate data. For the empirical analysis of the research we used annual data for the period 1961 – 2002 and Hodrick and Prescott filter (1997), a mathematical tool used in macro-economics and especially in business cycles theory, in order to find fictitious data using variation and correlation for both variables. Research results showed that unemployment cost, from the real GDP loss viewpoint, is larger for Italy (-0.024) and smaller for Greece (-0.007).

Keywords: Okun's law, Unit roots, Mediterranean countries

1. Introduction

One of the largest problems that most governments face is unemployment. Unemployment can be regarded as the cause of poverty and income dispersion. Many scientists have worked on issues such as unemployment which is characterized as an important power for governments and also for international economic policies.

The main causes of unemployment and how we can examine it have been explained during the last century as a linkage from many factors. Such a cause is ruled from two important laws. The first one is the demand law for internal factors, which indicate that the number of employers changes as long as the labour productivity, wages demand and price product changes as well. The second one is the supply law. Employment level is being supported on factors such as the status of an economy and economic cycles, technological and educational refinement and intension, productivity and profits. The supply surplus in terms of demand is measured as the unemployment in percentage units which are available in society and is known as transitional unemployment. Unemployment is created by deficit capital, technology development and from tendencies of fall (Kooros, 2006).

The relationship between unemployment rate and the rise of real production is well known from economists. Okun (1962) using data from American economy showed that for every per unit decrease of GNP, the unemployment rate is increasing more than the natural percentage. Okun pursued to use the relationship between the gap of real GNP and the gap of unemployment rate to predict the potential GDP given the former relationship between unemployment and GDP. He noted that changes in unemployment rate cannot be regarded as the referencing point of the change of real production which is the result of the variated unemployment. In other words, there are intermediary factors which connect the unemployment rate and real production (Kwami, 2005).

Okun's law was consistent with the relationship between unemployment rate and real production for many decades. Even if the negative relationship between the "gap" of unemployment rate and the increase of real production has been quite stable, the absolute value of Okun's coefficient seems to vary in different time periods and from country to country (Altig et. Al, 2002).

A simple specification of Okun's law can be the following:

$$(Y - Y^*)_t = \alpha + \beta (UN - UN^*)_t + \varepsilon_t \quad (1)$$

where

Y is the natural log of real output

UN is the unemployment rate

Y* is the potential output

UN* is natural rate of unemployment respectively

Prachowny (1993) took a logarithmic linear relationship from a Cobb-Douglas production function and shown that Okun's coefficient (β) should be approximately -0.6 per cent. Of course, the model consisted of factors such as productivity, labour supply and also weekly hour wages. Prachowny's results were criticized later due to shortcomings in the procedure of the data modeling.

Using a current model, Aoki and Yoshikawa (2003) exhibited a relation between unemployment rates and GDP similar to that of the Okun's law in its business fluctuations. Their simulation results revealed that Okun's coefficient increases as the average GDP increases.

Geidenhuys and Marinkov (2007) tried to give answer to the question if unemployment responds to changes in output in South Africa. For this reason, they estimated the relationship between economic activity and unemployment rate. The results indicated the presence of an Okun's law relationship in South Africa over the period 1970 -2005 with more evidence in favour of asymmetries during recessions.

Noor et al (2007) examined whether there exist an Okun – type relationship between output and unemployment in the Malaysian economy. The empirical results shown that there was a negative relationship between output and unemployment.

Villaverde and Maza (2007) analysed Okun's Law for Spain and its seventeen regions over the period 1980 – 2004. Using two different detrending techniques, the results showed an inverse relationship between unemployment and output for most of the Spanish regions and for the whole country. However, the values of Okun's coefficients for these regions are different and lower than those initially estimated by Okun and others.

Perman and Tavera (2007) tested for the presence of convergence of the Okun's Law coefficient (OLC) among several alternative groups of European economies. They used a testing procedure suggested by Evans in order to investigate the convergence or non – convergence of the OLC in several groups of European countries by examining how the cross – country variance of the OLC evolves over time in these groups. A hypothesis of medium – term convergence of the OLC is rejected for most of the European country groups examined.

Ho-Chuan Huang and Shu-Chin Lin (2008), motivated by a simple theoretical model, proposed the Bayesian approach for estimating Okun's coefficients using U.S. quarterly data from 1948: Q1 to 2006: Q1. The results showed that there is overwhelming evidence in favor of smooth –time – varying Okun's law which is positively related to productivity trend. Also their results indicated that the commonly – used Okun's law coefficient can lead to inappropriate results.

Turturean (2008) based on the inflation rate and unemployment rate registered in Romania for the period 1993 – 2004, examined how to show Okun's Law. Results consisted of two distinct models explaining the dependency between the GDP's growth rate and unemployment rate's growth and vice versa. This shows that in the case of Romania there was no two – way relationship using the same model, the direct and mutual dependencies between growth of unemployment rate and the growth rate of GDP's as shown in the original formulation of Okun's Law.

Basically, Okun's law consists of the divergence of real production and unemployment rate from long run levels or from employment levels. Therefore, an important step on Okun's coefficient estimation is the determination of physical production and physical unemployment rate. Unfortunately, these values are not observable and should be estimated. Generally, there is no other way that this estimation can be done with accuracy. For the estimation of these values, we use the Hodrick – Prescott (1997) technique. This technique is being used in macroeconomic theory, particularly in economic cycles' theory, in order to find out fictitious data and can reduce the high from low frequencies from time series.

The aim of this paper is to estimate Okun's coefficient for four member countries of European Union and to examine the differences that exist in every country, those that are created due to the correspondence of the 'gap' of real production on the changes of the 'gap' of real unemployment.

The remainder of the paper proceeds as follows. Section 1 is referred to the role of unemployment on production increase of every country. On section 2 the data used in the empirical analysis are described as well as the specification of the model. Section 3 employs with unit root tests and examines the stationarity of the data used. The results of this research are presented on section 4 while section 5 provides the conclusions of this paper.

2. Data and model specification

As suggested by Okun (1970), there are two classes of Okun's law specifications: The 'gap' model and the 'first-difference' model. According to the 'gap' model, the relationship between log of real GDP 'gap' and the unemployment 'gap' for the four member countries of European Union is the following function used:

$$LGDPGAP_t = \alpha + \beta UNGAP_t + \sum_{j=1}^k \gamma_j LGDPGAP_{t-j} + \varepsilon_t \quad (2)$$

where:

LGDPGAP_t is the log of real GDP 'gap' series

UNGAP_t is unemployment 'gap' series

α is the intercept.

β is the Okun's coefficient to be estimated.

γ is the coefficient to be estimated.

ε_t is the disturbance term.

This study uses data on the unemployment rate and real GDP for four Mediterranean countries in order to estimate Okun's coefficient. The data derives from European Economy data. All series are annual, covering forty – two years (1961 – 2002).

In his first research, Okun used data from Gross National Product. Later, many academics have estimated Okun's coefficient using Gross Domestic Product (Harris and Silverstone 2001) and production as well (Prachowny 1993, and Freeman 2000).

This paper uses Hodrick – Prescott filter (HP, with $\lambda = 100$) to decompose the two time series with trend and cyclical components. The aim of using this filter is to be able to observe the sensitivity of estimated Okun's coefficient. An advantage for using the Hodrick – Prescott filter is that time series which comes out is static when we remove the trend (Cogley and Nason 1995).

The reverse relationship of the logarithm between the 'gap' of real GDP and the 'gap' of unemployment is obvious from the data that derives from the four countries that we examine.

The model hypotheses (1) take into account that variables are stationary and the next step is to proceed with the unit root test using augmented Dickey – Fuller test (1979) and Kwiatkowski et al test (1992).

3. Unit root test

Many macroeconomic time series contain unit roots dominated by stochastic trends according to Nelson and Plosser (1982). Unit root tests are important in examining the stationarity of a time series, because a non-stationary regressor invalidates many standard empirical results. The existence of stochastic trend is determined by testing the presence of unit roots in time series data. In this study, unit root test is being tested using augmented Dickey – Fuller test (1979) and Kwiatkowski et al test (1992).

3.1 Augmented Dickey – Fuller test (ADF test)

The Augmented Dickey – Fuller test (1979) is referred to the t statistic criterion of δ_2 coefficient on the following regression:

$$\Delta X_t = \delta_0 + \delta_2 X_{t-1} + \sum_{i=1}^k \alpha_i \Delta X_{t-i} + u_t \quad (3)$$

The ADF regression tests for the existence of unit root on X_t , namely on logarithm of the 'gap' of real GDP and the 'gap' of unemployment. The variable ΔX_{t-i} expresses the first differences with k time lags and final u_t is the variable that adjusts the errors of autocorrelation. The coefficients δ_0 , δ_2 , and α_i are being estimated. The null and the alternative hypothesis for the existence of unit root in variable X_t is:

$$H_0 : \delta_2 = 0 \quad H_a : \delta_2 < 0$$

This paper follows the suggestion of Engle and Yoo (1987) using the Akaike information criterion (AIC) (1974), to determine the optimal specification of Equation (2). The appropriate order of the model is determined by computing Equation (2) over a selected grid of values of the number of k lags and finding that value of k at which the AIC attains its minimum. The distribution of the ADF statistic is non- standard and the critical values tabulated by Mackinnon (1991) are used.

3.2 Kwiatkowski, Phillips, Schmidt, and Shin's test (KPSS test)

As long as the null hypothesis, in the augmented Dickey – Fuller test, is that time series consists of unit root, the above hypothesis is accepted unless there is dynamic evidence against it. However, this approach can have a lower impact against the stationary unit root procedure. In contrast, Kwiatkowski et al (1992) presented a test where the null hypothesis is referred to a stationary time series. KPSS test implements the augmented Dickey – Fuller test considering that the power for both tests can be determined from the comparison of the significance of statistical criteria on both tests. A stationary time series has statistical significant criteria for ADF test and non statistical significant criteria on KPSS test (Note1)

4. Empirical Results

Table 1 presents the results of ADF stationarity tests and KPSS tests which were applied on the 'gap' of unemployment rate and on the logarithm of real GDP for four Mediterranean countries on EU in their levels.

Insert Table 1 here

ADF test show that all variables are stationary on their levels for the four European countries. Also, KPSS test rejects the null hypothesis on the levels of time series for the examined countries. Therefore, the corresponding variables on both tests (ADF, KPSS) can be characterized as integrated order null $I(0)$.

Table 2 presents the results of equation (1) for every examined country. As it was mentioned on section 2, the 'gap' variables that are used on equation (1), are static so there is no need for diversification on the data.

Starting with a maximum of five lags ($k=5$) of the logarithm of the 'gap' for real GDP which represents the restrictions as far as the size of the sample is concerned, we adopt a continuing procedure in order to define the most suitable structure for the model's lags. The accepted hypothesis is exactly above the one which produced an important result. The well-ordered hypotheses are as follows:

$$H_0^1 : \gamma_5 = 0$$

$$H_0^2 : \gamma_5 = \gamma_4 = 0$$

$$H_0^3 : \gamma_5 = \gamma_4 = \gamma_3 = 0$$

$$H_0^4 : \gamma_5 = \gamma_4 = \gamma_3 = \gamma_2 = 0$$

$$H_0^5 : \gamma_5 = \gamma_4 = \gamma_3 = \gamma_2 = \gamma_1 = 0$$

Insert Table 2 here

The estimated coefficients on table 2 are stable enough and statistical significant on 5% level according to Hodrick and Prescott method with an exception on data for Greece where coefficient is not statistical significant and has one time lag. It is worth mentioning that some relationships might appear on lags if the direction is not clear enough. Moosa (1997) on the long-run regression of his model, added one period lag on the unemployment rate in order to introduce a dynamic on his model.

The estimated Okun's coefficients are just an aspect of the variance of unemployment cost for the four examined countries. The results, using Hodrick and Prescott's filter and the method of trend removing, suggest that the cost in the increase per unit on unemployment rate from the decrease of real GDP is higher in Italy and lower in Greece.

Diagnostic tests for residuals consist of LM test for a possible existence of autocorrelation and heteroscedasticity, the Jarque – Bera test for normality and Ramsey RESET test for incorrect specification of the model with its functional form. For the verification of forecasting ability of the model, the first and second Chow test were adopted while for the extraction of predictions out of the sample (Ex – ante), the Theil's statistic was used.

The main goal of this study is not to explain the reason why the cost of unemployment is higher in Italy than in other examined countries. It is obvious that estimated Okun's coefficients are higher in the most industrialized countries with quite larger population and production.

5. Conclusions

On this study we have estimated Okun's coefficients for four member countries of EU using real GDP and unemployment rate. The purpose of this study is to examine the variance on Okun's coefficient for the examined countries. Evaluating the results in 5% level of significance, we obtain coefficients' stability and statistical results for all countries except Greece. The coefficients' estimation is -0.024 for Italy, -0.017 for Spain, -0.016 for Portugal and -0.007 for Greece and for the EU -15 is -0.12.

Generally, we can conclude that we don't reject the estimations based on results of table 2 according to statistical and diagnostic tests. Furthermore, we claim that the model can predict within the sample period satisfactory (Ex – Post).

To sum up, we can say that unemployment cost from the viewpoint of the loss of real GDP is larger in Italy, which is regarded as an industrial country, and lower in Greece where there is no heavy industry.

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Notes

According to Kwiatkowski et al (1992). The test of KPSS assumes that a time series can be composed into three components, a deterministic time trend, a random walk and a stationary error:

$$y_t = \delta t + r_t + \varepsilon_t$$

where r_t is a random walk $r_t = r_{t-1} + u_t$. The u_t is iid $(0, \sigma_u^2)$.

The stationary hypothesis implies that $\sigma_u^2 = 0$.

Under the null, y_t is stationary around a constant ($\delta=0$) or trend-stationary ($\delta \neq 0$). In practice, one simply runs a regression of y_t over a constant (in the case of level-stationarity) or a constant plus a time trend (in the case of trend-stationarity). Using the residuals, e_t , from this regression, one computes the LM statistic

$$LM = T^{-2} \sum_{t=1}^T S_t^2 / S_{\varepsilon}^2$$

where S_{ε}^2 is the estimate of variance of ε_t

$$S_t = \sum_{i=1}^t e_i, \quad t = 1, 2, \dots, T$$

The distribution of LM is non-standard: the test is an upper tail test and limiting values are provided by Kwiatkowski et al (1992), via Monte Carlo simulation. To allow weaker assumptions about the behaviour of ε_t , one can rely, following Phillips (1987) and Phillips and Perron (1988) on the Newey and West (1987) estimate of the long-run variance of ε_t which is defined as:

$$S^2(l) = T^{-1} \sum_{t=1}^T e_t^2 + 2T^{-1} \sum_{s=1}^l w(s,l) \sum_{t=s+1}^T e_t e_{t-s}$$

where $w(s,l) = 1 - s/(l+1)$. In this case the test becomes

$$\nu = T^{-2} \sum_{t=1}^T S_t^2 / S^2(l)$$

which is the one considered here. Obviously the value of the test will depend upon the choice of the 'lag truncation parameter', l . Here we use the sample autocorrelation function of Δe_t to determine the maximum value of the lag length l .

Table 1. Tests of unit roots hypothesis

	ADF	LAGS	KPSS	BANDWIDTH
GREECE				
LGDPGAPGR	-3.543**	0	0.055***	2
Δ LGDPGAPGR	-6.616***	0	0.060***	4
UNGAPGR	-4.743***	1	0.044***	3
Δ UNGAPGR	-4.170***	1	0.057***	3
SPAIN				
LGDPGAPS	-3.466**	1	0.037***	3
Δ LGDPGAPS	-5.354***	0	0.036***	1
UNGAPS	-4.606***	1	0.041***	1
Δ UNGAPS	-4.254***	1	0.046***	1
ITALY				
LGDPGAPS	-3.770***	1	0.074***	1
Δ LGDPGAPS	-5.426***	0	0.249***	16
UNGAPS	-4.815***	1	0.034***	3
Δ UNGAPS	-4.845***	0	0.161***	9
PORTUGAL				
LGDPGAPS	-5.028***	1	0.040***	2
Δ LGDPGAPS	-5.832***	1	0.326***	28
UNGAPS	-4.592***	1	0.043***	2
Δ UNGAPS	-3.899***	0	0.033***	3
EU-15				
LGDPGAPEU	-3.455**	1	0.063***	4
Δ LGDPGAPEU	-4.623***	0	0.047***	2
UNGAPEU	-4.580***	1	0.039***	3
Δ UNGAPEU	-4.548***	1	0.045***	2

Notes:

The t-statistic for testing the significance of δ_2 when a time trend is not included in equation 2..The calculated statistics are those reported in Dickey-Fuller (1981). The critical values at 1%, 5% and 10% are -3.60, -2.90 and -2.60 for τ_μ

The KPSS statistics for testing the null hypothesis that the series are $I(0)$ when the residuals are computed from a regression equation with only an intercept respectively. The critical values at 1%, 5% and 10% are 0.739, 0.463 and 0.347 (Kwiatkowski et al, 1992, table 1).

***, **, * indicate significance at the 1, 5 and 10 percentage levels

Table 2. Estimated equation (1)

	GREECE	ITALY	SPAIN	PORTUGAL	EU-15
Constant	-0.000760 [0.9066]	-6.3E-05 [0.9899]	0.000837 [0.8861]	- 0.00081 [0.890]	-0.00045 [0.8207]
UNG		-0.02462 [0.0226]	-0.01705 [0.0000]	-0.016486 [0.0245]	-0.01211 [0.0001]
UNG(-1)	-0.007411 [0.3923]				
LG(-1)	0.552824 [0.0003]	0.676851 [0.0003]	0.506832 [0.0000]	0.779563 [0.000]	0.769596 [0.0000]
LG(-2)		-0.33149 [0.0281]		-0.335173 [0.0384]	
R ²⁽²⁾	0.291642	0.562646	0.678984	0.609330	0.721565
DW ⁽³⁾	1.775911	1.968784	1.857702	1.873157	1.656195
Diagnostics Tests					
Serial Correlation LM Test ⁽⁴⁾	1.210 [0.271]	0.030 [0.861]	0.324 [0.569]	0.891 [0.345]	1.581 [0.208]
Normality Test ⁽⁵⁾	4.214 [0.121]	14.61 [0.000]	1.338 [0.511]	7.591 [0.022]	0.926 [0.629]
White Heteroscedasticity ⁽⁶⁾	0.916 [0.922]	11.85 [0.065]	0.739 [0.571]	11.68 [0.069]	2.269 [0.686]
ARCH LM Test ⁽⁷⁾	1.169 [0.279]	0.080 [0.776]	0.175 [0.675]	0.365 [0.606]	0.661 [0.416]
Ramsey RESET Test ⁽⁸⁾	0.630 [0.432]	1.606 [0.213]	0.779 [0.382]	0.394 [0.533]	0.578 [0.451]
Chow Breakpoint Test ⁽⁹⁾	0.031 [0.992]	0.058 [0.993]	0.198 [0.896]	0.169 [0.957]	0.598 [0.620]
Chow Forecast Test ⁽¹⁰⁾	0.068 [0.990]	0.058 [0.993]	0.145 [0.963]	0.169 [0.953]	0.497 [0.737]
Forecasting					
Theil ⁽¹¹⁾	0.789	0.554	0.367	0.516	0.468
Bias	0.000	0.000	0.000	0.000	0.001
Variance	0.636	0.314	0.124	0.276	0.118
Covariance	0.363	0.685	0.875	0.723	0.880
RMSE ⁽¹²⁾	0.046	0.037	0.041	0.045	0.018
MAE ⁽¹³⁾	0.033	0.029	0.034	0.036	0.015
MAPE ⁽¹⁴⁾	117.07	502.6	106.8	1527.1	396.4

Notes:

1. Numbers in brackets indicate significant levels.
2. R^2 = Determination coefficient
3. D-W Durbin – Watson statistic for autocorrelation
4. Breusch – Godfrey (Lagrange-Multiplier) test for up to first order of the residuals.
5. Jarque-Bera test for normality of the residuals
6. White test for heteroscedasticity of the residuals
7. ARCH Autoregressive conditional heteroscedasticity statistic of order one.
8. Ramsey reset test of functional form based on the inclusion of two fitted terms.
9. Chow breakpoint test for break in 1999.
10. Chow forecast test from 1999.
11. Theil inequality coefficient decomposition into bias proportion, variance proportion and covariance proportion.
12. Root mean squared error.
13. Mean absolute error
14. Mean absolute percent error.



A Test of Association between Working Hour and Work Family Conflict: A Glimpse on Dhaka's Female White Collar Professionals

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Abstract

As there has been an increasing influx of white collar woman professionals in Dhaka, maintaining work- family balance is becoming more critical day by day. This study particularly attempts to explore the correlation between working hour and work family imbalance. Three FGDs, each with 10 female managers, were conducted, to make a total sample size of 30. Findings report extensive working hours, per se 9-10 hours a day, as a lethal contributor to work family conflict, whereas shorter working hours (average 5-7 hours) have little or no affect. This study is based on Dhaka city and concentrated on private commercial organizations only. So an extended sample with more coverage is suggested.

Keywords: Working hour, Work family conflict, Dhaka

1. Introduction

With the increase in dual-income families and employed single parents, conflict between work and family has reached a crisis (Beauregard, 2006). Rhona and Robert N. Rapoport (1969, 1976) coined the terms "Dual Career Family" and "Dual Career Couple" (DCC) at that time these have become increasingly significant lifestyles (Greenhaus, 1989; Sekaran, 1983, 1985, 1986).

Work and family are the key domains of life to many people (Whitely and England, 1977), and, not surprisingly, work-family conflict (WFC) research has become a major area in organizational research (Parasuraman and Greenhaus, 2002). Work-family stress has been identified as a major problem for working mothers (Aryee et al, 1999, Ng et al, 2002).

Most family/work research emphasizes the idea that conflict has an impact on individual's emotional and physical condition, thus causing disadvantages for companies due to absenteeism and diminishing productivity (Cooper and Williams, 1994). Not only conflicts between the two fields might affect productivity, spillover theory (Caligiuri and Cascio, 1998) rather suggests that problems in one domain (e.g. home-life) will affect the other (e.g. performance in the job).

There are two types of work-family conflicts (Boyar et al, 2008)

A. "work interfering with family" conflict (WIF); and

B. "family interfering with work" conflict (FIW) (e.g. Carlson et al., 2000; Frone et al., 1992a, 1996; Gutek et al., 1991; Netemeyer et al., 1996).

Work-family conflict and family-work conflict are distinct, but conceptually related forms of inter-role conflict (Frone et al., 1992; Netemeyer et al., 1996). Work-family conflict refers to "a form of inter-role conflict in which the general demands of, time devoted to, and strain created by the job interfere with performing family-related responsibilities" and family-work conflict refers to "a form of inter-role conflict in which the general demands of, time devoted to, and strain created by the family interfere with performing work-related responsibilities" (Netemeyer et al., 1996).

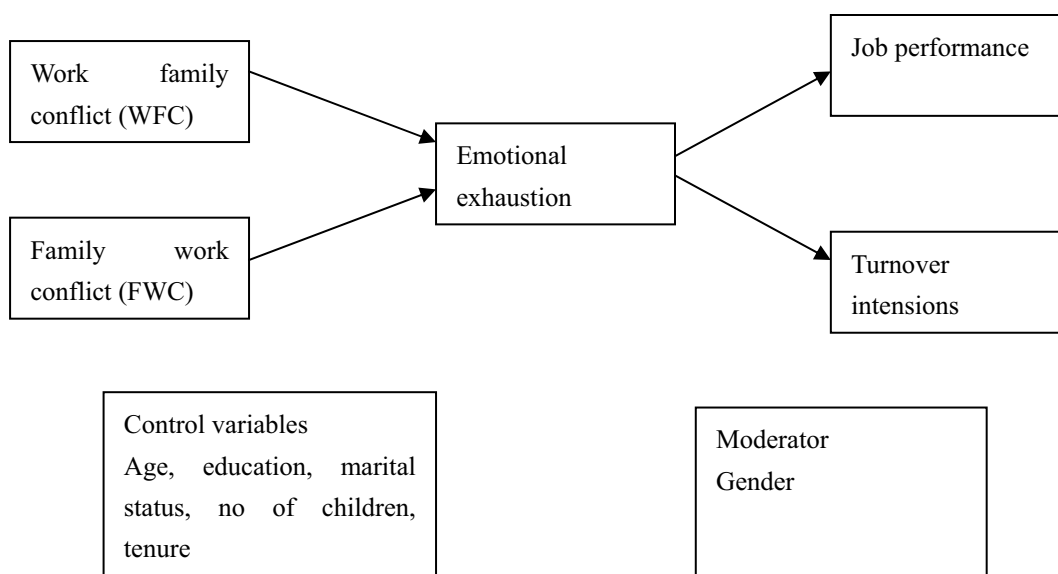
Both forms of conflict basically result from an individual's attempts to meet an overabundance of demands emanating from the home/family and work domains in which the individuals operate (Boles et al., 2001). The demands coming from one domain make performance of roles in the other domain more difficult. Yavas et al. (2008) contend that three consequences of work-family and family-work conflicts are: emotional exhaustion, poor job performance and higher turnover intentions.

This study targets married women professionals working in Dhaka city and examines their work-family conflict experiences. Western literature abounds on this topic (e.g. Ferber and O'Farrell, 1991; Hochschild, 1997; Pleck, 1977), but relevant information on Bangladesh is rarely available. Unique socio-economic structure of Dhaka city makes this study an interesting one which sheds lights into multiple relationships between husband and wife, children and mother, domestic help and professional women.

2.

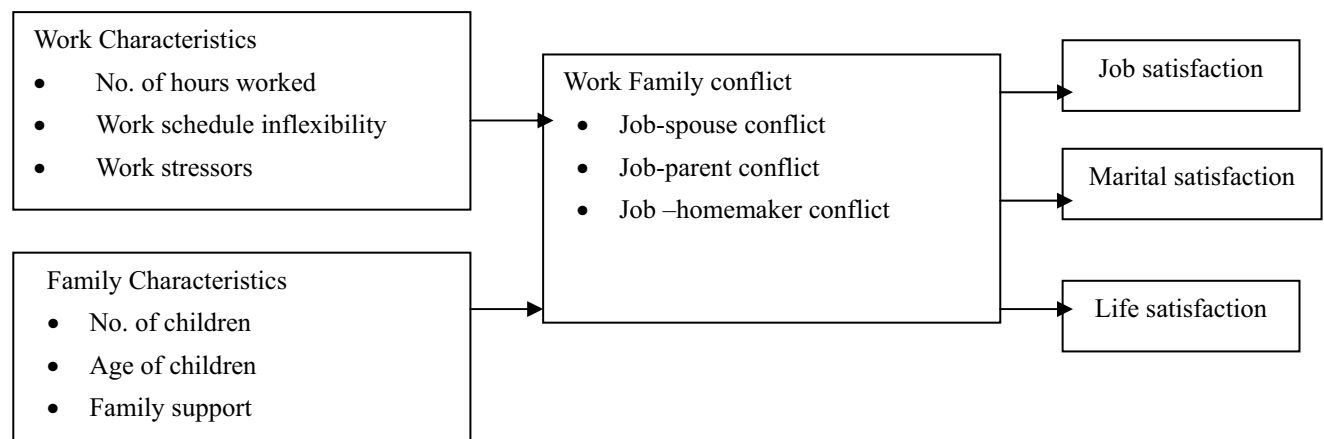
2.1 Conceptual Framework of WFC

Different researchers define the conceptual framework of WFC differently. The conceptual framework developed by Yavas, et.al, (2008) is shown in Figure 1.



According to this model developed by Yavas, et.al, (2008) inter-role conflicts emanating from the demands of the two universal domains of adult life, work and family, lead to emotional exhaustion. According to this model, emotional exhaustion results in poor job performance and a higher propensity to leave the organization. Hence, the key underlying premise of this model is that work-family conflict and family-work conflict impact the two critical job outcomes of performance and turnover intentions both directly as well as indirectly through the mediating role of emotional exhaustion.

According to Kim's (2001), work-family conflict arises from factors within the work domain and family domain, the research model on WFC is



Researchers have come to implicitly agree that increases in demand are a primary cause of "work interfering with family" conflict (WIF) and "family interfering with work" conflict (FIW) (e.g. Carlson and Kacmar, 2000; Parasuraman et al., 1996). Excessive work time has long been seen as the major culprit affecting work-family balance (Pleck et al., 1980).

The work-family literature has traditionally assumed that variables associated with the family domain (e.g. childcare, household work) predict Family to Work Conflict (FWC), and that work domain variables (e.g. hours worked weekly, job autonomy) predict Work to family conflict (WFC) (Beauregard, 2006).

The number of hours spent weekly in work activities has been shown to have a positive relationship with WFC (Fu and Shaffer, 2001). Expectations held by superiors and co-workers for an employee to prioritize the work by assuming increased job responsibilities and extending performance of the work role beyond normal working hours have also been shown to contribute to WFC (Major et al., 2002).

Parental demand can affect work-family conflict. Parents tend to experience more work-family conflict than non-parents as they need to spend greater amount of time at home taking care of their children. Parental demand is measured by the number of children and their age. Younger children will demand more of their parents' time. And large families are likely to be more time demanding than small families (Greenhaus and Beutell, 1985). Pleck et al. (1980) reported that parents experience more work-family conflict than married couples without children.

The supportive behavior of family members can help to buffer work-family conflict is experienced by working women. The support can be attitude, emotional or instrumental support (Kim and Ling 2001). Emotional support refers to the display of sympathetic and caring behavior such as taking interest in the spouse's work, willingness to listen, and giving advice (Kim and Ling 2001). Instrumental support is the provision of actual assistance to help in task accomplishment, which includes helping out in household chores and childcare. Instrumental support can reduce time pressure and parental demand that causes work-family conflict (King et al., 1995).

2.2 Outcomes of Work to Family Conflict (WFC)

Emotional exhaustion is the first stage of the burnout syndrome (Cordes and Dougherty, 1993; Maslach and Jackson, 1981) and it occurs when an individual faces seemingly overwhelming demands on his/her time and energy. Depletion of emotional resources and a lack of energy characterize emotional exhaustion (Gaines and Jermier, 1983). Precepts of three well-endorsed theoretical frameworks (inter-role conflict theory, identity theory, and conservation of resources -COR theory) suggest that work-family and family-work conflicts can lead to emotional exhaustion.

Study on women entrepreneurs, by Arora *et al.* (1990) found a negative relationship between work-family conflict and job/business satisfaction. Similar results for Singapore women professionals are obtained by Aryee (1992). Pleck *et al.* (1980) reported that when work-family conflict existed, the working women experience less job satisfaction.

Empirical research reveals that work-family conflict has a detrimental impact on performance (Aryee, 1992; Frone et al., 1997; Netemeyer et al., 2004). Anecdotal evidence by the Family and Work Institute as well indicates that employees who cannot balance their work demands with home and family responsibilities experience negative spillovers resulting in decreased job performance (Netemeyer et al., 2003). There is also evidence indicating that family-work conflict decreases employees' work-related performance (Frone et al., 1997; Netemeyer et al., 2004).

3. Focus of this study

The objective of this research is to identify to what extent the married women managers of Dhaka face the work family conflict with respect to working hours. This study mainly has two focal points:

A. Identify the impact of working hours (both short and long working hours) on work family conflict.

B. Develop a model on the basis of the findings on A

4. Methodology

Data were obtained from three FGDs. Each focus group consisted of 10 members. Face-to face interviews were taken separately with each group for one hour. Each focus group maintained consistency on two variables: working hours and average monthly income. The first focus group consists of teaching professionals whose working hours is 5- 7 hours per day; the other two focus groups are composed of members from corporate houses whose working hours range from 9-10 hours a day. The sample constituted a total of thirty female managers.

A structured questionnaire was used to collect some basic information of the selected thirty respondents (years in service, levels of education, age, no. of children, sources of child care support). The target population of this study was married women managers in Dhaka city. A manager means who has the authority to delegate and who has some subordinates to supervise. During focus group discussions all opinions, comments and suggestions were noted.

Hypothesis of this study

For short working hour

H₁: Short working hours has impact on work family conflict

For long working hour

H₂: Long working hours has impact on work family conflict

The linear relationship between the dependent and the independent variables was determined through ordinary least-square (OLS) regression. Here two different equations were constructed to find the regression results of the above mentioned hypothesis. Equation of for the first hypothesis

$$WFC_{Sh} = \beta_0 + \beta_1 W_{Sh} + u_h \quad (1)$$

Equation – 1 attempts to find out the results on short working hours (W_{Sh}) influences on Work family conflict (WFC_{Sh})

$$WFCLh = \beta_0 + \beta_1 WLh + u_h \quad (2)$$

Equation – 2 attempts to find out the results on long working hours (W_{Lh}) influences on Work family conflict (WFC_{Lh})

5. Sample Profile

5.1 Respondent profile (working 5-7 hours per day, two days weekly holidays)

The respondents of this category are in academia. 40 percent of them are having length of service between 2 to 5 years, 60 percent are in service for more than 5 years. All of the respondents are master degree holders. 30 percent respondents are having one child, 60 percent are having two and 10 percent have three children. 30 percent of the respondents reported that their own parents were taking care of their children while they were at job, 40 percent depended on their parent-in-laws for their children care and 30 percent respondent depended on domestic help (Table 1)

5.2 Respondent profile (working 9-10 hours per day, one/ two days weekly holidays)

The respondent of this category are 40 percentage entry level managers in bank, 35 percentage entry level managers in other corporate houses, 15 percentage mid level managers from telecom sector, 10 percentage are senior level executives from banks. 60 percent are having service length of 2-5 years, 20 percent are in service for more than 5 years. All of the respondents are master degree holders. 20 percent respondents have no child, 80 percent are mother of two children. 40 percentage respondents said that their own parents were taking care of their children while they were at job, this percentage is 60 who depended on their parent-in-laws for children care. (Table 2)

6. Findings from the Focus Group Discussions

6.1 Short Working Hours

The respondents working for 5-7 hours a day did not consider working hours as a factor to affect work and family balance. 60 percent respondents disagreed with the statement “Working hours positively associated with work -family conflict”. Whereas 20 percent respondents of this group agreed with the concept that working hours affect the work family balance. The findings are shown in the Table 3. The equation is not significant p value is more than 0.05 at 95% confidence interval. The coefficient of determination (R^2) indicates that only 34% of the total variation in the dependent variable is account for independent variable, while remaining 66% is account for other variables. Short working hours has no impact on Work Family Conflict). The complete results are shown in the table -V

Few comments of the respondents (Short working hours)

.....one respondent who was a teacher in a university shared to have a well balanced life between work and family as she could give ample time to her family. She rather opined that having the identity of a professional earned her social status

which in turn would spill over as a sense of completeness into her family domain to give her a more meaningful and productive life.

6.2 Long working hours (9-10 hours daily)

On the other hand, woman managers in corporate sector having long working hours (9-10 hours daily) reflected a different picture. 80 percent of the managers working for 9-10 hours daily, agreed that time is a crucial factor for work family imbalance. The findings are shown in the following table: IV

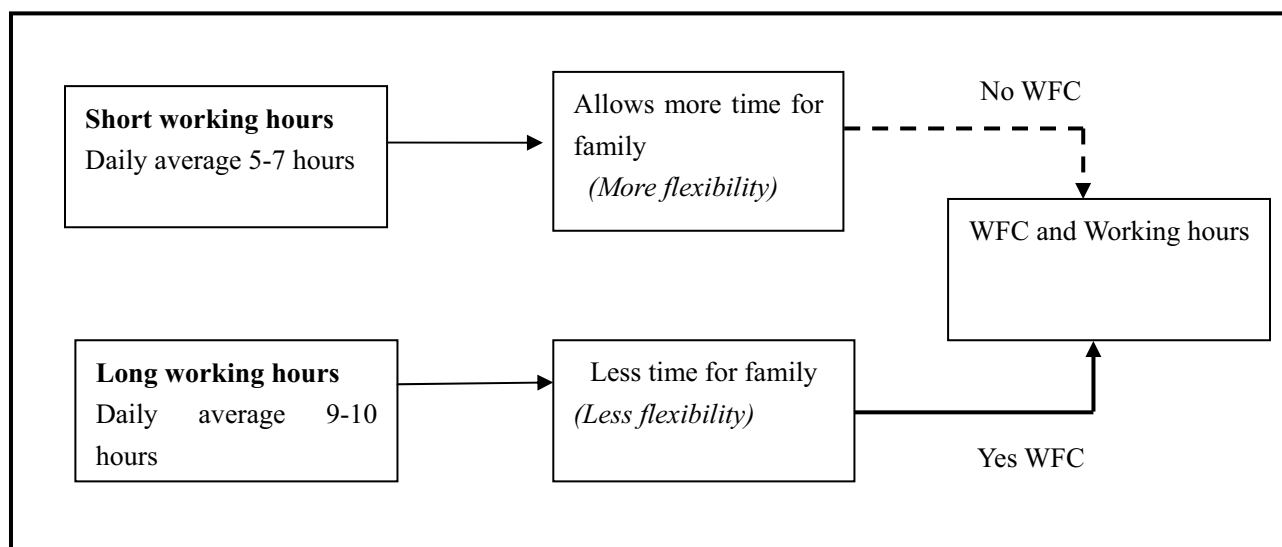
The equation is significant p value is less than 0.01 at 99% confidence interval. The coefficient of determination (R^2) indicates that only 75% of the total variation in the dependent variable is account for independent variable, while remaining 25% is account for other variables. Long working hours has impact on Work Family Conflict. (Table-VI)

Few comments of the respondents (Short working hours)

.....one mother having two small children of less than 5 years shared her emotional strain. Despite having moral support from her husband almost everyday when she reached home pretty late after dusk, she had to face increasing difficulty to satisfy the ever increasing role expectations from different stakeholders of her life; namely children and in-laws.

..... One respondent said that she had to stay with her parents in law. After returning home she had to address different family and social issues raised by her mother in law, or sister in law. She said that after joining work for the last two years it seemed to her that she was working round the clock and she failed to watch any movie as she failed to manage any time.

7. Model developed from this study



8. Conclusion

At the personnel level WFC precipitates to emotional exhaustion, at the organizational level it is translated into potential loss of female talent. Since WFC causes diminished job performance leading to turnover intentions, this might ultimately cost an organization in terms of loss of female talent. With the growing size of female white collar professionals at work place in Dhaka, the issue of work family conflict is gaining momentum. As literatures available on the Western world reveal work domain variables; such as working hours, schedule inflexibility or work stressors, to have association with work family conflict, study of the same sort has relevance in the socio-economic context of Dhaka. Two main branches of WFC area- work interfering with family conflict (WIF) and family interfering with work conflict (FIW) have widely been studied in the Western context, while a little is known in the socio-economic scenario of Dhaka. Dhaka, being the cosmopolitan city, shares some important commonness with other economic hubs of the developed world. This study has taken into account the impact of single work domain variable; i.e. working hour on work family conflict.

This study approves the association between working hour and WFC. 99 percent of the woman managers reported to have been suffering from the symptoms of WFC because of 9 to 10 hours of work everyday. While only 20 percent involved in teaching reported so.

Woman managers feel a strong two-way pull to maintain balance between work and family. With superior position comes more responsibility demanding for extended working hours leading to greater potential of WFC specially when support from family members remain very low or non-existent.

This study may further be elaborated with bigger sample size to look into relationships among other variables in work and family domain. The picture of struggle behind WFC can then be well portrayed with implications for organization.

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Appendix

Table 1. Respondent profile on basic information (working hour 5-7 hours)

Academic degree	Length of service	No. of Children	Children care	House hold support
100 percent in teaching profession with Master degree	40 percentage with 2-5 years	30 percent having one child	30 percent receive support from parents	90 percent domestic help
	50 percentage more than 5 years	60 percentage with two children	40 percent receive support from parent-in-laws	10 percent supported by self
	10 percentage working more than 10 years	10 percentage with three children	30 percentage take support from domestic help	

Table 2. Respondent profile on basic information (working hours 9-10 hours)

Respondent nature of job	Academic degree	Length of service	No. of Children	Children care	House hold support
40 percentage Bankers	All of the respondents are Master degree holder	20 percentage working for less than 2 years	20 percent with no children	60 percentage depend on parent-in-laws	100 percentage domestic staff
35 percentage entry level managers in other corporates		60 percentage working for 2-5 years	80 percentage with two children	40 percentage receive support from own parents	
15 percentage mid level managers from telecom		20 percentage working for more than 10 years			
10 percentage senior managers from bank					

Table 3. Less working hours and work family balance

		Working hours positively associated with work -family conflict			Total
		Disagree	Neutral	Agree	
Average daily working hours	Daily 5-7 hours	6	2	2	10
	Total	6	2	2	10

Table 4. Long working hours and work family balance

		Average daily working hours			Total
		8-9 hours	9-10 hours	More than 10 hours	
Working hours positively associated with work -family conflict	Neutral	1	0	0	1
	Agree	0	16	0	16
	Strongly agree	0	1	2	3
	Total	1	17	2	20

Table 5. Output Regression for Short working hours (all observations are used)

Equation no -1	Model	Co efficient	t-value	p-value	F-value	R ²
Hypothesis -1	Constant	-6.889	-1.473	0.179	4.126	0.340
	WFC	1.556	2.031	0.077		

Table 6. Output Regression for long working hours (all observations are used)

Equation no -2	Model	Co efficient	t-value	p-value	F-value	R ²
Hypothesis -2	Constant	0.119	0.218	0.830	54.064	0.750
	WFC	0.983	7.353	0.00		



Study on the Tax Planning of Enterprise Income Tax

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Abstract

The enterprise income tax occupies very important status in the tax paying of enterprise, and it has large space of tax planning. Under the background that the new enterprise income tax law was issued, we discussed the problem how to use tax planning to reduce the tax burden of enterprise and realize the maximization of the total profit for the enterprise. In this article, we studied the tax financing in the stage of enterprise financing from the selection of financing mode and the confirmation of financing channel, and put forward that the enterprise should select the liability financing mode to the largest extent in the critical risk range of equity structure. We studied the tax planning in the stage of investment of enterprise from three aspects including correctly selecting the investment direction, confirming proper enterprise organization form and selecting tax saving investment subject. We studied the tax planning from two aspects such as income and charge deduction. We studied the tax planning in the distribution stage of enterprise management result from first utilizing taxable income to compensate the loss, the loss recovering sequence of domestic investment profit return and the profit distribution strategy in the low tax region. For above aspects, we all put forward our own new theoretical opinions.

Keywords: Enterprise income tax, Tax planning, Tax preference

Comparing with the old enterprise income law, the new enterprise income law changed in many aspects such as the taxpayer, the pre-tax deduction, and the tax preference, which put forward new task for the tax planning of the enterprise income tax. Under the background of new enterprise income tax, we will discuss the tax planning in the main stages such as the enterprise financing, investment, management and distribution.

1. Tax planning in the stage of enterprise financing

The tax planning of the income tax in the stage of enterprise financing mainly includes the contents about the financing mode and the financing channel.

1.1 Tax planning of financing mode

The financing modes of enterprise mainly include the equity financing and liability financing, and two different financing modes will produce different tax results. Generally speaking, under the fixed tax rate level, the liability financing can produce the interest rigid cost which can be reported before tax. When the account profit is adjusted as the taxable income, the tax law allows that the interest expenditure induced by the liability can be deducted before tax in the same interest rate regulated by the Bank in the same period, which equals that the state finance assumes a quarter of interest cost from the enterprise. The equity financing is the flexible cost of bonus stock which can be reported after tax. The mode that the enterprise provides bonus stock and dividend to the investors is only one item of the distraction of post-tax profit (net profit), and it must be distributed after tax. The tax saving difference between two financing modes is very obvious. In the equity structure of enterprise, the proportion of the liability equity is higher, and the saving effect of the tax cost is more significant. So under the premise that the rate of or return on investment is higher than the liability cost rate, enhancing the proportion of liability financing will bring extra economic benefits for the owner of the enterprise, and finally increase the value of the enterprise. But we should also pay attention to that will increase the financial risk of the enterprise, and excessive liability will even induce the abnormality of the enterprise equity structure,

and the liability crisis will make the financial status of the enterprise fall into collapse. Therefore, before the enterprise makes the tax planning of financing mode, it must ensure that the equity structure is in the critical risk range.

1.2 Tax planning of enterprise financing channel

The financing channels of enterprise mainly include bank loan, self-accumulation of enterprise, inter-enterprise lending, interior collection of enterprise, bond or stock issuance and commercial credit. Under usual situation, the sequence of the tax burden from heavy to light is self-accumulation of enterprise, bank loan, inter-enterprise lending and interior collection of enterprise. The principle of tax planning of financing channel is that under the premise that the equity structure is to select the channel with higher profit and lower harm in the critical risk range, through comparing the advantages and disadvantages of various financing channels.

2. Tax planning in the investment stage of enterprise

For the tax planning in the investment stage of enterprise, we mainly consider three aspects, i.e. the selection of investment direction, the selection of enterprise organization form and the selection of investment mode.

2.1 Selecting correct investment direction

The new enterprise income tax established the new tax preference which gave priority to the industrial preference, assisted by the regional preference, giving attention to the social advancement. Investors should select the investment industry to reduce the tax burden according to the regulations about the national industrial policies and tax preference, and response the industrial policy guidance of the government. First, because the industrial select possesses strategic meanings for the development trend of the enterprise, so when the investors make the decision of industrial investment, they should scientifically demonstrate the investment and carefully make the decision, and they should consider not only their own industrial advantages, but also national industrial support policies, industrial tax preference policies, and make the rare resources of the enterprise to the green sunrise industries such as the agriculture, scientific technology, environment protection and energy saving. Second, the enterprise income tax regulated regional preference for Chinese western regions, minority regions and special economic zones, and the enterprise should study out multiple selectable investment programs in possible investment regions, and it should not only compare the cost incomes of various regional investment programs, but compare the tax levels of various programs, and make the comprehensive evaluation for the comprehensive benefits of various regional investment programs, which can not only reduce the tax burden, but find the regional investment program with maximum economic benefit.

2.2 Selecting proper enterprise organization form

The tax planning of enterprise organization form should mainly consider four parts including establishment, expansion, division and merger. First, we will study the tax planning when the enterprise is established and select the organization form. According to the organization form, the enterprise types include individual proprietorship enterprise, partnership enterprise and limited corporation which can be divided into limited liability company and joint stock limited partnership, and because the tax system regulates different tax burden levels for the enterprises with different organization forms, so the establishment costs and advantages of different organization forms are different, and the tax is one of factors we should consider when we select the organization form of the enterprise. Especially when the organization form of the enterprise has large influence to the production and management, the tax will be the important factor which we should consider, and investors can select the organization form of the enterprise to reduce the tax burden for the enterprise. Second, we will research the tax planning when the enterprise is expanded and needs to select the organization form. Enterprise always actualizes the scale expansion by increasing branches, but the tax policies for the branches with different forms in the tax law are obviously different, so enterprise should select the organization form of the branch. For the filiale and the subsidiary company, they respectively have their advantages and disadvantages for the tax, so the loss of the branch can counteract the gain of the parent company and reduce the total taxable income of the company. The subsidiary company and the parent company are regarded as two entities in the law, but the subsidiary company can obtain various tax preference policies regulated by the laws or local government. So the enterprise should comprehensively consider the profit ability of the branch when it selects the form of the branch, and it should adopt the form of filiale when the branch is in the loss period, and adopt the form of subsidiary company when the branch is in the profit period. Third, we will study the tax planning in the division and merger of the enterprise. According to the regulations of the enterprise income law, enterprises should pay the income tax by 25%, but it also regulates that the small-sized profit-making enterprise can pay the income tax by 20%, so the middle and small-sized enterprise can adopt the division measure to separate the branch from the enterprise to reduce the taxable income and the tax burden. The enterprise income tax regulates that the profitable enterprise annexes unprofitable enterprise, it can use the accumulated loss of the unprofitable enterprise to counteract the profit of the profitable enterprise and reduce the taxable income and the tax burden. Therefore, in the merger of enterprises, the profitable enterprise can reduce the enterprise income tax by annexing unprofitable enterprises.

2.3 Selecting the investment subject of tax saving

According to different forms of investment subject, the investment of enterprise can be divided into monetary investment, tangible investment and immaterial investment. The monetary investment doesn't increase the tax burden of investors, but it will influence the cash flux and payment ability of the enterprise. Different tax regulations aim at different tangible investment types, for example, for the estate investment, investors need not pay relative sales tax (if the investor belongs to the real estate enterprise, the land value increment tax needs not be paid temporarily), and the depreciation of the estate can be deducted before tax to reduce the tax base of the enterprise income tax. For the stock-in-trade investment, the tax law will regard it as the sales goods and increase the tax bases of the value increment tax and the enterprise income tax, and the enterprise need pay the increment tax and the enterprise income tax. The immaterial investment can deduct the withholding income tax for the enterprise, and realize the deduction before tax through amortization year by year, which can reduce the tax base of the enterprise income tax. So when the enterprise selects the investment subject, it can select the tangible investment and immaterial investment which are better than the monetary investment from the view of the invested enterprise. Certainly, for the view of investing enterprise, it will assume more tax burdens such as the enterprise income tax, the increment tax and the consumption tax when it selects the tangible investment and immaterial investment, so the investing enterprise should comprehensively consider the tax burdens of two parties to select the proper investment form.

3. Tax planning in the production and management stage of enterprise

The tax base of the enterprise income tax is the taxable income amount which equals to that an enterprise's total income amount of each tax year deducts the tax-free incomes, tax-exempt incomes, each deduction items as well as the permitted remedies for losses of the previous years. And the income items, tax-free incomes and tax-exempt incomes and each deduction items are all generated in the production and management of the enterprise. So the tax planning of the enterprise income tax in the production and management can be implemented from two items such as the income items and the deduction items.

3.1 Tax planning of income

The total income amount of the enterprise in the present term is decided by the sales amount of the product, the unit sales price of the product and the selected sales mode of the product, so the tax planning of the enterprise income tax about the income mainly includes the scale of production and sale, the sales price and the sales mode. First, for the planning of production and sale scale, under the premise of certain sale unit price, the income scale of the enterprise is decided by the sales amount. The scale of production and sale belongs to the item independently controlled by the enterprise, and the scale of production and sale will influence the tax burden of the enterprise which will influence the scale of production and sale in the same way. Therefore, when the enterprise confirms the scale of production and sale, it must consider the tax burden at term. According to the enterprise's self management ability, the enterprise should find the critical point of profit and loss, and seek the scale of production and sale with maximum profits. Second, for the planning of sales price, under the premise of certain production and sale amount, the income scale of the enterprise is decided by the price level which is also the item independently controlled by the enterprise. The enterprise should consider many factors such as the cost level, the market demand and the competition strategy, and the tax burden level is the important factor which should be considered by the enterprise, and the confirmation of the sales price can not only include the pre-tax income and income tax of the enterprise, but will directly influence the increment tax and other relative taxes. In the tax planning of income, we should take the sales price as the factor we should mainly considered. Third, for the planning of sales mode, in the sales process of the product, the enterprise possesses the independent selection right to the sales mode, and different sales mode always apply in different tax policies, i.e. the treatment difference of tax exists in this aspect, which offers the possibility to utilize different sales mode to plan the income tax.

In a word, under the premise disobeying the tax law, the enterprise should compress the income scale which has exceeded the critical point of the tax rate from the sales scale and the sales price, and make the enterprise obtain the preference policies of low tax rate. For the selection of sales mode, the enterprise should delay the implementation of the income and the tax obligation to the best, which will not only compress the income scale in the present term to make the enterprise obtain the preference policy of low tax rate, but also make the enterprise obtain the profit of interest-free loan because of delaying the implementation of tax obligation.

3.2 Tax planning of cost charge deduction

The payout of the enterprise can be divided into the profitable payout and the capital payout according to the time of the profitable term. The profitable payout should be reported in the present cost charge, and the capital payout is divided and respectively reported in the cost charges of the present and future terms. For these two sorts of payout, the planning of the enterprise income tax should treat them differently.

3.2.1 Tax planning of profitable payout

Because different situations of profit and loss, and different tax preferences will differently influence the tax planning of

enterprise, so we should respectively plan the tax of the profitable payout aiming at different situations of profit and loss. First, suppose the enterprise is profitable, because the profitable payout can be deducted from the enterprise income tax, the enterprise should select the planning method with large prophase cost. To make the tax deduction effect of the cost exert its function as soon as possible, and delay the realization of the profit, then enterprise should delay the tax obligation time of the income tax. Second, suppose the enterprise is in loss, the planning method should be combined with the loss remedy of the enterprise. The enterprise should try to make the cost charge in the year with pretax loss remedy higher and make the cost charge in the year without or incompletely with pretax loss remedy lower, and accordingly ensure the tax reduction effect of the cost charge will be exerted to the largest extent. Finally, suppose the enterprise is enjoying the preference policy of the enterprise income tax, because the tax deduction effect of the cost charge in the tax deduction period will completely or partly be deducted through the deduction preference, so the enterprise should select the planning method which has few costs in the tax deduction period and has more costs in the non-tax-deduction period.

3.2.2 Tax planning of capital payout

As the modernization degree of enterprise is gradually enhanced, the proportion of the purchase payout of the long-term assets such as the fixed assets and immaterial assets which reflect the progress of the technology of the enterprise is higher and higher, and the tax planning of the fixed assets depreciation and the immaterial assets salesmanship possesses special importance in the tax planning of the enterprise income tax. First, the tax law doesn't recognize the devaluation preparation of long-term assets which the enterprise picks up, but the taxpayer can utilize the relative regulations about the subsequent expenses of the long-term assets to adjust the depreciation base. The enterprise should combine the long-term development, rebuild the fixed assets designedly, enhance the technical level of the enterprise, and improve the comprehensive competition strengthen of the enterprise. At the same time, the enterprise can put the subsequent expenses according with the capitalization conditions into the fixed assets cost, increase the depreciation picking base, and accordingly increase the depreciation amount of the deduction, reduce the taxable income of the present term and save the tax. For various payouts which don't accord with the confirmation conditions of long-term assets, they should be counted into the profit and loss of the present term. Second, the "Chinese Enterprise Income Tax Law" regulated that the fixed assets of the enterprise needed to be depreciated quickly because of technical progress, the enterprise could reduce the depreciation fixed number of year or adopt the method of quick depreciation. To reduce the depreciation year can quicken the withdrawal of the costs, move the anaphase cost charges to the anterior period, and move the prophase account profit to the latter period. When the tax rate is fixed, the delayed payment of the income tax equals to obtain an interest-free loan from the country. When the tax rate is not fixed, the extension of the depreciation term can also reduce the tax burden for the enterprise. And the selection of the depreciation method of the long-term assets should be scientific, reasonable and legal. Finally, when the enterprise is in the non-deduction period of the income tax, taxpayer should apply for reducing the residual proportion for the tax department in time according to the characters of the assets. When the residual proportion is reduced, the depreciation tax deduction will increase, which could not only maintain the taxpayer's right, but bring large tax benefit for the taxpayer.

4. Tax planning in the management result distribution stage of enterprise

4.1 First utilizing the taxable income to compensate the loss

For the yearly loss of the enterprise, the tax law regulates to allow the enterprise uses the pretax profit in the next year to compensate it. And if the profit in the next year is not enough to compensate, the enterprise is allowed to compensate the loss year after year, but the longest term should be limited in 5 years. In this way, the enterprise can use the selection right of the assets price counting and amortization method allowed by the tax law, and the selection right of the expenses reported range standard to more report the pretax deduction items and deduction amount, and continue to induce the loss before the term of five years is at term, accordingly to prolong the term of the preference policy.

4.2 Arranging the domestic investment return to compensate the loss according to the sequence from low tax rate to high tax rate

According to the enterprise income tax, the investors' after-tax profits returned from the associated enterprise should pay the income tax, but if the enterprise which is the investor has loss or past yearly loss which has not be remedied, the returned profit can be used to remedy the loss, and for the surplus part, the enterprise should pay the income tax. Therefore, if the investor is the enterprise which can be applicable for different income tax rates, the enterprise can select the sequence from low tax rate to high tax rate, to use the returned investment profit remedy the loss and make the taxpayer's income tax reduce to the least level.

4.3 Keeping that the investment return in the low tax region doesn't be distributed

In the existing enterprise income tax, for the taxpayer's profit returned from other enterprise which has paid the income tax, the tax amount of the tax payment can be adjusted when computing the income tax of the enterprise. If the profit of the invested enterprise has not be distributed to the investors, the investors need not to pay the income tax, and in this

way, to keep that the investment return in the low tax region doesn't be distributed and turn it into the investment capital can reduce investors' tax burden.

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Ethical Role of Buddhology in Team Learning

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Abstract

For human kinds to thoroughly change their developmental direction, they have to publicize another subjectivity. New development should strive for harmony of three levels: 1. ecological harmony, in which they should strive for harmonious existence with other species; 2. personal harmony, in which they should strive for peace within human community; 3. mind-set harmony, in which they should strive for harmony of sense, will and emotion in an individual's soul. The broad and profound doctrines in Buddhology's Eight Consciousness are transferred into the four wisdoms. Namely, to think comprehensively with a state of "Great Perfect Mirror Wisdom"; to surpass oneself with "Wisdom of Accomplishment"; to build a shared vision with "Wisdom of Discrimination"; to train the ethical role of team learning with "Wisdom of Equality" in ecological harmony, especially in personal harmony and mind-set harmony development, which, without doubt, has a positive leading effect.

Keywords: Buddhology culture, Team learning, Ethical role, Contemporary business ethics regression

<<The Fifth Discipline>> by the American Massachusetts Institute Technology Professor Peter M. Senge raised a learning revolution worldwide. Learning organization and team learning become a trend. In his research, Peter M. Senge discovered that, among the large-size companies ranked in the "Top 500" by American Fortune, one third of them had kept silent by 1980s. These abnormal phenomena aroused thinking of Peter M. Senge. Through deep study, he discovered that, it was the organization's mental retardation that obstructed learning and growth of an organization, and that finally caused failure of the organization. Mental retardation, just as the name implies, refers to obstruction in learning and thinking of an organization or a team. Peter M. Senge thought that, in order to enable an enterprise to grow up strong and sturdy, it should build a learning organization, namely, to change an enterprise into a learning organization, so as to overcome the organization's mental retardation. In the <<The Fifth Discipline>>, Peter M. Senge pointed out that, among the five aspects of systematic thinking, self-surpass, improvement of mental models, building of a common vision, and team learning, the most important issue is to improve mental models, and attain self-surpass, on which human beings can build a common vision by means of systematically thinking. Team learning is to organize means and rules.

Primary prerequisite of learning organization is to learn to recollect. Post-modern spirit emphasizes substantiality of the internal links, advocates organicism, goes for building organic connection between humans and humans, humans and the nature, humans and the society, modernism and tradition, modernism and the future, and pursues moral value and religious value. Primacy and organism of psychic energy can be regarded as the two most fundamental features of post-modern spirit. Emphasis on psychic energy is a significant transfer of post-modern spirit about the driving force of humans' natural instinct in modern spirit. It means, at the time when the society is seeking for "the strongest motive", it is also seeking for and building "the best motive". However, the moral value and religious value of Buddhology is its concentration on psychic energy, and is the fact that team learning promotes development of the society as "the best motive".

1. Ethical meaning of Buddhology culture

The same as other religions, Buddhism is about the field of philosophy and culture spirit, which influences and determines humanistic disposition of a society and a nation to a certain extent. Ethics and the tradition formed by this humanistic disposition then are accumulated into a humanistic resource. The meaning of a resource lies that, human being can, thereby, acquire root motive and source, and therefore, has an extremely great developmental value. Humanistic force is a cultural nature which lies within the ethics but which is susceptible to be ignored.

Buddhism cultivates 84,000 doctrines of wisdom. However, if summarizing all doctrines, the core is to perfect one's attitude, change his disposition, his destiny and win the freedom of one's life through religious and moral practice.

Buddhology --- study of Buddhism, which should be originally named logic of Buddhism, refers to doctrines of Buddha

power, or the truth realized by all Buddhists, namely, truth of the universe and the life. Doctrines implied in Buddhism are too broad and profound, include all studies in life (secure living, life and death) and the nomastic life (relief from life and death), and it is similar to the generally so-called “study” in itself, so it is named “Buddhology”. Buddhism is indicated in the great pity and wisdom of the supreme bodhi Buddha --- Sakya, which is filled with wisdom, kindness, brightness, refreshment and comfort. Doctrine established according to this belief is Buddhism. The definition of Buddhism is “self-consciousness, consciousness of others, conduct of consciousness, which is perfect”, so Buddhism is the highest standard of the personality. Briefly speaking, Buddhism is consciousness, and religion is wisdom.

The French biologist, Paris National Scientific Research Center director, and Echoldo Technique Cognitive Science and Epistemology professor Francisco. Varela has pertinent preference for Buddhism. He believes that, Buddhism is a practice, not a religion. He said, “my interest in Buddhism has impact on my viewpoint about mental wisdom. A Buddhist is an expert who understands the concept of virtual self or not-self as existence experiences at heart, which is the reason why Buddhism tradition fascinates me.” In his assessment on the scientific achievements by Francisco, the Tufts University Cognitive Science Center director Daniel Dennett, who is an outstanding Literature and Natural Science professor and philosopher said, “after that, and that is the reason.” He believed that, Francisco was an extremely intelligent man. And due to his broad and profound spirit, Daniel Dennett believed that his thought originated from the Buddhism.

In Chinese Buddhism Mahayana and Eight Schools, Consciousness Only approximates to science, Three-Treatise to philosophy, Hua-yen School and T'ien-t'ai School to literature, Shingon and Pure-land School to aesthetics, and Zen is the core of Buddhism. Generally speaking, Dhyana and Purenness have the greatest influences in folk, while in the academic field, Consciousness Only (Eight Consciousness) has the greatest influence.

Eight Consciousness of Consciousness Only in Buddhism includes Eye Consciousness, Ear Consciousness, Nose Consciousness, Tongue Consciousness, Body Consciousness, Wish Consciousness, Manas and Alayavijnana. The first six kinds of Consciousness are what are called “the Six Roots” in Buddhism. According to Buddhism, our Consciousness can be classified into eight kinds: Eye Consciousness, Ear Consciousness, Nose Consciousness, Tongue Consciousness, Body Consciousness, Wish Consciousness, Manas and Alayavijnana.

The “Eight Consciousness” in Buddhology plays a positive role in improving our mental models, surpassing ourselves, sincerely communicating in team learning, and improving our personality and even the economic development of the society.

Among the Eight consciousness, Eye Consciousness, Ear Consciousness, Nose Consciousness, Tongue Consciousness, Body Consciousness are called the first Five Consciousness, namely, perceptual knowledge we generally call; Wish Consciousness is the Sixth Consciousness, namely the rational knowledge we generally call. The Epistemology we learn is basically concerned with the above content. However, Consciousness Only is different, which, in addition, also involves two consciousness forms, and they are the Seventh Consciousness Manas and the Eighth Consciousness Alayavijnana. To say it briefly, these two kinds of Consciousness are actually our subconsciousness. According to Consciousness Only, the first six Consciousness forms are superficial Consciousness, and can be felt, while behind the superficial Consciousness, there exist deeper Consciousness, that is, Manas and Alayavijnana In Buddhism, the subconsciousness is the most important, because subconsciousness determines superficial consciousness, which is the realization of Alaya.

The original meaning of Alayavijnana is “storing”, namely, storehouse. The general consciousness is the first six Consciousness, but the existence of the six Consciousness depends on several conditions, which is not obvious sometimes. For instance, the blind don't have Eye Consciousness. Furthermore, those who are not blind have a limited scope of eyesight, because they can't see anything when the surroundings are either too dark or too bright. The same is true in the case of all other Ear Consciousness. However, the Sixth Consciousness is relatively long-lasting. But when one is in heavy sleep without any dream, or when one is stuffy, such as in a comatose state by a staggering blow, the Sixth Consciousness does not exist any longer. Then what's the foundation for this unconscious man to survive? According to Consciousness only, man at this time does not have the superficial consciousness, but his subconsciousness exists, whose core is Alayavijnana. When one loses his consciousness, the subtle Alayavijnana still exists and activates, being an undertaker of his life.

The most significant feature of Alayavijnana is the accumulation and the state of being in effect of seeds. All our activities are stored in Alayavijnana, just like the seeds of a plant, so Alayavijnana is also called Seed Consciousness. “Seed” is a metaphor, and Buddhism is a metaphorical religion.

As a result of cognitive limitations and moral pollution, knowledge can never be perfect, and Consciousness Only puts forward the theory of “Transition from Consciousness to Wisdom” in order to thoroughly overcome this imperfectness. The so-called Wisdom is the same as its meaning in general, and it is the opposite of Consciousness. Wisdom is unlimited, and pure. It is a state which surpasses separation of subject and object, and which is called in Buddhism

“undifferentiated Wisdom” or “Wisdom of Understanding”. The end-result of Consciousness Only is to transit from the polluted and limited Consciousness into the unpolluted and unlimited Wisdom.

Specifically, transition “from Consciousness into Wisdom” means transition from Eight Consciousness into Four Wisdom. The first five Consciousness should be transferred into “Wisdom of Accomplishment”, the sixth Consciousness into “Wisdom of Discrimination”, Manas into “Wisdom of Equality”, and Alayavijnana into “Great Perfect Mirror Wisdom”. The so-called “Wisdom of Accomplishment” refers to the Wisdom which achieves the first five Consciousness. The first five Consciousness is perceptual knowledge, a specific feeling of oneself, and is limited, but after transition into Wisdom, the limitation will be eliminated. Wisdom can faithfully reflect the true colors of everything, and bring happiness to all. The so-called “Wisdom of Discrimination” refers to subtle observation on the world, whose core is co-existence of commonness and difference, namely, relation between general and individual. The Sixth Consciousness per se is rational knowledge, whose core is research on relation between general and individual. The so-called theoretical thinking is to abstract a general principle from details. Then what remains after abstraction of the whole world? There are totally different answers, based on which are formed different philosophies. For some, it is material, and for others, it is spirit. With “Wisdom of Discrimination”, we can completely understand the relations between the commonness and difference in the world.

Manas is root of self-consciousness, and always advocates “existence of self”, so the Wisdom after its transition is called “Wisdom of Equality”, which overcomes differentiation between others and self, and observes everything with an attitude that everything is equal. Alayavijnana is a storehouse which covers all seeds of everyone, and which becomes “Great Perfect Mirror Wisdom” after transition into Wisdom. Just like an unlimited mirror, it is perfect without any defect. By the time of this state, you have already been integrated into a whole with the universe. You are everything, absolutely free, without any obstacle.

Transition from Consciousness into Wisdom is a process in which one surpasses limitation of knowledge and expands the breadth of mind until the infinity. As the old saying goes “Reading makes a full man; practicing, a competent man”, which quite gets the point. Our breadth of mind should get broader, and finally get unlimited like the Sea and the Emptiness. There is a couplet at the South Heavenly Gate on Tai Mountain summit: A vast territory without immensity, bordering with the sky, and a mountain with tiptop, I being the peak. This is exactly an artistic conception from Consciousness to Wisdom. When you expand your soul to its infinity, you are yourself infinitely, which means you have accomplished the process of transition from Consciousness into Wisdom.

Then what’s the ethical role of Buddhology in team learning?

2. Ethical role of Buddhology in team learning

2.1 In terms of prerequisites of team learning

Maybe we have no idea why the learning organization creator Peter M. Senge could accomplish a difficulty. In the practical chapter of <<The Fifth Discipline>>, some scholars introduced like this “Senge practiced each discipline he advocated. For example, he attached great importance to the psychosomatic balance, and considered both his work and personal life. He was devoted to outdoor sports, and he had been in meditation for several years.” Thereby, meditation is extremely helpful for one to accomplish an undertaking. Meditation means elevation of the three dimensions onto calm reflection, among which the most importance is to learn to recollect, and to attain the psychosomatic balance. However, what team learning needs is to recollect and communicate. Of course, communication should be sincere. If one achieves “Wisdom of Equality” without limitation of others and self, and obtains unconditional freedom, without any interference just like lighting, then he attains the state of Buddhism “self-consciousness, consciousness of others, conduct of consciousness, which is perfect”. This is the primary humanistic foundation of team learning.

2.2 In terms of fundamental motives of team learning

To learn as one organization, it is the team that should vary but not an individual. The key to the success of an enterprise is no longer resource, fund, or technique, but a team and organization that can rapidly learn to meet an emergency. Potential and wisdom of each one can get fully developed. The synergy produced by wisdom and contribution of a team is far beyond the sum of all individuals. The Eight Consciousness in Consciousness Only can enlighten and help potential and wisdom of each one to be fully applied. We can imagine that, if everyone uses “Eight Consciousness” to improve his mental model and further “transition from Consciousness into Wisdom” --- transition from Eight Consciousness into Four Wisdom, thinks comprehensively with a stage of “Great Perfect Mirror Wisdom”, surpasses oneself with “Wisdom of Accomplishment”, builds a common vision with “Wisdom of Discrimination” and cultivates team learning with “Wisdom of Equality”, then the effect and result will be quite different.

2.3 In terms of spiritual requirements of team learning

Team learning demands for unified emotion, belief and learning desire. Without a unified learning desire, one’s heart might fly far away, and there might only be form without any effect. Then how to achieve unification? The answer is

religion. The German philosopher Cassirer is honored as the most venerable person nowadays. He said, in some human activities and cultural forms, what we find is “unification of several functions”, in which art gives us intuitionistic unification, science gives us thinking unification, and religion and myth give us emotional unification. Art opens to us a world of “living form”, and science reveals to us a world of regulation and principle. Religion and myth originate from the fact that, humans realize universal existence of life and fundamental unification of culture demand for religion, and team learning too. Eight Consciousness in Buddhology is the most scientific and sapiential in Buddhology. It’s said that, religion is the major part, the basis and root of spiritual life of human beings, which are exactly religious aspects of human spirit. The spirit per se manifests religion, and the so-called religious belief isn’t really a particular function, but a root of all its particular functions. If not fixed, it is not likely for long-lasting and sustainable development of a root.

2.4 In terms of ideal characteristics of team learning

A team has a strong flexible and adaptive capacity, and can incessantly adjust, renew or alter oneself to adapt to a changing environment. An individual in a team has strong learning desire and capacity. The entire team has a profound learning atmosphere. Each one discards their original thinking way, participates in the management and gains the freedom of life. Life and work target, value and meaning of each member are integrated together and become a community of life. Of course, a learning team should also display a spiritually excellent and prosperous performance. In order to achieve this, we should cultivate the foundation of each one, namely, Alayavijnana seed and effect theory. All our activities are accumulated in Alayavijnana seeds, without exception, which is called “edified learning” in Consciousness Only. “Edified learning” is also a metaphor. The same is true for human activities, and they edify seeds ceaselessly. Exchanging ideas together is an excellent edification, because being together with so many ambitious friends can improve my Alayavijnana seed. In the process of seed edification, seeds in turn generate effects. Seeds accumulated in Alayavijnana will get into effect timely because of karma harmony, which affects our activities. Effect edifies seeds and seeds edify effect. This behavior, together thinking interaction theory, provides theoretical basis for cultivation of Buddhism and even daily moral practices.

3. Contemporary business ethics regression

Ethics is a study on morality, while morality is concerned with value choice, behavioral choice and personality cultivation of humans. The American Economist Francis Fukuyama conducted a deep study on relation between social morality and social prosperity through the moral norm of “trust”, getting a breakthrough discovery, “the highest economic efficiency is not necessarily accomplished by a rational egoism, but by the joint effort of a group composed of by individuals. The reason is that, a common ethics among these members enables them to cooperate more efficiently.” He believed that, it’s not economic interests and laws that have the greatest impact on economic efficiency, but ethical morality. Although contract and self-interest mean a lot to association of group members, still an organization with the greatest efficiency is a corporation that shares a common ethical and value concept. Such a corporation doesn’t need a strict contract and legal provision to standardize relations between members, for which the reason is that innate moral consensus has endowed a foundation of mutual trust among members. Trust not only improves organizational efficiency, but reduces the operating cost of an enterprise. “What kind of business economics has a society initiated is closely associated with its social capital. Supposed that all employees in an enterprise can abide by a common ethical standard, and hold a highly trusting attitude towards each other, then the operating cost of the enterprise might be relatively inexpensive. Also, such a society can innovate and develop well-regulated, because a high trust allows for a diversified social relationship.”

Winner of Nobel Prize in Economics Buchanan believed that, ethics helps to resolve “great difficulties”, especially able to effectively resolve opportunistic and egoistic behaviors in economic activities. William-Mommsen differentiated opportunistic behavior as prior opportunistic behavior and afterthefact opportunistic behavior. Typical manifestation of prior opportunistic behavior is retrorse choice, while afterthefact opportunistic behavior is “moral hazard”. The former depends on standardization construction of the market, while the latter depends on morality construction. North, another representative man of the theory and also the winner of Nobel Prize in Economics, proposed a proposition: creation of wealth is a moral process. Arrow, the representative man of Information Economics and winner of Nobel Prize in Economics, said, “We have witnessed reactions to the balanced market failure in the norms of social behavior, including ethics behavior. Effectiveness of ethics norm has reduced extra transaction cost in economic concordat, so situation of each one has got improved.”

Winner of the Nobel Prize in Economics Amartya Sen studied characteristics of economics, and he focused on significant economic issues from the moral and ethical perspectives. His contributions are summarized as follows: to call for conscience, and to focus on human predicament. In his study on economics, he tried to seek for a path of governing and benefiting the people in order to make economics return to its ethical orbit.

Throughout new development of western Economics, we can find that, integration of economics and ethics is the major trend of development of the modern market economy theory. The topic put forward by this trend is ecological recovery of the relation between ethics and economics.

Ethical spirit of the Eight Consciousness in Buddhology displays the four “forces” indicated by the force of humanity in ethical spirit, namely, guiding force, adjusting force, standardizing force and interactive force. When the common culture-psychology structure comes into existence, it is possible that people can culturally communicate and interact. This is the ethical role of Buddhology in team learning.

Team learning is a managerial science, and Buddhology belongs to the scope of religion. The contemporary process philosopher Hui Tehai has viewed science and religion as “the two strongest powers which influence humans”, and declared that, “when we think over what on earth are religion and science to human beings, it’s no exaggeration to say that the process of history depends on how we handle the relationship between them.” To learn a little about Eight Consciousness of Buddhology might help us further reflect over the issue of team learning, organizational training and harmonious development and construction of humans.

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Foreign Direct Investment and Growth in ASEAN-4 Nations

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Abstract

The study tested the impact of FDI and Gross Domestic Investment on growth in Malaysia, Thailand, Indonesia, and the Philippines- significant FDI recipients within the developing world in the last three decades. The study's time-series analysis employing the Autoregressive Distributive Lag (ARDL) technique suggests that the FDI is better than Domestic Investment for growth in Malaysia, Indonesia but not for Thailand and the Philippines where the reverse is true.

Keywords: Economic growth, Foreign direct investment, Gross domestic investment, Neo-liberal theory, Dependency theory, Globalization

1. Background

Amongst developing world nations, the ASEAN-4 nations-Malaysia, Thailand, Indonesia, and the Philippines- have had a significant share of FDI inflows in the last three decades which have been accompanied by high growth. There appears to be a relationship between economic growth and FDI inflows in all the four ASEAN nations. Decreases in FDI are normally followed suit by decreases in growth and vice-versa as illustrated by Table 1 and Figures 1a through 1d. Thus, growth of the ASEAN-4 nations appears dependent upon FDI via multinationals and this dependence is thought to be especially risky against the backdrop of China's current lead as an FDI magnet coupled with India's potential as a second magnet in the near future which could siphon FDI away from the ASEAN-4 further.

Against an uncertain landscape and the rhetoric of the dependency literature that FDI is not as good as Gross Domestic Investment in promoting growth, the main purpose of this study is to test whether Gross Domestic Investment is indeed better than the neo-liberal FDI in promoting growth as postulated by dependency theorists, critiques and detractors of neo-liberal theory as well as of the larger globalization process characterized by the liberalization of trade and investment.

Extending the dependency argument further, it is postulated that growth driven by foreign entities is not as sustainable as growth generated by domestic factors of production since such growth depends on the robustness of foreign economies. In other words, growth based on domestic production factors is more sustainable since domestic governments are able to wield more control over them as opposed to foreign ones. It is also unclear that the ASEAN-4 economies deemed FDI-driven growth would be able to sustain their growth once this capital runs dry. In short, it is unclear whether ASEAN-4 economies are able to generate their own technology independent of the technology associated with FDI to propel growth.

2. Theoretical literature

The trend of a falling FDI which accompanies falling growth seems to lend some support to the theoretical perspective of development by dependency theorists, in particular to that of Santos' Structuralist Model of Dependence which points out that the growth in the periphery is very much subjected to the growth in the core (Gosh, 2001, Crane and Amawi, 1991).

Other dependency theorists such as Dixon and Boswell (1996), have postulated the concept of *investment dependence* based on the extent to which a country's economy is penetrated and controlled by FDI, which is referred to as *penetration* that is negatively related to growth rates in the long run. Dependency theorists are far more concerned with FDI than with portfolio investment in their measurement of investment dependence. Theorists and researchers sympathetic to dependency theory view *investment dependence* as a structural feature of a national economy which gives some degrees of economic and political power to those groups at the core. However, theorists and researchers working in the framework of neoclassical economy and neo-liberalism view *investment dependence* as a mere flow of resources into a country and that the growth rates of the ASEAN-4 nations make them ideal poster children for the free-flow of trade and finance.

Of equal importance is the view by dependency theorists that the level of foreign investment to be not as “good” as domestic investment in generating economic growth based on “differential productivity.” “Differential productivity is the expected result of several underlying mechanisms of “disarticulation” in the forms of tax avoidance, less development of local entrepreneurship, inappropriate technology, less profit reinvestment, and less linkage to domestic business” (Firebaugh, 1992, p.109, Dixon and Boswell, 1996, p. 545). Hence, while dependency theorists do not dispute that FDI in terms of inflows brings about returns, its returns are expected to be lesser than domestic investment.

3. Empirical Literature

The first literature surveyed is on the cross-national evidence of the effects of foreign investment and aid on economic growth by Bornschier, Chase-Dunn, and Robinson (1978). The study finds that economic growth tends to be positively related with FDI flows but tends to be negative with FDI stocks and is independent of geographical region. For Asia, FDI stocks show a significant negative effect on growth but flows only managed a small positive effect (Bornschier, 1980).

Jansen (1995) tests the impact of FDI on growth in Thailand after an upsurge of FDI is found to be of a different nature from the past inflows. The experience of Thailand shows that FDI helps to restore private investment and growth and that export-oriented FDI contributes sharply to an increase in export earnings. On the other hand, FDI also leads to an even sharper increase in import demand, so that the current account deteriorates and the external debt burden grows rather than declines. Although Jansen does not attribute FDI to cause external debt, it sets the motion an adjustment process that does lead to increased external borrowing. In short, the pre-1995 FDI inflow is both export oriented and import intensive.

Dixon and Boswell (1996) study on the impact of both FDI and Domestic Investment Flows on growth supports dependency theory that domestic investment flows are better than FDI in generating growth. The results are based on a panel-study for developing nations which essentially look at differential productivity of FDI and domestic investments.

Sun (1998) investigates the macroeconomic impact of FDI on China from 1979 through 1996. FDI has a significant role in promoting the economic growth of China through contributing to domestic capital formation, increasing exports and creating new employment. However, gross domestic investment is more robust than FDI in generating growth in the Eastern and Western regions of China.

Hsiao and Shen (2003) study is based on the Harrod-Domar's model. This model assumes that FDI raises the productivity of capital through improved competition, positive technological externalities, and accelerated spillover effects. Hsiao and Shen (2003) find that FDI increases GDP and the increase in GDP in turn attracts FDI.

The next literature surveyed is by Mencinger (2003) who poses the question if FDI in developing transitional economies enhance the economic growth of selected Eastern European countries during the post-transition period, and if not, its reasons. Mercinger's correlation coefficients between growth and corresponding FDI are negative in seven out of the eight countries and remain positive for Lithuania. Even pooled data result is a negative correlation coefficient. Mercinger's annual cross-sectional regression between growth and FDI obtained a similar negative result. A similar negative result is obtained by cross-section data for each year and hence, one can conclude that there is a negative correlation between growth and FDI in six out of the eight years with 1997 having a positive sign and 1998, registering insignificant results (Mencinger, 2003).

The final literature surveyed on growth is by Balamoune-Lutz (2004). Balamoune-Lutz regresses FDI against growth and exports using time-series data. The study's null hypotheses are as follows: FDI drives growth; Export drives growth. The findings of the study show there is a strong negative correlation between the export ratio and economic growth in the post-1993 years which is the liberalized FDI era for Morocco. The two null-hypotheses that Balamoune-Lutz accepted are: Growth does not cause FDI; Growth does not cause exports. In addition, FDI and exports have bi-directional causality, apart from having a positive impact from exports to economic growth. Growth is impacted by FDI both directly and indirectly.

4. Empirical Model

Hence to test the postulation of the neo-liberal and dependency theories on growth in the ASEAN-4 nations, the following model is proposed [Sahoo and Mathiyazhagan (2003), Sun (1998), Borenzstein, Gregorio, Lee (1998)]:

$$Y_t = \beta_0 + \beta_1 DOM_t + \beta_2 FDI_t + \beta_3 EXPT_t + \beta_4 HC_t + \varepsilon_t \quad (1)$$

Y_t	=	Real Gross Domestic Product Per Capita in (US) (1995) Dollars
DOM_t	=	Nominal Gross Domestic Investment in terms of % nominal GDP
FDI_t	=	Nominal FDI inflows in terms of % nominal GDP
$EXPT_t$	=	Nominal Export of Goods and Services as of % nominal GDP
HC_t	=	Adult Illiteracy rate (%)

Based on Neo-Liberalism theory, we expect:

$$\beta_1, \beta_2, \beta_3 > 0 \quad \beta_4 < 0$$

Based on dependency theory, we expect:

$$\beta_1 > \beta_2$$

The main aim of this model is to verify the postulation of the dependency school that in terms of level of investment impact on growth, FDI is not as good as Gross Domestic Investment. Furthermore, the model will also test if FDI and exports are correlated with growth in the ASEAN-4 nations. Thirdly, the model will also verify the postulation of the dependency school that the neo-liberal FDI increases export dependency in the economy. Fourthly, the model will test if Human Capital Stock enhances growth in the ASEAN-4 nations.

5. Variables and Data

Growth, as the dependent variable, is measured by Gross Domestic Product Per Capita in constant 1995 prices using US dollars. The GDP Per Capita data are from the World Bank Development Indicators 2003 CD-ROM.

Collectively, ASEAN nations have been among the most important destinations for FDI in the last two decades (Abdul Rashid and Usmani, 2000). Foreign direct investment is often thought to contribute to growth through technological progress (Borenzstein (1998), Choe (2003), Li and Liu (2004) and managerial skill (Abdul Rashid and Usmani, 2000). Both the neo-liberal and dependency theories agree that FDI inflows tend to impact growth positively. Hence, the null hypothesis that FDI drives growth is tested. The FDI variable is nominal FDI inflows in terms of % nominal GDP. The FDI flows' data are from UNCTAD's online database. Because of data limitations, the level of FDI penetration which requires the use of stock data is not tested.

Most capital dependency research would support the view that an investment of foreign capital will ordinarily return some productivity improvement but at a lower level than would accrue from a comparable level of domestic investment (Dixon and Boswell, 1996). Hence, the null hypothesis that gross domestic investment brings a greater yield to growth levels than would FDI is also tested in this study. Gross domestic investment will be measured in terms of % GDP in current prices and sourced from the World Bank Development Indicators 2003 CD-ROM. From the point of view of dependency research, both the FDI and Gross Domestic Investment measurements reflect the level of investment in the ASEAN-4.

Dependency theorists postulate that foreign investment from the advanced capitalist states promotes export and import dependent forms of development (Jaffee, 1986). Samir Amin (1976) elaborates that the general condition of "extraversion"-an excessively outward-looking economic structure finds its source not only in the evolution of colonial trade patterns, but also in the investment of foreign capital into export activities. Amin further elaborates that while there is explicit recognition that capital will be directed toward both the primary product and or manufacturing sectors, which the latter is more relevant to the ASEAN-4 case, the net effect will be a further dependence on external markets.

In opposition to the dependency thesis on the sources of trade dependence, a long tradition in the neo-classical economics focuses on the "natural" limits and factor endowments that lead nations to depend on external markets. According to this perspective, under a certain set of conditions international trade is not only rational but optimally beneficial strategy for meeting economic needs (Jaffee, 1986).

There are several postulations on the precise economic and social consequences of trade dependence. Some argue that a dependence on external trade hampers economic growth due to dramatic fluctuations in world market prices and the inability to make long-range economic plans, given the vagaries of an uncontrolled external market [Prebisch (1959) in Jaffee (1986)]. Others highlight the enclave nature of trade dependent economies and the subsequent lack of balanced and sectorally articulated economic growth [Amin, (1976) and Cardoso and Faletto (1979) in Jaffee (1986)]. Some economists advocate export-oriented strategies as the best means for overcoming underdevelopment and stimulating growth [Krueger (1978) in Jaffee (1986)]. Kohpaiboon (2003) best captures the scenario for the ASEAN-4 nations by stating that FDI better affects growth under an export-promoting (EP) regime than an import-substitution (IS) one because FDI as well as Gross Domestic Investment under an IS regime mostly takes place in sectors characterized by high capital intensity in production where the host country does not have comparative advantage. All the ASEAN-4 nations now emphasize an EP regime over an IS one. To demonstrate export dependence, this study will measure export in terms of the total value of goods and services expressed % GDP in nominal terms sourced from World Development Indicators CD-Rom 2003.

Human capital will be the rate of adult illiteracy sourced from the World Bank Development Indicators 2003. It is intended to measure the basic educational level of the stock of the population. Human capital stock enhances growth (Sun, 1998). The model will be estimated in the log form.

6. Bounds Test Approach

Based on Pesaran *et. al.* 2001 modeling approach; the maintained assumption that the time series properties of the variables included in Equation (1) can be well be approximated by a log-linear VAR (p) model is as follows:

$$z_t = \mu + \sum_{i=1}^p \beta_i z_{t-i} + \varepsilon_t \quad (2)$$

Where z_t is the vector of both x_t and y_t where y_t , the dependent variable, is defined as E, and $x_t = [DOM_t, FDI_t, EXPT_t, HC_t]'$, is the vector matrix which represents a set of explanatory variables. $\mu = [\mu_y, \mu_x]'$, t is a time trend variable, β_i is a matrix of VAR parameters for lag i . According to Pesaran *et. al.* (2001), y_t must be I(1) variable, but the regressor x_t can be either I(0) or I(1). Developing the model further:

$$\Delta z_t = \mu + \alpha t + \lambda z_{t-1} + \sum_{i=1}^{p-1} \gamma_i \Delta y_{t-i} + \sum_{i=0}^{p-1} \phi_i \Delta x_{t-i} + \varepsilon_t \quad (3)$$

where Δ is the first difference operator. Partitioning the long-run multiplier matrix λ :

$$\lambda \begin{bmatrix} \lambda_{yy} & \lambda_{yx} \\ \lambda_{xy} & \lambda_{xx} \end{bmatrix}$$

The diagonal elements of the matrix are unrestricted, and hence the selected series can be either I(0) or I(1). If $\lambda_{yy} = 0$, then y is I(1). In contrast, if $\lambda_{yy} < 0$, then y is I(0).

The VECM procedure described above is important in the testing at most one cointegrating vector between dependent variable y_t and a set of regressors x_t . The study's preferred model adhered to the assumptions of Pesaran *et. al.* (2001) in Case III that is unrestricted intercepts and no trends. After imposing the restrictions $\lambda_{xy} = 0$, $\mu \neq 0$, and $\alpha = 0$, the growth level specification in terms of the unrestricted error-correction model (UECM):

$$\begin{aligned} \Delta \ln E_t &= \beta_0 + \beta_1 \ln E_{t-1} + \beta_2 \ln DOM_{t-1} + \beta_3 FDI_{t-1} + \beta_4 EXPT_{t-1} \\ &+ \beta_5 HC_{t-1} + \beta_6 \sum_{i=1}^p \Delta \ln E_{t-i} + \beta_7 \sum_{i=0}^q \Delta \ln DOM_{t-i} + \beta_8 \sum_{i=0}^r FDI_{t-i} \\ &+ \beta_9 \sum_{i=0}^s EXPT_{t-i} + \beta_{10} \sum_{i=0}^v HC_{t-i} + u_t \dots (4) \end{aligned}$$

where Δ is the first-difference operator, u_t is a white noise disturbance term. Equation (4) can also be viewed as an ARDL order of (p, q, r, s, v). The structural lags are determined by using minimum Aikake's information criteria (AIC). In this case, the long-run elasticity is derived by dividing each of the one lagged explanatory variable by the coefficient of the one lagged dependent variable.

After obtaining Equation (4), the Wald test (F-statistic) was computed to discern the long-run relationship between the concerned variables. The Wald test can be conducted by imposing restrictions on the estimated long-run coefficients of, DOM, FDI, EXPT, HC, and GDP. The null and alternative hypotheses are as follows:

Ho: $\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 = 0$ (no long-run relationship)

Ha: $\beta_1 \neq \beta_2 \neq \beta_3 \neq \beta_4 \neq \beta_5 \neq 0$ (a long-run relationship exists)

The computed F-statistic value will be compared with the critical values tabulated in Table CI (III) of Pesaran *et al.* (2001). If the computed F-statistic is smaller than the lower bound value, then the null hypothesis is not rejected, then there is no long-run relationship between growth and its determinants. Alternatively, if the computed F-statistic is greater than the upper bound value, then growth and its determinants share a long-run level relationship. However, if the computed F-statistic falls within these bounds, the inference would be an inconclusive one.

7. Bounds Test Results and Discussion

The Bounds Test was used on all models to investigate the presence of a long run relationship among the variables specified for each country. In Table 2, the results of Pesaran *et. al* (2001) bounds test obviously demonstrates that the

null hypothesis $c(1)=c(2)=c(3)=c(4)=c(5)=0$ against its alternative, $c(1) \neq c(2) \neq c(3) \neq c(4) \neq c(5) \neq 0$ is easily rejected at the 5% confidence level for all ASEAN-4 nations. The computed F-statistic for Malaysia at 14.30421 is greater than the upper critical bound of 4.68 for the 1% significance level, and hence the null hypothesis of no cointegration is rejected at that level. Similarly, Thailand's computed F-statistic of 3.930668 is greater than the upper critical bound of 3.79 and the null hypothesis is rejected at the 5% upper bound critical value. The computed F-statistic for Indonesia at 6.122780 and the Philippines at 4.693430 are all rejected at the 1% upper bound critical value.

Based on the test results, it is concluded that there exists a steady-state long-run relationship amongst Domestic Investment, FDI, Exports, Human Capital, and GDP Per Capita for Malaysia, Thailand, Indonesia, and the Philippines. In other words, for Malaysia, Thailand, Indonesia, and the Philippines, these variables do not move "too far away" from each other in the long-run.

The computed results of the long-run elasticities of the determinants of GDP Per Capita are shown in Table 3.

The estimated results show that for Malaysia, Domestic Investment, FDI, Exports, and Human Capital significantly and positively influence the level of GDP Per Capita. Human Capital is said to have a positive relationship with GDP Per Capita because the "illiteracy rate" used in the study has the correct negative sign which corresponds to a positive sign had "literacy rate" been used instead in the estimation. This is true of the study's other three ASEAN nations. The estimated coefficients imply that a 1% increase in Domestic Investment, FDI, and Exports will lead to a rise in GDP Per Capita by 0.1647%, 0.2122 %, and 0.3762% respectively. However, a 1% increase in the rate of illiteracy (Human Capital) will lead to a decrease of GDP Per Capita by -0.5135%. The significantly positive values for coefficients $\beta_1, \beta_2, \beta_3$ conform to both neo-liberal and dependency theories. The negative value of the rate of adult illiteracy (Human Capital) also conforms to neo-liberal and not contested by dependency theorists. However, the neo-liberal and dependency theorists differ on their postulation of the size of β_1 and β_2 . A more robust coefficient for FDI as opposed to Domestic Investment means that β_2 contributes more to growth than β_1 .

Hence, FDI flows are better than Domestic Investment flows in promoting growth in Malaysia which invalidates the postulation of FDI flows are not as good as Domestic Investment flows in promoting growth as hypothesized by the dependency side. As previously mentioned, this postulation comes under the "level of investment" argument which is rhetorical in dependency theory literature. This finding is supported by Wong and Jomo (2005) who stressed the importance of FDI on the Malaysian economy.

For Thailand, the estimated results show that only Domestic Investment, Exports, and Human Capital are significant determinants of growth in the nation. As such, a 1% increase in Domestic Investment and Exports will lead to an increase in GDP Per Capita by 0.2648 % and 0.2775 % respectively. A 1% increase in adult illiteracy rate will lead to a fall of -0.7360 % in GDP Per Capita. FDI is not significant in determining growth in the model. The significantly positive value for coefficient β_1 and the insignificance of β_2 validates the hypothesis that FDI is not as good as Domestic Investment in promoting growth. Hence, this finding lends support to the dependency school of thought and challenges the viewpoint that capital is capital regardless of its origin as put forth time and again by the neoliberals (Chang, 2003).

Similar to Malaysia, Indonesia's estimated results show that all four determinants in the study significantly influence the level of growth. Subsequently, a 1% increase in Domestic Investment, FDI, and Exports will lead to an increase by 0.397 %, 0.9046 %, and 0.2126 % respectively. Conversely, a 1% rise in the adult illiteracy rate (Human Capital) will reduce growth by -0.7395 %. The larger coefficient of β_2 than that of β_1 lends further support to the neoliberal school. Indonesia's result shows that indeed FDI is better than Domestic Investment in promoting growth. This finding conforms to Sjöholm (2002) and Thee (2005).

In the case of the Philippines, only Domestic Investment and Human capital are significant in determining the level of growth in the nation. A 1% increase in Domestic Investment will lead to a 1% increase in growth but a 1% increase in the rate of adult illiteracy will deteriorate growth by -0.2143 %. Unexpectedly, FDI and Exports are not significant in determining growth. Hence, given that β_1 is significant and β_2 is insignificant, then the postulation that FDI is not as good as Domestic Investment is strongly supported here. This finding naturally further challenges the postulation of the neo-liberal theorists and conforms to Chang (2003).

8. Conclusion

The study compares and contrasts the "goodness" of two types of investments namely domestic investment with FDI in determining growth for four ASEAN nations spanning from 1970 to 2001 using the ARDL approach. ARDL developed by Pesaran *et.al* (2001) is most suitable for small sample size studies such as this. Exports and the rate of illiteracy were included to help explain the level of GDP per capita in each nation. Essentially, this study tests the postulation of dependency theorists that FDI is not as good as Domestic Investment in promoting growth and conversely that of neo-liberalism theorists that capital is capital regardless of origin and that FDI brings about many growth enhancing benefits to host-countries.

Several important conclusions may be deduced from the growth model's estimation results. First, Gross Domestic Investment is common to all growth models in helping to explain growth levels. Second, FDI is significant in explaining growth levels only as far as Malaysia and Indonesia are concerned. Injecting more FDI as opposed to Domestic Investment will do much more to generate growth since the postulation of the neo-liberals appears valid in Malaysia and Indonesia. Both are great showcases in advancing the neo-liberal argument in "harnessing" globalization to promote economic growth. Alternatively, any downturn in FDI would also mean decreases in growth levels for both nations. Hence, it is also important that domestic investment be promoted more aggressively for sustainability of economic growth (Ariff, 2007). Thailand would appear to do better in promoting growth by focusing on domestic investment. The same argument appears valid for the Philippines.

In tandem with the neo-liberals, dependency theorists do not dispute the contribution of FDI flows to growth but the insignificance of FDI towards promoting growth in Thailand and the Philippines does not fall neatly in either school of thought. Perhaps, dependency theorists ought to adopt a more critical stance on FDI inflows by reviewing its automatic association with positive growth given the emergence of a new body of empirical evidence which warrants a rethink of this postulation (Mercinger, 2003).

Thus, the alleged importance of FDI via TNCs in the ASEAN region and the larger East Asian regional development can be challenged with regards to Thailand and the Philippines.

Third, exports are robust in determining growth levels in all nations except for the Philippines. Rasiah (2004) finds exporting manufacturing to be significant to growth levels in Malaysia, Thailand and Indonesia. It is well-known that there has been a strong FDI participation in the leading export manufacturing branches of electric-electronics and textile-garment in Malaysia (Rasiah, 2004). However, exports appear not to be significant in elevating growth levels in the Philippines. Bello (2005) postulates that export-oriented growth that was pursued by Newly-Industrialized Countries (NIC) is no longer possible especially for the Philippines in an era of tremendous manufacturing overcapacity and the resulting protectionism in developed-country markets that this has spawned. Even if developed-country protectionism were not a problem, export-oriented manufacturing would not be an advantageous strategy given, the tremendous advantage that China has in labor costs (Bello, 2005). Similar to Bello, Ariff (2007) predicts that after the Asian Financial Crisis debacle, the next crisis is likely to witness a stronger ringgit and weaker external demand for both primary commodities and limit Malaysia's ability to export out of the crisis. Hence, he maintains that FDI and exports can never be substitutes for domestic private investment and consumption expenditure.

Not surprisingly, literacy is an important factor in determining growth levels in all four nations. Hence, having a high percentage of literate adults would do much to boost FDI levels and it reinforces the need to assure quality education at the primary level although some ASEAN-4 governments tend to pay more attention to the tertiary education as opposed to primary. As such an education policy to ensure that all primary school children are literate which includes numerical literacy would serve these nations well in the long run. The Philippines had achieved universal primary enrollment much earlier in the 1970s, than the other Southeast Asian nations. Unfortunately, there has been a marked decline in access and quality of education in the Philippines, and there exists wide regional differences. It is estimated that two thirds of primary school children do not complete primary education and rate of completion varies by region. The level of attainment of basic knowledge has also diminished. The school system is socially regressive since children from poor families have access only to public schools and suffer all the consequences regarding quality. Despite the fact that it is government funded public school, parents are still expected to contribute to one third of their child's education [World Bank (2000) in Pangestu (2000)]. Hence, all four nations should formulate educational policies aimed at raising educational attainment to enhance human capital as well as growth (Te Velde, 2002).

Acknowledgement

The author is most grateful to Zulkornain Yusop, Law Siong Hook, and Zaleha Mohd. Noor, lecturers at Universiti Putra Malaysia, for their guidance.

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Table 1. ASEAN-4 FDI (Million) Dollars and Growth (GDP Per Capita)

GDP Per Capita/ FDI	Year											
	70	75	80	85	90	95	96	97	98	99	2000	2001
Malaysia FDI	94	350.49	933.9	694.71	2611	5815	7297	6323	2713	3895	3787	553
Malaysia GDP Per Capita	394.05	806.85	1811.9	2026.7	2418.7	4310.2	4773.1	4623.1	3254.1	3485.2	3869.4	3699
Thailand FDI	42.8	85.62	189.4	163.55	2575	2070	2337.7	3881.8	7491.2	6090.8	3350.3	3813
Thailand GDP Per Capita	198.2	359.84	692.54	760.58	1535.1	2864.6	3080.7	2364.4	1937.5	2028.5	1987.2	1874
Indonesia FDI	83	476	180	310	1092	4346	6194	4678	-356	-2745	-4550	-3279
Indonesia GDP Per Capita	82.16	242.46	526.04	543.49	642.01	1048.7	1163.3	1088.7	475.17	687.74	738.01	695.3
Philippines FDI	-1.04	114	-106	12	550	1577	1618	1261	1718	1725	1345	982
Philippines GDP Per Capita	183.2	356.8	676.59	566.95	726.26	1084.6	1185.1	1151.3	890.6	1017.1	975.29	912.2

Source: World Bank World Development Indicators (2003) and United Nations Conference on Trade and Development (UNCTAD) Foreign Direct Investment Online Statistics.

Table 2. Bounds Test for Cointegration Test

Null Hypothesis: No Cointegration				
Computed F-statistic (Wald Test):				
Malaysia		:	14.30421	
Thailand		:	3.930668	
Indonesia		:	6.122780	
Philippines		:	4.693430	
Critical Value				
			Lower	Upper
1%	significance level		3.41	4.68
5%	significance level		2.62	3.79
10%	significance level		2.26	3.35
Decision: Reject or Accept null hypothesis at 5 % significance level				
Note: The critical value is taken from Pesaran et. al. (2001).				
Table C (iii) Case III. Unrestricted intercept and no trend				

The above table demonstrates that there exists a long-run relationship between growth and each of its determinants in the ASEAN-4 nations for the period surveyed.

Table 3. Long-run Elasticities

	Malaysia	Thailand	Indonesia	Philippines
Gross Domestic Investment	0.1647**	0.2648***	0.397**	0.3131**
FDI	0.2122*	0.0927	0.9046*	0.0112
Exports	0.3762*	0.2775**	0.2126*	0.0137
Human Capital	-0.5135*	-0.7360**	-0.7395**	-0.2143***

Note: * ** *** denote significant at the 1%, 5%, and 10 % significance levels respectively

The above table illustrates the results of the cointegration test for growth and its determinants. The long-run elasticity of each of the explanatory variable is calculated by dividing the long-run coefficient of an explanatory variable with the long-run coefficient of the dependent variable which in this case is the Growth variable and multiplying it with the negative term. Normally the long-run coefficients are larger than the short-run coefficients. However, in this study there are instances when the reverse is true and this is the result of the lag lengths chosen for the short-run period.

Table 4. Results of the Augmented Dickey Fuller and Phillips-Perron Unit Root Tests

	Augmented Dickey Fuller Test		Phillips-Perron Test		Augmented Dickey Fuller Test		Phillips-Perron Test	
	LEVEL				FIRST DIFFERENCE			
	Level, No Trend	Level, Trend	Level, No Trend	Level, Trend	Level, No Trend	Level Trend	Level, No Trend	Level, Trend
LMG DPPC	-1.29940 0(0)	1.7305 86(0)	-1.25740 4(1)	-1.9092 99(1)	-4.33870 5(0)* **	-4.445077 (0)* **	-4.35466 5(1)* **	-4.46019 8(1)* **
LMD OM	-2.57720 8(1)	-2.906 194(1)	-2.12694 8(1)	-2.1880 62(1)	-4.14218 3(0)* **	-4.123558 (0)**	-4.16456 7(1)* **	-4.14839 5(1)**
LMF DI	-2.36052 8(0)	-2.217 908(0)	-2.34106 1(1)	-2.1992 25(1)	-6.42885 8(0)* **	-6.424913 (0)* **	-6.43128 9(1)* **	-6.43119 8(1)* **
LME XP	0.125900 (0)	-3.355 337(0)	0.145819 (1)	3.44144 1(1)	-6.08966 6(1)* **	-5.997186 (1)* **	-5.34718 3(1)* **	5.319614 (1)* **
LMH C	6.482882 (0)* **	-1.348 718(0)	6.427694 (1)* **	-1.3439 63(1)	-3.03032 0(0)**	-5.473502 (2)* **	-2.99899 3(1)	-4.64758 8(1)* **
LTGD PPC	-0.92817 3(1)	1.9861 70(1)	-0.59662 1(1)	-1.3984 54(1)	-3.10849 6(0) **	-3.097241 (0)	-3.16342 6(1)**	-3.14371 0(1)
LTDO M	-2.21165 3(1)	-1.356 665(0)	-1.79236 5(1)	-1.5941 35(1)	-4.32244 8(0)* **	-4.369921 (0)* **	-4.33667 5(1)* **	-4.37692 8(1)* **
LTFD I	-2.16316 7(0)	-2.625 081(0)	-2.24278 8(1)	-2.8030 79(1)	-5.46895 7(0)* **	-5.402358 (0)* **	-5.46910 5(1)* **	-5.40260 6(1)* **
LTEX P	-0.81540 6(0)	-2.426 663(0)	-0.78213 2(1)	-2.4195 61(1)	-6.51673 6(0)* **	-6.404957 (0)* **	6.525751 (1)* **	-6.41282 6(1)* **
LTHC	2.341432 (0)	-1.092 512(0)	2.337776 (1)	-1.1292 83(1)	-3.89805 0(0)* **	-4.263831 (0)**	-3.92463 8(1)* **	-4.26930 5(1)**
LIGD PPC	-1.82881 6(0)	-0.588 236(0)	-1.71026 9(1)	-0.9038 83(1)	-3.96934 1(0)* **	-4.269396 (0)**	-3.98395 1(1)* **	-4.28431 3(1)**
LIDO M	-1.94529 8(0)	-1.742 957(0)	-2.11975 9(1)	-1.8839 77(1)	-4.40680 5(0)* **	-5.273332 (0)* **	-4.42117 0(1)* **	-4.51623 2(1)* **
LIFDI	-2.33410 2(0)	-3.331 335(1)	-2.56805 1(1)	-2.7239 86(1)	-4.84737 7(1)* **	-4.754558 (1)* **	-4.69761 0(1)* **	-4.62057 8(1)* **
LIEX P	-2.38123 2(0)	-2.796 891(0)	-2.33123 0(1)	-2.7664 53(1)	-6.49099 5(0)* **	-6.390451 (0)* **	-6.49758 1(1)* **	-6.39505 7(1)
LIHC	9.439870 (0)* **	-3.422 209(0)	8.410887 (1)* **	-3.3643 29(1)	-2.27850 1(0)	-3.453136 (0)	-2.25005 4(1)	-3.45372 2(1)
LPGD PPC	-2.89356 3(1)	-3.014 309(1)	-2.33428 7(1)	-2.1643 66(1)	-2.98024 2(0)**	-2.959669 (0)	-3.10783 4(1)**	-3.09855 9(1)
LPDO M	-2.31678 3(1)	-2.975 125(1)	-1.74396 0(1)	-2.2111 81(1)	-4.42523 8(1)* **	-4.513966 (1)* **	-3.98355 9(1)* **	-3.99043 8(1)**
LPFD I	-2.32577 5(0)	-2.523 062(0)	-2.23507 0(1)	-2.4422 7(1)	-6.54531 6(0)* **	-6.490933 (0)* **	-6.54623 7(1)* **	-6.49224 0(1)* **
LPEX P	0.034208 (0)	-1.554 838(0)	-0.04016 6(1)	-1.6233 49(1)	-5.05514 6(0)* **	-5.117741 (0)* **	-5.05569 0(1)* **	-5.11925 5(1)* **
LPHC	5.879084 (0)* **	-0.958 393(1)	4.646257 (1)* **	0.85731 2(1)	-1.90041 5(0)	-2.550913 (0)	-1.90125 9(1)	2.589312 (1)

The above table shows * / ** as denoting significant at the 1% and 5% levels, respectively.

Table 5. Malaysia: Unrestricted Error Correction Model Results

Variable	Coefficient	Std. Error	Prob.
LMGDPPC(-1)	-1.164638	0.212942	0.0004
LMDOM(-1)	0.191869	0.076274	0.033
LMFDI1(-1)	0.247139	0.048805	0.0007
LMEXP(-1)	0.438132	0.09894	0.0017
LMHC(-1)	-0.598083	0.130225	0.0013
DUM	0.040629	0.011082	0.0052
D(LMGDPPC(-2))	-1.229651	0.193078	0.0001
D(LMGDPPC(-3))	-0.885732	0.238323	0.0048
D(LMDOM(-2))	0.379453	0.062907	0.0002
D(LMDOM(-3))	0.196242	0.092702	0.0634
D(LMDOM(-5))	0.174911	0.057565	0.0141
D(LMFDI1(-2))	-0.203602	0.042074	0.0009
D(LMFDI1(-3))	-0.289388	0.069905	0.0025
D(LMEXP(-2))	-0.117637	0.090471	0.2258
D(LMHC(-3))	10.64281	2.228796	0.001
D(LMHC(-4))	-2.773476	2.122969	0.2238
C	3.725591	0.705339	0.0005
N=26			
Adjusted R-squared	0.858519		
S.E. of regression	0.006674		
F-statistic	10.48138		
Prob(F-statistic)	0.000586		
	Test-Statistics	P-value	
Jarque-Bera Normality Test	1.433079	0.488440	
Breusch-Godfrey LM Test (Lag 1)	0.931619	0.362709	
ARCH Test (Lag 2)	0.827466	0.450914	
Ramsey Reset (Lag 3)	3.807807	0.076860	

Malaysia's long-run results in as presented in Table 5 show that all the variables are significant at the 5% level with the correct sign either in the neo-liberal or in the dependency school of thought. The F-statistic, which tests the overall significance of variables, justifies the inclusion of all variables in the growth model. The R-squared as well as Adjusted R-squared values suggest that at least over 80% of the variations in growth the level is explained by the variables included in the model. Hence, the overall fit of the model is good. The model also passed all diagnostic tests specified in the same table which renders the long-term estimates of this model to be reliable. The significance of the long-run dummy variable suggests that the economic downturn years have had an impact on Malaysia's economic performance.

Table 6. Thailand: Unrestricted Error Correction Model Results

Variable	Coefficient	Std. Error	Prob.
LTGDPPC(-1)	-0.455249	0.135458	0.0047
LTDOM(-1)	0.12054	0.066633	0.092
LTFDI(-1)	0.042181	0.032372	0.2136
LTEXP(-1)	0.126341	0.054602	0.0364
LTHC(-1)	-0.335062	0.10472	0.0064
DUM	-0.038464	0.007069	0.0001
D(LTGDPPC(-1))	0.951298	0.163922	0
D(LTGDPPC(-2))	0.524008	0.194949	0.0177
D(LTDOM(-1))	-0.233316	0.051841	0.0005
D(LTDOM(-2))	-0.170208	0.063283	0.0176
D(LTFDI(-3))	-0.162265	0.043621	0.0023
D(LTEXP(-1))	-0.099059	0.03906	0.0238
D(LTHC(-2))	-2.655727	0.982109	0.0171
C	1.329213	0.403326	0.0053
N=28			
Adjusted R-squared	0.870809		
S.E. of regression	0.006714		
F-statistic	14.99944		
Prob(F-statistic)	0.000005		
	Test-Statistics	P-value	
Jarque-Bera Normality Test	1.257322	0.533306	
Breusch-Godfrey LM Test (Lag 1)	3.231689	0.072150	
ARCH Test (Lag 2)	1.785894	0.190122	
Ramsey Reset (Lag 3)	2.121840	0.155449	

Thailand's long-run estimated results as in Table 6 show that exports and the rate of illiteracy are significant at the 5% level while Gross Domestic Investment is significant at the 10% level of significance. FDI however is not significant. The results have the correct signs in either the neo-liberal or the dependency school of thought. The F-statistic shows that the overall model is very significant. The long-run dummy variable is significant at the 10% level and hence, retained in the equation. The high R-squared and adjusted R-squared suggest that almost 80% of the variables in the equation explains growth in Thailand. This model also passed all the diagnostic tests specified in the same table.

Table 7. Indonesia: Unrestricted Error Correction Model Results

Variable	Coefficient	Std. Error	Prob.
LIGDPPC(-1)	-0.703003	0.169255	0.0016
LIDOM(-1)	0.279082	0.108089	0.0255
LIFDI(-1)	0.63596	0.139439	0.0008
LIEXP(-1)	0.149477	0.048003	0.0099
LIHC(-1)	-0.519902	0.192495	0.0206
DUM	-0.11144	0.01039	0.0000
D(LIGDPPC(-2))	-0.712119	0.179841	0.0022
D(LIDOM(-1))	-0.170496	0.062428	0.0195
D(LIFDI(-1))	-0.694436	0.199967	0.0052
D(LIFDI(-2))	-0.466998	0.166791	0.0173
D(LIFDI(-3))	-0.274596	0.117147	0.0389
D(LIFDI(-4))	-0.067242	0.07567	0.3932
D(LIEXP(-1))	-0.115146	0.0413	0.0176
D(LIHC(-1))	-6.346714	2.554497	0.0303
D(LIHC(-3))	-6.79508	3.20024	0.0572
C	1.420297	0.643128	0.0494
N=27			
Adjusted R-squared	0.886394		
S.E. of regression	0.006424		
F-statistic	14.52403		
Prob(F-statistic)	0.000038		
	Test-Statistics	P-value	
Jarque-Bera Normality Test	4.916264	0.085595	
Breusch-Godfrey LM Test (Lag 1)	0.021163	0.887227	
ARCH Test (Lag 2)	0.002497	0.086958	
Ramsey Reset (Lag 3)	3.139270	0.997507	

Indonesia's long-run estimated results indicate that all variables are significant at the 5% level of significance as illustrated in Table 7. In fact, FDI and exports are significant at the 1% level of significance. The high significance of the long-run dummy variable strengthens its inclusion in the model. The variables have also the right signs that conform to either the neo-liberal or the dependency school of thought. The overall F-statistic shows that the entire model does well in explaining growth in Indonesia. The R-squared and the Adjusted R-squared indicate that almost 90% of the variables in the model explain growth in Indonesia. This model also passed all diagnostics tests.

Table 8. The Philippines: Unrestricted Error Correction Model Results

Variable	Coefficient	Std. Error	Prob.
LPGDPPC(-1)	-0.76948	0.214259	0.0033
LPDOM(-1)	0.240924	0.083499	0.0128
LPFDI(-1)	0.008607	0.088901	0.9244
LPEXP(-1)	0.010574	0.029526	0.726
LPHC(-1)	-0.164911	0.079038	0.0572
DUM	-0.022448	0.01051	0.0523
D(LPGDPPC(-1))	1.101337	0.216885	0.0002
D(LPGDPPC(-2))	0.346433	0.285751	0.2469
D(LPDOM(-1))	-0.28196	0.070903	0.0016
D(LPDOM(-2))	-0.134781	0.058421	0.0382
D(LPDOM(-3))	-0.119225	0.04861	0.0291
D(LPEXP(-1))	-0.129613	0.044879	0.0127
D(LPEXP(-2))	0.07764	0.046293	0.1174
D(LPHC(-1))	4.315091	2.307167	0.0841
C	2.2232	0.692346	0.0068
N=28			
Adjusted R-squared	0.684732		
S.E. of regression	0.008744		
F-statistic	5.188667		
Prob(F-statistic)	0.002613		
	Test-Statistics	P-value	
Jarque-Bera Normality Test	0.807287	0.667882	
Breusch-Godfrey LM Test (Lag 1)		0.157274	
	2.275835		
ARCH Test (Lag 2)	0.648611	0.532070	
Ramsey Reset (Lag 4)	3.496420	0.054976	

The Philippines' long-run estimated results show that all variables except FDI and exports are significant at the 10% level as shown in Table 8. However, Gross Domestic Investment is the most robust since it was significant at the 5%. The 10% significance level of the long-run dummy variable allows for its inclusion in the model. All variables have the correct signs and conform to either the neo-liberal or the dependency theories. The F-statistic's significance at the 5% level is an indication that the entire model is good at explaining the level of growth in the Philippines. The R-squared and Adjusted R-squared suggest that at least 68% of the variables in the model explain the growth level in the Philippines. This model is deemed reliable since it passed all diagnostics tests.

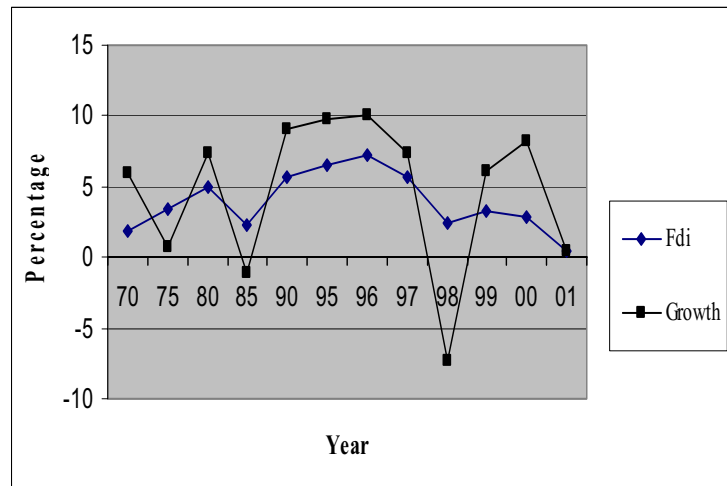


Figure 1a. Malaysia FDI and Growth

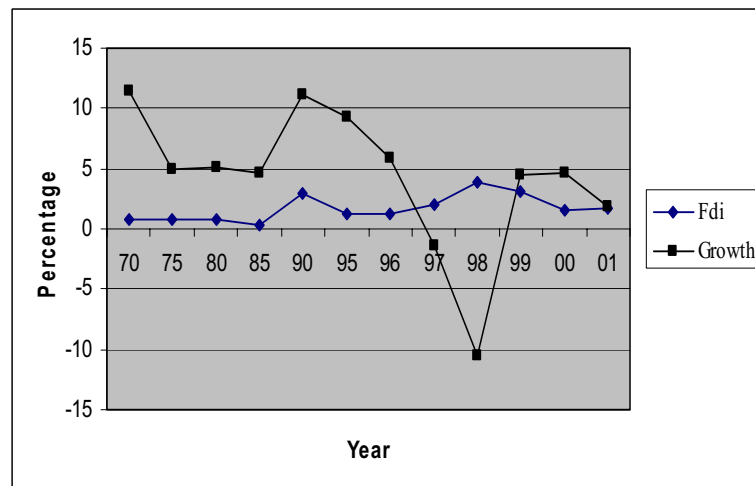


Figure 1b. Thailand FDI and Growth

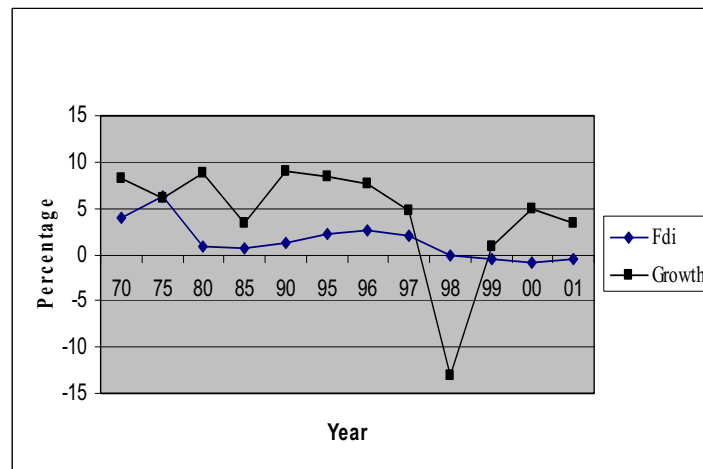


Figure 1c. Indonesia FDI and Growth

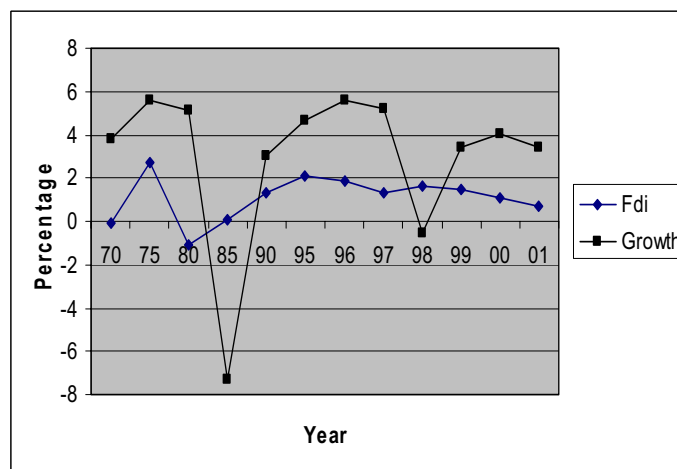


Figure 1d. Philippines FDI and Growth

The above illustrate FDI and Growth trends in the ASEAN-4 nations from 1970 through 2001.

Study	Model/Methodology	Dependent Variable	Findings
Bornschieer et. al. (1978).	$Y_{it} = \alpha + \alpha_1 FflowsI_{it} + \alpha_2 Fstock_{it} + \alpha_3 Capform_{it} + GNP_{i1960} + \varepsilon_t \quad (\text{OLS})$	GNP per capita growth rate	FDI Flows + FDI Stock -
Jansen (1995)	$Y = C_{pr} + C_g + I_{pr} + I_{pu} + X - M \quad (\text{Cointegration Technique})$	GDP growth rate	FDI Flows + Export +, Import +
Dixon and Boswell (1996)	$Y = \alpha + \alpha_1 FDI + \alpha_2 DOM + \alpha_3 ENERGY + \alpha_4 EXP + \alpha_5 GNPPC_{65} + \xi \quad (\text{OLS})$	GNP growth rate	FDI Flows+ Domestic Flows ++
Sun (1998)	$\ln GDP = \alpha_0 + \alpha_1 \ln DK + \alpha_2 \ln DFI + \alpha_3 \ln FK + \alpha_4 \ln L + v \quad (\text{Kmenta Model})$	GDP	FDI Flows+ Domestic Flows ++
Hsiao and Si (2003)	$\log(GDP_t) = \mu_{11} + a_{11} \log(GDP_{t-1}) + a_{12} \log(FDI_t) + \varepsilon_{1t} \quad (\text{Three stage least squares})$	GDP	FDI Flows+
Mercinger (2003)	$rGDP = a_0 + a_1 FDI_{-1} + a_2 FDI + a_3 FDI_{+1} + a_4 GDP_0 + a_j DUM_j \quad (\text{Cointegration Technique})$	GDP growth rate	FDI Flows -
Baliamoune-Lutz (2004)	$Y_t = \alpha + \alpha_1 FDI_t + \alpha_2 Exports_t + \varepsilon_t \quad (\text{Cointegration Technique})$	GDP growth rate	FDI Flows + Exports +

Figure 2. Summary of Growth Models

The above summarizes the growth models of the literature surveyed in the study



The Impact of Work Life Conflict on Job Satisfactions of Employees in Pakistan

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Abstract

The study was aimed to explore the relationship between work life conflict and job satisfaction in Pakistan. We found that job satisfaction is significantly negatively correlated with work to family interference and family to work interference. Job satisfaction is also found to be negatively related with stress in our research. However, the correlation of workload is positive and insignificant which shows that workload does not effect the job satisfaction of the employees in Pakistan. Job autonomy emerged as having a strong and clear correlation with job satisfaction, more autonomy in a job leads to higher job satisfaction among employees. The policy alternative should be that a supportive management is required to minimize the conflict between work and family. Top management should realize the importance of work life balance and its adverse affect on job satisfaction.

Keywords: Work life conflict, Job satisfaction, Stress, Work load, Job ambiguity

1. Background of the study

The fast pace economical development in 20th century, across the globe has created new endeavors for the business organizations. Globalization has changed the world into a global village. This change has pushed the organizations for striving hard to gain and sustain their competitive advantage, by reducing cost, increasing profits and enhancing the operations. The changing world scenario also evoked the changes in the organizational culture.

Organizational changes due to downsizing, mergers/ acquisitions and radical changes in technology have changed the work setups. The employees in present are more involved in their jobs than in the last decade. The long working hours, work pressure, high demanding jobs, use of sophisticated technology made it difficult for employees to keep a balance between their job and work commitments. This situation gave rise to the greatest challenge of human resource management issue i.e. Work Life Conflict (WLC).

A person plays different role in the span of life, which include roles from work (worker, employer) and non-work (father, spouse, friend, sibling, etc). Work Life Conflict (WLC) exists when time and energy demands to satisfy one role make it difficult to participate in other (Duxbury et al., 2001). Work life conflict also defined "as push and pull between family and work responsibilities, Nancy (2003).

The term Work Life Conflict (WLC) used contradictory with Work Life Balance (WLB). Work life balance (WLB) is defined as a state of equilibrium in which the demands of both a person's job and personal life are equal. (Lockwood 2003). However, when the demand of job or personal life increases it creates an unbalance situation and resulted in work life conflict. Creating a balance with job responsibilities and family responsibilities is a dilemma for the employees and almost impossible due to turbulent work environment, and fast moving economical development across the globe which resulted in demanding jobs and long working hours .

The history of work life conflict is very old. During barter system, the concept of work was not so clear. In this era work was not considered as employment rather it's just a source of survival. The work life conflict was not a social issue, as the conflict between the work and family was very small.

The industrial revolution of 18th century had changed the work settings as well as social setup. Dramatic changes were seen during this period, industries were setup and the functional design of factories led to division between employees

and the employer. Organizations were structured and employee loyalty based on the efforts to make the organization profitable. The period of industrialization served as a fore runner to the work/family conflict that intensified in the subsequent year. The relationships, struggles, and conflicts between workers and employers and between families and the workplace grew in this era (Googins B. K., 1991). The demanding jobs after industrialization resulted into two aspects of work life conflict role overload and role interference. Role overload is the phase when an employee is much involved in one role and unable to sustain balance with other. Role overload is also defined as having too much to do in too little time (Duxbury Linda, Higgins Chris, 2001). The time to perform one task (related job or family) does not left sufficient time to cop up with other task related to family or work

When work takes priority over family it is Work to Family Interference (WIF). This type of conflict is mostly seen in male employees as they are more committed toward their work responsibilities in relation to the family responsibilities. However, women are not fully exempted with this type of conflict.

Organizational changes such as downsizing, restructuring and amalgamate increase workloads and work stress and decrease job security which resulted in WIF conflict. Increasing rate of inflation and perceived higher living standards pushed more women in the labor force. The families now need two incomes to maintain the same standard of living (Bar, 1993). Women are also allowed to enter in the work force because of change in the role of women in the society. In the past the women was considered as responsible for household responsibilities. They had limited access to market, education and health care as well. The changing social and cultural setups in late 80s, created a new endeavors for women. The buzzing of "Equal Employment Opportunities" in early 80s has become a connotation of every organization now.

The entrance of women into the work force is greater in numbers than any other time in history (Alvi, 1994) the dual earners families have good pay back cheques and other incentives but at the cost of their family life. The biggest problem these couples encounter is child care. In a growing number of dual-income families, employees of both sexes are now juggling with care giving and household responsibilities that were once managed by a stay-at-home spouse (Higgins, Duxbury 2001).

When family responsibilities become a hindrance to perform the work effectively it becomes Family to Work Interference (FIW). Many factors contribute to intensify family to work interference which mainly includes family responsibilities such as child and elderly care. The conflict between work and family is now become a crisis for the organizations. With the increase in dual family parents, more job demand and long working hours made it almost impossible to create a balance between work and family.

Work life balance was considered as the main issue for female employees in the past. Factors such as parenting and caring are not expected to impact on men's work and therefore they do not have any work-life conflict (Hearn, 1999). Empirical studies over a decade suggested that there is significance difference in the number of predictors for WFC for male and female employees.

Male employees are also facing the dilemma of how to balance between work and family life. Recent research found that there is no statistically significant difference in priorities between men and women (HR magazine, October 2005). Women experienced more family to work inference, because they are responsible for family activities and spend more time in family than men (Scott, 2001). Men experience more WFC than women, because men tend to spend more time in work activities than women (Jacobs and Gerson, 2000); Direction of WLC (work to family interference or family to work interference) is predicted by different variables (Fu and Shaffer, 2001).

Pakistan is one of the fast growing economies in the world. Economical and social changes in the last three decades has changed the family and work settings. The increasing rate of inflation changed the working setups in the country. The monthly expenditures are also escalating because of higher rate of inflation. This resulted in the emergence of dual family earners. The monthly expenditure in the year 1996 was Rs 6757 in the urban areas of Pakistan which increase to Rs 8997 in the year 2002, Rs 9121 in 2004-05 and escalated to Rs 10583 in 2005-06 (Note 1). To maintain the standard of living now both husband and wives has to work and the concept of single earner family is diminishing (Sauvé 2002).

Now we have more women in the work force, a comparison of male and female participation rates reveals that the labor force participation rates for females (age 25-34) have been increasing in the last fifteen years, the tremendous increased has been seen in the figures which were 11V5 percent in 1992-93 escalated to 21.62 in 2005-06. Multiple factors like increased awareness, better educational opportunities, equal employment opportunities, changing social attitudes, are responsible for increase in female participation rate. However, it remains less than the male activity rate, which means that their participation in economic activities is low. On the other hand, male participation rate has seldom wavered and has generally remained steady since the early 90's (Note 2). However, it is seen that the male participation rate at the same age group shows a slight lower graph in the last one and a half decade the rate of male participation dropped from 97.05 in 1992-93 to 97.03 in 2005-06 (Note 3).

As the more dual earner couples are seen the problem of child care and elderly care creates an imbalance between work and family and the problem of family to work interference sprouted. "The majority of women are no longer at home on a full-time basis. As a consequence, responsibilities for food preparation, home chores, childcare and eldercare must be shared differently" Sauvé (2002).

The fast pace economical development in the country has demanded more efforts from its employees. Now organizations in Pakistan are paying off good salary packages, compensation and benefits but the nature of the work is more demanding. The work related stress, work pressure, long working hours leads to job satisfaction which is one of the main factor of work to family interference.

As the wave of globalization captured the Pakistanis markets the job became more demanding and the working hours also increases, the statistics shows that 20.4% of employees work more than 56 hours in a week in the year 1971-1972 which was increased to 30.8% in the year 2004(Note 4). This increase in working hours resulted in the problems in coping up with family responsibilities among male and female employees, which resulted into work to family interferences an aspect of work life conflict.

This study will identify the factors related to the work life conflict in male and female employees

1.1 Objective of the Study

The objective of this research is to contribute towards a contemporary issue of human resource management that is work life conflict in Pakistan. The research will analyze the factors related to work life conflict and its impact on job satisfaction of employees at three management level of the organization i.e. (top, middle and lower level management)

1.2 Research Questions

On the basis of pervious researches the following research questions are formulated to test in the Pakistani business environment

1. What is the relationship between job satisfaction and work to family interference?
2. What is the relationship between job satisfaction and family to work interference?
3. Does any relationship exist between workload and job satisfaction?
4. What is the relationship between stress and job satisfaction?
5. What is the relationship between job autonomy and job satisfaction?

The paper is organized as follows; Section two reviews the literature for relevant theoretical and empirical work on work life conflict and its impact on male and female employees. Section three presents the methodology and framework of the study which also describes the sample and variables used in the analysis. Section four presents the data analysis and discussion of statistical results. Section five focuses on conclusion and recommendations.

2. Theoretical Framework & Methodology

2.1 Theoretical Frame Work

The relationship between dependent variable (job satisfaction) and independent variables (work to family interference, family to work interference, stress, workload and job autonomy) is illustrated in the schematic diagram as follows:

Insert Figure 1

2.1.1 Variables

The objective of the research is to study the work life conflict and its impact on job satisfactions in Pakistan. The choice of variables is influenced by the previous research and analysis done on work life conflict and job satisfaction. All variables stated below have been used to test the hypotheses of this study. They include the dependent variable and the independent variables.

Independent Variable

The independent variable is one, which affects the dependent variable in a positive or negative way. The independent variables of the study are work life conflict (family to work interference, work to family interference), stress (family related stress, work related stress), workload (working hour, job type) and job autonomy.

Work life conflict is the main independent variable, defined as push and pull between work and family. The work life conflict is measured by, its two aspects family to work interference and work to family interference. Long working hours, job related stress and work overload are the main reasons associated with work to family interference whereas, child care, elderly care or single parenthood are the factors which caused family to work interference.

Workload in the study will be measured by working hours and type of the job. Working hours are defined as number of hours per week an employee work. The normal working hours in most of the countries around the world is 35-37.5 hour

work per week (Note 5). However, most of the western countries are now practicing flexible working hours. It is a variable work schedule in which employees can choose when they work, subject to achieving total daily, weekly or monthly hours. (Note 6) Type of job is the second variable to measure workload. In our study, we consider the managerial position to cater this variable. The managers at different level of the organization have different job requirements so the work load may differ as the different management level of the organization. The lower level managers are much involved in technical work as compare to middle and top management. Middle and top management are much involved in policymaking and conceptual work. The intensity of work may differ at different management level.

Stress, is defined as “a physical, chemical, or emotional factor that causes bodily or mental tension and may be a factor in disease causation.” One type of stress is job stress. With job stress, the stressors involved are work-related (Note 7). The main causes of stress are long working hours, heavy job responsibilities and conflict with the supervisor. The study in the literature revealed stress as the main factor of work life conflict and impact job satisfaction negatively. The operationalized concept used to measure stress is job responsibilities and family responsibilities. The other variable is job autonomy, which is a major predictor of job satisfaction. Job autonomy is defined as the independency employees had to take their decision regarding their job. Increase in job autonomy positively effects the job satisfaction and increases it.

2.1.2 Dependent Variable

The dependent variable is the prime interest of the researcher. The dependent variable is one, which is affected by the independent variables. The variation in the dependent variable can be explained by the variation in the independent variable. Job satisfaction is the main dependent variable. Job satisfaction can be defined as an overall feeling about one's job or career in terms of specific facets of the job or career (Thompson, Thompson & Orr, 2003).

Job satisfaction depends on many factors like work environment, compensation packages, job autonomy and supervisor support but our goal is to study the effect of factors associated with work life conflict on job satisfaction.

2.2 Methodology

This section discusses the sample selection procedure, variables selection, the model used for the research and the statistical techniques employed to find out the relationship between work life conflict and job satisfaction.

2.2.1 Data Set

The source of data for this study is primary data acquired through questionnaire. The information was also collected through personal interviews from the employees at different management levels, however the information adopted by the interviews is just for the understanding the phenomena of WLC in Pakistan and not used for the interpretation of the results. The data for the research obtained from respondents of one public sector organization and one private sector organization.

A pilot study was conducted before floating the questionnaire to study the validity of the measures. 200 questionnaires were floated among the two organizations selected (Nadra and LMKR) 162 questionnaire were returned. The response rate was 81%. 5 questionnaires were rejected as they do not provide the sufficient information to conduct the analysis. Sample size of 157 managers is used for the final analysis.

2.3 Hypotheses

This section is going to discuss the hypotheses of the research. The research intends to test whether the relationship that has been theorized does really exist or not. Since the objective of the study is to examine the impact of work life conflict on job satisfaction, different statistical tools and techniques will be used to test the following hypothesis:

2.3.1 Hypothesis 1

Job satisfaction is found to be negatively correlated with work to family interference. Burke (2000) found that the employees are more satisfied and committed to their job if organizations are supportive of work life balance. It is also found from the previous research that that organizational values supporting work-life balance have important work and personal consequences for men. Such organizational values were present, managerial and professional men reported greater job satisfaction and family satisfaction, generally higher life satisfaction and more positive emotional and physical wellbeing (Burke 2000; Jayaweera, 2005;). Jobs related responsibilities became a hindrance in performing household responsibilities; this tussle resulted in the job dissatisfaction (Oswald, 2002). Satisfaction with the HR practices, such as family friendly policies reduced the interference of work in the family and thus increases job satisfaction (Kinnie, Hutchinson, Purcell, Rayton , 2005).

Previous researches examined a negative relationship between job satisfaction and work to family interference this interference is a result of long working hours and more demanding job (Jayaweera, 2005; Janasz and Behson 2007; Ezra

and Deckman 1991; Cabrita and Heloísa; 2006). To study the relationship of work to family interference in Pakistani work settings hypothesis 1 is proposed as follows,

H1: There is negative relationship between job satisfaction and work to family interference.

2.3.2 Hypothesis 2

An employee faces different family problems along with their job responsibilities. The child care or elderly care responsibilities some time interfere in the job and create a situation of family to work interference. Work life balance is a major component of employee's job satisfaction (Ezra and Deckman, 1991). Long working hours and priority of work role expectation over family role increase the employee's family to work interference (Beauregard; 2006). The use of family friendly policies such as flexible time and onsite childcare appears to help employees particularly working mothers, who have dual demand of better work and family life (Ezra and Deckman, 1991).

Employees having multiples roles of childcare and job responsibilities, reduces job satisfaction and increases the family to work interference (Evandrou and Glaser; 2004). It is also found that work domain variables such as long working hours, supervisor support, organizational policies had a significant effect on family to work interference (Beauregard; 2006).

To study the relationship between job satisfaction and family to work interference hypothesis 2 is proposed

H2: There is negative relationship between job satisfaction and family to work interference.

2.3.3 Hypothesis 3

Increase in working hours increases the workload, which negatively affects the job satisfaction of the employees. Duxbury, Higgins, (2001) revealed in their research that increases in work overload leads to work to family interference, which leads to less organizational commitment and decreases job satisfaction. Burchell (1999), Cabrita and Perista (2006), Fu and Shaffer, (2001) found a direct relationship between numbers of hours spent in work activities and work life conflict.

As we stated in the hypothesis 1 and 2, that the two aspects of work life conflict family to work interference and work to family interference are negatively correlated with job satisfaction. As the workload is a main predictor of work life conflict the researcher assumed that a negative correlation does exist between workload and job satisfaction. To study the proposed relationship following hypothesis 3 is established.

H3: There is a negative relationship between workload and job satisfaction.

2.3.4 Hypothesis 4

Increase in stress decreases the job satisfaction of the employees in Pakistan. Previous studies have established a negative correlation between job satisfaction and stress (Duxbury Higgins, 2001, 2004; Yousef 2002). Role ambiguity, role conflict and work life conflict are found to be the most important factors associated with stress (Yousef; 2002). Employees who have a higher level of job stress negatively influences job satisfaction. Therefore, following hypothesis is proposed for this study.

H4: There is a negative relationship between stress and job satisfaction.

2.3.5 Hypothesis 5

Fewer studies exists that examine the relationship between job satisfaction and job autonomy, Job autonomy emerged as having a strong and clear correlation with job satisfaction, more autonomy in a job leads to higher job satisfaction among employees (Cabrita and Perista 2006). Job autonomy is found to be a strong predictor of job satisfaction, jobs with high demands and high control, experience less job satisfaction (Gronlund; 2007). Hypothesis 5 is proposed to study the relationship.

H5: There is a positive relationship between job autonomy and job satisfaction.

2.4 Model

This study used cross sectional data. The intended impact on job satisfaction by work life conflict is considered using the following model:

$JS = f(WIF, FIW, stress, workload, job\ autonomy)$

$JS = \alpha + \beta_1 WIF + \beta_2 FIW + \beta_3 stress + \beta_4 workload + \beta_5 job\ autonomy + e$

Where

JS = job satisfaction

WIF= work to family interference

FIW= family to work interference

e = model error term

Job satisfaction is the factor can be determined by studying the effects of independent variables (work life conflict, stress, workload, job autonomy). Work life conflict will be measured by its two aspects family to work interference and work to family interference. Workload will be measured by job type and number of hours working and stress is measured by family related stress and work related stress.

All data collected from the respondents was entered into the statistical software program SPSS-12 to perform all procedure of data analysis. The descriptive analysis was conducted to provide an idea on how the respondents have answered the questionnaire.

Pearson coefficient was used to measure the degree of association between different variables under consideration. Correlation coefficient provides a measure to establish the strength. This study would like to establish a linear relationship between job satisfaction and factors associated with work life conflict. Regression analysis was used to estimate the casual relationship between the job satisfaction and work life conflict.

3. Data Analysis and Discussion

In order to meet the purpose of the study, this section has five parts for analyzing the data collected for the study. The five parts are: (a) data sample information, (b) descriptive analysis, (c) correlation analysis, (d) regression analysis and (e) hypothesis testing.

3.1 Data Sample Information

The sample data comprised of 157 respondents belong to one private and one public service sector organization in Pakistan. 80 respondents are from LMKR and 77 belong to NADRA. The level of management of the respondents in the chosen data set is represented in table I below.

Insert Table 1

The total sample size of 157 respondents comprises of 36 top managers, 87 middle managers and 34 lower managers.

3.2 Descriptive Analysis

Table II represents the calculated means and standard deviations for the dependent variable (job satisfaction) and independent variables (work to family interference, family to work interference, work load, job autonomy and stress).

The mean of work to family interference is 3.02 in LMKR whereas Nadra has a mean of 2.4, which shows that employees at LMKR encounter more with work to family interference than employee at NADRA. On the other hand the means of family to work interference shows that employees at NADRA (3.3) come across with the problem of family to work interference as compare to employees at LMKR where mean of family to work interference is 2.2. The level of stress and work load is almost same at both the organizations as the means of stress and work load are 2.54 and 2.28, 2.78 and 2.73 respectively for LMKR and Nadra.

Insert Table 2

The employees of both the organization are found to be some how satisfied with their job as the mean of job satisfaction is 3.63 for LMKR and 3.79 for Nadra. The job autonomy is also almost at the same level with the means 2.04 and 2.06 for both LMKR and NADRA respectively. However, both the organizations shows high standard deviations for the variables under study which shows the variation in the data received. The main reason of higher standard deviation for the studied variables is that the responses vary due to difference in the management level of the respondents.

3.3 Correlation Analysis

Pearson product moment correlation procedure was adopted to determine the nature and strength of the relationship among variables suggested by the five hypotheses proposed in this study.

Insert Table 3

Table 3 illustrates the coefficient relationship between the variables. Job satisfaction is found to be negatively correlated with the two aspects of work life conflict, work o family interference ($r = -.159$, $p < .05$) and family to work interference ($r = -.382$, $p < .01$) which supports hypothesis 1 and hypothesis 2. Very low and positive correlation coefficient between workload and job satisfaction ($r = -.016$, $p > .01$) rejected the hypothesis 3 which proposed a negative relationship between job satisfaction and work load. Negative correlation is found between stress and job satisfaction ($r = -.323$, $p < .01$) which support our hypothesis 4. Positive correlation is seen between job autonomy and job satisfaction ($r = .562$, $p < .01$) which approved our hypothesis 5.

Separate correlations have been run to study the relationship of independent and dependent variables at different levels of management. The results of theses analysis are discussed below.

Insert Table 4

Table 4 illustrates the correlation coefficients of the relationship between the independent and dependent variables of the employees working at the top level of management. By analyzing the correlation coefficient it is found that job satisfaction is negatively related with work to family interference ($r = -.074$), however it is not significant. Similarly a negative relationship is found between family to work interference ($r = -.405$, $p < .05$). Stress ($r = -.235$) and job satisfaction is found to be negatively correlated however it is not significant. This shows that although a relation does exist between job satisfactions and stress but it is not statistically significant. Work load (0.224) is found as positively correlated with job satisfaction. Stress and work life conflict is found to be positively correlated and significant. This shows that even in top management the main source of work life conflict is stress. However, a significant positive relationship is seen between job autonomy and job satisfaction ($r = .617$). The results further revealed that the job satisfaction in the top management decreases if they don't have the authority to take decisions regarding their job and freedom to perform the task.

Insert Table 5

The correlation analysis of middle managers (table 5) shows that work to family interference ($r = -.325$, $p < .01$) and family to work interference ($r = -.322$, $p < .01$) are negatively and significantly correlated with the job satisfaction ($r = -.325$, $p < .01$). The analysis shows that job satisfaction decreases with the increase in work life conflict at the

middle level managerial positions. The relationship between workload ($r = -.176$) and job satisfaction is found to be negative but very weak and not significant. On the other hand stress is found significantly negatively correlated ($r = -.319$, $p < .01$) with job satisfaction. The results show that increase in stress decreases the job satisfaction in the middle level of managers.

Insert Table 6

Analysis of lower managers (table 6) shows job satisfaction is negatively correlated with work to family interference ($r = -.272$) however the relationship is not significant on the other hand family to work interference shows a significant negative correlation with the job satisfaction at the lower management level ($r = -.389$, $p < .01$). Stress is found as negatively correlated ($r = -.438$, $p < .01$) with job satisfaction, the results show that increase in stress decreases job satisfaction and increases the conflict between work and family in the lower level of management. Job autonomy shows a strong positive relationship with job satisfaction ($r = .585$, $p < .01$) which indicates that even at lower level of management employees are satisfied with their job if they have independency to take decisions regarding their jobs.

3.4 Regression Analysis

Linear regression was carried out in order to determine the explanatory power of independent variables (work to family interference, family to work interference, stress, job autonomy and workload) in the variance of dependent variable (job satisfaction). The estimated results are presented in Table VII.

Insert Table 7

It is evident from the table 7 that work to family interference is positively and significantly effecting the dependent variable that is job satisfaction. Similar results are also found by Beauregard (2006) in his study, where he said that greater organizational expectations, more challenging work and organizational commitment however subordinate the family responsibilities over their job but increase job satisfaction. Fu and Shaffer (2002) found that supervisor support and co worker support mediate the effect of work to family interference and thus increases job satisfaction.

Table 7 also shows that the variable of family to work interference is negatively and significantly affecting the dependent variable of job satisfaction. Fu and Shaffer (2002) in their research come up with the similar results. Their findings concluded that family to work interference decreases job satisfaction. Stress in our overall sample is found to have a negative significant impact on job satisfaction. The studies conducted by Duxbury, Higgins (2004), Yousef (2002), and Duxbury (2004) come up with the similar results and found that that a negative correlation exists between stress and job satisfaction.

It is also revealed from the table VII that job autonomy is bringing positive and significant variation in job satisfaction. Similar outcome is seen in the study conducted by Cabrita and Perista (2006), their research show a strong and positive relationship between job satisfaction and job autonomy. Negative and insignificant relationship has been found between job satisfaction and work load. Research by Rose (2003) also found an insignificant relationship among the job satisfaction and workload.

Results of regression analysis shows that the value of F is significant (22.909) which means that model is statistically significant. The R^2 of the model is 0.431, which shows that approximately 43.1% of variance in dependent variable (job satisfaction) can be explained by the linear combination of the independent variables work life conflict (work to family interference, family to work interference, stress, job autonomy and workload).

Insert Table 8

Table 8 reveals that variable work to family interference is showing a positive and significant relationship with the dependent variable job satisfaction. This result shows that employees at top management are satisfied with their jobs despite experiencing work to family interference. Spector et al (2005) conducted a comparative analysis between western and eastern countries and concluded that people in most of the eastern countries work as a means to personal achievement and development and thus resulted into work to family interference but this personal achievement and development also sustain the job satisfaction despite work to family interference. Excessive efforts spent in work pursuits are seen as being devoted to the self and neglecting the family.

Family to work interference has a negative and significant impact on job satisfaction at top management level. This result of our research is supported by Major, Klein, and Ehrhart; (2002) they concluded in their study that greater work demands are related to time spent with family, which in turn may cause family interference with work.

Stress is found as negative but insignificant predictor of job satisfaction at top level of management as illustrated in table 8. Similar results are also found by Nelson (1999) in his study. His research studied the causal relationship between stress and job satisfaction the results of the research shows that although a strong negative correlation exists between stress and job satisfaction. The causal relationship is not significant.

Table 8 further shows that there is a positive and significant relationship between job autonomy and job satisfaction. The finding is supported by the previous research conducted by Kim (2001); she revealed in her research that autonomy has a significant positive effect on public official's job satisfaction.

Workload in top management shows an insignificant negative impact on job satisfaction. Cabrita and Perista (2006) also come up with the similar results. Their research revealed that employees with longer working hours would be less satisfied with their jobs than those working less hours. Rose (2003) studied the same relationship but the results were not significant as ours, which support our findings and results.

The R^2 of our model is 0.589, which shows that approximately 59 % of the variance in dependent variable (job satisfaction) can be explained by the linear combination of the independent variables (work to family interference, family to work interference, stress, job autonomy and workload) at top management level.

Insert Table 9

Table 9 illustrates the estimated results at the middle level of the management. The independent variable work to family interference shows a positive but insignificant variation in the dependent variable job satisfaction.

The research by Konard Et al (2005) supports our research findings. He found that employees are more committed towards their job to get higher reward and appreciation. This attitude towards their jobs however increases work to family conflict but increases job satisfaction.

Family to work interference is found to have a significant negative impact on job satisfaction at middle level of management. Former studies by Ezra and Deckman; (1991) come up with the similar results that family to work interference is negatively correlated with job satisfaction. Beauregard (2006) also found that employees with elderly care and child care have a problem to cop up with their work responsibilities which decreases their job satisfaction.

Stress is having a negative and insignificant impact on job satisfaction. The previous research by Nelson (1999) concluded that employees, which experienced low degree of stress has high level of job satisfaction. Although his result shows a strong negative correlation between stress and job satisfaction, the research failed to establish a significant causal relationship.

Job autonomy is bringing a positive and significant variation in job satisfaction. This shows that independency to perform the job increases the job satisfaction. Similar results are found by the previous research conducted by Cabrita and Perista (2006). They concluded in their research that independency to perform a task increases job satisfaction in the employees. Yousef (2002) revealed in his research that the main source of job dissatisfaction is control to take decision regarding the job and role ambiguity.

Relationship between work load and job satisfaction is found to be negative but insignificant. Rose (2003) comes up with the similar results which supports our findings. Cabrita and Perista (2006) revealed in their research that although workload decreases the job satisfaction in the employees however income may mediate this relationship as higher income and longer working hours are also correlated.

The R^2 of our model is 0.38, which shows that approximately 38 % of variance in dependent variable (job satisfaction) can be explained by the linear combination of the independent variables (work to family interference, family to work interference, stress, job autonomy and workload) at top management level.

Insert Table 10

Table 10 illustrates the results of regression analysis at lower level of management. The variable of work to family interference is showing a positive and significant impact on job satisfaction. Similar results are found from the research

of Spector et al (2005). They concluded in their research that the positive connection of work to family interference with job satisfaction suggests that employees in Collective society (Note 8) are less likely to blame the employer for conflicts between work and home. Therefore, making work to family interference a less important issue in these countries. He further added that People in collectivistic society will view work demands as serving the needs of the family. As a result family members will be less likely to see work as competing with family, thereby being more likely to support the person's efforts at work and less likely to resent the person for having less time and energy for the family. This would minimize an employee's experience of work to family interference.

Family to work interference is bringing a negative significant variation in the job satisfaction of employees at lower level of management. This findings is supported by the previous researches conducted by Beauregard (2006). This study revealed that long working hours and priority of work role expectation over family role increase the employee's family to work interference and decreases job satisfaction. He also concluded that the supervisor support is found to be directly related family to work interference.

The relationship between stress and job satisfaction is found to be negative and insignificant. Nelson (1999) in his research concluded that there is no significant relationship exists between job satisfaction and stress. He further added that other factors like salary, organizational policies, satisfaction with supervisors are associated with job satisfaction and minimize the impact of stress. Like other management levels job autonomy in the lower management is also showing a positive and significant impact on job satisfaction. The results are supported by the previous researches conducted by Kim (2001), Yousef (2005) and Cabrita and Perista (2006) their research concluded that expected autonomy has a significant positive effect on job satisfaction, higher the degree of independence and discretion of the worker in scheduling the work the higher the level of the worker's job satisfaction. Relationship between workload and job satisfaction is found negative and insignificant. Rose (2003) comes up with the similar results which supports our findings. Cabrita and Perista (2006) revealed in their research that although workload decreases the job satisfaction in the employees however income may mediate this relationship as higher income and longer working hours are also correlated.

The R^2 of our model is 0.539, which shows that approximately 54% of variance in dependent variable (job satisfaction) can be explained by the linear combination of the independent variables (work to family interference, family to work interference, stress, job autonomy and workload) at lower management level. The values of R^2 at different management level shows that the independent variables are bringing 59% variance in top management, 37 % variance in middle managers and 54% variance in lower level of management. However, the coefficient of work to family interference is not significant for the middle managers. This statistics shows that work to family interference does exist at all the level of management and effect the job satisfaction. Wang et al. (2004) further added to this issue as connections with co-workers and the employer is very important for an employee and would be willing to sacrifice self-interest for the interest of the organization. The employee remain loyal to the employer, even if that employer's demands and practices produce work to family interference, and thus, they do not have negative feelings about the job as the cause of work to family interference.

3.5 Hypothesis Testing Results

The five hypothesis proposed in this study were tested statistically. The results of these hypotheses are discussed below.

3.5.1 Job Satisfaction and Work to family interference

Correlation results revealed that there is a negative and significant correlation between work to family interference and job satisfaction ($r = -.159$). The result supports our hypothesis 1. It is also found by the correlation analysis that at all the three-management level the relationship is negative, however it is significant only at the middle management level. Previously work to family interference is a related to the psychological well being of the employee and job satisfaction is matter of concern related to high pays and benefits. This research brought the two constructs together and tested their relationship in the service setting. The findings in this present study are consistent with some other researches.

The job responsibilities when coincide with family responsibilities give rise to work and life conflict, which decreases job satisfaction. Many researchers have frequently used the relationship between work to family interference and job satisfaction as contrary to each other. Jayaweera (2005) revealed in his research that work to family interference have a negative relationship with job satisfaction. Janasz and Behson (2007) also found that when work interference in the family responsibilities decreases job satisfaction. Strok, Brett and Reilly, (1996) found that Work family conflict is negatively related to several variables linked to job satisfaction. Ezra and Deckman (1991) revealed in their research that satisfaction with work/life balance is a major component of employee's job satisfaction. However, job satisfaction is found to be increased when a balance is kept between work and family life Cabrita and Perista (2006).

Wang et al. (2004) further added to this issue as connections with co-workers and the employer is very important for an employee and would be willing to sacrifice self-interest for the interest of the organization. The employee remain loyal

to the employer, even if that employer's demands and practices produce work to family interference, and thus, they do not have negative feelings about the job as the cause of work to family interference.

3.5.2 Job Satisfaction and Family to work interference

The result of the correlation revealed a negative and significant relationship between job satisfaction and family to work interference ($r = -0.382$). This proves our hypothesis 2, which stated that a negative relationship exists between family to work interference and job satisfaction. Managers at all three management level under study also have a negative correlation between family to work interference and job satisfaction which shows that the tug of war between family responsibilities directly effect the job satisfaction of the employees in Pakistan. Former studies by Ezra and Deckman; (1991) come up with the similar results that support that family to work interference is negatively correlated with job satisfaction. Beauregard; (2006) also found that employees with elderly care and child care have a problem to cop their work responsibilities which decreases their job satisfaction. He further added that an employee faces different family problems along with their job responsibilities which decrease job satisfaction.

3.5.3 Workload and Job Satisfaction

The result of the correlation for the overall sample revealed that positive insignificant relationship exists between job satisfaction and workload ($r = 0.016$). The results of the correlation rejected our hypothesis 2, which stated that a negative relationship exists between workload and job satisfaction. The assumption which was made while formulating our hypothesis 2 that as the workload is a main predictor of work life conflict a negative correlation does exists between workload and job satisfaction. However It is found that top managers has a non significant positive correlation between job satisfaction and workload ($r = 0.224$), whereas at middle management a non significant negative correlation does exists between workload and job satisfaction with ($r = -0.176$). The hypothesis 2 is accepted at lower level of management where a significant negative correlation ($r = -0.535$) exist between the two said variables. The previous studies by Duxbury, Higgins, Fu and Shaffer, (2001); Duxbury, Higgins, (2001) found that workload is negatively correlated with job satisfaction. However, this study indicated that employees with heavy workload satisfied with their job at top management, may be not satisfied at middle managers and significantly a negative impact of heavy workload is seen in lower managers.

The results are contradictory with the previous research. However research conducted by Cabrita and Perista (2006) support our findings. They studied the factors associated with work life conflict and job satisfaction in the countries located in the European Union block and revealed that the employees in Denmark and Portugal, shows a positive relationship between working hours (working hour is one of our predictor for work load) and job satisfaction. In other words, people who work more hours are more satisfied in their work. They also pointed out in the research that income mediates the relationship between workload and job satisfaction as higher income is positively correlated with longer working hours.

3.5.4 Stress and Job Satisfaction

There is a significant negative correlation found between job satisfaction and stress ($r = -0.323$). The result supports our hypothesis 3 which stated that there is a negative correlation exists between job satisfaction and stress, and hence it is accepted. However the relationship is not significant in top managers ($r = -0.235$) but in middle and lower managers the relationship is negative and significant, ($r = -0.319$) in middle managers and ($r = -0.438$) in lower managers which strengthen our hypothesis 3.

Stress is a main factor of withdrawal from the job (Falkenburg and Schyns, 2007). The employees involve in job stress, lost their interest in job and quit if they got a better opportunity. There are several researches which studied the impact of stress on job satisfaction and found the similar results. The studies conducted by Duxbury, Higgins (2004), Yousef (2002), Duxbury (2004) found that a negative correlation exists between stress and job satisfaction. Increase in stress leads to decreases in employee job commitment and job satisfaction. However study conducted by Nelson (1999) concluded that despite job satisfaction and stress are strongly negatively correlated with each other it is hard to established a causal relationship between the two variables. He further added that other factors like salary, organizational policies, satisfaction with supervisors are associated with job satisfaction and minimize the impact of stress.

3.5.5 Job Autonomy and Job Satisfaction

A positive and significant relationship between job satisfaction and job autonomy is found in this study ($r = 0.562$) for the overall sample. Employees in the service sector both in public and private organizations felt highly satisfied if they have freedom to take the decision regarding their job. This proves our hypothesis 5 which stated that a positive correlation exist between job autonomy and job satisfaction. A significant positive relationship is found at the all three level of management top managers ($r = 0.617$), middle managers ($r = 0.519$) and lower managers ($r = 0.585$), which support our hypothesis that increase in job autonomy increases the job satisfaction for the employees in Pakistan. Cabrita and Perista (2006) also revealed in their research a strong and clear correlation between job satisfaction and job

autonomy. Kim (2001) also concluded in the research that autonomy has a significant positive effect on job satisfaction, her research further added that the higher the degree to which the job provides substantial freedom, independence and discretion of the worker in scheduling the work and determining the procedures to be used in carrying out, the higher the level of the worker's job satisfaction.

4. Conclusion

This study provides evidence that support, the concept of work life conflict and advocates that it is not just a western phenomenon; it is also pertinent in an eastern setting such as Pakistan. We found that job satisfaction is significantly negatively correlated with work to family interference and family to work interference. Job satisfaction is also found to be negatively related with stress in our research. However, the correlation of workload is positive and insignificant which shows that workload does not effect the job satisfaction of the employees in Pakistan.

The previous research on workload shows that the results are affected by social norms and cultural differences among the different countries. The research by Cabrita and Perista (2006) studied the workload at different countries in the European Union block. The results of Portugal and Denmark show a positive relationship between workload and job satisfaction. Research conducted by Hofstede (1984) concluded that individualistic culture and collectivism culture had different outcomes regarding the attitude towards job. Job autonomy is found to be directly related to job satisfaction. Job autonomy emerged as having a strong and clear correlation with job satisfaction, more autonomy in a job leads to higher job satisfaction among employees. The result of job satisfaction is found consistent with the results of the researches conducted across the globe. It is found from the research that the factors associated with work life conflict bring variation in the job satisfaction of the employees. Work to family interference, family to work interference and stress are found to be negatively associated with job satisfaction. Job autonomy and workload is positively associated with job satisfaction.

The findings of this study offer suggestions for improvement of job satisfaction through work life balance.

- It is suggested that consideration be given to the development of guidelines in order to ensure that working hours should not affect the WLB of employees.
- Managers can increase flexibility with respect to hours of work for their subordinate. Whereas employees can reduce the amount of time they are expected to spend in work by prioritizing their work.
- A supportive management is required to minimize the conflict between work and family. Top management should realize the importance of work life balance and its adverse affect on job satisfaction.
- The need of policy is required to cater this problem. Different policies and strategies are needed for the people at different type jobs and at different stages of their career. As one of the largest employer of any country, government should require to introduce appropriate policies in the area of work life balance.

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Table 1. Company Wise Responses

Organization	N	Top Managers	Middle Managers	Lower Managers
LMKR	80	20	43	17
NADRA	77	16	44	17
TOTAL	157	36	87	34

Table 2. Descriptive Statistics for all Variables (N= 157)

VARIABLES	LMKR		NADRA	
	MEANS	S.DEV	MEANS	S.DEV
Work to family interference	3.02	0.787	2.4	0.78
Family to work interference	2.2	0.759	3.3	0.56
Work load	2.78	0.44	2.73	0.73
Job satisfaction	3.63	0.92	3.79	0.666
Job autonomy	2.04	0.905	2.06	0.573
Stress	2.54	0.92	2.28	0.766

Table 3. Correlation Coefficient of the relationship between the variables for over all sample

		WIF	FIW	STRESS	JS	JA	WL
WIF	Pearson Correlation	1	.472(**)	.472(**)	-.159(*)	-.096	.431(**)
	Sig. (2-tailed)	.	.000	.000	.046	.233	.000
	N	157	157	157	157	157	157
FIW	Pearson Correlation	.472(**)	1	.560(**)	-.382(**)	-.140	.013
	Sig. (2-tailed)	.000	.	.000	.000	.081	.873
	N	157	157	157	157	157	157
STRESS	Pearson Correlation	.472(**)	.560(**)	1	-.323(**)	-.131	.186(*)
	Sig. (2-tailed)	.000	.000	.	.000	.102	.020
	N	157	157	157	157	157	157
JS	Pearson Correlation	-.159(*)	-.382(**)	-.323(**)	1	.562(**)	.016
	Sig. (2-tailed)	.046	.000	.000	.	.000	.839
	N	157	157	157	157	157	157
JA	Pearson Correlation	-.096	-.140	-.131	.562(**)	1	.154
	Sig. (2-tailed)	.233	.081	.102	.000	.	.055
	N	157	157	157	157	157	157
WL	Pearson Correlation	.431(**)	.013	.186(*)	.016	.154	1
	Sig. (2-tailed)	.000	.873	.020	.839	.055	.
	N	157	157	157	157	157	157

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed)

Table 4. Correlation Coefficient of the relationship between the variables of Top Management

		WIF	FIW	STRESS	JS	JA	WL
WIF	Pearson Correlation	1	.634(**)	.543(**)	-.074	.024	.287
	Sig. (2-tailed)	.	.000	.001	.667	.888	.090
	N	36	36	36	36	36	36
FIW	Pearson Correlation	.634(**)	1	.476(**)	-.405(*)	-.033	.254
	Sig. (2-tailed)	.000	.	.003	.014	.849	.135
	N	36	36	36	36	36	36
STRESS	Pearson Correlation	.543(**)	.476(**)	1	-.235	-.063	.097
	Sig. (2-tailed)	.001	.003	.	.167	.716	.575
	N	36	36	36	36	36	36
JS	Pearson Correlation	-.074	-.405(*)	-.235	1	.617(**)	.224
	Sig. (2-tailed)	.667	.014	.167	.	.000	.189
	N	36	36	36	36	36	36
JA	Pearson Correlation	.024	-.033	-.063	.617(**)	1	.605(**)
	Sig. (2-tailed)	.888	.849	.716	.000	.	.000
	N	36	36	36	36	36	36
WL	Pearson Correlation	.287	.254	.097	.224	.605(**)	1
	Sig. (2-tailed)	.090	.135	.575	.189	.000	.
	N	36	36	36	36	36	36

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed)

Table 5. Correlation Coefficient of the relationship between the variables of Middle Management

		WIF	FIW	STRESS	JS	JA	WL
WIF	Pearson Correlation	1	.429(**)	.504(**)	-.325(**)	-.269(*)	.482(**)
	Sig. (2-tailed)	.	.000	.000	.002	.012	.000
	N	87	87	87	87	87	87
FIW	Pearson Correlation	.429(**)	1	.522(**)	-.322(**)	-.154	.038
	Sig. (2-tailed)	.000	.	.000	.002	.155	.725
	N	87	87	87	87	87	87
STRESS	Pearson Correlation	.504(**)	.522(**)	1	-.319(**)	-.095	.273(*)
	Sig. (2-tailed)	.000	.000	.	.003	.384	.011
	N	87	87	87	87	87	87
JS	Pearson Correlation	-.325(**)	-.322(**)	-.319(**)	1	.519(**)	-.176
	Sig. (2-tailed)	.002	.002	.003	.	.000	.102
	N	87	87	87	87	87	87
JA	Pearson Correlation	-.269(*)	-.154	-.095	.519(**)	1	.018
	Sig. (2-tailed)	.012	.155	.384	.000	.	.865
	N	87	87	87	87	87	87
WL	Pearson Correlation	.482(**)	.038	.273(*)	-.176	.018	1
	Sig. (2-tailed)	.000	.725	.011	.102	.865	.
	N	87	87	87	87	87	87

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 6. Correlation Coefficient of the relationship between the variables of Lower Management

		WIF	FIW	STRESS	JS	JA	WL
WIF	Pearson Correlation	1	.913(**)	.665(**)	-.272	-.055	.379(*)
	Sig. (2-tailed)	.	.000	.000	.120	.756	.027
	N	34	34	34	34	34	34
FIW	Pearson Correlation	.913(**)	1	.680(**)	-.389(*)	-.051	.446(**)
	Sig. (2-tailed)	.000	.	.000	.023	.774	.008
	N	34	34	34	34	34	34
STRESS	Pearson Correlation	.665(**)	.680(**)	1	-.438(**)	-.249	.533(**)
	Sig. (2-tailed)	.000	.000	.	.010	.155	.001
	N	34	34	34	34	34	34
JS	Pearson Correlation	-.272	-.389(*)	-.438(**)	1	.585(**)	-.535(**)
	Sig. (2-tailed)	.120	.023	.010	.	.000	.001
	N	34	34	34	34	34	34
JA	Pearson Correlation	-.055	-.051	-.249	.585(**)	1	-.469(**)
	Sig. (2-tailed)	.756	.774	.155	.000	.	.005
	N	34	34	34	34	34	34
WL	Pearson Correlation	.379(*)	.446(**)	.533(**)	-.535(**)	-.469(**)	1
	Sig. (2-tailed)	.027	.008	.001	.001	.005	.
	N	34	34	34	34	34	34

** Correlation is significant at the 0.01 level (2-tailed).

* Correlation is significant at the 0.05 level (2-tailed).

Table 7. Estimated result for overall sample - Dependent Variable Job Satisfaction

Variables	Coefficients
Constant	28.75* (11.954)
Work to Family Interference	0.135*** (1.647)
Family to work Interference	-0.295* (-3.696)
Stress	-0.134*** (-1.716)
Job Autonomy	0.531* (8.364)
Workload	-0.095 (-1.316)
R2	0.431
F	22.909
N	157

Note: figures in parenthesis are t-values.

* significant at 1% level of significant

*** significant at 10% level of significant

Table 8. Estimated result at Top level of management- Dependent Variable Job Satisfaction

Variables	Coefficients
Constant	27.888* (5.536)
Work to Family Interference	0.332** (2.012)
Family to work Interference	-0.501* (-3.186)
Stress	-0.122 (-0.853)
Job Autonomy	0.667* (III9)
Workload	-0.135 (-.849)
R2	0.589
F	8.585
N	36

Note: figures in parenthesis are t-values.

* Significant at 1% level of significance

** Significant at 5% level of significance

Table 9. Estimated result at Middle level of management- Dependent Variable Job Satisfaction

Variables	Coefficients
Constant	30.87* (8.618)
Work to Family Interference	0 .033 (0.273)
Family to work Interference	-0.174*** (-1.593)
Stress	-0.157 (-1.409)
Job Autonomy	0.489* (5.275)
Workload	-0.152 (-1.449)
R2	0.376
F	9.753
N	87

Note: figures in parenthesis are t-values.

* significant at 1% level of significance

*** significant at 10 % level of significance

Table 10. Estimated Result at lower level of management- Dependent Variable Job Satisfaction

Variables	Coefficients
Constant	32.324* (5.385)
Work to Family Interference	0.538*** (1.671)
Family to work Interference	-0.720** (-2.145)
Stress	-0.117 (-0.607)
Job Autonomy	0.489* (3.262)
Workload	-0.127 (-0.734)
R2	0.539
F	6.545
N	34

Note: figures in parenthesis are t-values.

* Significant at 1% level of significance

** Significant at 5% level of significance

*** Significant at 10 % level of significance

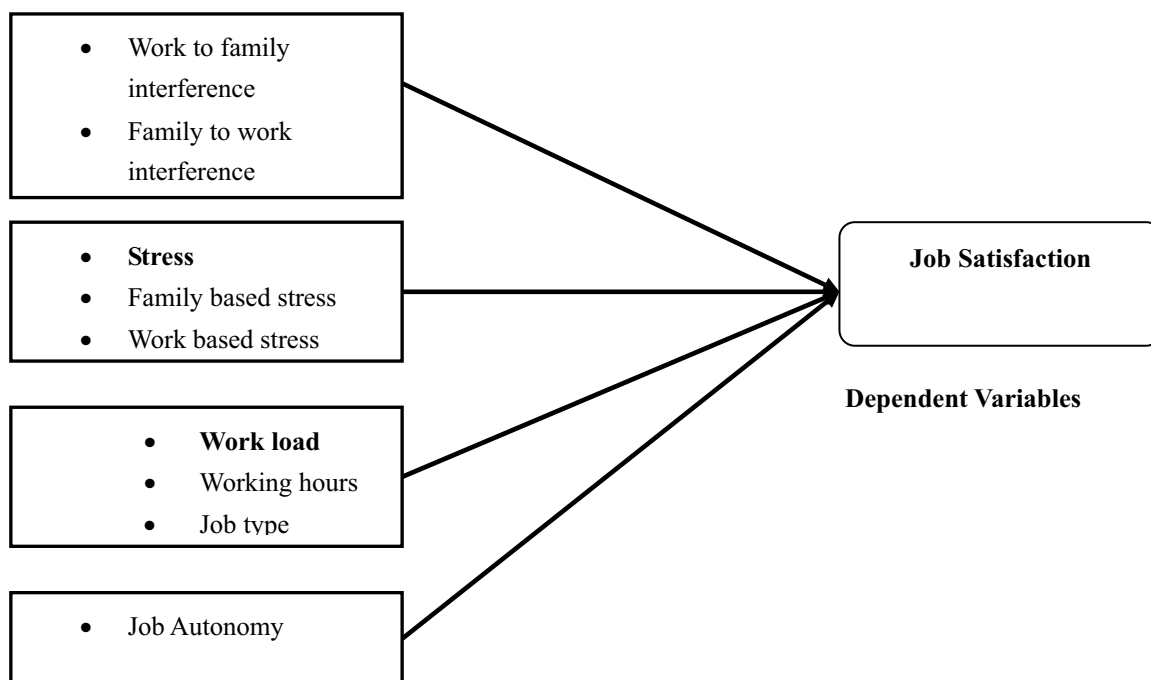


Figure 1. Theoretical Framework

Notes

Note 1. Pakistan Household Integrated Survey 2005-2006.

Note 2. Economic survey of Pakistan 2003-2004.

Note 3. Labour force survey Federal bureau of Statistics 2005-2006.

Note 4. Pakistan Statistical Year Book.

Note 5. Wikipedia encyclopedia.

Note 6. Wikipedia encyclopedia.

Note 7. Merriam-Webster's Collegiate Dictionary.

Note 8. A number of authors have suggested that Asian (Hofstede, 1984; Oyserman, Coon, & Kemmelmeier, 2002).

East European (Spector et al., 2001), and Latin American (Friedrich, Mesquita, & Hatum, 2006; Hofstede, 1984) societies are collectivistic.



Study on the Application of RCA in College Education Cost Accounting

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Abstract

The resource consumption accounting (RCA) integrating activity-based costing (ABC) with Germanic flexible marginal costing (GPK) is not only a new cost accounting method, but the innovation of the cost management system. Its application has been gradually emphasized by more and more people, and the application range is extending continually. Combining with the characteristics of college, we discussed the applicability of RCA in the college education cost accounting in this article, and simply narrated the application approaches of RCA and the problems in the application that should be concerned by us.

Keywords: Resource consumption accounting (RCA), Education cost, Applicability

1. Introduction

After RCA was proposed in 2002, it has been concerned broadly in theory and practical application. Except for the application in enterprises, its application in public institutions has been more and more emphasized. Combining with the characteristics of college, we will discuss the applicability of RCA in the college education cost accounting in this article.

2. Brief introduction of RCA

RCA is a sort of new cost accounting method which was pushed in America since 2002, which combined some advantages of GPK and improved ABC. RCA not only inherited the cost accounting idea of ABC, i.e. “activity consumes resources, and product consumes activity”, but also absorbed the skill and practical application experience of GPK, i.e. pursuing the consumption of cost to the center of the cost, so it is very meaningful whether for the theory or the practical application.

The theoretical base of RCA is composed by three important factors including resource analysis, quantitative method and cost attribute.

First, the concerned base of RCA is the resource. Though RCA still adopts the accounting idea of “resource-activity-product”, but its emphasis is transferred to the “resource”, not the “activity” in ABC.

The resource defined by RCA is generalized, and it includes various objectives such as worker salary, raw material and fixed assets depreciation consumed by activity. The resource includes not only the resource consumed by the activity, but also the resource consumed by the resource itself. According to causality of “activity consumes resource, and product consumes activity”, RCA takes the consumption of resource as the focus to calculate the costs, i.e. RCA distributes the costs to the cost objectives according to the resources, and solves the problems of cost distribution and cost management happened in the transfer of product values from one department to another department.

Second, RCA used the output quantitative method to distribute the cost. RCA is the cost distribution method based on measurement, and all resource consumption and activity consumption in RCA have quantitative standards which can be measured only. That can qualitatively describe the causality between resource consumption and cost distribution, but quantitatively confirm the reference of cost distribution.

Third, RCA cognizes the two dimensions of cost attribution. RCA observes and obtains the fixed cost habit from the supply of resource, and divides the cost region into fixed cost and variable cost. The resource supply cost changing with the positive proportion of output is defined by the variable cost, or else, the cost is fixed costs, which could cognize and distribute the cost in nature.

Comparing with traditional cost accounting method, the advantages of RCA are mainly embodied in three aspects. First, RCA could exactly confirm the cost distribution rate and more exactly distribute the cost through the resource analysis

and the selection of quantitative method. Next, RCA could open up the resource use rates of various departments and perform difference analysis and performance checking, and implement the responsibility system into fundamental departments by computing the surplus unused abilities of various departments. Again, RCA could provide information on different layers such cost information, marginal cost information, surplus unused ability and department resource use rate for the decision-makings such as cost management or higher layer policies.

3. Analysis of the applicability of RCA in college education cost accounting

In B.D. Clinton and D. E. Keys' articles, they pointed out that when following problems existed in the enterprise, the enterprise should consider implementing RCA.

- (1) The resources of enterprise are wasted, but that has not been predicted (for example, the actual productivity is excessive leaves unused) or the resource demand and use can not be predicted (for example, the planned productivity is excessive or leaves unused);
- (2) The product manager and service manager often complain that they assume unused productivity cost which they should not assume;
- (3) When those managers who often are responsible for the nature of changing cost make the decision of profit optimization (such as product reorganization), they encounter the output-side fixed-cost-death-spiral;
- (4) Lacking in sufficient resources or indecisive resources to be used (for example, the employee shift and the sharing of equipment among departments);
- (5) Because the economic confirmations of the fixed, half-fixed and variable costs are not be considered sufficiently, the prediction of future resource consumption (and sequent production and output costs) is lower than the practice;
- (6) Outsourcing service can not achieve anticipated effect (for example, facing the input-side fixed-cost-death-spiral of the fixed cost);
- (7) Because lacking in the comparison analysis of the budget and practical consumption, the correct improved measures can not be adopted.

Comparing with above problems, we can find out some problems in college talent cultivation as follows.

- (1) The education cost of college is hard to be accounted exactly. Traditional accounting method can only provide some basic cost information, and the precision can not achieve the requirement, which will induce the cost diversion and distortion.
- (2) The resource use efficiencies of various departments lack in exact evaluation, and part of education resources are wasted seriously, for example, some books and materials are purchased too much, but utilized less, and these wastes are often hard to be measured.
- (3) The financial budget of college lacks in the comparison and analysis with effective financial information, so the existing problems can not be found and improved in time.

Except for above problems in colleges, following characteristics in the college talent cultivation objectively require using new cost accounting method.

First, the indirect charge is high. The proportion of the indirect charge in the college talent cultivation achieves 60%, except for the scholarship, poor student subsidy and exercitation charge which can be directly numbered into the education cost, other charges such as the organizational teaching charge in the teaching management department, the enrollment charge of the admission office, the personnel charge, water and electricity and heating charge in daily management education all belong to indirect charge, so we should select a sort of cost accounting method which can exactly account the indirect charge when we account the education cost.

Second, there are numerous kinds of "product" in college. If the college regards its students as the output objectives, they can be divided into students of the foreign language college, students of the science college and students of the arts college according to the division of department, and they can be divided into junior college student, undergraduate, graduate and doctor graduate according to the cultivation layer of students, and they can also be divided by different specialty. So we need a sort of cost accounting method which can exactly and reasonably distribute the cost in many products.

Third, the college needs multi-layered accounting information serving for various decisions, for example, whether the enrollment amount should be increase or decrease, whether the computers in the computer center are sufficient, how many certain equipments in the experiment should be added to fulfill students' uses, and so on. Though these decisions have different layers, but they all need certain accounting information to be the references for the decision. And the accounting information should be multi-layered, and they are not only single cost information. So the education cost accounting method selected by the college should offer multi-layered and visual accounting information including cost

information.

Fourth, the “production and management” of the college should possess the characteristic of complexity. The college is the synthesis integrating teaching, scientific research, industry and logistics. Starting from enrollment, various teaching activities, students’ daily management activities, idea education, social practice, various assistant teaching activities, graduate instruction, and relative activities about students’ education cultivation all develop and intercross at the same time. Therefore, we should concretely analyze the characteristics and reasons of various activities, strengthen the management and optimization of different activities, find out the holes in the management, eliminate non-increment activities, and reduce the education cost.

Fifth, the cost responsibility of the college is indefinite. As the public institution, college is different to the enterprise. Because of strict checking standards, the responsibility of the enterprise products can be implemented easily. But for the products of college, students, they can be checked only after they go to the society. Even if the problem of “quality” occurs, it is hard to investigate the responsibilities of relative departments. So we need a sort of cost accounting method which can open out the responsibility in the students’ cultivation process.

Combining with above contents, we can easily find following reasons for the application of RCA in college.

First, RCA could exactly distribute the indirect cost.

Because the accounting method could exactly distribute the indirect cost before RCA is ABC, so many domestic scholars are actively advocating the application of ABC in college cost accounting. However, because of some instinct deficiencies of ABC such as the insufficient existing college cost accounting system and inexact cost drive distribution rate, ABC can not be implemented in college accounting up to now.

As the extension and supplement of ABC, RCA still adopt the cost accounting idea of ABC, “resource-activity-product”, but it perfect ABC in many details, for example, every activity only has one motive which can be quantified. So in RCA, the cost drive distribution rate confirmed by single drive is more exact. In addition, the use of resetting depreciation cost in RCA could solve the problem of the unequal cost distribution induced by different cost accounting periods. These improvements all make the indirect charge distribution more exact.

Second, RCA could exactly distribute the cost among various products.

Unlike ABC emphasizes the activity, RCA more emphasizes the accounting of resource. It divides different activities from the headstream, and directly account the resources consumed by different activities. Going with the division of cost attribution (RCA divides the cost into fixed cost and variable cost), RCA always blocks off the resources and the activity consumed by different products when it accounts the products of different kinds. Because it could respectively account the product kinds and activities, so it can more exactly distribute the cost among numerous products with different kinds.

Third, RCA could offer multi-layered accounting information for the management layer of college.

RCA could exactly account the complete education cost of college students and offer the most basic complete cost information. Because RCA combines the advantages of GPK, it can offer the information of marginal cost, and provide references for some decisions of college such as the pricing of tuition and the confirmation of enrollment amount of various specialties. And the RCA also can offer non-financial information such as the resource use rate information of various departments obtained by computing the surplus unused ability to enhance the management decision ability of college.

In addition, RCA could find non value-added activities like ABC to eliminate the non value-added activities and reduce the expenditure of cost. Of course, as the public institution, college should not cut expenses to the best, but should enhance the use efficiencies of various resources based on existing expenditures.

Fourth, RCA could adapt to the complexity of the “production and management” of college.

The activities of college are numerous and complex, if RCA puts the emphasis in the activity like ABC, the cost distribution will not be exact. RCA put the emphasis in the resource and divide the whole accounting process from the headstream, so the accounting result is more exact. In addition, because the cultivation process of college students is generally fixed, so the management layer of college will always ignore the importance of the control of the activity process. And traditional cost accounting methods only account the whole cultivation cycle, the accounting result can be obtained only if the cultivation period ends and they can offer few cost information in the process. But RCA could dynamically offer the cost accounting information in time, so the management layer could control and manage various activities in the students’ cultivation process.

Fifth, the application of RCA could strength the responsibility control of college.

The result of RCA offers references for the comparison analysis of the budget plan and actual running of college such as the computation of surplus unused ability, which could help the college carry out the responsibility to concrete

department and individuals. And these financial information and non-financial information could help the college to institute the performance checking standards for various departments.

4. Application approaches of RCA in college education cost accounting

Combining with the accounting characteristics of RCA and the particularities of college education cost accounting, the application of RCA in college education cost accounting includes following approaches.

(1) Dividing activity center

The activity center is the activity set composed by a series of activity which associate each other and could implement certain special function. Here, we set up the activity center according to the department, which can make for the department management, and these activity centers concretely include teaching management department, student management department, teaching assistant department and relative administration department.

(2) Dividing resource rally point

The resource rally point is similar with one unit in the cost center in the management accounting, and all costs (resource consumptions) happened in this unit are rallied here. According to the structure division of various departments under the activity center, the resource rally point can be divided into the resource rally point of educational administration office, the resource rally point of student office and so on.

(3) Rallying the resources in various resource rally points and differentiating their cost attributes

According to existing college accounting system, the charge expenses of education resource can be divided into personnel expense, daily public expense, fixed asset depreciation, and subsidy to family and individual. We can use these four kinds of expense for references to classify and rally the resources, and divide the cost region into fixed cost and variable cost according to the cost attribute to account respectively.

(4) Subdividing the activity

According to the property of activity, we subdivide the activity, for example, the teaching management department could be divided into teaching organization, teaching reading and editing, exercitation management, experiment management, teaching travel, teaching instrument repair, subject construction, teaching reform, cultural quality education, and other activities.

(5) Distributing the resource to the activity

Distribute the resources to various activities according to the analyzed resource drives. The activity consumes many resources such as human power, material, equipment and cash, so the resource cost should be distributed to the activities according to the resource quantity consumed by the activities.

(6) Distributing the activity to the product

To select proper activity driver to distribute the activity cost is the last part of the accounting part in RCA. The key to distribute the activity cost is to exactly compute the activity drive rate which means the cost of the unit activity driver of each cost base. The student's education cost of certain activity could be obtained by the activity driver amount consumed by the student multiplies the cost driver rate. The student's education cost of certain specialty and certain layer equals to the cost sum of various activity centers which should be paid for cultivating the student.

(7) Cost control and management

The main method which uses the accounting result of RCA to control the cost is the budget management which analyzes and evaluates the difference between the actual exertion and the standard amount, and takes the result as the reference for the department and individual performance checking.

5. Problems of the application of RCA in college education cost accounting

Though RCA is perfect in theory, but following problems should be concerned when we want to apply it into the college education cost accounting successfully.

(1) Exactly identifying the resource

The resource consumption in RCA happens with the transfer of cost among various departments, and to exactly identify the resource, we should exactly divide the departments and rally the resource according to the department. When dividing the department, we should not only exactly divide the resource, but consider the cost management and responsibility control after accounting. One feasible method is to divide the department according to the institution setting of college, and subdivide individual complex institution according to concrete situation.

(2) Reasonably dividing activity

The division of activity by RCA is more precise than ABC, but we should consider the concrete degree of subdivision, because if the activity division is not precise enough, it will influence the precision of the accounting result. But if the

activity division is too precise, it will increase the difficulty of the implementation. We can take the department function as the division reference and combine coessential activities or activities with close cost drivers to reduce the workload and enhance the actual running ability of activity division.

(3) Exactly collecting basic information of departments

The basic information of the department such as fixed cost and variable cost is not only the basic material of accounting but the premise ensuring exact accounting. Whether RCA achieves the anticipated result is decided by the collection of the basic information. To acquire the information, except for the financial account books of various departments, we should survey various departments and acquire full and accurate data from various channels, and establish the base of the exact accounting of RCA.

6. Conclusions

As new accounting method, RCA combines the theoretical advantages of ABC and the practical advantages of GPK, and offers better solution of the cost accounting and management. It is not only a sort of theoretical innovation, and its practical meaning should be more emphasized.

The application of RCA in college education cost accounting can more exactly account the indirect cost of college, and RCA could adapt to the characteristics of college such as numerous “product” sorts and complex “production and management” activity, and fulfill the multi-layered demands of financial information for college, and offer a wider road for the college accounting. Though the application is still in the experiment stage, but because of the advantages of RCA, it will certain acquire abundant results for the college education cost accounting.

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Causal Analysis of USA's Trade Deficit with China from the View of Globalization

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Abstract

With the development of globalization, the trade scale between US and China continually extends, and as both sides obtain huge amounts of benefit, the trade unbalance gradually emerges. And US administration frequently presses China, which induces continual trade frictions, and aiming at this situation, we should necessarily analyze American trade deficit objectively and rationally. In this article, as viewed from the globalization, we studied the causes of USA's trade deficit with China.

Keywords: Globalization, Trade deficit, Causes

1. Development and actuality of USA-China trade

Since USA and China established diplomatic relations in 1979, though the bilateral economic relationship experienced some twists and turns, but the quick development speed has been kept for a long time. Especially after China joined WTO in 2001, the bilateral economic relationship develops further quickly. According to the statistics of China Customs, the volume of trade between USA and China had climbed from 0.99 billion dollars in 1978 to 302 billion dollars in 2007, and the increase achieved 304 times. And according to the statistics of the Commerce Department of the US government, the volume of trade between USA and China climbed from 1.178 billion dollars to 386.7 billion dollars from 1978 to 2007, and the increase times was 327. Up to the late of 2007, USA had been the second largest trade partner, the second largest export market and the sixth largest import source for China. At the same time, China had been the second largest trade partner, the first largest import source and the third largest export market for USA.

With the continual increase of the trade volume between two countries, the trade unbalance of USA-China stands out increasingly. According to the statistics of the Commerce Department of the US government, China had replaced Japan and become into the largest trade deficit source country for USA since 2000. The data of Chinese Commerce Ministry showed that the USA-China trade deficit achieved 163.33 billion dollars in 2007, which was 54.1% of total USA-China trade volume. And the statistics of US Commerce Department indicated that the USA-China trade deficit achieved 256.3 billion dollars in 2007.

Though there are certain differences between USA's statistics and Chinese statistics from data, but the point that we can trust is that USA's trade with China has been in the deficit from a long time. The increasing USA-China trade unbalance year by year has influenced the normal development of the trade relationship between two countries, which has been concerned by the governments and scholars from two countries.

2. Analysis of the causes of USA-China trade deficit by the academe at present

The trade deficit of USA has been sustained for about 30 years, and after the trade deficit first occurred in 1971, except for in 1973 and 1975 when the petty surplus occurred, in other years USA had been in the deficit and the total trend of the deficit volume is continually extending. Many experts and scholars have analyzed the causes of USA's trade deficit with China all along, and flowing causes are included.

2.1 Data statistics

US calculates the carrying trades by way of China Hongkong in the China-USA trade, which ignores the carrying behaviors and the carrying added values, and in fact, many of these products carrying to US by way of Hongkong are from other countries and regions, and 60% of Chinese exports to US are carried by way of Hongkong, which aggrandizes the goods trade deficit volume between USA and China to a certain extent.

For the export goods, Chinese customs statistics and quoting are based on FOB, but US's exports are quoted by FAS. And for import goods, the statistical methods between China and USA are same. These different pricing methods

magnify the unbalance of bilateral trade. If both sides can quote the price by FOB, the volume of USA-China goods trade deficit will be reduced largely.

2.2 Export limitation of USA to China

The development of high-tech products always supported the economic development of US, and these products also possessed very high export values, and the science and technology advantages help the sustain the dominant status of US in the present world politics and economy. However, US adopted the limited policy to China in this aspect all along. The data of Chinese Commerce Ministry indicated the high-tech product imports from European Union and Japan respectively increased 71% and 151% from 2001 to 2005, but this number was only 38% for USA. The export limitation of USA to China restrained the exports of high-tech goods with international competitive forces from USA. The import proportions of high-tech goods from USA in the total import respectively were 9.1% in 2006 and 18.3% in 2001, and if USA could keep 18.3% in 2006, its export to China could increase more than 70 billions dollars at least.

2.3 Depressive USA manufacturing and declining competition of service trade

The last economic depression of US seriously stroke the manufacturing of US, and it made the output of the manufacturing drop largely. In recent years, the US manufacturing gradually resuscitated, but the resuscitating step was quite slow.

The service industry possesses important function in the US economy, and though the US goods trade had formed tens of years' huge deficits, but the US service trade has still kept large surplus. Since 2000, because the competition of US service trade gradually declined, and the service trade surpluses of US from 2000 to 2004 respectively were 77 billion dollars, 64.5 billion dollars, 61.2 billion dollars, 51 billion dollars and 48.5 billion dollars. The proportion of the service trade of US was gradually declining, and the proportions from 2000 to 2004 respectively were 0.8%, 0.7%, 0.5% and 0.4%.

Of course, except for above causes, with the continual development of globalization, the relationship between US and the world becomes more closely, and the international environment and the economic globalization also bring large influences to the USA-China trade deficit.

3. Analyzing USA's trade deficit with China from the view of economic globalization

The globalization dominated by US has brought benefits for most participators, and US is the largest winner, and the development of the globalization and the world trade liberalization is one constant factor to drive the sustainable increase of US economy, and one of important causes which induce long-term trade deficit.

3.1 Industrial transfer becomes into the cause of USA-China long-term deficit under economic globalization

Under the background of economic globalization and regional economic integration, the industrial structures of various countries gradually form the situation supplementing and depending on each other, and this situation is increasingly strengthened. The global industry is still in the big transfer and adjustment, and the international division has been gradually formed according to every country's gift factor. The result of the global industry transfer is embodied by "industry hollow out" in US, and by "industry second transfer" in eastern Asia, and by "global fitting shop" in China.

Under the function that the domestic management cost continually rises, US points at its objective of industrial transfer to China. US utilizes deep technical power and abundant scientific research outlays to make it turn into the source of the new products and new technologies, comprehensively utilize various advantages, account for the high end of the value chain, and establish the sustainable increase of economy on the "knowledge industries" such as information technology, finance and insurance, and gradually wash out its labor intensive industries such as shoemaking, textile and accouterments, so US must depend on huge amounts of import from the developing countries such as China to fulfill its domestic demands.

The industrial transfer in the eastern Asia further increased the USA-China trade deficit. The destinations of the first international industry transfer in 1960s to 1970s mainly include Korea, Singapore, Chinese Taiwan and Chinese Hongkong, and with the economic rise of these countries and regions, the labor costs drastically rose, so the resource advantages of the international industry transfer in these countries and regions lost quickly, and these countries and regions had to implement the second industry transfer to other developing country, and China was the first selection. Through this process, the China-USA trade surplus was induced, and except for the direct part between USA and China, many of the surpluses were transferred from other eastern-Asian countries and regions.

3.2 The US multinational direct investments in China further increase the USA's trade deficit

The mode of the industrial adjustment is the direct investment implemented by the multinational companies to foreign countries, and with the quick development and expansion of multinational companies, they have been the main body to implement international trade, international investment and international industry transfer. One of characters that US multinational companies perform the globalization strategy is the interior trade, and the result is that the interior trade of

the multinational companies develops very quickly, and they steer clear of the tariff walls and non-tariff walls by means of direct production and direct sale in China, which makes the USA-China trade belong to the interior trade of the US multinational companies, and the data of these items will be recorded in the China-USA trade surpluses, and make USA's import from China increased.

The product transfer among the US parent company and its subsidiary companies occupied 1/3 of the total import of US. Because the quite part of production was transferred to foreign countries under the economic globalization and international division, for example, above 70% of IBM computer parts were produced in Japan and Singapore, and 25% of US auto components were supplied by overseas subsidiary companies, and above 80% of semiconductor assembling were accomplished in foreign countries, and 28% of Boeing aircraft assemblies were manufactured in foreign factories. Therefore, in the international division situation under the globalization background, it is inevitable that large numbers of trade deficit occurred in US.

3.3 Capital inflow sustains USA's trade deficit

The reason why USA could keep strong economic strength under the long-term trade deficit is that huge amounts of other capital inflows support the development of the total economy when the trade deficit exists. The US economic globalization is embodied not only in the strong free flow of US goods in the world, but in the strong free flow of US capitals, and the international trade deficit could be counteracted by the deficit of the international capital flows, and the trade deficit of US was remedied by the net capital inflow to USA.

Though for the international investment, US is the net capital outflow country, but the net inflow of international indirect investment has far exceeded the net outflow of the direct investment, adding the securities investment capitals and other investment projects including the dollar capitals held by the governments and institutions of other countries and the credit assets about the trade. Only the special status of the dollar which is the international balance coin and the repertory coin will not be changed essentially, the capitals flowing into US by these modes will not be changed too, which is the important reason that the US could sustain large-scale trade deficit for long.

3.4 The rise of international oil price influences USA's trade deficit

US is the first largest oil consumption country in the world, and the oil consumption is about 19.50 million barrel/day, and it is also the first oil import country in the world, and the oil import amount is about 11.5 million barrel/day. Ever since a long time ago, oil is the single item good with largest trade deficit for US. Influenced by the Iraq War, the international price of base oil rises universally, and even in the day of the global economic crisis, the price of base oil is above forty dollars per barrel. Under the situation that the price of base oil rises, the demand of US for import base oil and oil products increases not reduces. In Jan to Sep of 2004, US imported 2.857 billion barrels of base oil, and that number increased 0.117 billion than the same period in 2002, and the increase proportion was 4.27%. And the import volume of base oil ascended from 74.2 billion dollars to 93.3 billion dollars, and the increase proportion was 25.7%. Therefore, the rise of oil price further induces the expansion of US trade deficit.

4. Conclusions

In the causal analysis of US trade deficit, we can see that the reasons which induce US trade deficit are numerous, and the development of globalization and regional economy integration definitely promote the USA-China trade deficit and make the USA-China trade develop unbalanced.

To change the unbalance of USA-China trade, the both trade structure should be adjusted in the near future, and the Chinese industrial structure should be transformed essentially in the long term. The transform of the foreign trade increase mode should be changed, and the resource-based goods with high energy consumption, high pollution, "large amount" and "cheap price" should gradually quit from the historical stage. The labor intensive products in the export goods should gradually give place to the capital intensive products and technology intensive products, and the emphases about the technical innovation, product renovation and brand management have been the big tendency to increase the export. In addition, we should start from improving the industrial development environment, strengthen the research and development, cultivate the research and development talents, protect the intellectual property rights, strengthen the service trade export, drive the full transformation of the foreign trade increase mode, and make Chinese foreign trade realize sustainable development on the bases of high quality, added quantity and balance.

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Are Investment Strategies Exploiting Option Investor Sentiment Profitable? Evidence from Japan

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The author acknowledges the generous financial assistance of the Japan Society for the Promotion of Science. The author would also like to thank the editor, Lisa Wang, and an anonymous referee for constructive comments on an earlier version of the paper.

Abstract

This paper demonstrates that the put–call ratio (PCR), an index of option investor sentiment, is useful for equity investment. More specifically, we find that monthly market timing strategies for the Nikkei 225 using the PCRs of Nikkei 225 index options are profitable, even after considering transaction costs. This evidence suggests that the PCR operates as a useful contrarian indicator for the underlying asset in Japan. Our analysis also reveals that application of the multivariate GARCH model in Japan is effective in predicting changes in the Nikkei 225 using the level of PCR.

Keywords: Put–call ratio, Investor sentiment, Market timing, Multivariate GARCH, SETAR

1. Introduction

We generally view the put–call ratio (PCR) as a short-term, leading technical indicator of sentiment of the direction of future moves in the stock market. However, most contrarians use the PCR as a contrarian indicator because they believe that the less sophisticated public, not professionals, dominates options' trading. For this reason, they believe that public investors are generally wrong about the market, especially at significant turning points.

Analysts consequently use the PCR to identify the consensus on the 'herding' of public investors, and then execute trading strategies to bet on the opposite direction. For example, analysts consider that an increase in the volume of put options relative to the volume of call options indicates that public investors are predominately bearish. Therefore, contrarians interpret this PCR increase as a sign of future bullish movement in stock markets. In contrast, analysts believe that a decline in the volume of put options relative to call options suggests that public investors are predominately bullish about the equity market. Hence, contrarians view the optimism of public investors, who have little specialized information, as a future bearish market signal. As argued later, analysts advocate a variety of PCR values as buy and sell signals. They then use these signals to set up long or short positions in stock or option portfolios.

Several studies have analyzed the PCR in the US as a sentiment indicator of stock markets: see, for example, Billingsley and Chance (1988), Pan and Poteshman (2006), and Chang et al. (2009). (Note 1) However, in Japan, we are not aware of any prior research using the PCR. Hence, this paper is the first analysis of option investor sentiment using the PCR in Japan. Our second contribution is that we reveal the predictability of the PCR for the future stock market using a multivariate GARCH model. Our empirical analysis indicates a strong statistically significant nonlinear relation between the six-month lag of the PCR and current stock market dynamics. Our third contribution is that we clarify the effectiveness of the SETAR model for modeling option investor sentiment. We also confirm that when we use the derived thresholds from the SETAR model, we can construct a profitable trading strategy for equity investment even after considering transaction costs.

We note that our contribution is not only meaningful in a practical sense but also in the academic sense. Because our findings suggest that we can beat the market using the irrational herding behavior of public option investors, they also supply evidence of inefficient markets. The rest of this paper is organized as follows. Section 2 explains the data and the construction of the PCR. In Section 3, we describe the trading strategy, methodology, and empirical results. Section 4 models the PCRs with the SETAR model and documents the results of trading strategies using the derived thresholds. Section 5 investigates the predictability of PCRs for the stock market using the multivariate GARCH model. Section 6

supplies the discussions from our analysis, and Section 7 concludes the paper.

2. Construction of the put-call ratio

Option volume data for the Nikkei 225 option index used to construct the end-of-month PCRs are from the Osaka Securities Exchange. The formula for deriving the PCR at time t , PCR_t , is as follows: (Note 2)

$$PCR_t = \frac{1}{N} \sum_{i=1}^N \frac{[V_{P1,t+1-i} + V_{P2,t+1-i}]}{[V_{C1,t+1-i} + V_{C2,t+1-i}]} \times 100, \quad (1)$$

where $V_{P1,t+1-i}$ is the volume of put options of the near-maturity contract, $V_{P2,t+1-i}$ is the volume of put options of the second-nearest maturity contract, $V_{C1,t+1-i}$ is the volume of the call option of the near-maturity contract, $V_{C2,t+1-i}$ is the volume of the call option of the second-nearest maturity contract, and N denotes the number of business days at the end of each month. In this paper we set $N = 5$.

We also note that all options here are ‘out of the money’ options that are nearest to being ‘at the money’. Our sample period is January 1990 to February 2005. Figure 1 plots the Nikkei 225 and the PCR for this period. Table 1 provides descriptive statistics of the PCR in Japan. As shown, the PCR has positive skewness and slightly higher kurtosis than the normal distribution. We can also see that descriptive statistics are almost the same in the whole sample period and the two subsample periods.

3. Are investment strategies by the put-call ratio profitable?

Table 2 provides the percentile values of the PCR for the whole sample period and the subsample periods. In the three sample periods, these percentile values are generally stable; thus, we use the figures computed for our full sample period for the various market-timing strategies. In existing US studies, Billingsley and Chance (1988) used 100–60 and 70–40 strategies for the S&P 100 Index Option (OEX), and 70–40 and 65–40 strategies for the Chicago Board Options Exchange (CBOE) equity options. (Note 3) We also consider these settings.

3.1 Trading strategies without trading costs

Based on the above PCR percentile values and the settings in Billingsley and Chance (1988), we set up the following eight strategies; namely: 1) 100–60 strategy (Note 4), 2) 72.9–132.4 (10–90 percentile) strategy, 3) 81.0–128.0 (15–85 percentile) strategy, 4) 84.3–122.2 (20–80 percentile) strategy, 5) 87.4–120.1 (25–75 percentile) strategy, 6) 88.7–116.5 (30–70 percentile) strategy, 7) 93.5–112.4 (35–65 percentile) strategy, and 8) 96.7–109.7 (40–60 percentile) strategy. More specifically, when PCR values lie above the upper threshold, we buy the Nikkei 225, and when PCR values fall below the lower threshold, we sell the Nikkei 225. (Note 5) This is the actual trading rule using PCRs employed in this paper.

Table 3 provides the empirical results for the eight trading strategies, excluding transaction costs. The table shows the profit and loss for each transaction using the PCR. Table 3 shows that 1) the 100–60 strategy yields an average annual return of –0.577% and a gross percentage return of –8.757% for our full sample period with five transactions. Similarly, and in order, Table 3 shows 2) the 72.9–132.4 strategy yields an average annual return of 0.860% and a gross percentage return of 13.047% with 11 transactions, 3) the 81.0–128.0 strategy yields an average annual return of 1.465% and a gross percentage return of 22.227% with 15 transactions, 4) the 84.3–122.2 strategy yields an average annual return of 2.835% and a profit of gross percentage return of 43.003% with 23 transactions, 5) the 87.4–120.1 strategy yields an average annual return of 3.327% and a profit of gross percentage return of 50.455% with 33 transactions, 6) the 88.7–116.5 strategy yields an average annual return of 3.586% and a profit of gross percentage return of 54.382% with 39 transactions, 7) the 93.5–112.4 strategy yields an average annual return of 3.527% and a profit of gross percentage return of 53.491% with 45 transactions, and 8) the 96.7–109.7 strategy yields an average annual return of 3.080% and a profit of gross percentage return of 46.714% with 53 transactions.

3.2 Trading strategies considering trading costs

We next consider transaction costs. Following Stall and Whaley (1986) and Billingsley and Chance (1988), we use a value of 0.85% for our transaction costs. Table 4 displays the results of our empirical tests for the same eight trading strategies, including these transaction costs. As shown, the profit and loss for each transaction using the PCR is similar to that in Table 3. Expressed differently, Table 4 demonstrates that 1) the 100–60 strategy yields an average annual return of –0.687% and a gross percentage return of –10.417% in our full sample period with 5 transactions.

Similarly, and in order, Table 4 also shows that 2) the 72.9–132.4 strategy yields an average annual return of 0.740% and a gross percentage return of 11.230% with 11 transactions, 3) the 81.0–128.0 strategy yields an average annual return of 1.297% and a gross percentage return of 19.664% with 15 transactions, 4) the 84.3–122.2 strategy yields an average annual return of 2.428% and a gross percentage return of 36.819% with 23 transactions, 5) the 87.4–120.1 strategy yields an average annual return of 2.511% and a gross percentage return of 38.086% with 33 transactions, 6)

the 88.7–116.5 strategy yields an average annual return of 2.518% and a gross percentage return of 38.182% with 39 transactions, 7) the 93.5–112.4 strategy yields an average annual return of 2.284% and a gross percentage return of 34.638% with 45 transactions, and 8) the 96.7–109.7 strategy yields an average annual return of 1.444% and a gross percentage return of 21.902% with 53 transactions.

As shown, the strategy that performs best is the 88.7–116.5 (30–70 percentile) strategy, yielding a gross percentage return of 38.182% for the period from January 1990 to February 2005, even if we consider transaction costs. Further, Figure 2 displays the loss and profit from each transaction for each strategy. As we have set up all of the strategies on a month-end basis, we conduct fewer transactions for each strategy in our sample period. We consider that this brings about profitable performance in all our strategies except the 100–60 strategy. Billingsley and Chance (1988), however, tested their trading strategies on a daily basis and concluded that they were not profitable. We suggest that their unprofitable results are due to too many transactions using a daily strategy setting.

4. Modeling option investor sentiment with the SETAR model: investment strategy by derived threshold values

4.1 Modeling PCR with the SETAR model

In the previous section, we tested eight strategies where two thresholds are set artificially and mechanically from the historical distributions of PCRs. In contrast to these simple procedures, this section attempts to model PCRs using modern econometric techniques. More specifically, we apply the self-exciting threshold autoregressive (SETAR) model, and attempt to obtain a more natural boundary for changes in the investor sentiment regime using data-driven thresholds from actual PCR data.

For this purpose, we first examine the Schwarz criterion (SC) for each lag order by applying the following standard linear AR(k) model in equation (2). Table 5 displays the results.

$$PCR_t = \gamma_0 + \sum_{i=1}^k \gamma_i PCR_{t-i} + \varepsilon_t \quad (2)$$

According to the SC values in Table 5, the appropriate lag length k of model (2) is 1 because the SC is minimized when $k = 1$. Based on this information, we attempt to model the PCRs by applying the SETAR(1) model. In addition, following Brooks and Garrett (2002) we choose a one-period lag of the PCR as the state-determining variable.

To be specific, we estimate the following SETAR model, given by equation (3), using the nonlinear least squares (NLS) optimization procedure in Brooks and Garrett (2002):

$$PCR_t = \begin{cases} \gamma_{0,1} + \sum_{i=1}^k \gamma_{i,1} PCR_{t-i} + \varepsilon_{t,1} & \text{if } PCR_{t-1} < r_0 \\ \gamma_{0,2} + \sum_{i=1}^k \gamma_{i,2} PCR_{t-i} + \varepsilon_{t,2} & \text{if } r_0 \leq PCR_{t-1} < r_1 \\ \gamma_{0,3} + \sum_{i=1}^k \gamma_{i,3} PCR_{t-i} + \varepsilon_{t,3} & \text{if } PCR_{t-1} \geq r_1 \end{cases} \quad (3)$$

where we set $k = 1$. In determining the thresholds values of r_0 and r_1 , we use a grid search procedure, also following Brooks and Garrett (2002). (Note 6)

Table 6 provides the estimation results of model (3). When we fit the SETAR(1) model, two sets of thresholds, namely $r_0 = 93.5$ and $r_1 = 126.8$ and $r_0 = 72.0$ and $r_1 = 126.8$, are derived. That is, the historical data imply that these thresholds divide option investor sentiment into three regimes. This is because when we use $r_0 = 93.5$ and $r_1 = 126.8$ or $r_0 = 72.0$ and $r_1 = 126.8$, the sum of the squared residuals becomes particularly small. The SETAR(1) model with $r_0 = 72.0$ and $r_1 = 126.8$ demonstrates better fit than the SETAR(1) model with $r_0 = 93.5$ and $r_1 = 126.8$ because the sum of squared residuals is smaller and the adjusted R -squared is larger in the former. Moreover, in the $r_0 = 72.0$ and $r_1 = 126.8$ SETAR(1) model, the γ s are statistically significant in all three regimes.

4.2 Trading strategies with trading costs using the thresholds derived from the SETAR model

This section examines two strategies using the boundaries derived from real data: namely, the 1) 93.5–126.8 strategy and 72.0–126.8 strategy. The results of our empirical tests for these two trading strategies are in Table 7 where transaction costs of 0.85% are considered. Table 7 demonstrates that 1) the 93.5–126.8 strategy yields an average annual return of 0.980% and a gross percentage return of 14.861% in our full sample period with 23 transactions. Table 7 also shows that the 72.0–126.8 strategy yields an average annual return of 0.740% and a gross percentage return of 11.230% with 11 transactions.

Clearly, the data-driven boundary value strategies do not necessarily produce more profitable results than the strategies using the artificially determined thresholds in Section 3. However, the SETAR model confirms that there exist at least three regimes in option investor sentiment, and by using the data-driven thresholds from options markets, we can

construct profitable strategies for the Nikkei 225, the option's underlying asset.

5. Can the put–call ratio predict change in the Nikkei 225?

5.1 Linear prediction

We have demonstrated that we can construct profitable strategies for stock markets using the PCR in Japan. Moreover, the estimation results of the double threshold SETAR(1) model with boundary values of 72.0 and 126.8 in the lower part in Table 6 indicate that the dynamics of the PCRs are statistically significant and persistent in all three regimes. This implies that option investor sentiment continues in the bull, bear, or neutral phases for some periods. Accordingly, we expect we can use this characteristic to predict future stock market directions. Hence, using this conjecture and the estimated profitability of the PCR investment strategies for the underlying stock index, we can assume the forecastability of option investor sentiment for stock market dynamics in Japan.

Using the above arguments, this section tests the predictability of the PCR for change in the Nikkei 225. We begin by implementing the following simple linear regression:

$$\Delta \text{NIKKEI}_t = \tau + \xi \text{PCR}_{t-k} + \eta_t, \quad (4)$$

where ΔNIKKEI_t denotes the change in the Nikkei 225 from $t-1$ to t , and PCR_{t-k} is the k th lag of the PCR.

Table 8 presents the results for the linear relation. From this table, we can see that the first and sixth lags have predictability for the Nikkei 225 dynamics. Further, the relations are positive. This suggests that bear (bull) sentiment in the options markets predicts future stock price increases (decreases) over several months. This is consistent with the usage of PCRs by contrarian investors.

5.2 Time-varying relation between the Nikkei 225 change and the lagged put–call ratio: A nonlinear analysis using a multivariate GARCH model

The linear analysis in the previous section is rather simple. Hence, this section examines the nonlinear time-varying relations between PCRs and changes in the Nikkei 225. To evaluate the nonlinear time-varying intertemporal comovements, we employ the following multivariate BEKK GARCH model (Engle and Kroner (1995), Kroner and Ng (1998)). The BEKK model ensures that the H matrix is always positive definite, and is specified by:

$$\mathbf{H}_t = \mathbf{W} + \mathbf{B}'\mathbf{H}_{t-1}\mathbf{B} + \mathbf{A}'\mathbf{\Xi}_{t-1}\mathbf{\Xi}_{t-1}'\mathbf{A}, \quad (5)$$

where \mathbf{W} , \mathbf{A} , and \mathbf{B} are 2×2 matrices of parameters, and \mathbf{W} is assumed to be symmetric and positive definite. For the purpose of clarity, in the case of two assets, we define the matrices as follows:

$$\mathbf{H}_t = \begin{bmatrix} h_{1,t} & h_{12,t} \\ h_{12,t} & h_{22,t} \end{bmatrix}, \quad \mathbf{W} = \begin{bmatrix} w_{11} & w_{12} \\ w_{12} & w_{22} \end{bmatrix}, \quad \mathbf{A} = \begin{bmatrix} a_{11} & a_{12} \\ a_{21} & a_{22} \end{bmatrix},$$

$$\mathbf{B} = \begin{bmatrix} b_{11} & b_{12} \\ b_{21} & b_{22} \end{bmatrix}, \quad \mathbf{\Xi}_t = \begin{bmatrix} u_{1,t} \\ u_{2,t} \end{bmatrix}.$$

The model is then written in full as:

$$\begin{aligned} h_{1,t} &= w_{11} + a_{11}^2 u_{1,t-1}^2 + a_{21}^2 u_{2,t-1}^2 + 2a_{11}a_{21}u_{1,t-1}u_{2,t-1} + b_{11}^2 h_{1,t-1} + b_{21}^2 h_{22,t-1} + 2b_{11}b_{21}h_{12,t-1}, \\ h_{22,t} &= w_{22} + a_{12}^2 u_{1,t-1}^2 + a_{22}^2 u_{2,t-1}^2 + 2a_{12}a_{22}u_{1,t-1}u_{2,t-1} + b_{12}^2 h_{11,t-1} + b_{22}^2 h_{22,t-1} + 2b_{12}b_{22}h_{12,t-1}, \\ h_{12,t} &= w_{12} + a_{11}a_{12}u_{1,t-1}^2 + a_{21}a_{22}u_{2,t-1}^2 + (a_{12}a_{21} + a_{11}a_{22})u_{1,t-1}u_{2,t-1} \\ &\quad + b_{11}b_{12}h_{11,t-1} + b_{21}b_{22}h_{22,t-1} + (b_{11}b_{22} + b_{12}b_{21})h_{12,t-1}. \end{aligned}$$

Regarding the estimation of model (5), the parameters can be estimated by maximizing the log-likelihood function:

$$l(\theta) = -\frac{TN}{2} \log 2\pi - \frac{1}{2} \sum_{t=1}^T (\log |\mathbf{H}_t| + \mathbf{\Xi}_t' \mathbf{H}_t^{-1} \mathbf{\Xi}_t),$$

where θ denotes unknown parameters to be estimated, N is the number of assets, T is the number of observations, and \mathbf{H}_t and $\mathbf{\Xi}_t$ are as previously defined.

Table 9 provides the t tests on the correlation coefficients between change in the Nikkei 225 and the lagged PCRs derived via the multivariate GARCH model (5). Our null hypothesis H_0 of the t test is that the average values of the time-varying correlation coefficients between the lagged PCRs and the Nikkei 225 changes are zero. Our alternative hypothesis H_1 is that the average values of the time-varying correlation coefficients between the lagged PCRs and the Nikkei 225 changes are positive.

As shown, we can see that all lags from the first to the eighth lags (except for the first and third lags) statistically reject the null hypothesis, and support the alternative hypothesis. That is, in six of eight cases, the average values of the time-varying correlation coefficients between the lagged PCRs and the Nikkei 225 changes are statistically significantly positive at the 1% level. In particular, there is a stronger nonlinear relation between the sixth PCR lag and the Nikkei 225 changes as the corresponding t statistic is largest. Figure 3 displays the time-series trend of the time-varying correlation coefficients between the Nikkei 225 changes and the sixth PCR lag. Using this figure, we also confirm that the positive relation continues rather strongly throughout the full sample period.

6. Discussion

This section discusses our results and derives their implications. First, the results demonstrate the effectiveness of nonlinear models, such as the multivariate GARCH model used as in this study, for investigating the forecastability of sentiment variables for future stock market trends. This is highlighted by the difference in results between the simple linear model (4) and the nonlinear model (5). As shown in Table 8, the simple linear regression (4) cannot clearly present the relation between PCR and future Nikkei 225 changes, while the correlation coefficients between these variables derived from a multivariate GARCH model (5) demonstrates their strong relation in Table 9. Hence, although nonlinear models are not often used in existing studies analyzing investor sentiment, we recommend their use in related studies in the future.

Second, an important point concerns investor irrationalities. Our results in Table 9 indicate that after the option investors become bullish (bearish), the Nikkei 225 falls (rises) in a few months. Because of data unavailability, we cannot confirm whether smart money exists in Japanese options markets, and whether they judge the market turning points with accuracy. However, our evidence demonstrates overall that Japanese option investors are incorrect about market turning points. This means that smart money, even if it does exist, cannot correct the incorrect herding behavior of noisy investors in Japanese option markets.

Finally, an academically significant point concerns market efficiency. As we well know, the strong-form market efficient hypothesis (Fama 1970; 1991) means that prices reflect all information that can be acquired by painstaking analysis of companies, markets, and the economy, even insider information. In such a market, we should not be able to earn profits if we analyze the markets by collecting all available information. In contrast, our evidence shows that when we use past information on the PCR, we can obtain profits, even after deducting transaction costs. Thus, we suggest that our evidence is inconsistent with the strong-form efficient market hypothesis.

7. Conclusion

This paper has investigated the effectiveness of equity investment strategies using option investor sentiment in Japan. The three main findings of this paper are as follows.

- First, trading strategies using PCR are profitable when we consider several strategies on a monthly basis. We obtain rather successful results even if we take the effects of transaction costs into account. Our empirical analysis demonstrates that the best PCR strategy for the underlying asset, the Nikkei 225, is the 88.7–116.5 (30–70 percentile) strategy.
- Second, by modeling PCRs with the new econometric SETAR model, we find that there exist at least three regimes in PCR dynamics in Japan. We also examined two investment strategies by using the thresholds derived from the SETAR(1) model, and revealed that both strategies yield profitable results, even after considering the effects of transaction costs.
- Furthermore, we have also revealed that the Nikkei 225 is predictable using the lagged PCRs. In particular, our investigation into the nonlinear relation between lagged PCRs and the Nikkei 225 changes using a multivariate GARCH model clearly indicates that bull (bear) stock markets follow negative (positive) sentiment in the options markets in Japan. Our nonlinear analysis also suggests we can predict changes in the Nikkei 225 using the levels of past PCRs from the options markets.

The profits gained by the several trading strategies after deducting transaction costs may not be large; however, in an academic sense, the evidence is that we can beat the stock market by using the irrational herding behavior of public investors. This contradicts the strong-form of the efficient market hypothesis. To reveal further real world financial markets, we need to conduct research in different international markets using a similar context in the future.

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Notes

Note 1. There are several studies of investor sentiment in the US. These include Solt and Statman (1988), DeLong et al. (1990), Shleifer and Summers (1990), Lee et al. (1991), Campbell et al. (1993), Bodurtha et al. (1995), Barberis et al. (1998), Daniel et al. (1998), Neal and Wheatley (1998), Fisher and Statman (2000), Shleifer (2000), Coval and Shumway (2001), Hirshleifer (2001), Antweiler and Frank (2004), Barberis et al. (2005), Baker and Wurgler (2006), Bandopadhyaya and Jones (2006), Cornelli et al. (2006), Kumar and Lee (2006), Edmans et al. (2007), Tetlock (2007), amongst others. As none of these uses the PCR, comparable studies are limited, even internationally.

Note 2. Financial institutions and technical analysts appear to use several methods of deriving the PCR. However, there appears to be no significant difference in these formulas.

Note 3. For example, from the OEX options data, a PCR greater than 100 (70) is considered bullish, a ratio less than 60 (40) is considered bearish, and ratios in between are considered neutral. Hence, in the 100 (70)–60 (40) strategy, when the PCR is over 100 (70), it is a signal to buy, while when the PCR falls below 60 (40), it is a signal to sell.

Note 4. We also tried the 70–40 and 65–40 strategies; however, they did not work for the Nikkei 225 Index options.

Note 5. For example, in the 100–60 strategy, when the PCR is over 100, we buy the Nikkei 225, and when the PCR falls below 60, we sell the Nikkei 225.

Note 6. In the grid search procedure, following Brooks and Garrett (2002), we searched for the threshold value that minimizes the sum of squared residuals.

Table 1. Descriptive statistics of the put–call ratio in Japan

Statistic	Whole sample period	Subsample period	Subsample period
	Jan. 1990 to Feb. 2005	Jan. 1990 to Dec. 1997	Jan. 1998 to Feb. 2005
Mean	104.48	100.572	108.852
Median	103.03	96.863	109.143
Maximum	210.76	210.759	184.807
Minimum	49.17	49.165	66.904
Std. Dev.	25.42	28.261	21.148
Skewness	0.71	0.867	0.813
Kurtosis	4.46	4.415	4.565
Observations	182	96	86

Notes: 1. The full sample period is from January 1990 to February 2005.

2. Std. Dev. is the sample standard deviation.

Table 2. Percentile values of the put–call ratio in Japan

Percentile	Whole sample period	Subsample period	Subsample period
	Jan. 1990 to Feb. 2005	Jan. 1990 to Dec. 1997	Jan. 1998 to Feb. 2005
10%	72.90	67.630	82.573
90%	132.43	132.407	132.172
15%	80.95	70.852	87.556
85%	127.99	125.568	128.740
20%	84.27	75.546	89.266
80%	122.24	121.360	124.046
25%	87.41	81.686	94.361
75%	120.09	118.320	121.232
30%	88.66	85.336	97.273
70%	116.47	112.917	118.800
35%	93.45	87.451	100.182
65%	112.36	107.393	115.795
40%	96.65	88.658	102.475
60%	109.72	106.439	112.131

Notes: 1. The full sample period is from January 1990 to February 2005.

2. The figures in the table are the percentile values from the distribution of the PCR in Japan.

Table 3. Profits and losses from the market timing strategies using the put-call ratio

Strategy	Number of transactions	Average annual percentage return	Gross percentage return
100–60	5	–0.577	–8.757
72.9–132.4	11	0.860	13.047
81.0–128.0	15	1.465	22.227
84.3–122.2	23	2.835	43.003
87.4–120.1	33	3.327	50.455
88.7–116.5	39	3.586	54.382
93.5–112.4	45	3.527	53.491
96.7–109.7	53	3.080	46.714

- Notes:
1. The sample period is from January 1990 to February 2005.
 2. Average annual percentage return is from each strategy over the whole sample period.
 3. Gross percentage return is from each strategy for the whole sample period.

Table 4. Profits and losses from the market timing strategies using the put-call ratio, including transaction costs

Strategy	Number of transactions	Average annual percentage return	Gross percentage return
100–60	5	–0.687	–10.417
72.9–132.4	11	0.740	11.230
81.0–128.0	15	1.297	19.664
84.3–122.2	23	2.428	36.819
87.4–120.1	33	2.511	38.086
88.7–116.5	39	2.518	38.182
93.5–112.4	45	2.284	34.638
96.7–109.7	53	1.444	21.902

- Notes:
1. The sample period is from January 1990 to February 2005.
 2. Average annual percentage return is from each strategy over the whole sample period.
 3. Gross percentage return is from each strategy for the whole sample period.

Table 5. Schwarz criterion in autoregressive modeling of the put-call ratio in Japan

	AR(1)	AR(2)	AR(3)	AR(4)	AR(5)
SC	9.3130	9.3215	9.3195	9.3252	9.3510
	AR(6)	AR(7)	AR(8)	AR(9)	AR(10)
SC	9.3797	9.3867	9.4078	9.4440	9.4737

- Notes:
1. Samples are monthly from January 1990 to February 2005.
 2. SC denotes Schwarz criterion.

Table 6. Estimation results of the AR(1) model and the double threshold SETAR models for the put–call ratio in Japan

	AR(1) model	Double-threshold SETAR(1) model [93.5–126.8]		
		Beyond the lower threshold	Within the central bound	Beyond the upper threshold
γ_0	104.5973***	85.8128***	142.9388***	191.0295***
t statistic	40.2806	3.4381	4.8562	5.2312
p value	0.0000	0.0006	0.0000	0.0000
γ_1	0.2284**	0.0995	−0.3159	−0.5079**
t statistic	2.5294	0.3334	−1.1674	−2.0612
p value	0.0123	0.7388	0.2431	0.0393
r_0	—		93.5	
r_1	—		126.8	
Adjusted R -squared	0.0465		0.1467	
Sum of squared residuals	110875.2000		99777.3035	
	Double-threshold SETAR(1) model [72.0–126.8]			
		Beyond the lower threshold	Within the central bound	Beyond the upper threshold
γ_0		−98.8669**	68.8311***	191.0295***
t statistic		−2.1638	5.2966	5.2312
p value		0.0305	0.0000	0.0000
γ_1		3.0291***	0.3372**	−0.5079**
t statistic		4.3030	2.5532	−2.0612
p value		0.0000	0.0107	0.0393
r_0			72.0	
r_1			126.8	
Adjusted R -squared			0.1516	
Sum of squared residuals			99205.8815	

Notes: 1. ** and *** denote statistical significance at the 5% and 1% levels, respectively.

2. Samples are monthly for the period January 1990 to February 2005.

3. γ_0 and γ_1 are model parameters and r_0 and r_1 are threshold values.

Table 7. Profits and losses from the market timing strategies using the threshold values from the SETAR model, including transaction costs

Strategy	The number of times of transactions	Average annual percentage return	Gross percentage return
93.5–126.8	23	0.980	14.861
72.0–126.8	11	0.740	11.230

- Notes:
1. The sample period is from January 1990 to February 2005.
 2. Average annual percentage return is from each strategy over the whole sample period.
 3. Gross percentage return is from each strategy for the whole sample period.

Table 8. Forecasting power of lagged put–call ratio for the changes of Nikkei 225

	PCR(–1)	PCR(–2)	PCR(–3)	PCR(–4)	PCR(–5)
Constant	–767.406**	144.112	–398.535	–79.627	–401.449
<i>p</i> value	0.030	0.739	0.384	0.887	0.403
Coefficient	6.009*	–2.601	2.852	–0.198	2.701
<i>p</i> value	0.051	0.551	0.496	0.968	0.525
Adj. R^2	0.008	–0.003	–0.002	–0.006	–0.003
SE	1289.183	1287.006	1245.248	1250.690	1221.495
	PCR(–6)	PCR(–7)	PCR(–8)	PCR(–9)	PCR(–10)
Constant	–1136.587**	84.040	–191.339	–644.421	–322.281
<i>p</i> value	0.025	0.820	0.520	0.112	0.352
Coefficient	9.834**	–1.874	1.057	5.722	2.366
<i>p</i> value	0.032	0.588	0.689	0.130	0.485
Adj. R^2	0.037	–0.004	–0.005	0.011	–0.003
SE	1198.177	1225.372	1169.926	1102.096	1063.772

- Notes:
1. Samples are monthly for the period from January 1990 to February 2005.
 2. SE denotes the standard error of the regression.
 3. * and ** denote statistical significance at the 10% and 5% levels, respectively.
 4. Adj. R^2 is the Adjusted R -squared.

Table 9. The results of *t* tests on the time-varying correlation coefficients

	PCR(–1)	PCR(–2)	PCR(–3)	PCR(–4)
Correlation coefficients	–0.1000	0.1000	0.0126	0.0674
<i>t</i> statistic	–7.0690	8.9040***	1.0757	8.3137***
<i>p</i> value	–	0.0000	0.1418	0.0000
	PCR(–5)	PCR(–6)	PCR(–7)	PCR(–8)
Correlation coefficients	0.1101	0.1824	0.1100	0.1189
<i>t</i> statistic	10.5250***	19.8002***	8.5936***	7.2872***
<i>p</i> value	0.0000	0.0000	0.0000	0.0000

- Notes:
1. Samples are monthly for the period from January 1990 to February 2005.
 2. Correlation coefficients in the table are the average values of the time-varying correlation coefficients derived by the multivariate GARCH model.
 3. *** denotes statistical significance that supports that the average values of the time-varying correlation coefficients are positive at the 1% level.

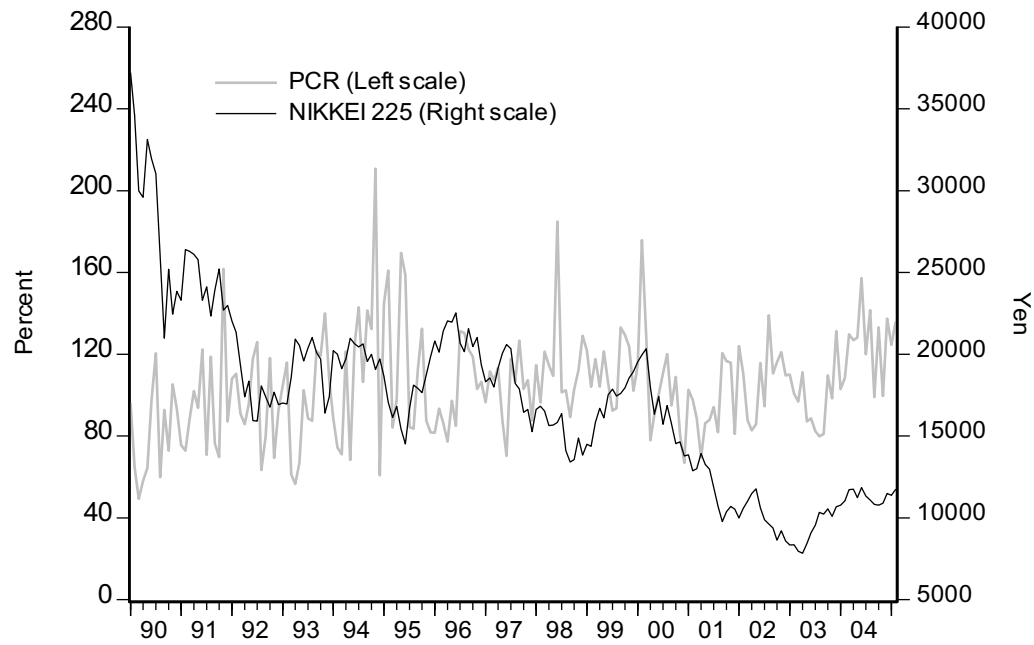
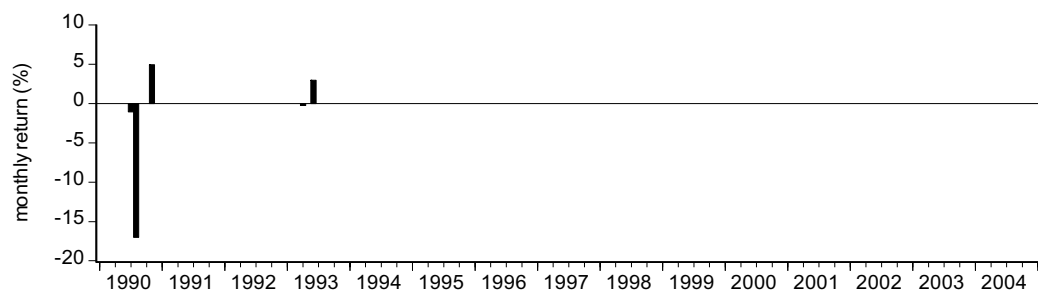
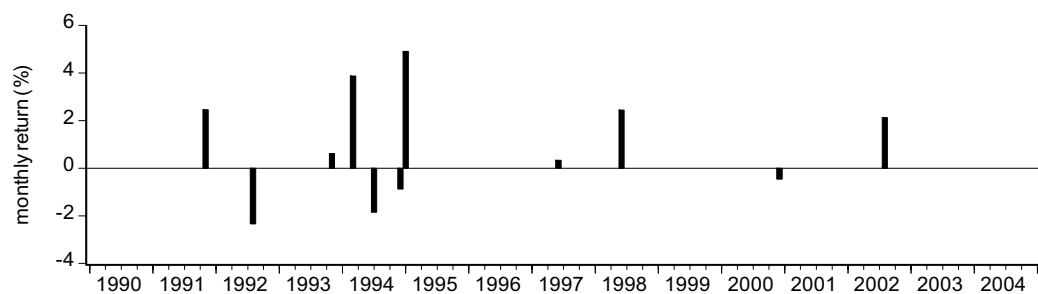


Figure 1. Trends in the Nikkei 225 and the put-call ratio

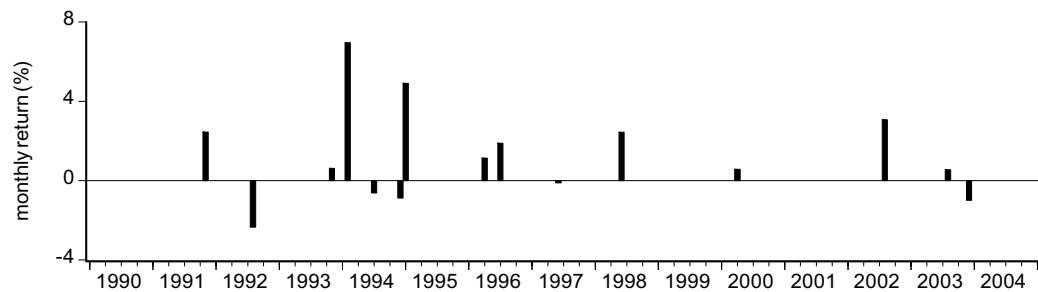
Panel A 100–60 strategy



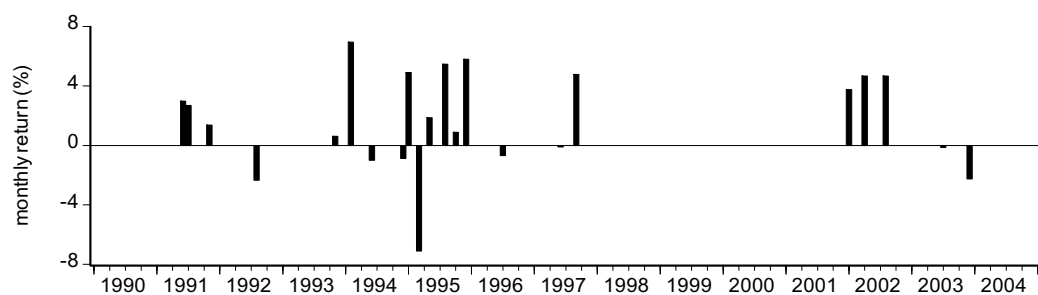
Panel B 72.9–132.4 strategy



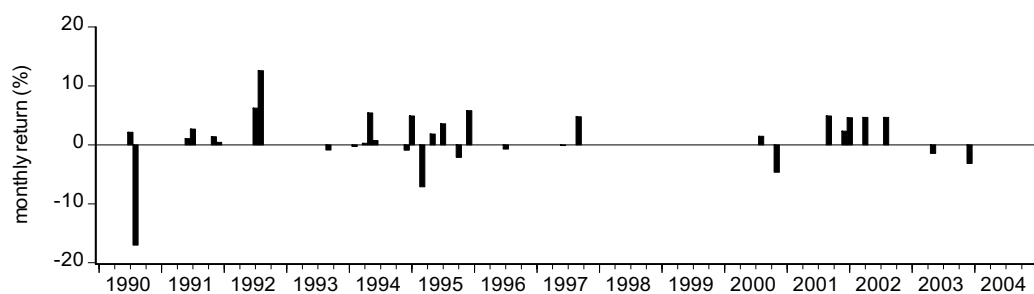
Panel C 81.0–128.0 strategy



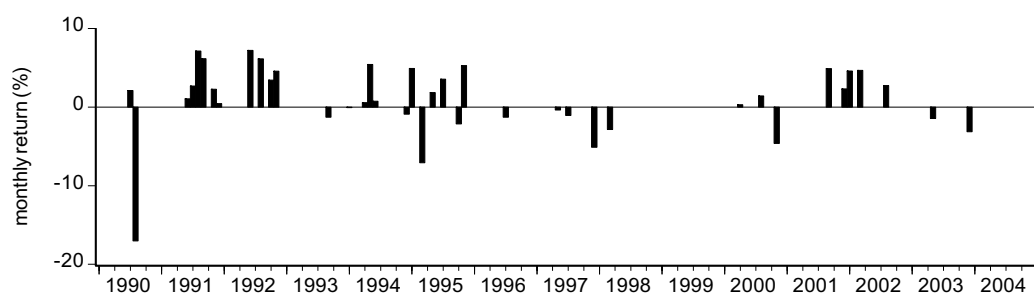
Panel D 84.3–122.2 strategy



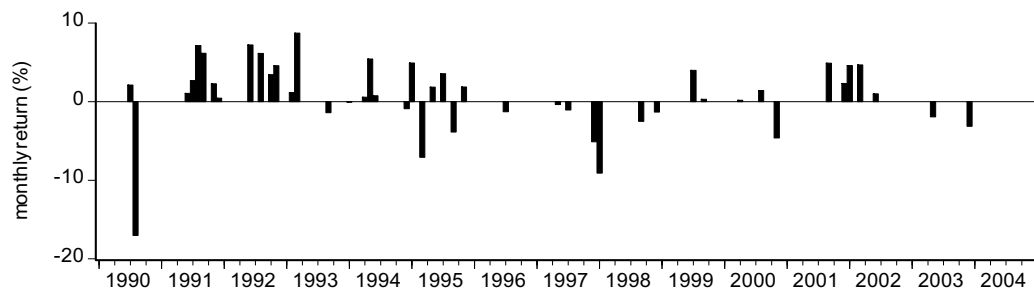
Panel E 87.4–120.1 strategy



Panel F 88.7–116.5 strategy



Panel G 93.5–112.4 strategy



Panel H 96.7–109.7 strategy

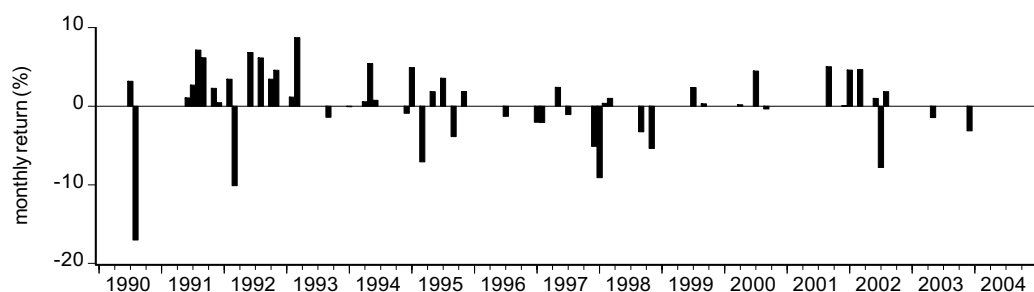


Figure 2. Profits and losses from the investment strategies using the put–call ratio,
including transaction costs

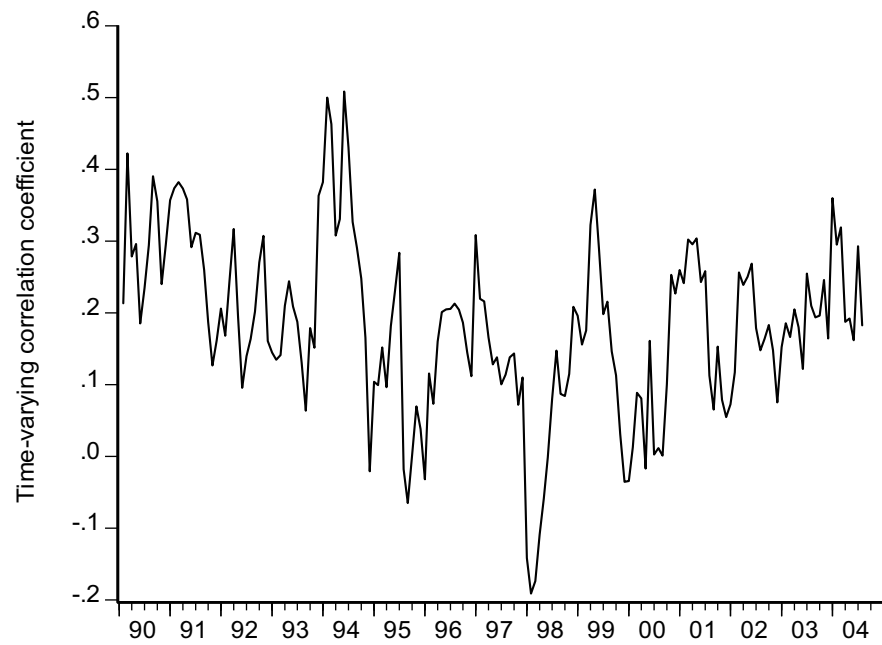


Figure 3. Time-varying correlation coefficients between changes in the Nikkei 225 and six-month lagged put-call ratio



An Analysis of Investor's Risk Perception towards Mutual Funds Services

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Abstract

Financial markets are constantly becoming more efficient by providing more promising solutions to the investors. Being a part of financial markets although mutual funds industry is responding very fast by understanding the dynamics of investor's perception towards rewards, still they are continuously following this race in their endeavor to differentiate their products responding to sudden changes in the economy. Thus, it is high time to understand and analyze investor's perception and expectations, and unveil some extremely valuable information to support financial decision making of mutual funds. Financial markets are becoming more exhaustive with financial products seeking new innovations and to some extent innovations are also visible in designing mutual funds portfolio but these changes need alignment in accordance with investor's expectations. Thus, it has become imperative to study mutual funds from a different angle, i.e., to focus on investor's expectations and uncover the unidentified parameters that account for their dissatisfaction. Present research proposes to identify critical gaps in the existing framework for mutual funds and further extend it to understand realizing the need of redesigning existing mutual fund services by acknowledging Investor Oriented Service Quality Arrangements (IOSQA) in order to comprehend investor's behavior while introducing any financial innovations.

Keywords: Mutual Funds (MFs), Investor's expectations, Asset Management Companies (AMCs), Portfolio risk, Return on Investment (ROI), Diversification, Financial innovation, Continuous Improvement (CI)

1. Introduction

Mutual funds are recognized as a mechanism of pooling together the investment of unsophisticated investors and turn in the hands of professionally managed fund managers for consistent return along-with capital appreciation. Money collected in this process is then invested in capital market instrument such as shares, debentures and other securities. Finally, unit holders in proportion of units owned by them share the income earned through these investments and capital appreciation. Mutual funds put forward a way out to investors to approach most schemes and get well-diversified portfolio because investors with small savings neither have sufficient expertise nor have access to required diversification.

Mutual funds have already entered into a world of exciting innovative products. These products are now tailor made to suit specific needs of investors. Intensified competition and involvement of private players in the race of mutual funds have forced professional managers to bring innovation in mutual funds. Thus, mutual funds industry has moved from offering a handful of schemes like equity, debt or balanced funds to liquid, money market, sector specific funds, index funds and gilt edged funds. Beside this recently mutual funds have also introduced some special specific funds like children plans, education plans, insurance linked plans, and exchange traded funds. The result is that over the time Indian investors have started shifting towards mutual funds instead of traditional financial avenues.

Diversification in mutual funds is coming up with many new faces and as a result Indian mutual fund industry has been growing exceptionally well on the back of country's booming economy but still further mutual funds need to create

more lucrative solutions to suit investor's expectations. The active involvement of mutual fund in economic development can be witnessed from dominant presence of mutual funds in worldwide capital and money market. Although mutual funds industry is responding very fastly to dynamism in investor's perception towards rewards still they are continuously following this race in their endeavor to differentiate their products responding to sudden changes in the economy. These acts of innovation include both invention and diffusion that persist to address information asymmetries.

Mutual funds as blessed with professional management use their diligent skills for efficient resource allocation by making markets more efficient, bringing transparency and foremost important risk management. Automated approaches designed by new technology and data mining is helping AMC's of mutual funds in strategic planning and investment decision making by uncovering the hidden patterns and predict future trends and behavior in financial markets. Intensive global competition and ICT enabled tools are promoting more demanding investors everyday. To satisfy the needs of investors' mutual funds are designing more lucrative and innovative tools considering the appetite for risk taking of individual investors. While designing these innovative fund scheme AMCs mainly consider for risk return trade off and after completely evaluating the various securities on various risk parameters new fund scheme is launched that can satisfy the quest of every investor to maximize the returns. Although risk and return are the two prime concerns for any mutual fund investment but investor's also go for sale charges, fund manager's reputation, fund history, management fees, clarity in disclosure, recommendation from media. So, whether it is a winner's game or loser's game the trick is to access the level of risk that investor wishes to assume and make certain that collection of assets fulfill their risk expectations. A successful investor is one who strives to achieve not less than rate of return consistent with risk assumed. Thus, it becomes imperative for the Mutual funds AMCs to judge the presence of rationality in investment behavior.

2. Review of Literature

Mutual funds have already attracted the attention of global practitioners and academicians but most of the existing research available is on either accelerating the return on funds or comparing it with benchmark fund schemes. Few studies are available that focus on investor's objective and considering risk orientation of investors that has been categorized as:

2.1 Studies pertaining to Investor's Rationality: Risk –Return trade off

Investors are generally more careful while making investment decision and presence of rationality in every investor demands higher return at minimum risk but when markets are efficient it is not possible to gain abnormal returns. Risk is generally, associated with various applications differently but in common it means negative connotation such as harm or loss or some undesirable action. Risk expressed by Kaplan and Garrick (1981) demonstrates that risk involves a factor of uncertainty and potential loss that might be incurred.

Elmiger and Kim (2003) elucidate risk as .the trade-off that every investor has to make between the higher rewards that potentially come with the opportunity and the higher risk that has to be borne as a consequence of the danger.

Although different literature available on risk define it variedly but in common the word risk refers to situations in which a decision is made whose consequences depend on the outcomes of future events having known probabilities(Lopes,1987). Risk from a strategic management perspective has been defined as one that is often taken as manager's subjective judgment of the personal or organizational consequences and it may result from a specific decision or action. Beta has been accepted as most appropriate measure of risk that describe the slope of any regression line .i.e it reveals the volatility of a stock relative to a market benchmark (Sharpe 1966).

Uncertainty in investment decision prevails when Mutual fund AMCs skills and knowledge fail to have proper access of decision relevant information due to complexity of financial markets. This incapacity forces decision makers to adopt a simplified approach where risk is considered to be exogenous variable. Extensive literature available has proved that since Markowitz (1952) attempts have been made to resolve the conflicts of how decision makers should choose among composite alternatives that combine stochastic outcome as he was strongly in favor that choice for portfolio of securities is entirely different from securities that an individual investor holds (Bernstein 1996). Risk averse behavior of investors reflects the choice of investors to avoid risk or take negligible risk that means whenever an individual investor is given option to go for guaranteed return with probability one which are comparatively less than gambling return with probability less than one, chances are that he may go for guaranteed return.

2.2 Studies relating to investment expectations

Huge literature available on predicting stock market returns has proved that generally investors think high past stock market return predict high future return (De Bondt, 1993) even though there is no support for such belief in the data (Fama 1988). Further, evidence by Fisher and Statman (2000) have shown that individual investor's stock market return expectations are positively correlated with past returns. An attempt to relate stock expected returns and interrelated

attributes can be well traced from Asset pricing Model that explains an assets expected return is positively related to its systematic market risk (Black 1972). The crux of these models is that risky portfolio yields higher return.

Although majority of investors who invest in mutual fund themselves are not clear with the objective and constraints of their investment but in addition to this most important critical gap that exist in this process is lack of awareness about presence of risk elements in mutual fund investment. The new marketing philosophy and strategies place special emphasis on recognition of customer needs in an effort to provide high level of quality services (Harrison, 2000). Study by Laukkanen (2006) explains that varied attributes present in a product or service facilitate customer's achievement of desired end-state and the indicative facts of study show that electronic services create value for customers in service consumption.

Return ambiguity and changes in risk perception of individual investor affect action taken in risky financial market. In a more complex situation taking rational decision is undoubtedly difficult but certainly not impossible. Computational complexities are not only the reason why rationality assumption is challenged rather challenges also come from cognitive reasoning (Anderson 1991) where question is how optima human beings are. A more realistic notion of rationality is bounded rationality defined by Simon (Simon 1957) that property of an agent who behaves in a manner that is nearly as optimal with respect to its goals as resource will allow. Here resource includes processing power, algorithm and time available to the agent.

2.3 Studies relating to Financial Innovations in mutual funds

New financial product and market designs, improved computer and telecommunication technologies and advances in theory of finance during past quarter century have led to dramatic changes in structure of mutual fund industry. Financial innovation is fighter promoted when the financial authorities recognize the obsolescence of existing statutory framework and deregulate the essential part of it (Suzuki 1986).

Financial system of any country comprises of regulatory bodies, financial institutions, financial products and financial markets and whenever the regulatory bodies try to interfere and restrict the actions of financial intermediaries, to sustain their position in the financial market, mutual funds (FMI) are required to come up with innovative and more lucrative solutions. Wide literature available on financial innovations has proved that regulatory restraints encourage innovations (Ben-Horim, 1977).

Study by Kane (1978) has described the process of avoiding regulations, as "loophole mining" which suggests that when regulatory constraints are so burdensome that large profits can be made by avoiding them, financial innovations is more likely to occur. These financial innovations may look for searching either entirely new product or making some structural changes in already built financial products to focus on investor's requirement. Financial innovation in case of mutual funds is an ongoing process but innovation and success are not parallel to each other. A large size of enterprise implies that product supported by adequate innovation is more likely to yield greater return (Schumpeter 1950). Study contrast to this by Scherer (1984) has suggested that smaller firms with only modest level of market power are more likely to be rapid innovators.

Mutual fund managers have to use various investment styles depending upon investor's requirement. Most of the empirical evidences have shown that mutual fund investor's purchase decision is influenced by past performance (Patel, et al. 1992). Research study by (Jones et al, 2007) has proved that a negative correlation exists between advertisement and fund quality. A common investor may expect that mutual fund should opt strategies that have been documented to produce superior returns in the past instead they follow to select portfolios that don't deviate markedly from market benchmarks (Lokonishok, Shleifer and Vishny, 1997).

3. MF Service quality gaps: Loss Function

Investor's satisfaction in case of mutual funds depends upon amount of trust and dependence that an investor places with AMC and in turn the benefits that are actually delivered to them. Although fund managers uses their expertise skills and diligence while investment but still dissatisfaction prevail among the investors and their experiences show that majority of mutual funds have shown underperformance in comparison to risk free return and reported that mutual funds were not able to compensate them for additional risk they have taken by investing in mutual funds (Anand, S. and Murugaiah, V.2004)

3.1 Ambiguity of Investor's Expectations

Concept of investor satisfaction is gaining importance for every MF organization because in addition to its contribution in a dominating way to the overall success of these organizations, it also shows them roadmap to retain and grow their business. SERVQUAL expectations have been variously defined as desires, wants, what a service provider should possess, normative expectations, ideal standards, desired services and the level of service a customer hopes to receive. Zeithaml, V (1993) expressed satisfaction of individual investor comprise of a range of varied parameters and is not easy to define but in general it means positive assessment. Where the growing demand of investor's expectation is

following the way most of researcher admit the fact that working of customer's mind is a mystery which is difficult to solve (Dash, 2006). Customer satisfaction is subjective and even difficult to measure. To draft an accurate picture of customer satisfaction organizations should diligently use information – collecting tools and market research that will finally enable an organization to identify critical elements of customer satisfaction and further fine-tune their operations to achieve incremental improvements. Significant gaps that exist between service expectations and perceptions is right from the first step where AMC's are not found capable enough to translate investor's expectation, reason being financial intermediaries having inadequate knowledge and training are not able to communicate the message to each player effectively.

3.2 Designing Gap

Given the financial and resource constraints, AMC's are under increasing pressure to design services specifications in accordance to customer's requirement. Lack of upward communication from financial intermediaries to top management, inadequate commitment to service quality, absence of goal setting, inappropriate standardization are few reasons that are accountable for gaps that occur in designing of mutual fund services.

Minimizing risk and maximizing return are the two basic criteria that are given highest weightage while designing services specifications, as a rational investor. The purpose of designing quality services with improved quality from customer's perspective is to discover innovative ways that will provide value added services. Study by Ippolito (1992) documents the reaction of investors to performance in mutual fund industry. His findings have shown that poor relative performance results in investors shifting their assets into other funds. Therefore investing in quality of a product should be considered important not only to sustain reputation but to gain flow of profit that may come in the form of premium which investors will be willing to pay on trusted funds. Mutual fund organizations need to be extremely conscious at the time of designing and determining services standards. Service specifications designed by AMC's should match with customer's expected standards or with promised standards.

3.2.1 Tolerance Zone: Risk

Considering the level of income, constancy and stability of income etc investor's frame their own boundaries for risk bearing on any particular investment (Figure 1). Risk assumes wide definitions and distinguished from uncertainty as risk is measurable uncertainty about occurrence of an undesirable event. Williams (1964) proposed that sense of unpredictability of actual results of an action differing from possible predicted results in a given situation. Risk not only includes uncertainty and loss elements but time factor cannot be excluded from probability of risk. Doubt concerning the outcome in a given situation before the event occurs implies that there is something about the present situation that will be different in the future.

Tolerance Zone depicts the minimum and maximum specifications as described by investor for his willingness to assume risk represented by Upper Specification Limit and Lower Specification Limit. Investors based on his knowledge about the market volatility where he accepts the minimum risk, which he will have to bear on his investment, design these specification limits and maximum level is assumed depending upon his risk appetite and his willingness to maximize his ROI. However, Lack of management's commitment for services performance may deviate AMC's to come up with different performance standards. This deviation if less than the expected specification as proposed by investor will result in indifferent attitude of investors but in case the controllable limit as performed and delivered exceeds the upper specification limit of investors, it will certainly result in great dissatisfaction among the investors as AMC's will be held liable for the loss that will accrue to investors and that will lead investors think over incompetent professional management of mutual funds.

3.2.2 Tolerance Zone: Return

Investor's investment in any particular fund scheme of mutual funds depends upon anticipated return that will accrue from that particular investment. Mutual funds also offer innovative promising solutions for varied financial requirements of investors. Presently, Mutual fund organizations are also considered mature enough to understand and translate return requirement of individual investor's depending upon their demographic requirements. Again, mismatch between the boundaries as designed by investor's and actual performance standards may result in higher level of dissatisfaction among investors (Figure 2). Measurement criteria for loss to investors in case of return is almost opposite of discussed above. If actual delivered return from mutual funds exceeds the expected return it may provide positive reflections to investor's mind but will not satisfy them unless actually delivered return abnormally outperform expected return as in this case higher returns are credited to financial markets performances. Actual loss, if accrue to the investors through delivered return less than specified return it will bring great level of dissatisfaction among the investors because in this case investor's trust on skills and diligence of mutual funds AMC's get trodden. The only remedy to fill up these gaps is to create awareness among the investors that mutual funds performance is subject to market risk and instead of tempting them towards stocky returns, promises should be aligned with investor's specifications.

3.3 Delivery Gaps

A rich diagnose for any mutual fund performance is evaluated through services they deliver in the form of extra ordinary return if they are able to deliver. Most of consumers admit the fact that increasing awareness have lead them to agree upon that despite of professional knowledge and skills fund performance is subjective of market volatility. So unlike other gaps that give a way to investor's satisfaction delivery gaps don't prevail in mutual fund services. Mutual fund's tendency to over promise however may push investor's expectation but to completely eliminate this particular gap mutual fund organization should show a true picture to investors and fund scheme to be provided should be framed after a complete analysis of risk appetite of investors. Among mutual funds delivering the promises are not only the criteria to evaluate fund services but courtesy, communication, empathy, responsiveness and reliability are some of the other parameters where mutual funds are found to be performing exceptionally well.

4. Research Methodology

In order to achieve the objective of developing an understanding about investor's risk and return perception towards mutual funds, a well structured questionnaire was designed. Responses of individual investors were collected through filled questionnaire with pre explained objectives of research. To reduce the complexity of data responses questionnaires were distributed among those investors only who had prior experience of mutual fund investment. For this purpose random sampling was ignored and selective systematic sampling was taken for consideration. For reliability of questionnaire 100 individual investors were selected from different regions of Punjab, which included selective investors who were assumed to be having complete knowledge of financial environment, and further they were existing investors of mutual funds. Age constraint considered in this questionnaire was minimum 18 years. Main focus of questionnaire was to obtain responses of individual investors regarding how they evaluate mutual funds services in terms of return and risk on their investment. Broad objectives of our research include:

- E1: Evaluate Perception towards risk involved in mutual funds in comparison to other financial avenues
- E2: Evaluate Perception towards return from mutual funds in comparison to other financial avenues.
- E3: Identify critical gaps in mutual funds services towards transparency and disclosure practices.
- E4: Uncovering the hidden problems investors encountered with because of unprofessional services of mutual funds.
- E5: Understanding the willingness and ability to assume different levels of risk with varied parameters.
- E6: Evaluating investor's perception towards risk volatility involved in mutual funds

5. Analysis and Discussion

Investor's purchase decision for mutual funds is influenced by chain of factors, out of this presence of risk and expected return being dominant one determines the direction where investor should opt for a particular investment avenue. Once an investor finalizes a particular investment avenue with calculated risk next factor accountable for his final decision is quality of service delivered. In this research a structured questionnaire was prepared to seek experiences of existing investors. These statements were analyzed and quantified on a 5 point likert scale used especially to measure the risk perception towards various financial avenues. Ranking and rating methodology was also followed to prioritize the investor's preferences. For convenience and better interpretation about different group of investor's responses, three categories were designed in order of age that include Aggressive investors, Active investors and reflexive investors. On the basis of income investors were again categorized into four classes that include basic investors i.e no-tax payer, Low tax payer i.e investor's in the lowest tax bracket, high tax payers which include upper middle class and lastly wealthy investors which include rich and financially stable investors.

5.1 Relationship of Investor's Age and setting investment objectives

For the sake of convenient understanding total investors are divided into three categories in relation to their age where investors below 30 years represent aggressive investors and active investors represent middle age investors and lastly investors above 50years are represented through reflexive investors. Data collected through questionnaire revealed that 41.4% aggressive investors invest with objective of capital appreciation and 24.1% prefer to invest for tax reduction. Active investors have got a hybrid of investment choices whereby 37.5% prefer to invest with the objective of tax saving and 31.2% invest it for capital appreciation. Opinion of reflexive investors is quite different from above two categories of investors, as 75% of them have given their preference for retirement benefits as main cause luring them towards investment avenues. A study at aggregate level tested by chi-square test has shown that investor's age is a considerable determinant in setting investment objectives which is significant at 1% level. ($\chi^2=54.26^a$, df=12)

5.2 Relationship of investor's Income and setting investment Objective

Income has also been considered as one of the important parameter that determines the objective of investment. Basic investors having low level of income are found to be more uncertain about future and 29.4% invest for future contingencies. Low taxpayers gave their opinion for tax saving as main investment objective (34.8%) whereas 30.4%

admit capital appreciation as investment objective. Choice of high tax payers is also found near to low tax payers where variance is only in terms of quantum as 50% investors support capital appreciation as their broad objective and 33.3% opine for tax benefits. Opinion of wealthy investors is entirely different from rest of the investors as all of them have objective of capital appreciation as the broad investment objective. Chi-square is significant at 1% for income level. (Table 1)

5.3 Investor's Risk Perception Analysis

Presence of risk in any investment is a normal feature. Investor's behavior in terms of their willingness to accept risk depends upon their risk appetite or market sentiments that are spread in the market at the time of investment. Moreover, investor's knowledge and their optimism about market volatility also influence their decision to select risky investment. Table values depicting Average preference Scores (APS) reveals the fact that individual investors admit capital market instruments i.e Shares as the most risky investment in comparison to other investment avenues and mutual funds are opined to be next risky investment. APS also reveals that Investors don't deny the presence of risk in real estate but level of risk admitted is moderate and Government securities are admitted to be the least risky securities.

5.3.1 Relationship of Investor's income to risk Perception for Insurance

One of the objectives of study is to analyze risk perception of investors for mutual funds and identify critical gaps that prevail in mutual funds restructuring. In order to identify these gaps researcher is required to compare investors preference for various investment avenues and identify which investor group prefer what sort of investment and reason out the positives of those investment avenues which mutual fund organizations should involve while going for financial innovations in their existed fund schemes.

Insurance as an investment preference of investors emerges for uncertainty of future. Although Insurance is not considered as a most risky investment by majority of investors. Data collected through survey reveals that 47.1% basic investors consider it as least risky investment whereas 65.2% low taxpayers opine it as least risky investment. Fact is further supported by the responses gathered from high-income group investors where 50% High taxpayers give last ranking to risk involved in insurance and 56% wealthy investors also have last preference for risk involved in insurance. Going to aggregate level indicative facts exposed by survey prove that risk associated in insurance investment is significant for income as a parameter of investment decision-making. It is indicated by chi-square (61.484^a), which is significant at 1% level of significance. Chi square test shows that income status of investors and risk perception for insurance as an investment avenue is not independent ($\chi^2 = 23.043$, df=28)

5.3.2 Relationship of Investor's income to risk Perception for government securities

Government securities are admitted as most secured securities and they have always been at the foremost preference of those investors who want to play safe game. When compared with other investment avenues nobody among the sample investor opined it as most risky investment. Data collected through survey revealed that 41.2% basic investors rank it at sixth position in terms of risk involved whereas 34.8% low tax payer support this position of government securities in comparison to all other investment avenues. Further the fact is supported by opinion of high taxpayers where even 50% of them strongly agree to the fact that government securities are least risky investment and even they rank it at the sixth position but outlook of wealthy investors reveal that 66.7% of them have their opinion that government securities are least risky investment. Significance test as applied through chi square test although government securities are considered to be risk free investment but still income of investors and preference for government securities because of risk association are closely related as indicated by $\chi^2 = 61.540^a$, df 24. This value of chi square is significant at 1% level (asympt.sig .000).

5.3.3 Relationship of Investor's income to risk Perception for Shares/Bonds

Risk and Return for any investment are parallel to each other. Higher the risk, higher the return. Shares and bonds have been observed as the first preference of those investors who are willing to take risk. Capital market instruments being most risky investment are expected to yield above normal return that can be expected from any other investment avenue. Data collected from survey has proved this hypothesis that income of investors and risk perception for shares/bonds are related parameters of investment. 70.6% basic investors admit capital market instrument as most risky investment and rank it as first risky investment. 62.6% low taxpayers also opine that maximum risk is involved in shares and debentures when compared with other financial avenues whereas 100% high taxpayers and wealthy investors consider it as most risky investment. This statement is further tested by chi square test, which prove it to be significant at 1% level ($X^2 = 32.251^a$ df 16).

5.3.4 Relationship of Investor's income and Risk Perception for Mutual Funds

Responses collected from individual investors reveal the fact that reflection of risk on mutual funds is not as high as it was in case of shares and bonds. Although risk perception for mutual funds is also comparatively on higher side as 58.8% basic investors consider it as second risky investment and 65.2% low taxpayers consider it at the same position.

Fact is further supported by the opinions of high taxpayers whereby 71.4% admit it as high risk involved and 66.7% also opine the same. The hypothesis was further tested at chi-square that shows that there is no close association of investor's income and their risk perception for mutual funds ($X^2=11.061^a$, $df=18$), which is not significant at 1% level. Thus, results of above data analysis make it clear that majority of individual investors don't consider mutual funds as highly risky investment but on a ranking scale it is considered to be on higher side when compared with other financial avenues. (Table 2(A) & 2(B))

5.4 Relationship of Income and investor's Perception for Returns

Investor's income is one of the crucial determinants that set the objective of investment in various avenues. As shown in the table it can be clearly observed that individual investors mostly prefer shares as the best investment avenue in terms of return and quite close to it their next preference is for mutual funds. Insurance is considered as next preferred investment and government securities are considered to be last preferred investment.

5.4.1 Investor's Perception for investment Return from insurance

As discussed earlier investor's preference for insurance is not because they are tempted by the handsome return offered by insurance NBFCs but investors prefer to invest in mutual funds to reduce their fear of uncertainty. Moreover the fact is proved from the responses collected from individual investors when asked to rank investment avenues with return as a parameter for their evaluation. Data collected expose the fact that 35.3% of basic investors give their ranking as 5th and 23.5% investors have ranked it at 7th position. Among the low tax payers 30.4% also have their opinion that it is least preferred investment in terms of return as objective. Further ranking given by high tax payer investors also show that 66.7% have their opinion for it as least preferred investment and 33.3% wealthy investors rank it as moderately preferred investment avenue in terms of returns offered. Going to aggregate level the indicative facts disclose that a close association exist between income status of investors and their preference for insurance as an investment avenue which is proved by significance level of chi square at 1% level ($\chi^2 = 65.165^a$, $df=32$)

5.4.2 Investor's Perception for Investment Returns from Government Securities

Government securities being risk free securities are not preferred by the investors who want to gain above average return from their investments. Preference of government securities as an investment avenue is because of investor's choice to select securities that are completely free from any uncertainty and volatility. Results of responses collected from survey expose this fact that among the basic investors 29.4% rank it at 5th position and further 29.4% admit it at 6th position which explains that investors have moderate preference for government securities in terms of return as objective behind investment. Further data collected from survey for low taxpayer also support this fact whereby 39.1% again rank it at 5th position and 50% high taxpayers rank it at 6th position when compared with other investment avenues. Finally, wealthy investors have somewhat different perception for government securities whereby 66.7% investors have least preference for government securities. Fact of aggregate level when tested by chi-square has proved that a significant level of association exists between investor's income level and their perception for returns wise from government securities. These results are proved by $\chi^2 = 62.840^a$, $df=24$, which is significant at 1% level.

5.4.3 Investor's Perception for Investment Returns from Shares/ Bonds

As observed by survey responses of the individual investor's fact is clear that overall among other investment avenues capital market instruments are at the priority of investors but level of preference varies with different category/ level of income. Data responses of wealthy investors reveal the fact that majority of them i.e 66.7% admit it as first preference in terms of return as an investment objective. Among high tax payers 83.3% highly prefer this investment avenue in comparison to other investment avenues. Responses of low taxpayers do not reveal that these investors have absolute choice for capital market instrument as 39.1% have first preference for shares and debentures whereas 26.1% have second preference for capital market instruments. Basic investors also don't support wealthy investors to consider shared/bonds as first preference but 29.4% rank it at second or third position in terms of return as investment objective. Moving to aggregate level the fact is tested by chi-square which is significant at 1% level indicate that association exists between income status of investors and their preference for capital market instrument with return as objective ($\chi^2 = 66.414^a$, $df=24$)

5.4.4 Investor's Perception for Investment Returns from Mutual Funds

Mutual fund as an investment avenue is preferred by those investors who don't want to take complete risk of capital market volatility or those investors who want to rely on professional knowledge of mutual funds AMCs. Survey results reveal the fact that very few investors rank mutual funds as most preferred investment avenue and rank it at first position. Among basic investors 29.4% rank it at 2nd position and 23.5% put it at 3rd position whereby 47.8% low tax payer admit it second preferred investment avenue in terms of return as an objective for investment. Majority of high tax payers (66.7%) rank it at 3rd position compared to other financial avenues. However, wealthy taxpayers also have their opinion of second position for mutual funds in terms of return provided by this investment. Results of aggregate level study are tested through chi square test that also proves that a significant relationship of interdependence exist

between income level of investors and their perception for investment returns from mutual funds investment ($\chi^2=65.946^a$, $df=28$), which is significant at 1% level. (Table 3(A) and 3 (B))

5.5 Analysis of investor's Perception towards MFs Services

Technological gadgets are extending their demand even in mutual funds market because of the proven solutions they are putting forward fund managers to tailor their fund schemes as per customer's desires. Information and Communication Technology enabled software programs are making it easier for fund managers to concentrate on individual needs of investors and come up with newly fangled financial innovations every time. Behind every financial innovation the two dominating forces where a trade off is required are minimizing the risk and maximizing the returns. Despite the major innovations recently introduced in MFs dissatisfaction among investors is clearly reflected which can be traced from their opinion towards mutual funds services. 61.11% basic investors admit that mutual funds completely disclose the risk involved in their investment whereas 30.4% low tax payers don't admit that mutual funds completely disclose presence of risk element. Opinion of high tax payers is also quite different and only 33.33% investors admit about mutual funds practice to disclose risk. Results obtained at aggregate level through ANOVA clearly reveal that average investors from all different categories don't differ in their opinion towards risk disclosure (F value=2.675, $df=99$) which is significant at 5% level.

Results obtained from survey regarding investor's opinion towards disclosure of entry/exit load by MFs at the time of selling fund scheme shows that 41.1% basic investors admit it and 43.47% low tax payers also admit this. It has been observed that 28.57% high tax payers and 33% wealthy investors have positive response for mutual funds disclosure practices towards entry/exit load. It is evident from the above responses that majority of investors are not satisfied from mutual funds disclosure practice towards entry/exit load (F value=4.888, $df=99$) which is significant at 1% level. Investor's responses towards MFs services for disclosing the fund portfolio are also not found to be satisfactory as 35.29% basic investors and 34.78% low tax payers are found to be satisfied and agree that they were completely disclosed content of fund portfolio. Moreover responses of high tax payers (33.33%) give their consent towards this practice. Evidences obtained are highly significant at 1% level (F value=3.008, $df=99$)

Majority of investors get tempted by any fund scheme when illustrative examples are shown to them and puffed statements are given to give a lift to investor's optimism. Responses of investors towards whether they were disclosed that illustrative examples do not assure any guaranteed return yield the result that only 35.29% basic investors and 29.16% low tax payers admit it. Where responses of high tax payers (33.33%) are quite similar to other responses wealthy investors are a bit different in their opinion as 67% of them admit that they were explained the concept. Results are verified by ANOVA that proves that average responses of investors towards mutual funds practice to disclose difference between hypothetical assumptions of market volatility and varied actual return are not different (F-value=4.378, $df=99$) which is significant at 1% level.

Maturity and liquidity is one of the major concerns of every investor while investing. Investor's responses regarding disclosure of this practice by mutual funds yield the results that 64.7% basic investors and 69.56% low tax payer admit that they were clearly explained about maturity and liquidity of their investment. Responses from high tax payers are also quite close to above said categories whereby 66.67% admit this statement. Hypothesis testing by ANOVA has shown that on aggregate level majority of investors are satisfied from MFs disclosure practice. (F value=1.958, $df=99$) which is significant at 1% level. (Table 4)

5.6 Problems encountered in Mutual funds investment

Investor's knowledge about capital market volatility and AMC's ability to control risk involved in mutual funds plays a dominating role in determining their satisfaction level. Based on this responses of investors were evaluated in terms of investors knowledge whereby investors with 73.3% low knowledgeable investors agree that actual return from mutual funds don't match with expected results whereas 66.7% investors with good working knowledge also admit the fact that investors are not found to be satisfied with returns delivered by mutual funds. Reason to prefer mutual fund investment lies in the fact that investors believe in the professional knowledge of mutual funds AMC's, responses of investors toward AMC's performance to behave in volatile market reveal the fact that 53.33% less knowledgeable investors agree with this statement that mutual funds AMC's are poor to respond to volatility in capital market and further investors with good working knowledge (80%) also admit with the same opinion.

Cost charged by mutual funds in the form of fund management service charge that determines investor's opinion to prefer mutual funds. Responses of investors with less knowledge (73%) admit high hidden cost charged by mutual funds whereby 87% investors with good working knowledge also admit and show their resentment towards fund services charged by mutual funds. Presence of awareness of individual investors for MFs working forces them to believe that their funds are invested according to investor's objectives described by them but survey evidence reveal the fact that 73.33% less knowledgeable investors and 53% investors with good working knowledge admit their funds are

not invested in the desired portfolio which should have been designed in accordance to their investment objectives. (Table 5)

6. Investor Oriented Service Quality Arrangement (IOSQA)

Prioritization of customer needs and expectation is critically important in order to satisfy investors. While MF's ability to reduce risk and magnify returns is expected to raise investor's satisfaction level but investors are also sensitive about overall service quality that is offered to them. Understanding service quality from the angle through which customer perceives it has still remained a mystery. However, Zeithaml (1987) endeavored to explain it as customer's judgment about overall superiority and Study by Parasuraman et.al, (1988) identified five determinants of service quality as discussed above. Johnston (1995) provided 18 different service dimensions that included access, aesthetics, attentiveness, availability, care, cleanliness, comfort, commitment, communication, competence, courtesy, flexibility, friendliness, functionality, integrity, reliability, responsiveness, security.

A secret catalyst for any breakthrough is to analyze potential impacts of a particular innovation and further to align those outcomes with the investor's objectives. IOSQA identifies seven C's that include *Communication, Confidence, Credibility, Commitment, Concern, Competence, and Continuous improvement (CI)* that should be fostered in order to ensure customer satisfaction. Investor oriented service quality arrangement (IOSQA) is a suggestive approach to align investor's expectations and AMC's actions towards complete satisfaction (Figure 3). This particular approach suggests AMCs should embrace 7Cs in order to transform their services in win-win game. Currently AMCs are required to flesh out existing fictions about investor's expectations and frame out completely new system that is conceptually richer and empirically more supportive in identifying what investors really need for which the root planning should start through effective *communication*. Moreover this communication process should not only be continued until investor finalizes his purchase decision but AMCs should also focus on post purchase reactions of investors. Mostly fund managers are wrongly blessed with misconceptions that success of their fund is directly related to heavy dose of innovation whereby they overlook post selection behavior of investors that comprise of the most relevant step that ensure final satisfaction.

Despite the fact realized, most of MFs are concentrating to improve only one parameter of investor's satisfaction and that is to improve the return they could provide to investors without paying any attention to quality of services expected by investors. Presence of intense competition in mutual fund industry is strongly pushing investors to change their attitude towards investors, so its high time to develop *competence* by showing their *concern* and innovating newly designed schemes that can assure them not only the financial benefits but also value added quality services. Mutual Funds AMCs have realized that the key mantra to success is designing new schemes with multi feature options for investors. Study by Garvin (1984) has shown that customers are generally benefited from the improvements that are offered by new features e.g enhanced quality product. Financial benefits offered in terms of return on Investment (ROI) is generally considered as a true parameter to evaluate fund performance but a true measure for it will be to what extent AMCs are able to satisfy investor's expectations by maintaining their *credibility* & winning their *confidence*. In this context prioritization, preference building and close monitoring of mutual funds are essential for fund managers to make MFs most preferred financial avenue in coming years (Panda 2001).

Thus, the need of hour is not only to assess customer expectations and translate them but MF organizations are also required to ask how investors perceive Mutual Funds performance in comparison to investor's own expectations. Study by Brown and Eisenhardt (1998) suggest that developing technology, changing aspirations of stakeholders and increasing economic pressure all contribute to the need for organizations to significantly modify the way they are doing things. Existing literature available on Total Quality Management (TQM) suggests *continuous improvement (CI)* loop that should be evolved in order to deliver desired expectations. Among the varied systematic approaches of TQM, most applicable is Deming cycle or Plan-Do-Study-Act (PDSA) whereby each successive step is oriented towards improving firm's performance and also focus on customer satisfaction (Deming, 1995). Gelade and young (2005) examined the relationship between organization climate, employee attitude, customer satisfaction and sales performance and concluded teamwork climate, Job enablers and support climate are organizational climate variables, commitment is an employee attitude and customer satisfaction and sales achievement are organizational performance measures.

Despite higher ROI, many fund schemes fail and results in dissatisfaction among investors because the measures introduced are not followed continuously. So, the last 'C' in this approach demands MFs true *commitments* that should be followed continuously. Relevance of communication with investors is not only to identify their expected and perceived needs but also to ensure understanding of dynamic needs, which need adjustments during post purchase stage. This continuous loop should be followed by AMCs admitting commitment towards investors, showing their concern for the trust investors have vested with them and extending their competence in order to regain investor's confidence.

7. Conclusion

The present study endeavored to give a look on investor's perceptions towards risk-return trade off for mutual fund services. Understanding of investor's expectations from mutual funds has become necessary issue to study due to mutual funds inability to accelerate the required pace of growth. Moreover, volatility influencing stock market movements is turning most of investors to hold stocks with calculated risk, in the shape of mutual funds. Thus mutual funds can prove to be most preferred financial avenue provided it is put forth before investors in the desired form. Facts revealed in this study highlight the preferences of varied investors who desire to invest in mutual funds but also require some innovations and added quality dimensions in existing services. The critical gaps identified in the study also provide the key information input regarding the discrepancies in existing framework of mutual funds which can be extremely beneficial to AMCs in designing more lucrative solutions to suit investor's expectations. Survey findings of this study have got significant managerial implications that can be used by AMCs in restructuring their existing practices and finally innovating new ways of service delivery.

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Table 1. Chi-Square Test for Investment Objective

Variable	Likelihood Ratio	Linear Association	Chi-Square	df	Significance
Age	15.421	1.064	54.260 ^a	12	0.000
Income	24.707	0.399	63.295 ^a	20	0.000

Table 2 (A). Risk Wise Average Preference Score and Standard Deviation Coefficient

Investors		Insurance	Govt. Securities	Shares	Mutual funds
Basic Investors	APS	5.1176	5.8824	1.4118	2.6471
	SD	1.57648	1.40900	1.06412	1.27187
Low Tax Payers	APS	5.6522	6.0435	1.3913	2.5652
	SD	1.19121	1.10693	1.26990	1.34252
High Tax Payers	APS	5.1429	6.1429	1.0000	2.4286
	SD	1.06904	1.06904	.00000	.78680
Wealthy Investors	APS	4.3333	6.6667	1.0000	2.6667
	SD	2.30940	.57735	.00000	1.15470
Total	APS	5.3200	6.0400	1.3200	2.5800
	SD	1.39152	1.17734	1.05830	1.21370

Table 2(B). Chi-Square Test for Risk Perception

Variable	Likelihood Ratio	Linear Association	Chi-Square	df	Significance
Insurance	28.654	0.45	75.106 ^a	28	0.000
Government Securities	22.406	3.39	61.54 ^a	24	0.000
Shares/Bonds	17.554	0.192	32.251 ^a	16	0.001
Mutual Funds	12.158	.054	11.061 ^a	18	0.892

Table 3 (A). Return wise Average preference Score and Standard Deviation Coefficient

Investors		Insurance	Govt. Securities	Shares	Mutual funds
Basic investors	APS	4.8235	5.3529	2.8824	3.1176
	SD	1.87867	1.36662	1.65387	1.83311
Low tax payer	APS	5.7391	5.2609	2.0000	2.7826
	SD	1.38883	1.21421	.95346	1.04257
High Tax Payers	APS	5.0000	6.0000	2.4286	2.2857
	SD	2.00000	.81650	.78680	.95119
Wealthy Investors	APS	5.0000	6.3333	1.3333	2.0000
	SD	1.00000	1.15470	.57735	1.00000
Total	APS	5.2800	5.4600	2.3200	2.7800
	SD	1.65418	1.23239	1.26878	1.35962

Table 3 (B). Chi-Square test for Investment Returns

Variable	Likelihood Ratio	Linear Association	Chi-Square	df	Significance
Insurance	27.71	2.66	65.165a	32	0.000
Govt Securities	22.672	4.729	62.84a	24	0.000
Shares/Bonds	27.758	2.411	66.414a	24	0.001
Mutual Funds	28.246	0.605	65.946a	28	0.000

Table 4. Investor's Perception towards Mutual Fund Services

Variable	Mean	Variance	F value	Sig
Risk Disclosure	2.64	0.969	2.675	0.019
Entry/Exit Load	2.4	0.7744	4.888	0.000
Portfolio contents	2.8	0.855	3.008	0.010
Illustrative examples	2.9	1.02	4.378	0.001
Maturity/Liquidity	2.36	0.765	1.958	0.06
% Fund Allocation	3.06	1.56	2.868	.013

Table 5. Problems in Mutual Fund Investment

Variable	Mean	Variance	F value	Sig
Actual returns v/s Expected returns	2.06	0.954	2.536	.026
Ability to respond towards market volatility	2.32	0.834	5.549	.000
High hidden cost	1.9	0.908	4.138	.001
Investment v/s investor's objective	2.78	1.23	4.439	.001

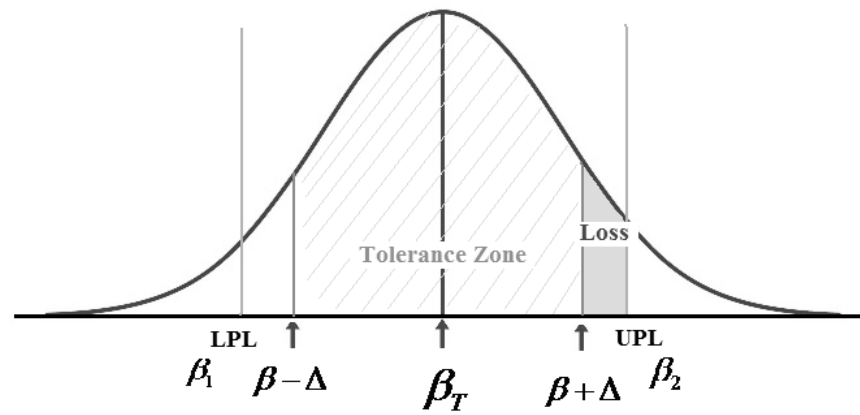


Figure 1. Tolerance Zone: Risk

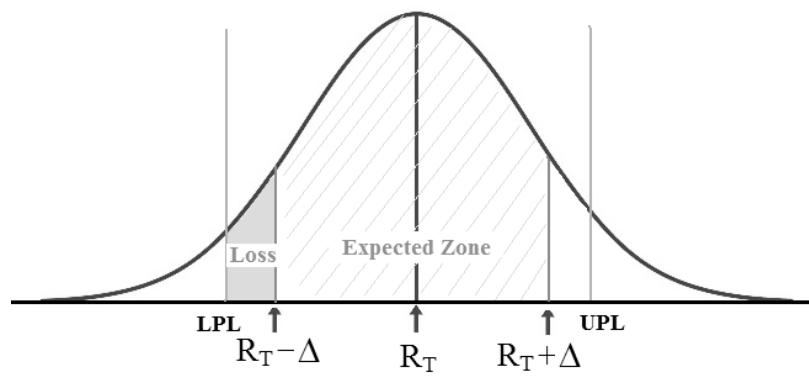


Figure 2. Tolerance Zone: Return

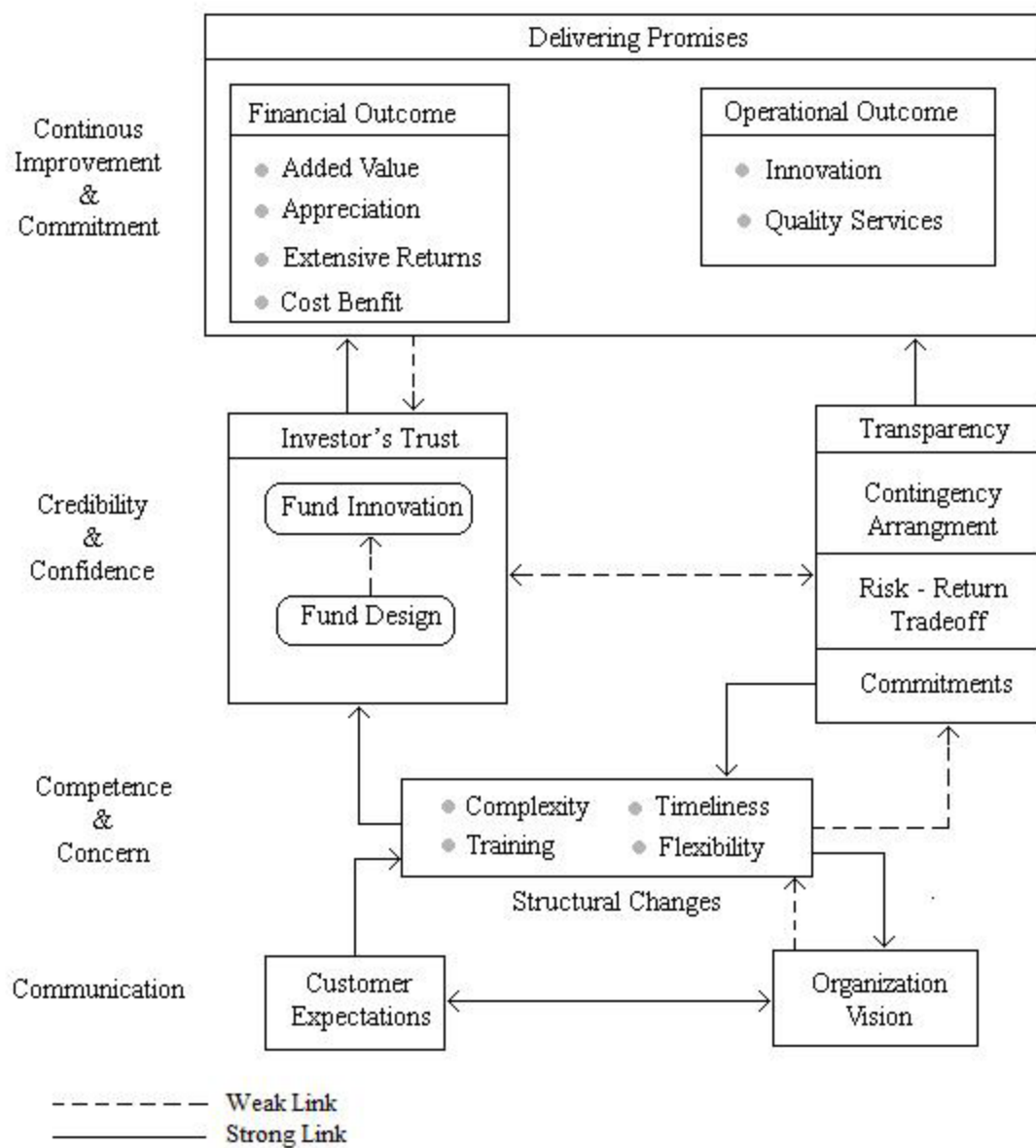


Figure 3. IOSQA



A Review of Theories on Transnational Transfer of HR Practice within Multinationals

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Abstract

This article discusses the process of transferring human resource (HR) policy and practice internationally within multinational companies (MNCs), and the factors that influence the transfer process. The first section thoroughly surveys the literature on why MNCs transfer HR practices across borders and generalizes three lines of arguments. The second section looks at “what to transfer” with regard to particular HR issues, and points to a gap in the literature. The next section briefly reviews three main methods of transfer adopted by MNCs. Finally, the results of transfer are discussed both prescriptively and descriptively in light of Kostova’s (1999) multilevel model. The arguments presented in this article have two main implications which are summarized in the conclusion.

Keywords: Multinational companies, Human resource policy and practice, Transfer

1. Why transfer

This section examines the reason for MNCs to transfer HR practice. The author believes it worth a detailed analysis, for it largely defines the scope for analyzing the following issues of the transfer process. Three generalizations of the reasons for transfer emerge from the literature. They are: international competition pressure, international integration and strategies, and organizational politics.

1.1 International competition pressure

As to the reason for transfer, one of the most developed arguments is that competition in the global economy on the basis of competitive advantages is the incentive for MNCs to transfer and recombine new knowledge and practices across borders (e.g., Bartlett and Ghoshal, 1995; Kogut and Zander, 1993; Taylor et.al., 1996; Kostova, 1999). As Kostova (1999, p.308) put it, “for purposes of synergy and efficiency, organizations often engage in cross-unit transfers of business practices that reflect their core competencies and superior knowledge and that they believe to be a source of competitive advantage”. HR policies and practices are often considered by top management to be one of those sources. Moreover, they may stem from both national and organizational contexts.

Firstly, HR practices being transferred originate from national business system. Hall and Soskice (2001) believe that the existing social system of a nation generates national comparative advantage. Thus one can expect that MNCs tend to possess those ‘superior’ HR practices that are developed in support of their national comparative advantage and to transfer them to their subsidiaries worldwide. This can be regarded as a demonstration of the “country-of-origin” effects (Ferner, 1997; Edwards, 2004).

Secondly, HR practices may stem from particular organizational contexts and convey organizational strategies. It is obvious that the competences of different MNCs of the same country-of-origin are not identical. They may develop core competences which are highly firm-specific. Indeed, a number of Japanese MNCs have been identified with different core competencies in the literature (Bartlett and Ghoshal, 2000; Evans et.al., 2002). Similarly, Kostova (1999, p.309)

has stressed the influence of “an organization’s history, people, interests, and actions” on the strategic organizational practices being transferred.

It is noteworthy that transfers of HR practices can occur in various directions within the MNC, including transfers from parent companies to foreign subsidiaries, from subsidiaries to parent companies, or from one subsidiary to another. For example, German companies have been observed to adopt some ‘Anglo-Saxon’ tradition from their “vanguard” subsidiaries in UK (Ferner and Varul, 2000). This is what Edwards (1998) terms ‘reverse diffusion’, in which firms may look to ‘reverse-transfer’ policies associated with companies and countries that are dominant in the global economic system, since such policies are likely to be seen to be linked with international competitive advantage. This phenomenon could also be explained by the theory of dominance effects (Smith and Meiskins, 1995), which is consistent with the argument of competition pressure. The logic of this theory is that countries in dominant positions in the international economic system may also dominate HR practices at the international level as a result of international competition. That may explain why the post-war period saw US and Japan, in turn, act as the most influential power in the international HR areas.

1.2 International Integration and international strategy

A second general conclusion from the literature concerning the reason for transfer is that the degree of international integration and the corresponding strategies of MNCs largely determine the extent to which MNCs are likely to transfer their HR practices (e.g., Porter, 1986; Taylor *et. al.*, 1996; Edwards, 2004). In other words, the transfer of HR practices is often linked to certain industry sectors. For example, those sectors such as automobiles, IT services and pharmaceuticals, with a high degree of international integration, are easy to transfer HR practices across borders. Furthermore, Edwards (2004, p.401-402) distinguishes between two forms of international integration: standardization and segmentation. He argues that “In those sectors in which MNCs have developed standardized operations, the transfer of employment practices is likely to be more attractive to management”; whereas “in MNCs which have segmented their international operations”, even where the degree of integration is high, “there will be little incentive to transfer practices across borders”. This is evident in many relevant studies. Examples include Japanese MNCs in Asian subsidiaries making low value-added products, which exhibit no transfer of Japanese employment relations (Dedoussis, 1995).

One can expect a close linkage between MNCs’ degree of international integration and their international strategies. Porter (1990) identifies two generic MNC strategies: multidomestic and global. MNCs in sectors like foods and clothing tend to choose multidomestic strategies; whereas MNCs in sectors such as automobiles and pharmaceuticals are likely to choose global strategies. Linked with Porter’s theory of MNC strategies, Taylor and her colleagues (1996, p.966-968) define three strategic international HRM (SIHRM) orientations: adaptive, exportive and integrative. They propose that MNCs following a multidomestic strategy will adopt an adaptive SIHRM orientation, hence making no transfer of HR practices; in contrast, MNCs following a global strategy will adopt an integrative SIHRM or an exportive SIHRM orientation, hence are more likely to transfer HR practices.

Taylor *et. al.* (1996, p.969-970) also point to the importance of top management’s perception of the context generalizability of parent company’s HR competence, i.e. whether top management believe the competence can be used in other contexts outside the home country of the firm. If not, they argue, there will be no incentive to transfer its HR system across borders, regardless of the international strategy of the firm. Figure 1 illustrates Taylor’s (1996) arguments.

1.3 Organizational politics

A third approach explaining the incentives for MNCs to transfer HR practices looks at political relationships within organizations (e.g., Edwards, 2004; Kostova, 1999). Edwards (2004, p.393) terms this explanation “the political approach”, indicating that “actors in organizations can be willing to engage in the process of transfer as a way of obtaining legitimacy and to advance their own interests”. Furthermore, Kostova (1999, p.319) bases this approach on resource dependence theory and institutional theory. She argues that MNC subsidiaries “may develop perceptions of dependence on the parent” due to various resources such as technology, capital, and promotion of the subsidiary staff, etc. She suggests that “under such conditions of dependency and intraorganizational competition”, a subsidiary will try to implement parent company’s practices as a way of gaining internal legitimacy.

A key contribution of this approach is to recognize the influence of organizational actors’ personal motivations on MNC’s decision to launch a transfer process. It is noteworthy that such concerns should not be confined to senior managers in organizations. Indeed, ‘shopfloor’ workers may also play a significant role in the process. Under certain circumstances, they can even suffocate a potential transfer at an early stage. In a further exploration, Edwards (2004, p.404) points out that “actors at plant level may be reluctant to share their expertise with their counterparts for fear of undermining their performance within the group”. As a result, they may prefer to keep those practices instead of letting it transfer.

In summing up the research on the reasons for transfer, one can conclude that the transfer of HR practices within MNCs is the result of either external competition pressures or internal politics, or both, and is often linked with certain industry sectors and organizational strategies.

2. What to Transfer

Based on the above studies on why transfer, it is possible to generalize that MNCs will tend to transfer those HR competence that they look on as sources of their competitive advantage (e.g., Bartlett and Ghoshal, 2000) and at the same time, those they believe to be context generalizable (Taylor *et. al.*, 1996).

Another line of argument draws attention to particular HR issues concerned. For instance, Rosenzweig and Nohria (1994, p.232-233) hypothesize that HR practices will tend to be transferred in the following order, starting with the one that will most likely to be transferred: (1) Participation; (2) Executive Bonus; (3) Training; (4) Gender Composition; (5) Benefits; and (6) Time off. This hypothesis has been generally supported by their following empirical test. They argue that this is because “practices for which there are diffuse and poorly defined local norms, or which are seen as being critical to maintaining internal consistency or arriving at critical decisions”, are more likely to be transferred. Conversely, “practices for which there are well-defined local norms and which affect the rank-and-file of the affiliate organization are likely to conform most closely to the practices of local competitors”(Rosenzweig and Nohria, 1994, p.233). This argument highlights the internal differentiation of HR management practices within a MNC, instead of viewing it in terms of an overall orientation. It recognizes the significance of host country effects as well as organizational strategies.

Moreover, this study hints at some fact behind the scene. Since Rosenzweig and Nohria’s (1994) study was conducted in U.S., whose employment system overall offers less paid time off and provide a lower percentage of benefits, MNCs from different nations in this study exhibit varied degrees of local isomorphism in their U.S. affiliates with regard to particular HR issues. For instance, close adherence to U.S. practices in benefits and time off makes German and Swedish MNCs far different from the very generous policies of their home countries. Whereas Japanese MNCs adhere to US practices much less, as they follow their home policies which offer even less paid time off than U.S.

Another particular HR issue indicating a similar problem is union recognition. U.S. MNCs are known to have sought to avoid collective employee representation even where there is strong institutional support for it (see Royle, 2002, for example). This is seen as the result of their long history of hostility towards unions. However, German MNCs also turn to non-unionism in their U.K. subsidiaries (e.g., Guest and Hoque, 1996), rather than transferring their own traditions of close cooperation with unions, which are thought to be a resource of German’s national comparative advantage (Hall and Soskice, 2001). Though this behavior is seen as a result of their devolution of HR policies to local management decision, German MNCs’ intentions in this regard deserve further consideration.

One possible proposition which can be induced from the above phenomena is, whenever and wherever possible, MNCs’ subsidiaries, especially in relatively low-skilled sectors, would tend to pursue “low-road” HR practices, such as less paid time off, lower benefits, non-unionism, etc. in order to maximize their profits. Therefore, MNCs are likely to take this “principal” into consideration when they decide whether to transfer their home country practices, or to adapt to local polices with regard to certain HR issues. This proposition needs to be tested in deregulated host countries, especially in developing countries such as China. But existing research has failed to systematically explore this area. Thus the author believes it an interesting topic for further study.

3. How to Transfer

This section briefly reviews the literature on the mechanisms of transfer, focusing on three main methods adopted by MNCs.

One method of transfer is through formal policies and management control systems, allowing parent policies to be propagated and implementation monitored. This is common in U.S. companies. But these formal systems may allow practices transferred from subsidiaries to parent companies as well. For example, Marginson and his colleagues (1995) report that North American-based companies usually establish worldwide personnel policy committees. And these committees hold meetings of personnel managers from different countries, on an ad hoc basis or a regular basis. Labour performance comparisons at different sites would appear to be very much on the agenda of such meetings. Thus one can expect a two-way transfer of HR policies and practices between HQ and subsidiaries under such mechanisms.

Another mechanism is called “best practice” or “coercive comparisons” (e.g., Ferner and Edwards, 1995). As Marginson *et. al.* (1995) note, labour performance comparisons are getting important in management decisions on investment or divestment. Furthermore, Martin *et.al.* (1998) argue that internal and external benchmarking has been the most important and most widespread mechanism for the transfer of best practices, especially in MNCs with the same or similar operations at sites in different countries. However, it has been pointed out that coercive comparisons may intensify the pressures for non-managerial employees and cause tensions between management and labours (Ferner and Edwards, 1995; Marginson *et. al.*, 1995; Martin *et.al.*, 1998).

A third mechanism is through socialization of parent company's culture (Edstroem and Galbraith, 1977). Edstroem and Galbraith (1977) suggest that socialization represents the most complex in the control strategies used in MNCs. Evans (1995) has outlined a number of means by which multinational firms have attempted to integrate their corporate cultures, including mission statements, communications of the CEO, the process of building corporate charters, and management education, etc. While a most widely used method among these may be the transfer of personnel, or expatriates, between parent and subsidiaries. Japanese companies are said to rely heavily on the use of expatriate managers to monitor implementation of systems and cultures, hence obviating the need for very formal international control systems that are common in U.S. companies. Therefore, one may argue that the distinctions of the main method adopted by MNCs of different nations also exhibit some "country-of-origin" effects (Ferner, 1997).

4. The Results of Transfer

This section discusses first the factors that may influence the results of the transfer as a prescriptive analysis. Kostova's (1999) multilevel model is critically examined. Then the actual results of transfer are described in light of the multilevel model and finally the meaning of "hybridization" is discussed.

4.1 Factors that may influence the results of transfer

It has been noted that diverse factors, like national culture, employment law, IR institutions, firm strategy, etc., in both the home country and host countries of MNCs, have an impact on the results of HR transfer. One could assume that these factors roughly correspond to country-of-origin and host-country effects (e.g., Ferner, 1997; Edwards, 2004). Moreover, as Schmitt and Sadowski (2003, p.410) put it, "these factors are interrelated and they determine what package of personnel and labour practices is appropriate in a given situation". In order to study such complex organizational phenomena as the results of cross-national transfer of HR practices, Kostova (1999) develops a multilevel model, in which she proposes that three sets of factors at three levels --- country, organization, and individual --- affect transfer success reflecting social, organizational, and relational embeddedness.

Kostova's multilevel model is systematic and integrated. First, it incorporates the interaction of country-of-origin and host-country effects at country level, namely "institutional distance between home and recipient" (Kostova, 1999, p.313). For instance, it is proposed that the success of transfer of HR practice is negatively associated with the institutional distance between the countries of the parent company and the recipient unit. Second, it stresses the abilities and motives of subsidiaries to adopt the transferred practices at organizational and individual levels. For example, it is hypothesized that the success of transfer is positively associated with the recipient unit's commitment to, identity with, and trust in the parent company.

One more contribution of the model is, it points out that, transfers based on power/dependence relationships lead to implementation rather than internalization of the practice transferred. As discussed previously, one potential motive for transferring HR practice is the organizational politics (i.e., the actors in organizations can be willing to engage in the process of transfer as a way of obtaining legitimacy and to advance their own interests, see Edwards, 2004). Kostova (1999) argues that such motive usually leads to formal and ceremonial adoption, and is highly unlikely to achieve positive attitudes of the employees at the recipient unit toward the practice. This argument explains, in part at least, why the transfer practices may actually be implemented in form rather than in substance in the host environment.

The limitation of Kostova's (1999) model lies in two facts. First, it defines the success of transfer as "the degree of institutionalization of the practice at the recipient unit" (Kostova, 1999, p.311). However, this definition might be narrow in some ways. For instance, as mentioned earlier, it is inferred in this model that the success of transfer of HR practice is negatively associated with the institutional distance between the countries of the parent company and the recipient unit. But a considerable body of evidence exists to suggest that practices transferred between countries with a high institutional distance may act as a trigger to change, hence be internalized with a different form or structure within the recipient unit (e.g., Scarbrough and Terry, 1998). Thus the transfer may not be looked on as a 'failure' in that it brings about some improvements within the company. Second, this model is highly prescriptive, and may not apply to all circumstances, especially in heterogeneous social contexts. This is evident in transition economies such as China, where the old institutional systems are collapsing while the new ones have not been fully established yet.

4.2 The actual results of transfer

Consistent with the implications of Kostova's (1999) multilevel model, existing field studies suggest that the results of transfer exhibit combined effects from all three levels of contexts. First, they provide substantive support for the notion that results differ at country level. For instance, Doeringer *et.al.* (2003, p.266-267) contend: "patterns of transfer and accommodation differ systematically from country to country in ways that suggest new management practices are blended with traditional practices to create distinctive national 'hybrid' management regimes". Second, there is evidence to support organizational and relational embeddedness. As Scarbrough and Terry's (1998) study on the British response to Japanese-style management practices indicates, in the process of "hybridization", managements have been influenced by a number of factors; not only by the context of national institutions, but also by company and plant-level

path dependencies, and by the persistence of trade unionism as an active force amongst their workforces.

With regard to the different results of transfer at country level, the transfer of Japanese-style high-performance management practices – usually termed “lean production” – may have drawn the most intensive interest in the existing field studies (e.g., Scarbrough and Terry, 1998; Doeringer *et.al.*, 2003). Surveys (Doeringer *et.al.*, 2003) shows that the overall adoption rates of Japanese-style practices are higher in the US than in the European countries. It is explained partly by the relatively laissez-faire US industrial relations system which poses fewer barriers to the transfer of efficient management practices compared with European countries. Whereas in the UK, despite a significant decline in their influence, unions remain an obstacle to adopting “lean production” (Doeringer *et.al.*, 2003). This finding is consistent with Scarbrough and Terry’s (1998) study of the continuing influence of the institutions of collective bargaining over events at plant-level in UK.

The term “hybridization” depicts the way transferred practices are actually implemented in the host environment. From this perspective, differences in national IR systems and in organizational relations may block the transfer of particular management practices, or they may force modifications in practices to make them compatible with other parts of the national IR system (e.g., Doeringer *et.al.*, 2003). One can expect that the “modification” is not merely to tinker with the transferred practice, but a process that demands creation and innovation. As mentioned earlier, Scarbrough and Terry (1998) point out that lean production may act as a trigger to workplace change. This argument acknowledges the creative side of the transfer process in the host environment, that is, the tendency for transferred innovations to be selectively re-invented within different social and organizational contexts. Therefore, they argue that “the pattern of change in established British producers should be viewed not as a diluted form of Japanisation nor as a minor set of system modifications but as a creative process of adaptation” (Scarbrough and Terry, 1998, p.235). In other words, recipient units would evolve their historical legacy of employee relations and managerial practice into new regimes. This argument might add to the meaning of “hybridization”.

5. Conclusion

This article has attempted to develop an analytical framework for examining the process of transferring HR practice internationally within MNCs by looking at the incentives, the contents, the mechanisms, and the results of the transfer in turn. The arguments presented in this essay have two principal implications. First, when looking at the pictures as a whole, a multilevel approach may be appropriate for studying the process of cross-national transfer of HR practices. Indeed, one can conclude from the previous sections that the reason for transfer may stem from national, organizational and relational contexts. And the contents, methods and results of transfer can also be analyzed from the three levels. Second, HR practices in MNCs’ subsidiaries in developing countries or transition economies deserve more systematical exploration. For instance, one may hypothesize that MNCs tend to pursue “low-road” HR practices in their subsidiaries in deregulated countries, and this needs further empirical tests in developing countries. Moreover, a different framework may be needed to study the cases in heterogeneous social contexts like transition economies.

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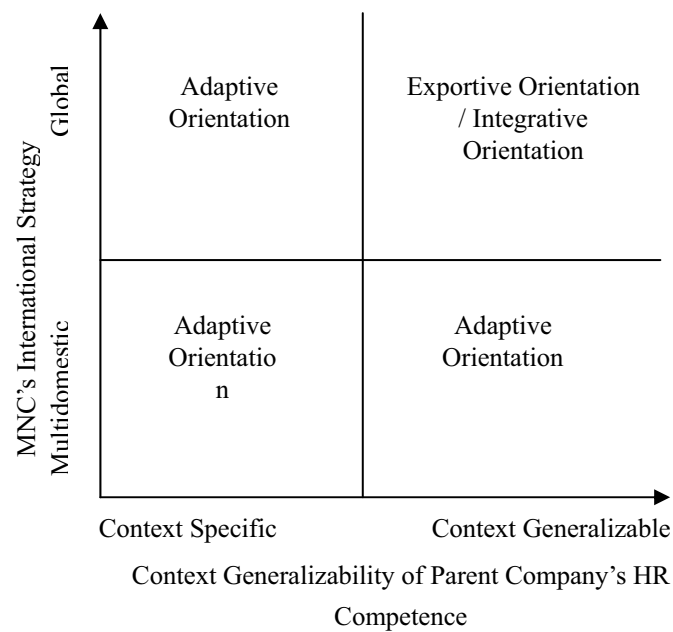


Figure 1. Determinants of MNC's SIHRM Orientation
(Adapted from Taylor et. al., 1996)



Asian Financial Crisis: An Analysis of the Contagion and Volatility Effects in the Case of Malaysia

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Abstract

The emergence of the Asian financial crisis in July 1997 had a tremendous impact on the economies of the Asian countries. This study aims at linking the contagion theory and the crisis faced in Malaysia with more emphasis on the effect of the contagion volatility in the currency exchange market. This research uses the co-relation analysis, models of ARCH, GARCH and also GJR-GARCH in demonstrating the link. The results show that the crisis in Malaysia was not merely due to the weakness in its economic fundamentals, but also due to the contagion and volatility effects particularly originated from Thailand and Singapore. This study suggests the need for a more systematic management system with improved transparency in the financial sector even though the effect of the crisis contagion could hardly be prevented.

Keywords: Currency exchange rate, Contagious volatility spillover, GARCH, GJR-GARCH

1. Introduction

Malaysian Ringgit was devaluated as a result of the emergence of the financial crisis in the mid-1997. The Malaysian economic scenario was devastated and changed drastically ever since the Thai government decided to float its currency, the Baht on 2nd July 1997. Six months prior to the crisis, Malaysia's macroeconomic pointers did not show any sign that this country would be easily affected by such a crisis as in Thailand even though there was concern about the country's fast developmental growth (Ishak, 2000). The economic growth achieved was seemingly too high and continuous, exceeding the country's own potential rate and the problem of resource imbalance between funds and investments was apparent.

Nonetheless, Malaysia's economic growth had showed a declining sign since early 1996 whereby the growth rate declined slightly from about 9.4 per cent in 1995 to about 8.6 per cent in 1996. Meanwhile, the national current account deficit payment balance declined from about 10.4 per cent in 1995 to about 5.1 per cent in 1996. The government's financial placing was also strong recording a surplus for five years continuously before the crisis.

Apart from these, the inflation and unemployment rates were recorded low at about 2.6 per cent and about 2.7 per cent respectively in 1996. Foreign funding were sufficient to fund for the country's imports for four months and there were surpluses in the short term dues which were borne by the people of Malaysia. Steps in early paybacks of foreign loans

caused Malaysia to record a lower level of foreign loans which was only about 32.7 per cent of its KDNK in 1997 with total foreign loans amounting USD3.3 billion or about 14.4 per cent of its total loans (Ishak, 2000).

The devaluation of Ringgit was apparent between July 1997 and early 1998. On 13th January 1997, Ringgit achieved its highest level at RM2.46 per USD1. This position did not last and instead became worse. The value of Ringgit started to decline in the mid of July 1997. The value of the currency fell to its lowest at RM4.80 per USD1 in January 1998. On 10th February 1998, Ringgit managed to achieve a satisfactory level of RM3.55 per USD1 and was maintained at a range of RM3.60 to RM3.70 per USD1.

The decline of the Malaysian Ringgit during this period was the most devastating in its history. The economic slump which fell upon the country since July 1997 was different to what had happened in the mid-1980s, of which the value of Malaysian Ringgit was not much affected. During the crisis in 1997, the long fall of the Malaysian Ringgit resulted in damages to all sectors and slowed the country's economic growth.

It must be agreed that because of globalization, Malaysia would be affected by global events outside of the country. There were horrendous implications to the entire Thai economic system following the fall of the Baht currency. The fall of Baht simultaneously played a role in the outbreak of another crisis which eventually erupted in other East Asian countries and this situation is said to be the early bandwagon effect where the impact on Thailand also resulted in implications to its neighboring countries.

The devaluation of Baht on 2nd July 1997 became the start of the financial crisis that spread over to other East Asian countries particularly South Korea, Indonesia, Philippines, Malaysia and Japan. Even those countries which were thought to be able to withstand the crisis such as Hong Kong, Singapore, and Brunei were dragged into this critical scenario. Actually, Thailand had been facing currency speculation threats since June 1996. On 14th May 1997, it was reported that the trading of Baht had reached USD10 billion (Md. Nasrudin, 2000). Therefore, it would be difficult for the finance authority of Thailand, a country with a small economy and moderate economic growth to face the international speculative activities of which resulted in large capital outflows.

Meanwhile, in Indonesia, the financial crisis affected its trading, foreign investments, and lending the most. Following the contagion, the value of the Indonesian Rupiah declined badly relative to the currencies of other South East Asian countries. Rupiah was depreciated to as low as IDR17 000 compared to USD1. Even more alarming, the value of Rupiah decreased by about 85 per cent in June 1997 and one third of the Indonesia's private sector debt amounting USD80 billion was borrowed from the financial intuitions in Japan (Md. Nasrudin, 2000).

Following the crisis, Bank Negara Malaysia (BNM) intervened aggressively to protect the value of the Malaysian Ringgit. On 14th July 1997, BNM stopped protecting the value of Ringgit and eventually, the value of Ringgit experienced a decline on 24th July 1997. Meanwhile, the Indonesian Rupiah started to receive tremendous pressure from currency speculators on 13th August 1997. This was followed by South Korea stopping to protect its currency, the Won, on 17th November 1997 and finally on 3rd December 1997, Baht, Rupiah, Ringgit and Won experienced their lowest falls.

In short, the falls of the South East Asian currencies affected each other due to their interdependency in various aspects. The falls began with the value of Baht declining on 2nd July 1997, followed by Peso on 11th July 1997, Ringgit on 14th July 1997, Rupiah on 21st July 1997, and the Singapore Dollar fell in stages which began on 24th July 1997. The crisis then spread to South Korea with the Won's value declined on 23rd October 1997 (Md. Nasrudin, 2000).

According to Peng Yie (2000), the outbreak of the East Asian financial crisis could probably be avoided if Thailand floated its exchange rate six months before the crisis occurred. This is because, if Thailand had practiced an organized floating exchange rate regime, and did not exhaust all its reserves amounting USD32 billion to protect the value of Baht, Thailand could have stopped this contagion to other East Asian countries, even though it might not able to stop the economic bubble to burst. This seems true in the view of Dornbusch (in Ugarteche, 2000), who stated the following:

Don't fight to hang on to an exchange rate, let it float. The more you struggle, the worse the crisis and more reserves will erode. Better to let it float before the disaster to avoid the steep fall and the cost in lost reserves that would have to be paid if it postponed.

The financial crisis hit Thailand and as a result, the crisis spread to the neighboring countries in weeks. Indonesia, Malaysia, and Philippines for examples felt the effect of the blow directly, while Singapore, Hong Kong, and Taiwan were affected at a smaller and limited scale.

The analysis of this research is presented in six parts. Part 2 elaborates the crisis and the contagion theory, and also discusses the contagion concept which was presented by Rigobon (1999). Part 3 explains about data and study set. Part 4 is a closer examination of the theory and the model specification used in this research. The empirical analysis and results are discussed in part 5 and part 6 concludes.

2. Crisis and Contagion Theory

Contagion is a phenomenon when a currency crisis falls on a country which then triggers another crisis to occur in other countries where these countries show a chain of weak economies. The contagion theory shows that there is no country in the region which can parry the effect of contagion of such an economical crisis and the besetting currency problems.

According to the Oxford Dictionary, the term “contagion” is defined as an infectious disease transmission through contact. The word contagion is taken from the Latin language namely *con* meaning 'with' and *tangere* which means 'touch'. However, the definition of contagion is really still vague.

In his research, Rigobon (1999) defined contagion through three classifications as following:

- (i) Contagion can be interpreted as one crisis agreed upon that is when devastation occurs in a country, it would then create a speculative attack to another country;
- (ii) Based on fact, the countries experiencing a crisis will experience volatility increase in their returns. So, contagion can be characterized as transmission of volatility between one country with another country; and
- (iii) Contagion can also be defined as the change in shock that spread among affected countries.

However, definitions (i) and (ii) only exist in specific cases and definition (iii) does not exist in data or reality. In another case, contagion may be more visible when a crisis occurs, but may still exist at any time when there is no occurrence of a crisis.

3. Data and Study Set

The Exchange Rate data (ER_t) for the ASEAN countries including Malaysia, Indonesia, Philippines, Singapore, Thailand and also South Korea is acquired from the *International Financial Statistics Monthly* and *IMF Yearbook*. The data series used were monthly data beginning from July 1997 to August 2000. The Econometric Views program is used to produce all estimations and calculations in this study.

The study set begins with measuring the degree of the spread of the crisis based on a correlation analysis. An exchange rate variable is taken into account in seeing a correlation relationship that exists between the Malaysian currency market and the market of other countries' currencies.

The presence of volatility in the currency market is also analyzed using the GARCH (Generalized ARCH), and the GJR-GARCH (Glosten, Jagannathan & Runkle, 1993) models to further explain the role of volatility in the currency market as each of these would have a different role in reflecting volatility that exists in currency market.

Engle (1982) was the first to introduce the ARCH model, while the GARCH model was introduced by Bollerslev (1986) for the purpose of representing the ARCH process with the higher level (q). According to Bollerslev, the GARCH model is more appropriate and parsimony when faces with the higher level of ARCH model. Akgiray (1989) had looked into the trait effect of heteroscedasticity to stock return. Based on the ARCH and GARCH models that took into account the heteroscedasticity factor, he proved that these models are capable of predicting volatility better as compared to other models. The GJR GARCH model on the other hand was introduced by Glosten et al. in 1993. This model tries to take into account the asymmetric shock effect towards volatility in the financial market's return.

4. Theory and Model Specification

The study set explains how the testing procedure is made and in particular, the models are specified according to the stated testing procedure in greater detail. The model categories are classified into two testing forms which are: test based on correlation analysis, and volatility of the financial market. For each category mentioned, a model is formed to facilitate ease of testing to determine the degree or magnitude of the contagion spread, volatility and contagion presence among affected financial markets.

4.1 Correlation

Baig and Goldfajn (1999) conducted a study on the presence of the contagion in the financial markets of Thailand, Malaysia, Indonesia, Korea and Philippines. Based on the outcome of the study, they found that there existed a significant correlation relationship in currencies and it was increasing throughout the crisis period. They carried out the tests on two period namely prior (*tranquil*) and during the crisis.

The results of their study showed that contagion did exist in the foreign debt market; however its existence in the stock market was more obvious. Contagion in the foreign debt market gave control pressure to the presence in elements of panic within the financial system which eventually brought about the emergence of the Asian financial crisis. Their research findings supported most opinions which reflecting a panic crisis within the financial system as one of the causes as to how the spreading of the crisis happened to most countries in the Asian region.

Kawai, Newfarmer and Schmukler (2001) studied three different crisis categories namely the economic crisis that started in Mexico (1994), Thailand (1997) and Russia (1998). According to them, the economic shock which started in

the countries mentioned above had a positive effect to their neighboring countries, isolated countries and also new and developing markets. They regarded the transmission and crisis shock that happened between one country and another as an 'infection'. They also focused their study on the Asian financial crisis and the contagion that occurred, and studied the various channels which might have caused the contagion in the affected countries.

The outcomes of their study concluded that there were some dominant channels showing how the 'virus' which was said to stem from Thailand spread to other countries as a result of mutual association and reactions which existed among financial variables such as exchange rate, interest rates and stock market prices. At first glance, the study indicated that the strong correlation between trade and foreign direct investment (FDI) was a dominant channel to the presence of a contagion. The study revealed that there were strong ties between trade and FDI among East Asian countries, while Korea had a weak correlation in trade or FDI with Thailand.

The second channel was that the demand and supply effects through the real sector required a longer period as compared to the actual time of occurrence and the third explained that there existed speculative activities by various speculators towards affected countries with minimal trade or FDI ties.

At the same time, a contagion crisis did exist in the financial sector through the ties which were present in the financial system linking the affected countries. As to maintain the quality of portfolio, those banks facilitating international trade would have taken measures to prevent the impact of any financial shock in a country to spread to other neighboring countries or to the country's trade partners. Nonetheless, the presence of the international trade facilitation seemed worsen the spread and exposed the crisis to other countries. This view is backed by Kaminsky and Reinhart (2000).

Meanwhile, there is a very high possibility that the contagion was encouraged by the perception and sentiment of investors themselves. Two obvious states reflected this situation namely the normal or natural reaction from investors onto problems that they faced, and the second is that the fear or worry that are usually felt by investors pushed them to make decisions in a hurry or to act irrationally (immediately) without taking into account the decisions made by other investors. Such a situation would in the end encourage panic to occur among investors and make the market act inefficiently.

In the study on the effect of the crisis spread, which started in Mexico in 1994 towards East Asian countries and Latin America, Frankel and Schmukler (1998) discovered that there was a less shock impact to East Asian countries as compared to Latin America. This shock had a positive effect directly onto Latin America which reflected a powerful implication onto countries with a weak and fragile fundamental foundation such as the Philippines which had a high export debt ratio. There are others who suggest that the financial crisis in Southeast Asia was not due to the direct impact of the crisis that happened in Korea. This view assumed that the collapse in the Taiwan's economy played an important role in causing the crisis to Korea and was the initial effect onto the ASEAN-4 countries through financial institutions.

4.2 Volatility

The most popular models for conditional variance include ARCH, GARCH and GJR-GARCH. All of these three models are capable in predicting return volatility in the financial market and may create an impact onto investors' portfolio decision (Engle, 1993). The volatility of the financial market can be predicted and such an observation can provide significant implications for portfolio management and asset's price positioning strategy. Most investors observe ways to avoid risk, for example they may choose to make adjustments to their portfolio by reducing their commitments on assets which are predicted to increase in volatility or they may use diverse dynamic approaches to their portfolio to protect themselves from predicted increase in volatility.

Usually, the equation which is used to reflect the relationship in exchange rate variable among the Malaysian market and markets of other countries is in the form of returns as follows:

Exchange Rate Return ($S_{i,t}$):

$$S_{i,t} = \log(ER_{i,t} / ER_{i,t-1}) * 100 \quad (1)$$

where $ER_{i,t}$ is exchange rate to the country i over the American Dollar (USD) in the period t . Exchange rate return to each country is calculated as the difference in percentage in the exchange rate in the logarithmic form.

In short, the basis to the formation of the ARCH (p) model introduced by Engle (1982) is as follows:

$$y_t = c + x_t' \xi + \varepsilon_t \quad (\text{Mean Equation}) \quad (2)$$

where $t = 1, \dots, T$

$$\varepsilon_t | \psi_t \sim N(0, h_t)$$

$$h_t = \alpha_0 + \sum_{i=1}^p \alpha_i \varepsilon_{t-i}^2 \quad (\text{Variance Equation}) \quad (3)$$

where y_t is a dependent variable and h_t is a conditional variance ($h_t = \sigma_t^2$) and ψ_t is a variable set or information which can be acquired at t time period where $\psi_t = (y_{t-1}, x_{t-1}, y_{t-2}, x_{t-2}, \dots)$ whereas x_t is $k \times 1$ external variable vector which can also take the lag value of the dependent variable itself which is y_{t-1} and ξ is $k \times 1$ parameter vector for the external variable used. The coefficients, α_0 , and α_1 have to be positive to ensure a positive variance. The coefficient α_1 must less than 1 otherwise h_t will continue to increase over time, eventually exploding.

The GARCH model was introduced by Bollerslev (1986) for the purpose of representing the ARCH process which has stage (q), the higher level. The GARCH model is more appropriate and parsimony when compared with the higher class ARCH model. The conditional variance equation specified in (5) is a function of three terms namely a constant term, news about volatility from the previous period, measured as the lag of the squared residual from the mean equation, and the last period's forecast variance. All coefficients α_i and β_i must be positive and the coefficients α_1 and β_1 must less than 1 that is $\alpha_1 + \beta_1 < 1$ for stationary; if $\alpha_1 + \beta_1 \geq 1$, we have a so-called "integrated GARCH" process or IGARCH (Hill, Griffiths & Lim, 2008). In addition, if the sum of the coefficients $\alpha_1 + \beta_1$ is very close to one, indicating that volatility shocks are quite persistent. The model for GARCH (p,q) created is presented as follows:

$$y_t = c + x_t' \xi + \varepsilon_t \quad (4)$$

where $t = 1, \dots, T$

$$\varepsilon_t | \psi_t \sim N(0, h_t)$$

$$h_t = \alpha_0 + \sum_{i=1}^p \alpha_i \varepsilon_{t-i}^2 + \sum_{i=1}^q \beta_i h_{t-i} \quad (5)$$

Meanwhile, the GJR GARCH (1, 1) model was introduced by Glosten et al. (1993) whereby this model tries to take into account the asymmetrical shock effect onto return volatility. The GJR GARCH model created is presented as follows:

$$h_t = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \beta_1 h_{t-1} + \gamma D_{t-1}^- \varepsilon_{t-1}^2 \quad (6)$$

This model only shows the equation variance because there are no changes in the mean equation. This model includes a dummy variable namely D_{t-1}^- which will take value 1 if $\varepsilon_{t-1} < 0$ and 0 for others. This would cause the equation to have a different gradient when the value ε_{t-1} has a different sign. As compared to other previous models which do not take into account the sign ε_{t-1} , this model is more suitable in order to see the asymmetrical shock effect towards volatility in returns. There are a priori reasons to suspect that the coefficient γ as well as $\alpha_1 + \gamma$ are negative, since empirical evidence suggests that a positive innovation to return is associated with a decrease in return volatility. However, if $\alpha_1 + \gamma$ is negative, the conditional variance can potentially become negative for some realization of ε_t (Glosten et al., 1993). Note that the threshold GARCH (TGARCH) model of Zakoian (1994) is very similar to GJR-GARCH but models the conditional standard deviation instead of the conditional variance.

Meanwhile, the forming of contagion volatility model based on the GARCH (1, 1) model on the Malaysian financial market was modified from Wee Beng, Lee Ying & Chee Chee (1999) and is presented as follows:

$$\Delta y_t = \rho_0 + \rho_1 \Delta y_{t-1} + \rho_2 \Delta y_{t-1}^q + \varepsilon_t \quad (7)$$

$$\varepsilon_t | \psi_t \sim N(0, h_t)$$

$$h_t = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \beta_1 h_{t-1} + \gamma_1 V_t^{2q} + \gamma_2 V_{t-1}^{2q} \quad (8)$$

where:

y = Ringgit exchange rate return

y^q = exchange rate return where

q = Thailand (T), Indonesia (I), Philippines (P), Singapore (S) and Korea (K).

V^{2q} = variance on shock in nation q after allowing change effect in five other countries.

For example, the shock variance on the Baht exchange rate return, V^{2T} where a square error is attained from the following regressed equation:

$$\Delta y_t^T = \alpha_0 + \sum_{i=1}^n \beta_i \Delta y_{t-i}^T + \sum_{i=0}^m \delta_i \Delta y_{t-i}^K + \sum_{i=0}^m \phi_i \Delta y_{t-i}^I + \sum_{i=0}^m \gamma_i \Delta y_{t-i}^P + \sum_{i=0}^m \psi_i \Delta y_{t-i}^S + \sum_{i=0}^m \theta_i \Delta y_{t-i}^M \quad (9)$$

Wee Beng et al. (1999) used the GARCH (1, 1) model in their study of currency volatility contagion in other countries like Korea, Indonesia and Thailand on Malaysian Ringgit. Through this, it was found that the conditional volatility on Malaysian Ringgit received a bigger blow especially the impact of the volatility shock on the Thai Baht compared Korea's Won and Indonesian Rupiah.

Koutmos and Saidi (2001) conducted a study on the positive bilateral trade ties in the capital market for new market countries namely Hong Kong, Malaysia, Philippines, Singapore, Taiwan and Thailand by using daily data for share price index from 2nd January 1990 to 9th September 1996. The study assumed that there were two kinds of trades which were maximization of risk dodger utility, and positive bilateral trade. The study found that the bilateral trade is an important factor in determining short-term movements in stock return. During the high volatility period, investors or traders strive to influence share prices. The outcomes of the study also showed that the bilateral trade is asymmetric when the market is rising or declining. However, trade seems more active when the market is declining and negative shock would have a larger effect on the volatility in stock return as compared to the positive shock. Such a reaction is also consistent with the 'leverage effect' which is more related to the bilateral trade when the market is on the decline.

Meanwhile, Dungey and Martin (2000) studied and measured the degree of contagion in the East Asian countries during the financial crisis. The result of their study showed that the contagion effect on the movement of exchange rate was identified as a result of unanticipated shock from one country to another country after taking into consideration the hidden factors (latent) as ordinary shock that existed and of a global form, and also specific shock originating the country itself. Based on the measurement made onto the level of contagion which began in Thailand, they estimated that there was almost 55 per cent of exchange rate volatility in Indonesia, and less than 3 per cent in Malaysia and South Korea. They concluded that the effect of the contagion crisis did exist starting from Thailand and moved to Malaysia and the contagion effect to Indonesia spread too fast.

5. Analysis and Empirical Decision

The theoretical link of the financial crisis chronology that occurred in the Asian region in July 1997 has been highlighted previously. How such a crisis which started in Thailand could occur and spread to other countries in such a short period? In merely a few weeks, most economies of the Asian and South East Asian countries fell and a rather obvious destruction was experienced.

In this context, Malaysia was dragged into a dilemma when the unanticipated crisis also beset on this country. Subsequently, various opinions did arise in describing the problems which more or less answered some of the questions as to why and how Malaysia was also trapped in this difficult crisis.

Some are with the opinion that the crisis that happened in Malaysia originated from its weak basic economic fundamental and there are also views that due to globalization, Malaysia is mutually linked with other countries in many ways especially in terms of the financial market. Malaysia is said to have received the same amount of impact of this contagion crisis as other affected countries especially its neighboring countries because Malaysia is located in the same region with most of the countries hit by the crisis. Therefore, in this chapter, the analysis on empirical decision will more or less address Malaysia's issues and the contagion volatility in the financial market.

5.1 Summary Statistics and Correlation Analysis

The analysis starts with an estimate of the important statistics, the exchange rate (ER) of a number of six countries including Malaysia to identify the status of the market positioning for each country. This is shown in Table 1 in appendix whereby on average, the exchange rate for each country is 1521.80 to the American Dollar (USD), by which Indonesia is the country which influenced the exchange rate the highest at 7833.34, followed by Korea at 1213.37, Philippines at 39.55, then Thailand, Malaysia and Singapore at 39.12, 3.76 and 1.67 respectively.

The exchange rate value for Indonesia was 2599 to 14900, for Korea, the rate was 892 to 1695 and 32.07 to 54.92 for Thailand. The exchange rate volatility risk to each country was fairly low whereby the standard deviation was at the rate of 0.07 to 3.69, except for Indonesia and Korea of which it is recorded at the rate of 2532.38 and 173.51 respectively. Overall, Indonesia and Korea faced the highest instability risk in the exchange rate. The normalization test also indicates that the exchange rates in these countries were abnormally distributed except Indonesia and Korea. This is

shown by the value of skewness, kurtosis and Jarque-Bera's statistics which pushed the exchange rate distribution normalization for countries like Malaysia, Philippines, Thailand and Singapore.

Based on the monthly data from July 1997 to August 2000, the correlation analysis shows that the correlation degree in the exchange rate between Malaysia and other countries was fairly high as shown in Table 2 which was 0.622 to 0.845. Malaysia and other countries like Indonesia, Singapore and Philippines had the highest correlation degree compared to Thailand and Korea. This same circumstance also shows that the effect of change in the currency value or exchange rate for the countries mentioned also affected Malaysia's financial market. This also gives the picture that Malaysia's economy during the crisis was easily exposed to external shocks and can be hit by a crisis through contagion.

The correlation analysis onto the financial market of the countries mentioned shows that overall Malaysia's market had a high correlation degree with all the countries mentioned. The occurrence of the crisis in Malaysia was not merely due to the own national economy weakness, but was also caused by the impact from other correlated countries especially through the links in the financial market. It cannot be denied that trade and finance policy implementation were too independent causing these countries to be easily become fragile not only to internal shock but also to external shock. Elimination is one of the important features in the Bretton Woods's system whereby capital control may also be another reason to the occurrence of the Asian financial crisis in 1997. A misunderstanding of the financial liberalization policy experience without orderly control and supervision was also another basis for the crisis to occur.

5.2 Volatility Analysis

Table 3 reflects the volatility exchange rate return for each of the countries in this study. Almost all countries indicate that volatility did exist (ARCH's impact) in exchange rate return as shown by the coefficients, α_1 which is significant, except in the case of Philippines and Singapore. Indeed, all countries have experienced with GARCH's impact as shown by the coefficient, β_1 .

The estimation on the persistence of volatility shocks shows that only Indonesia, Thailand, Singapore and Korea were able to show the persistence of volatility shocks in exchange rate return. This is important in explaining the volatility impact in exchange rate return for the countries mentioned onto Malaysia's market and at the same time to reflect the contagion effect onto the Malaysian financial market. The GJR GARCH (1, 1) estimation model in Table 4 has taken into account the asymmetric shock impact towards volatility in exchange rate return.

The positive shock impact in the above model is shown by the value α_1 , while the negative shock impact is described by the sum of α_1 and γ . This model tries to see whether there is more influence through positive shock or negative shock in exchange rate volatility. This is called the leverage effect which is normally linked to the declining market activity.

From Table 4, estimation towards the exchange rate return provides more explanations on the existence of the leverage effect caused by the negative shock. The result is consistent and significantly with the case of Indonesia, Thailand, Korea and Singapore compared to Malaysia and Philippines. On the other hand, there is no significant positive shock impact occurred for all countries. This result would be vital to explain the contagion crisis theory onto the Malaysia's financial market which originated from the countries mentioned such as those shown in Table 4. The outcomes also propose that the contagion crisis impact onto the Malaysian financial market is due more to the negative shock impact on the financial market than the positive shock.

Table 5 explains about the modeling of the contagion volatility which spread through the Malaysian currency market by using the GARCH (1,1) model which is modified in order to take into account the external shock impact onto the Malaysian financial market especially in the exchange rate market.

Conditional volatility on the Malaysian Ringgit was caused by the shock impact to the Thai Baht and the Singapore Dollar. However, the volatility impact of the Singapore Dollar was found to be greater than the Thailand Baht. This finding more or less supports the argument and theory that viewed the financial crisis that struck Malaysia was caused by the contagion effect especially from the neighboring countries particularly from Thailand and Singapore, and the indirect effect from Korea and other countries. There may be truth behind the contagion theory to explain this phenomenon and to further conclude, the crisis that struck the countries was not merely due to their weak basic economic fundamentals. The weaknesses in the economic structures only act as the catalyst to the occurrence of the crisis.

6. Conclusion

Since the occurrence of the Asian financial crisis in the mid-1997, the contagion theory and the crisis have frequently been debated among economists. Various opinions have been presented and proposed on these issues. In such case, Malaysia is also not exempted from being a study sample and at the same time, attracting many researchers' attention. Aside from the fact that Malaysia recovered quickly from this crisis, what has become more appealing is that whether the crisis which struck Malaysia was merely due to the weakness in the basic economic fundamentals or caused by other factors such as the contagion effect from the neighboring countries.

Previous studies also concluded that the crisis which happened in Malaysia was caused by the contagion effect which started in Thailand and Korea. However, there are also empirical results showing that the contagion effect was not only come from Thailand and Korea, but also from Singapore and Indonesia, whether directly or indirectly. These views also agree that the financial market was the most effective channel in spreading the contagion.

However, there are also views from several researchers who concluded from the results of their empirical tests that the contagion did not exist to be the cause of the spread of the crisis to the whole Asian region and several other countries in the world. Rigobon (1999) for example, suggested that in reality, the crisis that happened in the Asian region was not caused by the contagion effect but was more due to the presence of certain characteristics which created the concept of the contagion. According to him, the economic systems of most countries in this region have the same foundation or characteristics. This means that the crisis that happened in the one country is simultaneously followed by the crisis in other countries. However, this phenomenon was purely coincidental and was not caused by the contagion effect. In another case, contagion may be more obvious during the time of a crisis, though the contagion could still exist in when no crisis presents.

The differences in opinions mentioned above would become more obscure if the definition of infection or contagion is based on certain classification such as the one proposed by Rigobon because it cannot be determined specifically. However, if the definition of infection or contagion is straightforward and agreeable to most researchers which is about the collapse in one country and creates speculative attacks onto other countries, as a transmission of volatility occurring between one country and another country, and as a change in the spread of shock among affected countries, *ceteris paribus*, without a more complex definition for contagion, then contagion analysis will become easier.

The empirical result of this study supports the initial view that effects of the contagion crisis from the neighboring countries especially from Thailand and Singapore, did exist in Malaysia. The findings of this study also suggest that the financial sector played a very effective role in spreading the crisis from one country to another. Likewise for Malaysia, this sector became the channel in spreading the crisis to this country. The complex network links in the global financial system would spread the impact of the collapse of a country's economy to another at such a high speed through the financial transmission channel.

From the beginning of the crisis in the mid-1997, the regional economy of the Asian countries including the economy of Malaysia became weaker due to the business networks and the interdependency in many ways. The various efforts were made but not sufficient to restore the economies of the region in a short period of time. This situation was aggravated even more by the assistance by IMF which did not help to restore Asia's economy, but instead worsen the economic situation.

Apart from these, the spread of the crisis among countries in the region is also linked directly to the contagion effect which started in Thailand. Yet, it cannot be denied that the indirect contagion effects from other nations such as Singapore and others country were also parts of the spread of the crisis. Although the crisis reputedly stemmed from the weak basic economic fundamentals of the countries involved, yet this does not mean that contagion is not linked in anyway to the phenomenon. The countries' structural economic weakness was the catalyst to further accelerate the spread of the crisis all over the region and also onto some other countries in the world.

The financial crisis of which in its early stage started in Thailand probably would not have spread over so rapidly if the country had floated its currency earlier. If Thailand did float its currency earlier, then its reserves could have been used to restore the economic status for example, to repay its national debt of which was in large amount. This action could have help to resist the outbreak in other countries.

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Table 1. Summary Statistics

	Mean	Median	Max	Min	STD	Skewness	Kurtosis	JB
Exchange Rate (ER)								
Malaysia	3.76	3.80	4.57	2.64	0.32	-1.22	7.35	39.39*
Indonesia	7833.34	7985.00	14900.00	2599.00	2532.38	0.10	3.99	1.62
Philippines	39.55	40.07	45.08	28.97	3.49	-1.16	4.75	13.39*
Thailand	39.12	38.54	54.92	32.07	3.69	2.20	10.58	121.67*
Singapore	1.67	1.69	1.78	1.47	0.07	-1.20	4.07	11.00*
Korea	1213.37	1186.00	1695.00	892.00	173.51	0.68	4.02	4.54

Notes: *, *** denote significant at the 1% and 10% levels respectively. STD = Standard Deviation, Max = Maximum, Min = Minimum dan JB = Jarque-Bera Statistic.

Table 2. Correlation Analysis

	Malaysia	Indonesia	Thailand	Singapore	Korea	Philippines
Exchange Rate (ER)						
Malaysia	1.000	-	-	-	-	-
Indonesia	0.787*	1.000	-	-	-	-
Thailand	0.667*	0.388**	1.000	-	-	-
Singapore	0.845*	0.704*	0.420*	1.000	-	-
Korea	0.622*	0.488*	0.676*	0.316***	1.000	-
Philippines	0.809*	0.730*	0.493*	0.813*	0.447*	1.000

Note: *, **, *** denote significant at the 1%, 5% and 10% levels respectively.

Table 3. GARCH (1, 1) Estimation

$$y_t = \rho_0 + \rho_1 y_{t-1} + \varepsilon_t \quad \varepsilon_t | \psi_t \sim N(0, h_t) \quad h_t = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \beta_1 h_{t-1}$$

	Malaysia	Indonesia	Philippines	Thailand	Singapore	Korea
Equation (i) & (ii): Exchange Rate Return (S)						
ρ_0	-0.0007 (0.0008)	0.0007 (0.025)	0.006 (0.004)	0.002 (0.004)	0.002 (0.003)	-0.005 (0.004)
ρ_1	0.086 (0.144)	-0.080 (0.175)	0.027 (0.117)	-0.034 (0.211)	-0.241 (0.188)	0.191 (0.173)
α_0	6.58E-05 (4.75E-05)	0.0006 (0.0005)	6.56E-06 (3.55E-05)	0.0003 (0.0002)	3.39E-06 (9.32E-06)	2.55E-05 (3.31E-05)
α_1	0.716*** (0.403)	0.054* (0.020)	0.082 (0.149)	0.577** (0.279)	0.186 (0.135)	0.051* (0.010)
β_1	0.359** (0.178)	0.939* (0.017)	0.998* (0.229)	0.404*** (0.227)	0.754* (0.111)	0.946* (0.004)
$\alpha_1 + \beta_1$	1.075	0.993	1.080	0.981	0.940	0.997

Notes: *, **, *** denote significant at the 1%, 5% and 10%. y = S and D = dummy where 1 if financial crisis begin in July 1997 and 0 others. The total parameter of $\alpha_1 + \beta_1 \leq 1$ shows the persistence of volatility shocks in the exchange rate return. Number in parentheses are standard error.

Table 4. GJR-GARCH (1, 1) Estimation

$$y_t = \rho_0 + \rho_1 y_{t-1} + \varepsilon_t \quad \varepsilon_t | \psi_t \sim N(0, h_t) \quad h_t = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \beta_1 h_{t-1} + \gamma D_{t-1}^- \varepsilon_{t-1}^2$$

	Malaysia	Indonesia	Philippines	Thailand	Singapore	Korea
Exchange Rate Return (S)						
ρ_0	-0.050 (0.073)	-0.029 (3.604)	0.288 (0.378)	0.441 (0.997)	0.242 (0.180)	-1.095** (0.491)
ρ_1	-0.058 (0.109)	-0.035 (0.253)	0.132 (0.141)	0.038 (0.158)	-0.087 (0.186)	0.125 (0.150)
α_0	0.002 (0.019)	6.287 (12.340)	1.168 (0.830)	3.661 (4.799)	0.004 (1.093)	1.611 (1.093)
α_1	0.559 (0.635)	0.003 (0.049)	0.285 (0.469)	0.142 (0.130)	0.111 (0.296)	0.134 (0.198)
β_1	0.006 (0.022)	0.820* (0.097)	0.818** (0.318)	0.805* (0.183)	0.990* (0.346)	0.832* (0.139)
γ	-3.939 (3.993)	-0.561** (0.280)	-0.370 (0.288)	-0.773*** (0.435)	-0.500* (8.5E-102)	-0.507*** (0.269)

Notes: *, **, *** denote significant at the 1%, 5% and 10% levels respectively. y = S and number in parentheses are standard error. $D_{t-1}^- = 1$ if $\varepsilon_{t-1} < 0$ and 0 others.

Table 5. Modelling The Volatility Spillovers Onto Malaysian Financial Market Using GARCH (1, 1)

$$\Delta y_t = \rho_0 + \rho_1 \Delta y_{t-1} + \rho_2 \Delta y_{t-1}^q + \varepsilon_t \mid \psi_{t-1} \sim N(0, h_t) \quad h_t = \alpha_0 + \alpha_1 \varepsilon_{t-1}^2 + \beta_1 h_{t-1} + \gamma_1 V_t^{2q} + \gamma_2 V_{t-1}^{2q}$$

	Indonesia	Philippines	Thailand	Singapore	Korea
	Exchange Rate Return (S)				
ρ_0	0.035 (0.159)	0.024 (0.044)	0.018 (0.045)	0.044 (0.042)	0.028 (0.112)
ρ_1	0.110 (0.685)	0.125 (0.271)	0.303 (0.275)	0.130 (0.279)	-0.078 (0.543)
ρ_2	-4.4E-05 (8.6E-05)	0.001 (0.017)	-0.010 (0.010)	-0.056 (0.846)	0.001 (0.001)
α_0	0.031 (0.092)	0.002 (0.009)	0.013 (0.008)	0.010 (0.013)	0.023 (0.102)
α_1	0.150 (0.349)	0.803 (0.496)	0.965 (0.620)	0.809** (0.379)	0.150 (0.669)
β_1	0.600 (0.154)	0.018 (0.105)	0.048 (0.050)	0.011 (0.054)	0.600 (1.671)
γ_1	0.000 (6.5E-07)	-0.004 (0.003)	-0.008** (0.004)	-20.898** (10.250)	-2.0E-07 (3.2E-06)
γ_2	0.000 (6.4E-07)	0.032 (0.020)	0.012 (0.012)	37.254 (29.731)	4.8E-08 (4.0E-06)

Notes: *, **, *** denote significant at the 1%, 5% and 10% levels respectively. $y = S$ for Malaysia and number in parentheses are standard error. $y^q = S$ for others countries and $V^q =$ varians for others countries ($q =$ others countries except Malaysia).



A Study of Education Investment and Xinjiang Economic Development

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Abstract

As a main form for human capital investment, education has irreplaceable effect on national or regional economic development. This paper, based on the relationship between Xinjiang regional economic development and education, analyzes the present conditions of Xinjiang educational investment, the scale and problems of Xinjiang education, the contribution of education to Xinjiang economy, and how to drive Xinjiang regional economic development. Finally, this paper puts forward relevant policy suggestions as future references.

Keywords: Human capital, Education investment, Industrial structure adjustment, Economic development

1. Review of education investment

1.1 Main contents of human capital theory

In T. W. Schultz's opinion, the concept of capital in traditional economic theories merely includes some physical matters, such as production materials and money, and ignores an important production factor --- man's competence, what is incomplete and could not make reasonable and reliable explanation for economic growth. According to his idea, to study the economic growth, it is necessary to absorb the concept of human capital into the traditional capital concept, instead of just considering the tangible material capitals. Both human capital and material capital have the properties of capital. But they are different. He thinks that there are two kinds of capitals in economic production process. The capital embodied by material forms is material capital. And the capital embodied by laborers is human capital. The two kinds of capitals have production effect on economy, what will contribute to the rise of income of people. The practices of western economic development have already proved that the return from human capital investment is higher than that of material capitals. Under the market economy condition, people will response to the different returns on investments reasonably and make the right economic choice. Then, social economy will grow quickly and national income will be increased. Therefore, to enhance the human capital investment and improve the population quality turns into the key for driving economic development. In social economic development, it is extremely important to improve the population quality by education and medical care. T. W. Schultz thinks that what determine the future of human being are not space, land, and natural resources, but population quality, techniques, and knowledge level.

T. W. Schultz lists five main forms of human capital investment: The first is medical care. Extensively, it includes all expenses concerning human longevity, power, hardiness, energy, and vitality. The second is the training for employees. The third is the formal primary, middle, and high education. The fourth is the learning project provided by non-enterprise organizations for adults (includes the technology popularization project that is common in agriculture). The fifth is laborers' adaptation to the transfer of employment opportunity. Then, expenses for migrants entering a new area and investments in improving enterprises' competence are added. T. W. Schultz regards the education investment as the most important part of the whole human investment. He points out: People invest in themselves to improve the production capability and consumption capability. School education is the largest investment for human capital. The effect of education is far greater than that of material capitals, such as buildings, facilities, and stocks.

T. W. Schultz emphasizes on the "human capital" in technological progresses. The human capital is embodied by human being with their techniques and production knowledge. It is resulted from the investments in education, trainings, and medical care. T. W. Schultz advances the human capital model concerning economic growth: $Y=F(K, AL, H)$. Here, K means capital. L stands for laborers who are not educated. H means human capital. Apparently, the human capital, as an independent source for economic growth, is becoming more important. The increasing return to human capital serves as the reason for economic growth.

The human capital theory has a prominent driving and promoting effect on economic development. Firstly, human capital can help to improve the use efficiency of materials, capitals, and technologies. Same materials, capitals, and technologies can produce more high-quality products. Secondly, human capital can direct the rise of materials, capitals, and technologies investment. For example, enlarge the investment scope of factors, increase the investment types of factors, and make best use of foreign resources, leading to the rise of quantity and the improvement of quality. Thirdly, changes of laborers structure and general improvement of laborers' quality will improve the use efficiency of laborers. Then, under the condition without increasing laborers and other factors, the quantity and quality will be improved together. Economics of development shows that human capital has an extremely important effect on economic development. As a developing country, we should pay more attention to human capital, comparing with material capitals. The absence of human capital serves as the fundamental reason for the lagged-behind economy and culture of developing countries, which has already been proved by the developing countries' economic development and social progress after the World War II. Especially, during the early and middle development in developing countries, the developing factor in great short is material capital, which is also the most effective factor. However, it is only one side of the problem. As a matter of fact, it is the human capital that is in real short for developing countries.

1.2 The key point of human capital investment ----- education investment

Education investment, also education resource, education input, and education economic condition, refers to the sum of people, materials, and capitals invested in education field by a country or region according to the requirements for developing education cause.

Education investment is the material base for developing intelligence and the education cause, an important factor for economic and social development, and the key for the success of modernization construction. For the long run, education investment has the largest benefit. Today, all countries in the world emphasize on investments in education. Especially for undeveloped regions, they should pay more attention to education investment.

During the development process of one country, education investment is usually increasing. Along with the development of national economy and society, on one hand, the need for all kinds of specialized talents and skilled laborers is larger and the level of national culture tends to be higher. It requires for relevant development of education. On the other hand, the gross national income and the income per capita keep in rising, what may share the constantly increasing education investment.

In China, education investment includes daily expenses for education and infrastructure expenses for education. The daily expenses for education are used for teachers' wages and welfare, and teaching facilities. The infrastructure expenses for education are used for school buildings and large equipments.

Chinese education investment is from many resources, including the financial appropriation from the central government and local governments, the special education fee from state-owned enterprises, collectivity-owned enterprises, and institutions, and the education fees from common people. As main form of human capital investment, the education investment accounts for a vital percentage. It is also an identification mark for the human capital in different country or region.

2. The effects of education investment for Xinjiang economic and social development

As an important way for human capital investment, education development directly restricts laborers' knowledge and citizens' quality in one country or region. The formation of human capital determines the economic development level. The importance of education gains more and more attention in the world today. The distance between countries or regions is in economic aspect superficially. In essence, the ultimate distance relies in education.

2.1 Human capital investment ----- education investment can help to realize industries' increasing returns in Xinjiang

The decreasing marginal revenue means that as certain factor investment reaches certain amount in production under certain unchanging technological condition, the output will be decreasing. However, human being, as a living factor, will contribute to the change of technological conditions due to the enhancing education investment in the accumulation and update of knowledge, the development and perfect of capability, and a series of self-enriching and improving processes, causing the increasing marginal revenue. Because of the special location, Xinjiang is short of talents, capitals, and materials. In special, the loss of talents restricts the economic development to a great degree. The present talent structure is quite unreasonable, what exerts a harmful effect on Xinjiang economic development. Therefore, Xinjiang local government should be aware of the inferior position of education there, increase investments in education, and make best use of talents in Xinjiang.

2.2 Education investment can benefit the optimization and upgrade of Xinjiang industrial structure

The prominent industrial structure contradiction is one of important factors affecting Xinjiang economic operation and the operational quality. Therefore, we must take the strategic adjustment of economic structure as Xinjiang economic development mainline, running through the whole process of reform and development. Focus on the strategic points of

Xinjiang economy, take the market as the guidance, the improvement of economic benefit as the center, the optimization and upgrade as the goal, adjust the economic structure comprehensively, construct a Xinjiang characterized new economic pattern, and drive the fast and healthy development of Xinjiang economy. The fundamental solution for all these issues is to improve the investments in education in Xinjiang.

To promote the industrial structure optimization and upgrade, we must take the improvement of laborers' quality and income as the goal and make strategic adjustment to Xinjiang industrial economic structure. Therefore, we should emphasize on human investment. Only when people's techniques are improved, can we realize the adjustment of economic structure in Xinjiang. It is a gradual logic process. If people's quality is improved, they can master new technologies and adapt themselves to new equipments soon, which will reduce the barriers of industrial structure adjustment to a great degree. The unreasonable talents structure, the low quality and efficiency of industry, especially the slow increase of laborers' income are the key for Xinjiang economic development. The important way for Xinjiang economic structure adjustment includes: promote the industrial structure optimization and upgrade, take the market as the guidance, the enterprises as the subjects, the benefits as the center, the technology and innovation as the support, enhance the education investment, improve the industrial quality and market competence comprehensively.

Increase the education investment and make the economic development turn into the improvement of laborers' quality from the transfer of laborer quantity. Laborers, once the quality and the technology are improved, will improve their productivity, save resources and work time to a great degree. The whole industry of Xinjiang will be transferred from the labor-intensive to the technology-intensive, realizing the optimization and upgrade of industrial structure.

2.3 Education investment is the engine for Xinjiang economic development

As for development, what people concerns firstly is economic development. Undoubtedly, that is true. Economic development is the base for national or regional development, which is also the key for all issues. Xinjiang is not an exception. Economic development must center on economic construction. Then, what is the inner source of economic development? It is human being. Human has initiative. Laborer is the most active initiative factor among all production factors. Education determines laborers' quality and competence, which finally determines the level and benefit of economic development. Economic competition is to compete for talents in essence. It results in education competition. The real source for Xinjiang economic development relies in the advantage of turning amounts of laborers into human resources, comprehensively improving Xinjiang people's scientific and cultural quality. To explore the natural resources, the first is to develop human resource. "Strengthening the country with education" should serve as the ultimate motive for Xinjiang economic development. In specific, the effects of education investment on laborers include four aspects as follow:

- (1) Education investment can improve laborers' quality. By means of education, laborers can acquire new knowledge and enlarge the insight. By this way, the quality of laborers will be improved.
- (2) Education investment can endow future laborers with techniques, and present laborers with new techniques. Techniques are in a positive proportion with values created by labor. Therefore, all provinces lay stresses on professional technique education, offering sorts of professional trainings, aiming at improving laborers' techniques.
- (3) Education investment is the base for scientific and technological innovation. It is the motive power of the first productivity. The development of science and technology is determined by the education. If science and technology are the first productivity, education will be the motive power of the first productivity. Today, the development of economy and the improvement of comprehensive national power depend on the development of science and technology. Therefore, emphasizing on the education cause and cultivating more innovative talents is the key for the sustainable development of economy.
- (4) Education investment can help to cultivate management talents for economic development. The economic development follows certain law that is controlled and used by people. Besides practical exploration, education and trainings can cultivate management talents who master economic laws.

In general, education is an indirect, potential, and long-term productivity. Its function is to cultivate knowledgeable, competitive, and high-quality talents. At present, the most developed country in the world has the most developed education level.

3. The quantitative analysis of the relationship between Xinjiang education investment and Xinjiang economic growth

Indexes for National economic growth mainly include gross domestic product (GDP), general national product (GNP), total product of society, total product of industry and agriculture, and household consumption level. We use the number of graduates in Xinjiang every year as the index for education development. Here, y refers to Xinjiang total product, x the number of graduates from colleges and universities in Xinjiang. Based on data from 1979 to 2004 in Xinjiang Statistical Yearbook, we set up the correlation model and the regression model as follow.

3.1 Correlation coefficient matrix

Suppose x_1, x_2, \dots, x_m are the relevant factor indexes. After observing these factors for n times, we get relevant sample data $x_i(k) (k = 1, 2, \dots, n)$. Then, the system's correlation coefficient matrix is:

$$R = \begin{bmatrix} r_{11} & r_{12} & \cdots & r_{1m} \\ r_{21} & r_{22} & \cdots & r_{2m} \\ \cdots & \cdots & \cdots & \cdots \\ r_{m1} & r_{m2} & \cdots & r_{mm} \end{bmatrix}$$

$$\text{Here, } r_{ij} = \frac{\sum_{k=1}^n (x_i(k) - \bar{x}_i)(x_j(k) - \bar{x}_j)}{\sqrt{\sum_{k=1}^n (x_i(k) - \bar{x}_i)^2 \sum_{k=1}^n (x_j(k) - \bar{x}_j)^2}}, \bar{x}_i = \frac{1}{n} \sum_{k=1}^n x_i(k)$$

$0 \leq r_{ij} \leq 1$ represents the correlation degree of x_i and x_j . The closer r_{ij} is to 1, the significant the correlation between x_i and x_j . As r_{ij} is close to 0, it means there is no correlation between x_i and x_j . Based on data from 1979 to 2004 in Xinjiang, we get:

$$R = \begin{bmatrix} 1 & 0.924708 \\ 0.924708 & 1 \end{bmatrix}$$

From relevant coefficient matrix, we get the correlation coefficient for y and x , 0.924708, which means a significant correlation. It indicates that Xinjiaing education investment has an important driving effect on Xinjiang economic development.

3.2 Regression analysis

The regression analysis is to study the dependence of one variable on the other variable. It can evaluate or predict one variable's average by the other variable's value or supposed value. One variable is dependent variable. The other is independent variable. We set a simple linear regression model, in which there is only one independent variable:

$$y_i = \beta_0 + \beta_1 x_i + \mu_i \text{ here, } i = 1, 2, \dots, n$$

y_i is dependent variable. x_i is independent variable. β_0 and β_1 are parameters by estimation. μ_i is a random disturbing item. In order to avoid the heteroscedasticity, we make logarithm of the independent variable and the dependent variable. Based on data from 1979 to 2004, we set the regression equation.

$$y = 1.26x - 5.2283$$

$$(9.22) \quad (-4.33)$$

$$R^2 = 0.78 \quad F = 85.31 \quad DW = 0.76$$

The result of regression indicates a satisfied model fitting. $R^2 = 0.78$ means the model fitting is satisfying in general.

The test values of intercept and slope are larger than 5%, and the critical value of the free degree of significance level

$n-2=24$ $t_{0.025}(24) = 2.06$. Besides, from the intercept value, 1.26 is larger than 0, which indicates a positive correlation between them. In other words, the marginal contribution ratio of graduates from colleges and universities in Xinjiang to Xinjiang total product is 1.26. Once the graduates are rising by 1, the total product will rise by 1.26.

From the correlation model and regression model, we know that the driving effect of education investment on economy is considerable. The theoretical analysis has been verified by practices. Education investment is the direct driving power for economy.

4. Present conditions of Xinjiang education investment

4.1 The quality of human capital is poor and the proportion of education investment is irrational.

Here the quality refers to laborers' knowledge level, knowledge application ability, and the knowledge progress of human capital. In Xinjiang, the human capital has a large quantity but poor quality. The education structure of talents is unreasonable and can not meet the economic requirements. Concerning economic growth, the first is human capital. Therefore, when Xinjiang economy develops toward modernization, the largest barrier is not the resource or the capital or even the technological reform, but the population quality. Capitals can be accumulated. Technologies can be introduced. But population quality can not. It must depend on education investment.

4.2 The government's education investment for human capital is insufficient.

Data show that although Xinjiang education has achieved great progresses based on the government investment, it still far lagged behind the eastern provinces and cities, especially the talents structure. Xinjiang has rich natural resources. However, modern economic development lays more and more stresses on human capital. The key for human capital is education investment. In this aspect, Xinjiang local government does not offer sufficient investment, especially the education investment, for human capital. The local government should adopt an effective talents-introducing and maintaining mechanism, motivating the most potential talents to contribute themselves to Xinjiang economic development.

5. Policy suggestions for the development of Xinjiang education investment

5.1 Invest more in education expenses

To solve the lower investment issue, the urgent is to invest more in education. Education is an industry. But it should not be industrialized. Xinjiang local government should change the traditional thought and make it clear that education investment is a production investment, taking the education investment into the government's strategic vision and investment plan. In a sense, the local government can turn the education charges into "education tax", reducing the educational funds' external circular, regulating the government behavior, improving the investment environment, and making the education investment meet the requirements for Xinjiang economic growth. Meanwhile, transfer the vertical human capital investment into the horizontal and separate investment as soon as possible, motivate all social powers, enlarge the financing channels, invite more investments from enterprises, folks, and foreign subjects, forming a multiple invested education mechanism, and solving the shortage issue of education investment thoroughly.

5.2 Adjust the structure of education investment

Compared with other provinces, Xinjiang economy is still at a lower level. Education investment should more focus on the primary education that has higher social returns. The State Council regulates that from the spring of 2006, China will apply the new guaranteed mechanism for rural compulsory education funds. It marks that China has already realized the effect of primary education on the whole education system. Based on the increasing investments from the central government and the local government, the education quality will be improved gradually. It is an opportunity for Xinjiang developing the education. Therefore, we should grasp the opportunity to develop Xinjiang's primary education.

5.3 Actualize the balanced growth of regional education investment

At present, the education investment in areas of Xinjiang is not in a balance. The education investment in northern Xinjiang is larger than that in southern Xinjiang. In order to actualize a balance and drive the education development in undeveloped areas, the Xinjiang government should supply relevant financial supports and even more practical supports. China adopts the "local responsibility and leveled management" education mechanism. However, as a matter of fact, some local governments in Xinjiang fail to supply necessary guaranty for the implementation of policies and plans after they assume relevant education responsibilities. Therefore, to strengthen the Xinjiang government's financial transfer payment and local financial transfer payment is an important way for increasing education investment, guaranteeing the balanced development of primary education, and realizing the education fairness. In order to actualize the fair competition, Xinjiang should improve the local government's ability of transfer payment, achieving the education fairness.

6. Conclusion

To sum up, to speed up the development of Xinjiang economy, we must improve the education investment in Xinjiang. Only by this way, we can cultivate more high-quality talents for Xinjiang, driving the adjustment of industrial structure in Xinjiang area, and optimizing the talents structure there. We should understand the gap between Xinjiang and the east concerns not only economy. The key is the talents competition mode. We should learn to attract talents, retain talents, motivate talents, and use talents, what will benefit the sustainable development of whole Xinjiang economy.

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A Study on Risk Cost Management

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The research is financed by Philosophy and Social Science Research Project of Hunan (No. 08YBB016) and Philosophy and Social Science Review Committee Research Project of Hunan (NO.0808061B) and Research Fund of Central South University of Forestry & Technology (NO.08QZ001).

Abstract

The uncertainty of economy and finance more and more affects cost and cost management. Cost management increasingly becomes the important means of risk management. The research on the risk cost and risk cost management in this article is developed based on the situation. The concept, kinds and characters of risk cost are the first research object in the article; the other research object is something about risk cost management.

Keywords: Risk cost, Risk cost management, Risk cost control, The Measure of risk cost

1. Introduction

In the traditional cost management, the subject of the cost is the production and operation of material products. Certainty constitutes its important feature. However, with the development of market economy, the risks increase continually and the uncertainty of the cost emerges increasingly. Especially, the development of the financial market makes the social and economic structure change greatly and the virtual economy develops at an amazing speed. On the one hand, the wealth effect generated by the fictitious economy promotes the prosperity of the global economy. On the other hand, it makes that the financial risk more serious. The risk management is increasingly challenged. The uncertainty and risk of economy and finance also more and more affect cost and cost management. Cost management increasingly becomes the important means of risk management.

2. The concept, kinds and characters of risk cost

2.1 The concept of risk cost

Risk cost stems from insurance industry. The concept of the risk cost was put forward by the former chairman of famous American Risk an Insurance Management Society (RIMS), Douglas Barlow. RIMS and its strategic partner, British Ernst & Young defined it as some expenses related to risk in the reports they published, including premium, demurrage and internal management; external service includes consulting, necessary management and other sales service; financing guarantee; charges, taxes and the similar expenses. Risk cost is firstly used in the operation and management of insurance company. American famous risk management expert Scott E·Harrington and Gregory R·Niehaus think in their book *Risk Management and Insurance* that the existence of risks leads to the decrease of company's and enterprise's value and constitutes the risk cost. Author thinks risk cost is in essence the price that the investment subject possibly pays for the expected benefit. From the point of view of risk management, risk cost is divided into two: cost of risk management and cost of risk loss.

2.2 Kinds of risk cost

The structure of risk cost is complex. Some kinds can be classified into from different angles.

2.2.1 Risk management cost under certainty and risk loss cost under uncertainty

On the basis of uncertainty, we can divide risk cost into two kinds: risk management cost under certainty and risk loss cost under uncertainty. According to the relatively stable extent of probability's uncertain condition. Risk loss cost under uncertainty can also be classified into three kinds: (1) Expected loss cost; (2) Unexpected loss cost; (3) Exquisite loss cost.

2.2.2 Actual risk cost and risk opportunity cost

Aimed at the function of decision, there are actual risk cost and risk opportunity cost. when choosing and investing in the risk management project, risk opportunity cost is a kind of risk gain in the process of selection for the optimal risk project and abandoning sub-prime risk project. It is mainly used for reference for the risk decision, rather than actual cost.

2.2.3 Exogenous risk cost and Endogenous risk cost

According to the causes of formation, risk cost has exogenous risk cost and endogenous risk cost. Exogenous risk cost is caused by the external objects, for example, Market risk and credit risk in finance field also can lead to the exogenous risk cost. Because of the cognition and management for risk in the process of internal operation, endogenous risk cost is easily brought about.

2.2.4 Strict risk cost and generalized risk cost

The strict risk cost only means the current expense of enterprises, which affects the current profit and loss cost. The generalized cost not only includes the costs which have already been treated as expenses, but also the costs treated as capitals.

2.3 Four characters of risk cost

As a kind of special cost, risk cost has four important characters. Uncertainty is the basic character of risk cost. Because of the uncertainty of external factors affecting the cost, such as interest rate, exchange rate and stock price and so on, they are always changeable. On the balance sheet date, the value of risk asset and risk cost can't be determined finally. In order to solve the measure of risk cost, the estimate problem appears which brings the second characters of risk cost: estimation. The third characters of risk cost are compensation. The importance of the character that differs risk cost from risk cost is that risk cost decides the quality and analyzes from the point of view of compensation of risk cost. There is no going concern without the management of risk cost and efficient risk management can't be finished. The fourth character of risk cost is substitution. Between the two parts of risk cost, the occurrence cost of risk and the management cost of risk, exists negative correlation relationship under certain condition. The bigger the management cost of risk, the smaller the occurrence cost of risk; the smaller the management cost of risk, the bigger the occurrence cost of risk. The relationship reflects that substitution relationship exists in risk cost control. It decides the controllability of risk cost, that is, by the control means like the prediction, diversification and transfer of risk cost, reduce and eliminate risk cost.

3. The content and meaning of risk cost Management

The measure of risk cost and the risk cost control is the two essential contents in the process of risk cost management. The following articles will revolve around the above two contents to explain the meaning of risk cost management.

3.1 The referential basic theory and models of the measure of risk cost

The measure of risk cost is the basis of risk cost management. It is the uncertainty measure. The measure of risk cost is closely related to risk measure. The risk loss and maximum loss calculated by risk measure equals broad total risk cost. Risk cost itself does not negate the risk measure method and model that shows the quintessence of multidiscipline development adapts to the multidiscipline need and is mature.

3.1.1 The referential basic theory of risk measure

The referential basic theory of risk measure is mainly embodied in the following aspects.

(1) The covariance measure of Markowitz

Markowitz assumes that investment risk can be taken as uncertainty of return on investment. The uncertainty can be measured by variance and standard deviation. Based on this, the rational investors always pursue the best equilibrium between the investment risk and return, that is, acquire the biggest return when the risk is certain or take the smallest risk when the return is certain. Therefore, the best allocation of financial asset in investment portfolio by M-V analysis and getting the solution to the second plan model under single target.

(2) William Sharp's β value measure

William Sharp's β value measure is a kind of indicator to measure risk in Capital Asset Pricing Model (CAPM). CAPM was put forward by William Sharp based on Markowitz's mean variance model. It is simplification of Markowitz's early work. It is also an important theory in current finance and economics. Because of its conciseness, the method is widely accepted and used by the investors.

(3) The measure of risk value (VaR)

The basic meaning of VaR is: the largest expectation loss of risk asset in the certain confidence interval and holding period under normal market condition. The most obvious advantage of using VaR method to measure risk is its concise

implication and visible value judgment. It makes the portfolio risk concrete and becomes a number that can match with return, and is favorable to the realization of operation and management target. VaR is extensively used in actual risk management.

3.1.2 Models of the measure of risk cost

Some risk measure models are improved in the application of risk measure model to international finance. Now there are three main risk measure models: (1) Risk metrics model. The main purpose is to measure credit risk based on VaR; (2) Credit metrics model. The model is aimed at measuring credit risk; (3) KMV model. It is a credit risk measure model developed by the famous risk management company KMV and the model is different from Credit metrics which analyses the enterprise' credit condition from the point of view of stock market price change of the credit enterprise.

3.2 The risk cost control of the risk cost Management

The risk cost control is an important content in the risk cost management. The basic target of risk cost control is the balance between risk and return, make the risk return maximum, risk cost structure optimum and total cost the lowest. The control of risk cost, on the one hand, assures the safety of investment; on the other hand, assures that the financial institutions and bear the risk cost needed by the investment to generate reasonable return. The risk cost control is systematic, dynamic and replaceable. There are some main kinds of means of the risk cost control in risk cost management.

3.2.1 Entire Risk Cost control

In order to adapt to the development tendency of Entire Risk Control (ERC) and internal control, the risk management of banks more and more emphasizes it is systematic, effective, complete and a process. As the important part of risk management, risk cost management needs to absorb its conception and thought. The management of risk cost firstly needs to build the control system of ERC. The basic objectives are: build complete, uniform and centralized control system of risk cost; build full process control system of risk cost and the transmission mechanism and make ERC efficiently implemented. The core of complete control system is to build the limit value system of risk cost. By the limit value of risk cost, it refers to the largest bearable risk cost measured by the financial institution. It represents the bearable risk level and takes this as the standard of control and realizes the complete control over the institution's general risk cost. After determining the bank's total risk cost control, understand risk business policy and break down control indicators. Build risk cost aggregate control mechanism and implement the limit value management of risk cost.

3.2.2 The motivation control of risk cost

Although risk cost differ greatly from general cost, motivation analysis is still applicable to risk cost, only the relationship between each motivation and the total cost is not direct summing relationship because the motivation are obviously correlated. The covariance generated by mutual effect also becomes the basic factor that affects the total cost. Even so, the cause-result relationship between cost motivation and total cost is effective.

3.2.3 The diversified control of risk cost

By efficient combination, when the return rate is the same, the risk can be lower, or when the risk is the same, the return can be higher, which is the important function of investment portfolio diversification and realize risk cost control by the investment diversification. Credit concentration is an outstanding contradiction that currently the Chinese commercial banks face. The general existence of the problem seriously threatens the prudent operation of the commercial banks. Credit concentration is the important cause that leads to non-performing-loan. Therefore, we should extensively use investment diversification and portfolio principle, take diversification as the basic policy and strategic orientation of credit management, adjust and improve credit management, from good credit structure and reduce the risk cost of banks.

4. Conclusions

Because of the uncertainty of risk cost, the measure of risk cost is unclear. In the actual risk operation of operation institution, which has the preference to pursue accounting profit, the two-way uncertainty of risk cost always changes and becomes a single risk, that is, the loss cost measure is seriously in shortage. Little by little, lots of risks are amassed, which greatly threaten the operation, and these risks have not fully disclosed. As described above, to reduce risk cost, it is necessary to strengthen the control over risk cost. This is integral important method to reduce risk cost, but the control over the risk cost is not enough, the compensation mechanism of risk cost must be built and perfected. the compensation mechanism of risk cost has special sense in risk cost management, which is the problem discussed by academic circles in the future.

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Demand Forecasting and Supplier Selection for Incoming Material in RMG Industry: A Case Study

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Abstract

RMG sector is the single most important manufacturing industry in Bangladesh. Almost all of the raw materials in this sector are being imported from abroad. Hence, incoming material management is of paramount importance for effective and efficient management of the supply chain in this sector. This paper deals with incoming material management of a 100% export-oriented knit composite factory. Demand forecasting and supplier selection are two major components of incoming material management. Different techniques of demand forecasting have been implemented to find the best suitable model for a particular raw material. In supplier selection, AHP technique has been implemented to select the best supplier of the concerned raw materials. Successful implementation of the recommendations of this paper can significantly improve the level of material management and thereby increase overall profit by reducing waste.

Keywords: Demand forecasting, Supplier selection, Analytical Hierarchy Process (AHP)

1. Introduction

Ready-made Garments (RMG) industry is the major export-base for Bangladesh. It has considerable impact on national economy, as well as high of degree of social implications, as a large number of female workers are employed in this labor-intensive industry. In the current post MFA era, international competition in this sector has been increased a lot. Therefore, garments companies in Bangladesh need to become more competitive and efficient to survive, to retain market position and increase market base. The foreign competitors have upper-hand basically in three areas: stronger backward linkage, more skilled manpower, and better methodology of manufacturing. Among these three, backward linkage is the most important factor as almost all of the raw materials needed in this sector are being imported from different countries. Proper management of supply chain is of outmost importance for smooth operations of the manufacturing processes in this sector that can help in maintaining the delivery schedule.

Highly competitive market is currently forcing every factory to think globally. Survival becomes increasingly difficult and critical to find new ways to grow. Looking back at North American and European business trends, it seems that strategies have been changing and updating frequently. "How to do more" was emphasized in 60s; "How to do it cheaper" became important in 70s; "How to do better quality" was in the 80s and "How to do quicker" was the key in the 90s. All of those are still important in our business, however meeting the increasing time demands of customers will become important. Shorter lead time and will be the strategic focus for at least the next decade. Time – the number of seconds, minutes, hours, days, months or years – is the yardstick by which we increasingly judge around us – particularly organizations providing manufacturing services.

Demand forecasting is an integral part of any kind of supply chain management and very important to sustain profitability. Improving demand forecasting performance has long been a concern of people involved in any kind of industry (Armstrong & Grohman, 1972). To this end, researchers have developed and disseminated increasingly sophisticated forecasting techniques, believed to be more accurately model the fluctuating demand patterns (Fildes &

Hastings, 1994). However, improved forecasting techniques are useful mainly for different management practices including decision making and planning processes (Winklehofer, 1996). Surveys of sales forecasting practice have consistently shown that qualitative methods are more widely used than quantitative methods; however an extensive body of research supporting the superiority of quantitative forecasting techniques in most situations (Dalrymple, 1987). Not all the techniques are suitable for each category of the materials used in production. Out of several techniques, proper implementation of the appropriate technique is very much important for accurate demand forecasting.

Analytic Hierarchy Process (AHP) is a multi-criteria decision-making approach and was introduced by Saaty (1977). The AHP has attracted the interest of many researchers mainly due to the nice mathematical properties of the method and the fact that the required input data are rather easy to obtain. The AHP is a decision support tool which can be used to solve complex, unstructured decision problems (Putrus, 1990). It uses a multi-level hierarchical structure of objectives, criteria, sub criteria, and alternatives.

Some of the industrial engineering applications of the AHP include its use in integrated manufacturing (Boucher & McStravic, 1991), in the evaluation of technology investment decisions [Wabalickis, 1988], in location planning and layout design (Cambron & Evans, 1991; Min, 1994), in software development (Finnie et. al., 1993), in project risk assessment (Mustafa & Al-bahar, 1991) and also in other engineering problems (Wang & Raz, 1991; Shtub & Dar-el, 1989).

This paper focuses on selecting appropriate technique for demand forecasting of raw material in RMG sector. A particular raw material, which is widely used in one selected factory of this sector is taken into consideration to implement this technique. AHP technique has been implemented to find out the best suitable supplier of this raw material.

2. Forecasting Models

In this analysis, ten different techniques have been used to forecast the demand of raw materials used by the selected factory. The techniques are simple average (SA), moving average (MA), weighting moving average (WMA), single exponential smoothing (SES), single exponential smoothing with linear trend (SESLT), double exponential smoothing (DES), double exponential smoothing with linear trend (DESLT), adaptive exponential smoothing (AES), linear regression (LR), and holts-winters additive algorithm (HWAA).

Simple average (SA) method simply let the forecast equal to the average of all prior demand data. As time passed, our forecasts would stabilize and converge towards the level of the series, because in the long run the noise terms will cancel each other out because their mean is zero. The more data we include in the average, the greater will be the tendency of the noise terms to sum to zero, thus revealing the true value. Sometimes the demand for an item in a logistics system may be essentially "flat" for a long period but then undergo a sudden shift or permanent change in level. In moving average (MA) technique, the forecast would be calculated as the average of the last "few" observations. If number of observation is "small", the forecast will quickly respond to any "step", or change in level when it does occur; the "averaging out" effect is lost which would cancel out noise when many observations are included. The optimal value in any given situation depends in a fairly complicated way upon the level, the noise variance, and the size and frequency of occurrence of the step or steps in the demand process.

It might seem more reasonable to assume that historical observations actually lose their predictive value "gradually", rather than so "abruptly" as in the moving average. As a given data point becomes older and older, it becomes progressively more likely that it occurred before the step change in level happened, rather than after it did. It therefore might improve the accuracy of the forecast if relatively more emphasis is placed on recent data and relatively less emphasis on less current experience. This idea leads to the concept of a weighted moving average (WMA) forecast, where the last observations are averaged together, but where they are not given equal weight in the average.

A popular way to capture the benefit of the weighted moving average approach, while keeping the forecasting procedure simple and easy to use, is called single exponential smoothing (SES), or occasionally, the "exponentially weighted moving average". In its simple computational form, a forecast is made for the next period by forming a weighted combination of the last observation and the last forecast using various coefficients and taking the forecasting error in consideration. An upward and downward trend in data collection over a sequence of time periods causes the exponential forecast to always lag behind (be above or below) that actual occurrence. If such a trend is observed in single exponential smoothing then exponentially smoothed forecasts can be corrected somewhat by adding linear trend (SESLT).

To develop a smoothing procedure that will separate the trend component from the noise in the series and forecast trended data without a lag is called Double Exponential Smoothing (DES). Given a smoothing coefficient of α , a simple smoothed average of the data is first calculated. This series would follow the slope of the original data while smoothing out some of the noise. A second series is then formed by smoothing the second series will also tend to capture the slope of the original data while further smoothing the noise. An upward and downward trend in data collection over a

sequence of time periods causes the exponential forecast to always lag behind (be above or below) that actual occurrence. If such a trend is observed in double exponential smoothing then exponentially smoothed forecasts can be corrected somewhat by adding a new adjustment (DESLT). A quantitative forecasting method (AES) in which averages derived from historical data are smoothed by a coefficient, which is allowed to fluctuate with time in relation to changes in demand pattern. The larger the coefficient, the greater the smoothing effect.

One way to deal with trended demand data is to fit the historical data to a linear model with an "ordinary least squares" regression (LR). This procedure is an attempt to decompose the demand data observations into an initial level, a trend component, and noise components, which are modeled as the errors in the regression estimates. Once established, the model can be used for several periods, or it could be updated and re-estimated as each new data point is observed. It would often be the case that items in a logistics system exhibit demand patterns that include both trend and seasonality. It is possible to combine the logic of Holt's procedure for trended data and the seasonal index approach so as to forecast level, trend, and seasonality. This approach is embodied in Winter's Model for Trended/Seasonal Data (HWAA). Each component term of the forecast is estimated with exponential smoothing, and separate smoothing coefficients.

Out of many forecasting models discussed above, no single model is appropriate to forecast the demand of different products in the market. Best suitable of these techniques need to be selected for each individual product and the raw materials used for the respective product. In this paper, a particular type of yarn, maral combat, has been picked up to forecast its future consumption by using all the above mentioned techniques. The actual consumption and forecasted data for each of the techniques are shown in Table 1.

Few criteria have been chosen to select the most suitable technique for the particular yarn. Values of Cumulative forecast error (CFE), Mean absolute deviation (MAD), Mean square error (MSE) and Mean absolute percent error (MAPE) and Tracking signal (TS) are shown in Table 2 that are being used to select the best model to suit the material.

From the table, it is obvious that MAD, MSE and MAPE values are the minimum for the Adaptive Exponential Smoothing model. In addition, CFE and TS values are also considerably lower for Adaptive Exponential Smoothing. Thus, it can be ascertained that, for the chosen yarn, maral combat, Adaptive Exponential Smoothing is the most suitable forecasting technique to be used. Figure 1 shows the forecasting trend of few techniques those give better result in forecasting the demand of the selected material. The trends also support the Adaptive Exponential Technique among all the models.

3. Supplier Selection

Since a decision maker bases judgments on the knowledge and experience, then makes decisions accordingly, the AHP approach agrees well with the behavior of the decision maker. The strength of this approach is that it organizes tangible and intangible factors in a systematic way, and provides a structure yet relatively simple solution to the decision making problem.

Decision making process needs to consider multiple criteria, which are often qualitative and conflicting as well in nature. This requires multi-criteria evaluation using Analytical Hierarchy Process (AHP) technique developed by Satty [5]. Analytical Hierarchy Process (AHP) presents a different approach for the situations in which ideas, feelings & emotions are quantified to provide a numeric scale for prioritizing decision alternatives. Figure 2 shows the process flow of AHP technique for the supplier evaluation.

The crux of AHP is the determination of the relative weights to rank the decision alternatives. Assuming that there are n criteria at a given hierarchy, the procedure establishes a $n \times n$ pair-wise comparison matrix, A , that reflects the decision maker's judgment of the relative importance of the different criteria. The numerical results of attributes are presented to the decision maker(s) to assign relative importance according to a predefined scale. A judgment matrix is then prepared to evaluate the criteria and the suppliers. Normalized weights of each of the criteria and suppliers have been calculated using equation (1).

$$\left\{ \begin{array}{cccccc} 1 & a_{12} & a_{13} & \cdots & a_{1n} \\ a_{21} & 1 & a_{23} & \cdots & a_{2n} \\ a_{31} & a_{32} & 1 & \cdots & a_{3n} \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ a_{n1} & a_{n2} & a_{n3} & \cdots & a_{nn} \end{array} \right\} \xrightarrow{\text{Geometric Mean}} \left\{ \begin{array}{c} b_1 \\ b_2 \\ b_3 \\ \vdots \\ b_n \end{array} \right\} \xrightarrow{\text{Normalized Weight}} \left\{ \begin{array}{c} x_1 \\ x_2 \\ x_3 \\ \vdots \\ x_n \end{array} \right\} \quad (1)$$

here, a_{1n} = priority of criterion/supplier 1 to criterion/supplier n

a_{n1} = priority of criterion/supplier n to criterion/supplier 1

$x_1 \dots x_n$ = overall priority vectors of the selected criteria/suppliers

In supplier qualification evaluation for the mentioned yarn, maral combat, three different suppliers have been short-listed to be evaluated based on 11 different criteria. The chosen criteria are: quality, quantity, versatility, lead time, cost, reputation, experience, relationship, transportation, payment flexibility & bureaucracy advantage. The decision maker has decided the priority to be assigned to each criterion compared to the others. In Table 3, the values of the top-most row indicate which criterion is given how much preference compared to the each of the other criteria. The remaining cells are automatically calculated from the cells of the top-most row using a simulation model that confirms the consistency of priority matrix.

From Table 3, a normalized matrix has been calculated to find out the average priority for each of the criteria. This calculated priority factors is shown in Figure 3.

After prioritization of each of the criteria taken into consideration, all selected suppliers are then prioritized based on each category. For example, supplier A is 0.5 times preferred to supplier B and 3 times preferred to supplier C with respect to quality. Similar preference matrices for different suppliers with respect to few selected criteria are shown in Table 4.

Finally combining the priority matrices of both criteria and suppliers for each criterion, an overall priority matrix has been generated using the mathematical model of Analytical hierarchy Process (AHP). Table 5 represents these final overall priority values of each pre-qualifying supplier for our case study.

Twelve different criteria and three alternative pre-qualified suppliers have been considered in this study. Acceptance is checked for each priority matrix. Acceptability of alternative and attribute is measured in terms of consistency ratio (C.R.) which is the ratio between consistency index (C.I.) and randomly generated consistency index (R.I.). Here both qualitative and quantitative criteria are considered. The qualitative criteria are judged by expert opinion and quantitative criteria are judged against the collected and calculated quantitative data. By analyzing, the overall priority values are calculated for different suppliers. Supplier B has the highest overall priority value, then supplier A and supplier C respectively. So, Supplier B should be selected from three different qualified suppliers. In figure 4 below, overall priority values of the pre-qualifying suppliers for our case study is represented graphically. It is associated with its quantitative portion for its easy understanding. From the diagram and overall priority table (Table 5), we can easily find that supplier B should be selected due to its highest overall priority.

4. Conclusions

A detailed analysis has been done to customize the best forecasting model for a selected raw material used in the concerned factory. The obtained result shows that the adaptive exponential smoothing method can forecast the future demand of the particular raw material very precisely. Similarly, demand of any other raw material used in the factory can be forecasted using the most suitable out of different forecasting models through similar analysis.

Later, Analytical Hierarchy process (AHP) has been implemented to select the best supplier based on few important criteria. The same raw material that has been selected for demand forecasting was chosen to serve the purpose. Combining the priority factors of each criterion over the other as well as of each supplier over another, the best supplier has been selected for the concerned raw material. Through converting subjective judgment into quantitative form, AHP provides a better solution for selecting the best suitable supplier with less effort.

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Table 1. Actual consumption (tons) and forecasted data (tons) in 12 month period

Model	Month											
	1	2	3	4	5	6	7	8	9	10	11	12
SA	20	21	20.5	20.7	21	21.8	22.8	24.6	25.6	26	26	25.5
MA	20	19.5	20	20.67	21	22.67	25	29.33	32	32.33	29.33	25
WMA	20.5	20	22	21	21.2	22.8	25.2	29.6	31.8	31.3	29.2	24.9
SES	20.3	21	20.85	20.87	21.04	21.64	22.59	24.45	25.73	26.22	26.19	25.26
SESLT	19.9	21	20.81	20.8	20.99	21.79	23.20	25.98	28.36	29.81	30.42	29.57
DES	20	21	20.98	20.96	20.97	21.07	21.3	21.77	22.37	22.95	23.43	23.71
DESLT	20.5	21	20.7	20.77	21.12	22.3	24.11	27.6	29.69	30.08	29.43	27.09
AES	20.7	21	20.85	21.92	24.73	27.16	24.99	34.3	28.19	26.92	25.12	19.67
LR	23.27	25.58	23.9	24.21	24.53	24.84	25.16	25.47	25.79	26.1	26.42	26.73
HWAA	20.8	22	20.9	22.3	21	20.78	23.37	27.14	30.01	31.48	34.53	31.24
Actual	21	20	21	22	25	28	35	33	29	26	20	20

Table 2. Forecasting errors using different techniques

Model	CFE	MAD	MSE	MAPE	TS
SA	23.54902	4.405283	32.15264	16.43619	5.345633
MA	0.6666679	5.333333	35.65432	20.79569	0.1250002
WMA	-7.63E-06	5.55	36.7075	21.57678	-1.37E-06
SES	23.14943	4.409149	32.93404	16.37703	5.250317
SESLT	6.2733	5.0779	41.8572	20.1208	1.2354
DES	38.488	4.9788	41.712	17.6498	7.7304
DESLT	5.104	4.5186	32.2168	17.8278	1.1296
AES	4.1353	2.6562	10.0642	10.4376	1.5568
LR	0	4.0355	24.3199	16.1576	0
HWAA	-3.5473	7.6212	75.7807	30.7724	-0.4655

Table 3. Priority matrix of different criteria

	Quality	Quantity	Versatility	Lead Time	Cost	Payment Flexibility	Transportation	Bureaucracy Advantage	Reputation	Experience	Relationship
Quality	1.00	2.00	3.00	3.00	2.00	4.00	7.00	6.00	5.00	3.00	5.00
Quantity	0.50	1.00	1.50	1.50	1.00	2.00	3.50	3.00	2.50	1.50	2.50
Versatility	0.33	0.67	1.00	1.00	0.67	1.33	2.33	2.00	1.67	1.00	1.67
Lead Time	0.33	0.67	1.00	1.00	0.67	1.33	2.33	2.00	1.67	1.00	1.67
Cost	0.50	1.00	1.50	1.50	1.00	2.00	3.50	3.00	2.50	1.50	2.50
Payment Flexibility	0.25	0.50	0.75	0.75	0.50	1.00	1.75	1.50	1.25	0.75	1.25
Transportation	0.14	0.29	0.43	0.43	0.29	0.57	1.00	0.86	0.71	0.43	0.71
Bureaucracy Advantage	0.17	0.33	0.50	0.50	0.33	0.67	1.17	1.00	0.83	0.50	0.83
Reputation	0.20	0.40	0.60	0.60	0.40	0.80	1.40	1.20	1.00	0.60	1.00
Experience	0.33	0.67	1.00	1.00	0.67	1.33	2.33	2.00	1.67	1.00	1.67
Relationship	0.20	0.40	0.60	0.60	0.40	0.80	1.40	1.20	1.00	0.60	1.00

Table 4. Priority matrix of different suppliers

Criteria	Quality			Quantity			Leadtime		
Supplier	A	B	C	A	B	C	A	B	C
A	1	0.5	3	1	4	2	1	3	1
B	2	1	6	0.25	1	0.5	0.333	1	0.333
C	0.333	0.167	1	0.5	2	1	1	3	1
Criteria	Cost			Reputation			Experience		
Supplier	A	B	C	A	B	C	A	B	C
A	1	0.75	2	1	0.3	0.5	1	0.7	2
B	1.333	1	2.667	3.333	1	1.667	1.43	1	2.86
C	0.5	0.375	1	2	0.6	1	0.5	0.35	1
Criteria	Payment flexibility			Transportation			Relationship		
Supplier	A	B	C	A	B	C	A	B	C
A	1	3	1	1	0.2	0.9	1	0.5	2
B	0.333	1	0.333	5	1	4.5	2	1	4
C	1	3	1	1.111	0.222	1	0.5	0.25	1

Table 5. Overall priority values of different suppliers

	Quality	Quantity	Versatility	Lead Time	Cost	Payment Flexibility	Transportation	Bureaucracy Advantage	Reputation	Experience	Relationship	Overall Priority Vector
A	0.079	0.075	0.043	0.037	0.037	0.028	0.005	0.026	0.008	0.030	0.015	0.384
B	0.157	0.019	0.021	0.012	0.049	0.009	0.026	0.013	0.028	0.043	0.030	0.409
C	0.026	0.037	0.011	0.037	0.019	0.028	0.006	0.004	0.017	0.015	0.007	0.208

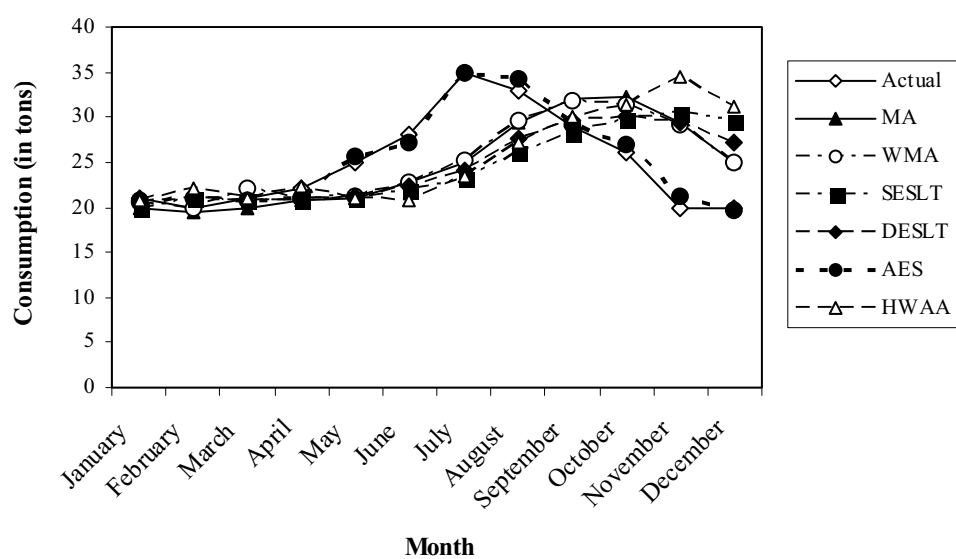


Figure 1. Forecasting trends of different techniques compared to actual consumption

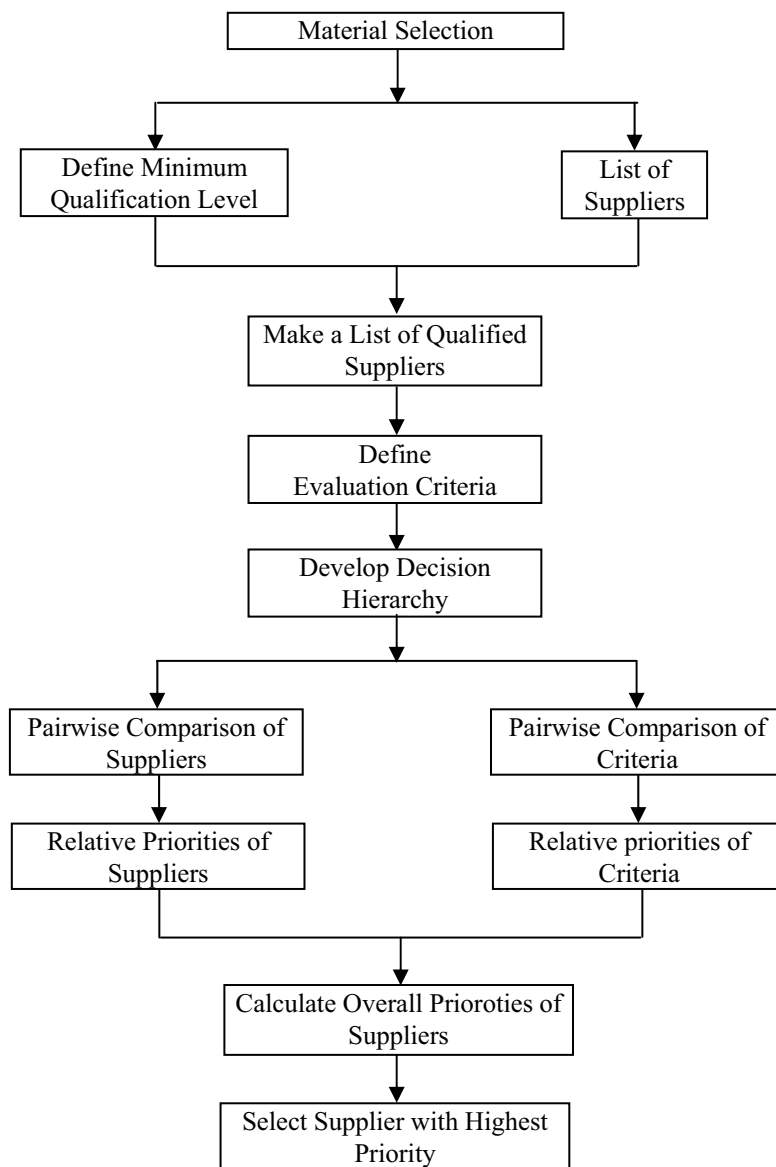


Figure 2. Process flow of AHP technique for supplier selection

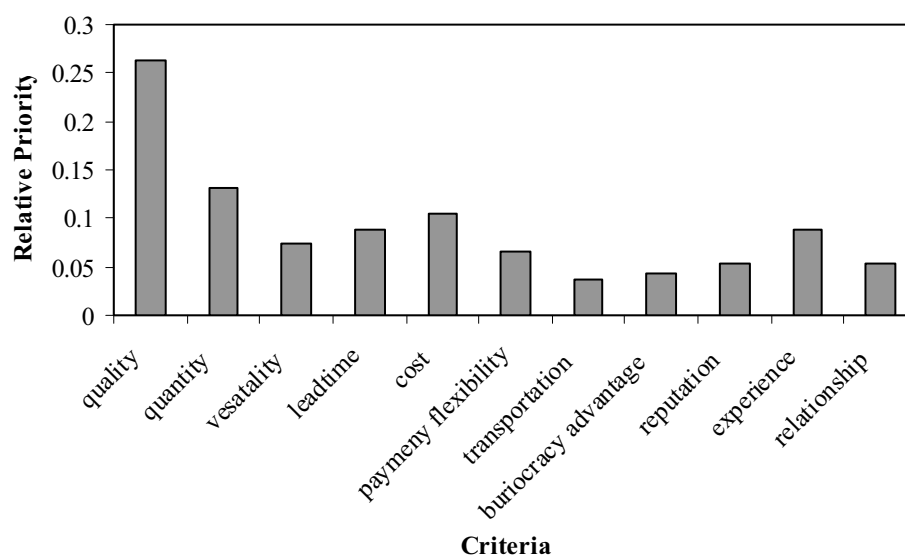


Figure 3. Calculated priority factors of different criteria

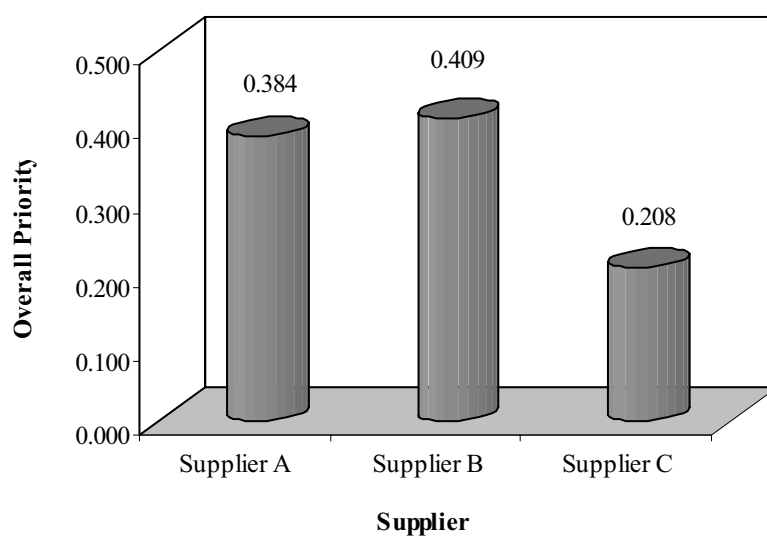


Figure 4. Overall priority values of different suppliers



Managerial and Leadership Perceptions of CEOs in Leading Turkish Companies

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Abstract

The aim of this study was to examine the factors affecting the management and leadership style and managerial perceptions of managers in leading Turkish companies. The empirical research was conducted with the participation of top-level managers in the top 500 companies of Turkey and the data was statistically analyzed using the Poisson Regression Model. As a result of the analysis of the data, it was found that the number of employees working in the organization and the leadership and management styles of the managers, have significant effects on managerial perceptions of the managers. Therefore, it is suggested that the study will enable an understanding of the decision making processes of top management in Turkey.

Keywords: Management, Leadership, Managerial perception, Turkey

1. Introduction

Managers are one of the main factors that affect the success of organizations because they participate and work through the decision-making processes and have a significant influence during the organizational resource planning process. Within this framework, studies on managers' effective decision-making processes tended to focus especially on the trait theory. In the trait theory, individual factors were considered and the impact of the physical traits of the managers on the managerial processes was examined. Historically, this approach can be viewed as normal because of situational factors; it can also be said that in previous times there were no other effective factors when the subject is evaluated from the viewpoint of the managers' power source.

When this issue is evaluated historically, it can be seen that there were very successful and effective leaders, managers, kings, and strategy developers who actually applied modern management approaches. Therefore, when considering management and managerial practices, these should be assessed more widely and more rationally. In this context, it is important to find out the common values of the success of leaders throughout the centuries in order to help identify contemporary management models.

However, the process of management studies and researches occurred differently. After the theory of the "big man", the subject was examined using behavioral models. Hence, management practices were considered within organizational

parameters and studies especially focused on the attitudes and behaviors of managers towards production factors. Therefore, the field of management and subject of managerial practices gained new dimensions and fresh, in-depth studies on the attributes of the general behaviors of a successful management model towards production factors were carried out. Researches were conducted in two dimensions. Before all else, a management evaluation scale was developed in order to measure how a manager acts and performs in his position. This scale was used to identify managerial characteristics from the view of employees and how the employees perceived their managers' acts and attributes could be measured with the aid of this scale. According to the findings of the scale, if the managers gained high points in the "structure" part, it meant that those managers adopted an effective process in making programs, planning, and effective communication. If their total points concerning "employee relations" were high, it meant that the managers were listening to their employees, giving them information, and trusting them. Many studies showed that giving importance to the structural and human side of the organization had positive correlations with other functions within the total organizational system.

After this, managerial studies were generally evaluated in two fields, namely, employee focused and job focused. The findings of these studies indicated three contingent factors: task structure, member-leader relation, and position power. Tasks were revealed as being "structured" and "unstructured". The tasks that had high structured property were considered as having only one method of solution and the solution was clear and evident. Leader-member relations and the manager's position were also indicated as important fields within the managerial processes. In addition, authority and power sources effective in the manager's in-group relations were found to be contingent factors which direct management processes.

The basic findings of all the management studies and researches coalesced around the same variables. The common points of the studies focused on the importance of the efficiency of managers during the decision-making processes. Especially, the resource use of organizations was considered a very important factor and a number of empirical studies were carried out on this aspect which tried to determine whether the findings supported the case or not. They concluded that existing models were inadequate to explain managerial processes and other factors also had an important effect. Despite this, all these studies and findings made an important contribution to the methodology and scientific discussion of the field. By means of these studies, management science benefited from having a well-developed model and scientific knowledge for the study of management processes emerged. These studies also contributed to the development of contemporary management models and indicated new approaches concerning today's management practices.

2. Previous Studies on the Management Process

When management researches are analyzed, it is seen that management models were examined in different dimensions and from different perspectives. In Bennis' (2004) studies, the common characteristics and behavioral models of managers, rather than the differences, were examined. The findings indicated that managers were individuals who do things right right jobs in organizations. Managers were considered as having an important role in the decision-making processes and that there were basic factors that enhanced their decision-making. One of the basic functions of managers in organizations is to concentrate on the performance of the team they manage and to inspire and motivate team members. Managers are individuals with a vision that enables the team members to reach their goals. According to Bennis (2004), one of the common characteristics of managers is the management of meaning. The managers empower the members' creativeness by means of which the members to participate in the processes and share the vision. Managers have to connect with the members' visions and the interaction that emerges leads to employees working collectively towards a common goal. Managers have to rationalize their ideas and thoughts for members of the organization and should communicate them clearly by using analogy and metaphors. An important characteristic of managers is the management of trust relations within the company. The most important property of trust is being considered trustworthy by others. This can be defined as exhibiting the same behaviors and attitudes in every circumstance. In executing the job process, being conscious of their skills during the decision-making processes and developing these skills efficiently are very important for the managers and employees. It has been emphasized that management is a process perceived by the entire workforce of the organization and which enhances collective effort, good mutual relations, and energized employees. In the organization, empowerment has a crucial role and collective effect on all employees. As a consequence of empowerment, employees feel important because they belong to a group, and opportunities for their learning and skills development are given.

All these factors indicate different dimensions of the management process and designate the variables which affect the organization and leader relationship. These factors are also important for directing the strategic decisions of managers and allowing those strategies to have an impact. Zaleznik (2004) emphasizes that the most important factor about being a manager is having "dreams". According to him, this means having the ability to transform a problem or difficulty into an opportunity. Briefly, this process means motivating others to solve problems within the organization. According to this approach, creating opportunities and finding solutions to problems are the most important factors. Being an

opportunistic makes managers express their visions practically, and being optimistic helps them to shape the members' vision. Tichy and Devanna (1995) state that in today's business world, good management is required more than ever, and they evaluated the general characteristics of managers as follows. Managers define themselves as transformative. It is a reality that the most important part of the management process is creating and implementing the change process and making effective transformations. Today, organizations need these to survive and develop competitive advantages. Creating an organizational image and differentiating the company in the market are the responsibility of managers and depend on their skills. The managers empower employees and encourage them to take risks. In order to enable this, employees are given autonomy and supported in different operations. One of the most important factors in the management process is trust in others. Here, it can be understood that being a manager does not mean being a dictator, because managers always hold the ultimate power, but they should be sensitive towards others and tend to empower followers.

Managers learn continuously and do not see their actions or concepts which do not produce the desired result as problems which cannot be overcome. They learn from their experiences and add what they have learned to their behavioral processes.

Golman (2000) offers a different perspective on the subject. In his study, he states that intelligence, seriousness, and vision are all important factors for success but not enough to explain the whole management process. According to his view, the most important factor that distinguishes an effective manager from others is emotional intelligence. Emotional intelligence can be defined as self-regularity, consciousness, self-motivation, empathy and social skills. The findings of his research significantly support an association between emotional intelligence and managerial outcomes.

Moreover, it is found that employees, customers, and other shareholders have many problems in and with organizations where the leaders of the organization have low emotional intelligence. The consequence is dissatisfied employees, customers, and shareholders and the entire process of the organization is affected negatively. Many examples of this situation are to be found in the business world.

Zaleznik (1995), states that there are three factors - motivation, vision, and passion - which have crucial roles in creating managerial success. These factors have impacts on organizational success and importance for successful management. Zaleznik also suggests that being a manager and being a leader are very different concepts and they should be evaluated differently. Leaders have the ability to manage ambiguities and uncertainties; they motivate others in difficult conditions and perceive events astutely. In this context, the basic factor for organizational success is the ability of leaders and managers to work together synchronously.

Boehnke et al. (2003) studied whether management behaviors are universal or not and they evaluated the impact of cultural differences on the management process. According to the empirical findings of their research, there are some basic management characteristics for a high level of organizational success. These characteristics are; creating a vision, intellectual orientation, team development, and coaching. Pillai and Williams (2004) identified a different dimension of management in their research. They propose that managers have a crucial role in stimulating employees to be more productive and in producing meaningful outcomes. They determined a significant association between organizational commitment and performance in their research. These findings were supported by empirical research on fire department personnel. According to Kass and Shamir (2004), there is strong emotional relationship between managers and employees. This approach is the opposite of the cognitive theory. There are not many empirical researches on this approach, and these studies generally test their hypotheses by evaluating the depth of the emotional relationship between managers and employees.

There have also been studies examining the relationship between management characteristics and team performance (Dionne & Yammarino, 2004). It was found that the managers' influence on the motivation process creates a shared vision within the organization, strengthens team spirit, empowers team members, and thus decreases conflict among team members. Apker (2004) did another specific study in which she examined the collaborative aspect in the health sector. Apker's study emphasizes the positive relationship involved in a team-based process which shifts organizational control from management to employees but results in workers acting in accordance with management decisions and upholding traditional power structures. Kark (2004) examined the subject from the point of view of women. It was determined that women have replaced men in today's business world. Other recent studies have attempted to find out whether there is a significant relationship between gender and management. Chakraborty and Chakraborty (2004) analyzed management from the perspective of psychology and considered a different dimension of management. This study implies the importance of management for both morale and motivation within the organization. Gosling and Mintzberg (2003) examined the issue from the point of view of the organization. They gathered all managerial fields under five factors, as follows; the manager him/herself, organizations, content-procedures, relations, and change. Goleman (1998) argued that there are no significant findings which show that any management model has definite and absolute consequences. However, recent research carried out on 3871 managers demonstrated that the six different dimensions of emotional intelligence have positive impacts on the management processes. In the context of these six

dimensions, the “coercive manager” wants others to obey instructions immediately; the “autocratic manager” directs followers towards the vision; the “democratic manager” tries to create a common background for the applications; the “creative manager” requires excellence in every area; and the “coach manager” trains individuals for the future. Goleman (2000) examined the subject in detail in other studies and stresses the importance of emotional intelligence for management models using real experiences and examples. Bartlett and Ghoshol (1995) examined the changing roles of managers and tried to redefine how managers’ roles have changed in organizations. In their research, new developments in organizational structure and information flow are analyzed. Bennis (1995) examined the changing role, characteristics, and attitudes of leaders from an historical perspective. Kotter (2001), in his study, examined what managers really do in organizations and he evaluated the “manager” as a factor that creates and implements changes in the organization.

As is emphasized in many other studies, the motivating characteristics of managers have crucial importance for the organizational structure. Conger and Fulmer (2003) considered the factors that cause success and failure, and they argue that dynamic and innovative organizations are more successful than ones which have mechanical structures and processes. In organizational ecology, the determination and successful application of strategies is very important for leaders as the right strategy enables the creation of alternatives for competition and innovation. There are a number of studies in the literature which examine how the personality traits of managers affect individuals (Lansiti & Levien, 2004) and which analyze the relation between organizational performance and managers (Thomas, 1988).

There are also studies that investigate the association between top level managers and the external environment of the organization and that examine the impact of strategies on the functioning of organizational systems. The impacts of the managers’ expertise on strategy and organizational success were determined by studies carried out on managers working for the companies listed in Fortune 500 (Geletkanycz & Hambrick, 1997). In another study, the associations of the demographic structure of the top level managers on the social integration and communication processes within the organization (Smith & White, 1987) were investigated. A further study which examined the heterogeneity of top level managers tried to prove the significant effects of demographic structure on the organizational competition process (Smith et al., 1994). In addition to those noted, there are many other preliminary studies about the subject in the literature (Hambrick, Cho, & Chen, 1996).

3. Analysis of Data Structure and Research Model

The data form developed for the research consisted of two parts. The first part involved questions about the participating managers’ and companies’ demographic information. In this part, the work experience, educational level and age of the managers, together with the number of individuals within the control area of the manager, were asked. The second part of the questionnaire was composed of 42 questions. The questions related to the managers’ management perceptions, decision-making processes, attitudes to the job and treatment of subordinates, and concepts about strategic decision-making processes. For every question in the second part, a 5 point scale was used, from 1 (most important) to 5 (least important), and the participants were asked to list them in order. Following that, the data collected were subjected to statistical analysis.

The research was conducted among the managers working for companies that were listed in the first 500 companies of Turkey. The preferred participants were from the functional departments (marketing, production, human resources, finance) and were top-level managers (CEO). 200 questionnaires were delivered and 125 of them were answered and returned. All 125 questionnaires were able to be used in the statistical analysis.

In the analysis of the data, it was decided to use the Poisson Regression Model. According to this model, Y represents a casual variable and i in each sample represents an individual. In this situation, Y_i means that the event occurred in a given period of time for the unit of i from the unit of N . Every i individual includes rate parameter λ and x ($j=1...K$) explanatory variables.

In such events, the equation can be defined as follows (Kenneth, Land, Nagin, & McCall, 2001):

$$\lambda_i = \exp(x_i \beta)$$

$$\log \lambda_i = x_i \beta$$

By considering the above model, the equation of the study can be developed as follows. In the research, the CEOs’ perception of management and leadership (CPML) was considered as a dependent variable. When the previous studies in the literature were examined, it can be seen that there were a number of factors affecting and differing from the leaders’ perception of management and leadership. Therefore, this causes every leader and manager to develop a unique management style. Additionally, it is normal that the perception of each leader should be different due to human factors. In this study, we tried in particular to determine whether the number of individuals working in the company (NI), the

leadership understanding of the manager (LU), the management style of the manager (MS), the education level (E) and the age of the manager (A) had any impact on the management style and perception of management and leadership of the managers. Those variables and the equation of the research is as follows;

$$CPML = \exp (N_i \beta_1 + LU_i \beta_2 + MS_i \beta_3 + E_i \beta_4 + A_i \beta_5).$$

In the questionnaire, the participants were asked which leadership model (autocratic, intellectual, participative, contingent, or charismatic) most closely described their own style. When previous studies were examined, it was seen that each of the leadership models has different applications within the organization. Therefore, it is important to understand how different leadership models reflect management processes and this will enable a better understanding of the different management applications in the organizations. In this context, the hypotheses generated were as follows;

H1a: The leadership models of managers make a difference to their management applications. An organizational system which is managed by autocratic leaders will be more mechanical.

H1b: The leadership models of managers make a difference to their management applications. An organizational system which is managed by participative and democratic leaders will be more organic.

The managers were asked in the questionnaire about their management styles and were required to answer what kind of a style they adopted in relations with subordinates and the environment. The participants could choose one or more of the management styles directing, supporting, delegating authority, teaching, adapting to circumstances which they possessed.

H2: Having an understanding of the directing, supporting or teaching styles during the managerial processes affects the manager's perceptions of managerial processes and causes application of different managerial practices.

Other factors that affect the manager's perceptions are the number of individuals worked with or number of subordinates. There are differences in the perceptions of management and leadership between managers who work with small groups and large groups. Work processes are more complex especially in large companies and relations are more formal. Therefore, directing and controlling small groups affects and may alter the managerial style of a manager.

H3: There are differences between small, medium, and large-sized companies in terms of their managers' leadership and management styles and managerial perceptions.

In the research, educational level was considered as another factor affecting the managers' leadership and management styles and managerial perceptions. It was assumed that there would be differences between managers having high school, university, and other postgraduate level education in terms of their managerial perceptions because education is considered as an important variable which influences individuals' cognitive and behavioral processes.

H4: There will be differences between the managers having lower and higher education in terms of their leadership and management styles and managerial perceptions.

Moreover, biological age was considered another factor affecting the managers' leadership and management styles and managerial perceptions because it was assumed that the buildup of experience and knowledge causes managers to perceive events and situations in a different way. Therefore, it was expected that there would be differences between younger managers and elder managers in terms of their managerial perceptions.

H5: There will be differences between the managers' experience according to their age and accordingly there will be differences in their leadership and management styles and managerial perceptions.

4. Findings of Research

The findings of the research and the statistical results of the data gathered are presented below. When the associations between the variables were analyzed, either a low level of correlation or high level of negative correlation was seen. The correlations of the variables can be seen in Table 1.

Poisson Regression Model or Log Linear Models were used in the analysis and evaluation of the data. These models are used for events occurring in a given period of time in order to see the explanatory power of the variables. In this research the explanatory variables were considered as the factors affecting the managers' managerial perceptions. This model contains countable data that are not discontinuous and negative and therefore it is assumed that the logarithm of the expected numbers is the linear function of the explanatory variables (Haining, 2003).

Poisson Regression Model is a flexible and easy-to-use model which is used in multiple models containing the mean of the countable data and when there is a moderating or marginal association between the variables (Lloyd, 1999). Due to these characteristics, this model was preferred for the statistical analysis of our research.

For analysis of the data, a macro was written using the GENMOD Procedure. The five different independent variables, involving the age and education level of managers, size of company, individual leadership perception of managers and managerial styles, were analyzed using the Poisson Regression Model. According to the findings of the Wald Test,

among the five independent variables, the number of employees working in the company (0.0167), the leadership styles of the managers (0.0470) and the management styles (0.0397) were significant at 95% confidence level. The age of the manager (0.5959) and the education level (0.7124) were not statistically significant, as seen in Table 2. This finding is interesting when the assumptions of the research are considered because previous studies in the literature determined that there are significant associations between the experience, age, and education level of managers and their managerial perceptions and leadership styles. However, according to the findings of our research, these variables had no significant impact on the managerial perceptions and leadership styles of the managers. Therefore H4 and H5 were rejected. It was seen that the other 3 hypotheses are supported by the findings because the size of the company and the leadership and managerial styles of the managers have significant affects on the management, leadership, and managerial perceptions of the CEOs. These findings are interesting considering the general context of our research (Table 2).

According to the findings of Pearson X2 tests, the model was not statistically significant because the Chi-square/Estimation value was greater than 1 (Chi-square/Estimation=2.6210 >1). There was a high diffusion in the Poisson Regression Model. When this occurs, a mixed model called the Poisson-Gama Regression Model can be used for the analysis. Therefore, in order to analyze the data with the Poisson-Gama Regression Model, a new macro was written using the GENMOD Procedure.

According to the Wald tests, among the five variables, the size of the company (0.0233), the leadership style (0.0475), and the characteristics of the managers (0.0463) were statistically significant at 95% confidence level.

According to the findings of the Poisson-Gamma Regression Model, the data were significant for the model (Chi-square/Estimation = 1.1093 > 1).

$$\text{CPML} = \exp(2.6539 + K_s 0.0040 + L_a (-0.0669) + Y_s (-0.0728))$$

$$\text{CPML} = \exp(N_i \beta_1 + L_u \beta_2 + M_s \beta_3 + E \beta_4 + A \beta_5).$$

The findings of the model were evaluated differently from the classical regression model. In the classical regression model, the coefficient of each of the variables indicates how much difference will be seen at the end of an increase of one unit. In the Poisson-Gamma Regression Model, it can be stated that there will be 1.004 increase in the model depending on one unit change occurring in the size (number of employees working) of the company. When the impact of changes in the leadership styles of the managers on their managerial perceptions was analyzed, it was seen that the leadership style impact was higher than the impact of the number of employees working in the company according to the model (2.6551). This finding is significant and also parallel with previous research findings in the literature. As determined in the literature, the leadership perceptions of managers as being democratic, autocratic, or participative have meaningful and important affects on the managerial perceptions of the managers. Another significant finding was that the managerial styles of the managers can be considered as important variables affecting their managerial perceptions. When there is one unit change in the managerial styles of the managers, there will be an effect on the perceptions of the managerial processes (2.645). It is seen that there is a significant relationship between leadership styles and managerial perceptions and this finding has importance for determining which factors are effective on the management and leadership styles and managerial perceptions of managers in organizations. The age and education level variables had no significant affect on the dependent variables; these have therefore not been explained in the findings. The findings of the variables are presented in Table 3.

5. General Evaluation and Discussion

This study aimed to find out which factors have impacts on the differences of management and leadership styles and managerial perceptions of managers in leading Turkish organizations. It is supposed that this research will be useful for organizational systems in various ways because both managers and employees have crucial importance for organizations. Organizations grow, develop and create competitive advantage by means of the decisions of their leaders and CEO's. In this study, the basic factors influencing the managerial perceptions of the CEO's were determined. According to the findings of the research, it is interesting that there is no significant relationship between the age and education level of the managers and their managerial perceptions. However, these variables should be tested in different samples so that different evaluations can be made and different findings may be obtained. According to the findings of this research, it is seen that leadership is the factor which has the strongest effect on the managerial perceptions of the CEO. Therefore, it is suggested that the leadership characteristics of managers should be closely evaluated during the recruitment and selection process of the organization.

Another finding is that management style has a significant effect on the managerial perceptions of the CEO. Therefore, management style can be considered as an important factor in the evaluation of managerial perceptions.

This study can be considered as the foundation of further studies we intend to carry out as it is believed that the identification of the managerial perceptions of CEO's in different dimensions has importance for organizations, and we will continue researching and examining new data on the management styles and perceptions of the CEO's. Hence, the

reliability and validity of the variables and findings will increase and the CEOs' decisions, behaviors and attitudes will be understood better by means of further studies involving different dimensions and variables.

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Table 1. Correlations of Variables

	1	2	3	4	5
1					
2	-0.6889				
3	-0.3977	-0.0368			
4	-0.1299	-0.0423	-0.0841		
5	-0.2731	-0.0266	-0.1093	-0.0019	
6	-0.2987	-0.0884	0.0015	-0.0868	-0.0541

N=125.

Table 2. Significance Levels of Variables

		<i>Chi-</i>	
<i>Parameter</i>	<i>DF</i>	<i>Square</i>	<i>Pr > ChiSq</i>
Age	1	0.28	0.5959
Education	1	0.14	0.7124
Size of company	1	5.72	0.0167
Leadership style	1	3.95	0.0470
Management style	1	4.23	0.0397

Table 3. Findings of Variables

<i>Parameter</i>	<i>DF</i>	<i>Estimate</i>	<i>Standard Error</i>	<i>Wald 95% Limits</i>	<i>Confidence</i>	<i>Chi-Square</i>	<i>Pr > ChiSq</i>
Intercept	1	2.6517	0.2416	2.1782	3.1253	120.44	<.0001
Age	1	0.0025	0.0047	-0.0067	0.0116	0.28	0.5959
Education	1	0.0335	0.0910	-0.1448	0.2119	0.14	0.7124
Size	1	0.0040	0.0017	0.0007	0.0072	5.72	0.0167
Leaderstyle	1	-0.0669	0.0337	-0.1329	-0.0009	3.95	0.0470
Mngmtstyle	1	-0.0728	0.0354	-0.1423	-0.0034	4.23	0.0397
	0	1.6189	0.0000	1.6189	1.6189		



A Study on Defects and Causes in Current Financial Reports

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Abstract

The traditional pattern of financial reports, an outcome of social economic development, has displayed its defects in the new economic environment. Unable to adapt itself to the needs of intellectual economy, this pattern can not reveal some non-financial information, prospective information, uncertain information as well as large intangible assets of some potential enterprises, hence failing to satisfy their users' demands for prediction. This article analyzes the defects and causes of current financial reports in the aspects of information demands and supplies.

Keywords: Financial reports, Information demands and supplies, Variance analysis

As a special commodity, accounting information involves the supplier and the demander. Just due to the interaction between the two, some of the accounting information is revealed. In order to test the consistency between the supplies and demands of the revealed accounting information about China's quoted companies, we conducted an investigation on investors' demands for accounting information as well as the accounting information disclosure of quoted companies.

1. Defects of Current Financial Report System

The survey on investors' demands shows: (1) 42% of investors are in a bad need of future information while only 10% of them are interested in historical information; generally, investors have greater demands for future information than historical one. (2) 22% of investors need financial information very much while 23% of them require non-financial information; generally, investors need not only financial information but non-financial one. (3) investors have greater demands for regular and temporary reports and their demands for financial reports become less with the shortening of financial report period.

According to the survey on the supplies of quoted companies, (1) the evaluation of estimate for future information and non-financial information is much greater than that for historical information and non-financial one; quoted companies disclose more about historical and financial information than future and non-financial one. (2) quoted companies have high disclosure degree in their regular and temporary reports and this degree tends to be lower with the shortening of the regular report period.

To sum up, the current financial report system is far from satisfying the information users' needs. In addition to the above asymmetry between supplies and demands, some other problems lying in the present financial reports include:

1) Emphasizing the history of enterprises' operation while neglecting their prospective development. In terms of measurement, financial reports mainly focus on historical cost to provide enterprises with the historical financial information, that is, "to provide the historical images of enterprises' economic activities and results based on their past transactions with money as the main measurement unit". Due to its basis on the past transactions, financial information, especially the information embodied in financial reports, is mainly based on the past. In spite of the importance of historical information in predicting the future, the users are unable to make their decisions only with it. Prospective information, which seems increasingly important in the decision-making process, cannot be reflected in the current financial reports.

2) Emphasizing the confirmation, measurement and report of enterprises' tangible assets and financial assets while neglecting that of their intangible assets and intellectual assets. As required in financial reports, all listed assets are expected to be definable, measurable, relevant and reliable. Compared with tangible assets, intangible ones have uncertain future economic profit and are more difficult to be measured as well as dominated by enterprises. Therefore, most intangible assets, such as self-created reputation and human resources, are thrown out of financial reports due to their failure to meet the strict standards.

3) Emphasizing the disclosure of financial information while neglecting that of non-financial one. Traditional financial reports are mainly intended to offer financial information. As financial information only involves a short term, it is unable to show the dynamic process of an enterprise's operation and production, hence failing to explain its long-term value. Good financial indexes don't necessarily reflect a healthy operation and a long-term development because some enterprises may sacrifice their long-term value for maximized short-term financial achievements. Not only financial information but non-financial one as well as non-financial achievement indexes should be relied on to reflect the long-term value of an enterprise properly. Since the information listed in financial reports is about an enterprise's operation achievements which result from the interaction among many factors, current financial reports only inform their users of the operation of an enterprise instead of a variety of elements that make it, especially some non-financial elements not listed in them, such as technological innovation, human resource management, corporate reputation, energy sources and sales channels and so on. Unable to be described in monetary form, these factors cannot be listed in financial reports.

4) Emphasizing the total sum reflected in financial situation and achievements while neglecting some potential risks and uncertainty in operation. As pointed out by FASB in No.1 Concept Statements, financial reports aim at helping present or potential investors, creditors and other users to assess the actually earned sum, time distribution and uncertainty in sales, payment or loans. Therefore, it is one part of financial reports to disclose the risks and uncertainty enterprises are facing. However, our current financial reports, focusing on the disclosure of some possible market risks and credit risks for relevant financial instruments while lacking in that of potential operation and financial risks facing enterprises, fail to convey the overall risks to information users. As for the prospective and uncertain information which is most important, some deep-rooted principles, such as the historical cost principle, the realization principle and the reliability principle, are kept out of financial reports.

In addition, with the arrival of the intellectual economy era which leads to the constant shortening of product life circle as well as the rise of derived financial instruments, enterprises' production and operation are made uncertain. In this case, if we use the traditional financial reports, which mainly employ regular reports to reflect some relevant information, the quality and usefulness of financial information will be influenced.

2. An Analysis on the Above Problems

1) Analyzing the restrictions of the object itself. Financial reports have limits because of the gap between financial information demands and it in quantity and quality. Reasons for this gap include: first, the application of accrual basis enables information suppliers with an opportunity to explain enterprises' earnings management with their reasonable subjective judgment. Actually, the present disorder between the uncertainty and certainty of financial report items is caused by the application of accrual basis, which leads to estimation and judgment when processing financial information, such as the withdrawal of bad debt provisions, the depreciation length of fixed assets, the confirmation of residual value and the cognizance of intangible assets' economy life span. But the current financial accounting pattern conceals this feature by listing some very definite numbers, which greatly influences the users' understanding and employment of the given financial accounting information. They can only verify these numbers in different ways or even decompose these numbers one by one with great efforts, and finally recombine them according to their judgment. Second, according to the definition of financial elements, financial reports or statements are mainly summary statements with historical accounting records. As required in "the usefulness for decision making", financial elements should include the transactions and matters involved now and in the future. However, this is not the fact. In reality, financial report information comes from the accounting information created in the framework of accounting hypotheses and principles, the employment of which will result in the gap between the given information and the demanded one as well as the improvement of information standardization.

2) The accounting information demanders' understanding capacity is an important factor for information utility. For those users lacking in certain accounting knowledge, the usefulness of the information listed in financial report analysis will be influenced due to their unclear demands or their sequacious use of information.

3) Some demands of accounting information users may be unreasonable or hard for enterprises to offer. With the increasing types of derived financial instruments, these instruments may bring about dramatic changes in enterprises' future financial conditions and profit-earning abilities. With their risks not disclosed, these instruments will cause accounting report users' decision-making errors in investment and credit. That is because accounting information isn't the whole information of an enterprise. As for enterprises, some accounting information is their secret and cannot be disclosed freely. Otherwise, misunderstandings will rise among investors.

To sum up, the current financial reports, focused on financial resources and conditions, mainly put importance on disclosing enterprises' past financial resources and present financial conditions while neglecting the disclosure of their future financial potentials and financial core abilities. Actually, users need the latter information as well as the former one. However, our present financial report system, which is based on financial resource information and emphasizes financial condition, only discloses enterprises' financial abilities indirectly (including their profit-earning ability,

debt-paying ability, operation ability and growing ability). In a complex and changeable environment, both financial resources and conditions tend to change. Therefore, our current financial reports are doing not enough in prediction and foresight.

3. Suggestions for Improving Current Financial Reports

Current accounting reports are stuck in trouble: on one hand, investors blame them for reduced relevance of the information they include; on the other hand, due to the failure to include a great deal of information caused by our present confirmation and measurement technology and basic characteristics of financial accounting, the information can only be disclosed off sheet, which results in the sharp increase of off-sheet information. Even if with this off-sheet disclosure, a considerable part of valuable items cannot be disclosed in the present financial report system. Therefore, these reports should be enriched and made more flexible to improve the use value of accounting information.

3.1 Predictive Information

Predictive information refers to the prediction about enterprises' future financial conditions, operation achievements and cash flow with scientific prediction methods based on their current conditions and taking all kinds of certain or uncertain elements in the future into consideration. With the development and perfection of capital market, present or potential investors have greater demands for the information about an enterprise' future operation. As for information users, this seems particularly important for them to make decisions. Predictive information is like a bond connecting the past and the future, which helps present and potential investors, creditors and other users to evaluate the future sum, time distribution and uncertainty of cash flow.

3.2 Non-financial Information

Not only financial but non-financial information play a significant role in the decision-making process. Some information, such as market shares, customer satisfaction, R&D of new products and so on, helps its users to learn about the whole operation process and prospects.

3.3 Analysis on Financial and Non-financial Information

With scientific and careful analyses conducted by enterprise administrators on financial and non-financial information, its users will not feel hard to understand or even misunderstand the given information due to their lack of professional knowledge.

3.4 Information on Corporate Environment

With the development of the whole society, there is a closer relationship between enterprises and environment. The effects of environment on an enterprise's survival and development include both its direct influences and the influences of some social reasons caused by environment on an enterprise.

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The Research of Multinational Corporation Knowledge Management New Pattern in Globalization

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Abstract

The traditional multinational corporation theory manifests unidirectional steps and ladders output the knowledge management pattern primarily to be already obsolete. In fact, the knowledge economy and globalized competition's further development causes the knowledge which the global management needs not only exists in some place, the multinational corporation must learn to distinguish knowledge which disperses in the global, and performs conformity and innovation, on this base, creates the product and the service which suits global market, and promotion and sale in the global market. This is precisely the globalization business strategy core.

Keywords: Multinational corporation, Knowledge management, Globalization

The globalized tendency has been irresistible at the beginning of the 21st century, multinational corporation take well the globalization as the business strategy in the new era, the knowledge management becomes more and more important in the globalized process, before the multinational corporation provides the product and the service which mostly design according to its country needs, then sells the world market, but present, multinational corporation's product and service are actually the whole world knowledge management results. The multinational corporation says, establishes the suit of productions, retailing and the sales effective network in the world cannot construct its competitive advantage, only through recognition and conformity the knowledge which disperses in the world place, based on this and carries on innovation, thus designs product and service which conforms to the global market, it can form the competitive advantage.

1. Multinational corporation traditional knowledge management pattern

The multinational corporation tradition's knowledge management pattern is the unidirectional knowledge output, namely the multinational corporation uses it technical the management skill as well as product and the service which obtains in the motherland, carries on manufacture, sale in the host country market. Thus, on the one hand, the multinational company may obtain the world scale economy, on the other hand, there are some different of the technical know-how and management knowledge which the motherland market between the host country market, the multinational corporation may carry on arbitrage activity, when the multinational corporation carries on transnational operations, may provide the service for other multinational corporation customers, may also use its can utilize the global resources ability to bring the pressure to the local competitor. For example, American Nike Corporation's headquarters located at Beaverton of Oregon State, it mainly carries on function activity such as research and development, the product design, brand management, e quality control, financial control and so on. Nike Corporation in Some low cost position's country, like China, Indonesia and Thailand has established the stable production network by the contract way, and has established the quality control and the purchase network in these Asian countries, simultaneously; Nike Corporation has also established the marketing center in the global important market. The unusual Multinational Corporation, for example Siemens, P&G, General Motors and so on is also developing like this.

2. Knowledge economy to traditional transnational operations knowledge management pattern challenge

Knowledge economy is economy which establishment in above knowledge and information production, assignment and using, is economy which by the knowledge primarily. The strategic resources are a capital in the industry economy society, but in the era of knowledge economy, it is knowledge and information. Knowledge economy is changing the global competition environment, and challenge to the traditional transnational operations pattern.

2.1 The enterprise globalization management needs the knowledge no longer originates from some place, but is distributes in the world place.

In the past, when the multinational corporation carried out transnational operations, mostly take the domestic market's production, the sales management experience in to the host country operative activity, and revised suitably according to the local situation. Along with world economics' development, many developing country rapidly expands, enable the world market to become a globalized market, if relies on the multinational corporation headquarters, then cannot satisfy the enterprise globalization need, is most obvious that will be enterprise's technical alliance and cooperation increases day by day as well as many multinational corporations will establish research and develop organization to approaching customer's market.

2.2 the global production and sales network cannot constitute global management competitive advantage, an effective global production, retailing and sales network is the essential condition which establishes the global competition superiority, but is not the sufficient condition.

The globalized management cannot guarantee its global competition superiority. For example, in the early-1990s, American Pepsi Cola Corporation formulated one great goal which increase its international drink income more 2 times, namely income will be increased from 1.5 billion U.S. dollars in 1990 to 5 billion U.S. dollars in 1995. To the mid-1990s, Pepsi Cola Corporation has established the subsidiary company in global each area, but this kind of expansion has not transformed into the growth and the profit. In fact to 1997, the result is actually 1 billion U.S. dollars losses. In addition, in the majority of industry's main competitors already knew how to carry on the globalized management, many companies already started to use the Internet to provide standardized rapidly the product and service for the world.

2.3 Multinational Corporation only uses the monopoly knowledge and the technical know-how which establishes in the motherland market no longer can guarantee that it wins in the global competition.

Because may cause the multinational corporation to surmount the competitor skill to disperse the expert hand who has the specialty skill in the world. Present's winner must understand that recognition and gain the new technology, ability and the technical know-how which disperses in the world, and conformity, thus creates the world first-class product and the service. For example, represents American new economy development' company, Microsoft Corporation, Oracle and so on could surpass General Motors, Ford Motor Company and so on Multinational Corporation's Stock market value in such a short time.

2.4 The sole domestic market's demand no longer is many industrial leading forces.

In the past, Multinational Corporation accorded to own country market demand to develop products and the service, and sold its product and the service in the world. Especially American market, because its power of consumption is high, the domestic market capacity is big, it becomes the new product and the service birthplace frequently. But, this does not mean the American market demand to be possible completely on behalf of the world market demand. Especially in the era of knowledge economy, many guide the market the demand to appear in some the fringe market which multinational corporations manages network. For example, there are many new demands for mobile phone in China. If the multinational corporation cannot distinguish these dispersions and multi-dimensional market demand to the competitor, and uses its whole world knowledge management ability, it will be inferiority in the competition.

3. The new knowledge management pattern superiority in multinational corporation operations

Because in traditional Multinational corporation business model, knowledge management pattern limitation, therefore needs one kind of new knowledge management pattern, which mainly carries on the knowledge management from globalized, but is not embarks from the motherland needs. This management pattern divides into three stages, namely knowledge recognition in global scale; in global scale knowledge conformity and innovation; knowledge operation and implementation in global scale.

3.1 The new knowledge management pattern is the true globalized strategy

Not only the globalized strategy refers to sells the product and provides the service in the world market, simultaneously must construct and maintain the transnational infrastructure, and causes an enterprise's all function including research and development, purchase, production, logistic management, marketing, human resources management as well as financial internationalization, all these are finally for provide the best product and the service to the world customer. Uses the new knowledge management pattern to be possible to help the enterprise to participate in the competition in all markets, because the enterprise may seek for any possible market in the world and unceasingly analysis information which comes from the global, even if is the domain which the enterprise not yet steps can also demonstrate the latent superiority and threat. For example, Nokia Corporation which carried on the multiplex management in the 1980s, it only decided that concentrated in the two-way charges for cellular phones domain in 1992. Speaking of Nokia, the mobile phone and the network service not produces from Finland and export to the overseas, in fact, production and sale in the overseas, this means the company development in the global synchronization. Nokia must study advanced

technology and global marketing skill to the U.S., studies to grasp the customer to the electronic products demand psychology to Japan, and must study the low cost manufacture management skill to the Southeast Asian country. The Nokia Headquarters' superintendent is dispatched to the world important region and carries on the management, like this, constituted the entire company knowledge sharing network. Through to the global knowledge network effective management, therefore Nokia can always think that the market demand from the global angle, from the GSM development to "put the Internet each into person's pocket" and "e mobile electron commerce", Nokia's concept and behavior are always lead one step to the competitor. Because Motorola Corporation limits its innovation mentality to the US territory, has lost taking the initiative which changes to the numeric mobile telephone and the GSM standard, thus fell on Nokia's behind.

3.2 The new knowledge management pattern is helpful to the Multinational corporation constructs core competitiveness

3.2.1 The whole world knowledge management may help the enterprise to open the global customer's potential demand. Many new customers' new demand possibly appear outside place of the motherland market. The enterprise except meets when these special needs obtains the profit, may also bring these special demands to the global customer market, thus creates a bigger market and profit space.

3.2.2 The whole world knowledge management is the enterprise creates different strategic and the unique superiority new way. Through the global knowledge management, may help the enterprise to be separated from the original geography boundary and the enterprise field of vision limitation, discovered customer's new demand, found the technological innovation origin, and thus produced the global first-class product and the service. In addition, can distinguish and conformity the knowledge and skill which from many place is very difficult and the cost is soaring, only then minority company which has the forward-looking judgment to be able achieve. Although its investment is much bigger than management in a place, but its repayment is also astonishing.

3.2.3 The whole world knowledge management means that the enterprise has ability of develops global new service rapidly. An enterprise can accept the knowledge and skill which disperses in the worlds, understands d other market change besides the motherland, this explained that the enterprise has had the rapid development internationalization management ability. Through conformity the knowledge and skill which disperses in the world, the enterprise can obtain benefits very quickly from the global research, development and management.

4. Chinese enterprise implements global knowledge management countermeasure

Regarding any country, globalization is a handle double-edged sword, namely has opened gate to the world, and also has welcomed the global competitor. In view of China's actual condition, the World Bank proposed that including uses global knowledge and so on six suggestions to the Chinese syllable knowledge economy challenge. This explained fully as a result of the globalized development, knowledge may globally unrestricted flow. If the Chinese Enterprise wants to obtain competitive advantage, must grasp this opportunity, raises enterprise's technical level and competitive ability.

4.1 Integrate the global knowledge management to the enterprise strategy

Through comparison tradition transnational operations unidirectional steps and ladders' knowledge shift pattern and the global knowledge management pattern, may discover that the Chinese enterprise is in passive and disadvantageous position in the former, but the Chinese enterprise and other multinational corporations occupy the same position in the latter, the multinational corporation has more experience which in three stratification planes of the global knowledge management, therefore, Chinese enterprise should integrate the whole world knowledge management in the enterprise strategy.

4.2 *Transforms the thinking mode, utilizes the global knowledge in the management and operation* Regarding the majority Chinese enterprises, thought logic usually is that hope gains other country technical transfer by our country market, is impossible to use the global knowledge on own initiative. This mainly reason is that China's majority enterprises have not "gone out", lacks the understanding to the world market, in fact, transportation and technology of communication progress, Internet technology application, already caused the understanding information cost to be reduced greatly, moreover, along with the Chinese economy high speed development, many enterprises has had "go out" strength and ability, is only because the vision limitation and thinking mode's barrier prevented the enterprise to step forward important one step. Therefore, the Chinese enterprise transformation idea and expands the field of vision, treats enterprise's knowledge and management from the globalization, may transform the global knowledge to the enterprise's knowledge and ability, thus enhancement enterprise's international competitiveness.

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The Effects of Corporate Reputation on the Competitiveness of Malaysian Telecommunication Service Providers

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This project is funded by University Technology MARA, Kelantan (sponsoring information)

Abstract

The competition for customers among telecommunication firms in Malaysia is fierce. The competition among them is not only limited to new customers but also to the respective customer base. In this fiercely competitive environment, existing customers are frequently exposed to offers and counter offers from the competing firms. At the same time various persuasive messages being made to encourage customers to switch their service provider. Perhaps the corporate reputation of a firm could provide certain competitive edge which could ensure the growth and survival of a firm into the future amid the highly competitive environment. This study attempts to assess the influence of corporate reputation of the firms on their competitive advantage in the market from the customers' perspective. The study sampled 600 individual customers who have been using the mobile service at a minimum of three years. The selected respondents have been experiencing the service provided by more than one telecommunication operators. The data were collected using self-administered questionnaires and analyzed using Structural Equation Modeling (SEM) in AMOS 6.0. The study found that the direct impact of firms' corporate reputation on their competitive advantage in the market is not significant at $\alpha = 0.05$. Instead, the corporate reputation has an indirect impact on competitive advantage through perceived value and perceived quality of the service. In other words, the firms should communicate their favorable corporate reputation effectively to the market so that the customers' perception level towards their products and service would arise. In other words, the firm's corporate reputation could only help the marketability of its products or services if it could trigger the positive perception of quality and value of products or services in the mind of their potential customers. The findings provide important implications to the telecommunication operators in their effort to increase their customer base and, more importantly, to ensure the interest the customers towards the firm is preserved!

Keywords: Corporate reputation, Perceived quality, Competitive advantage, Telecommunication industry

1. Introduction

The competition for customers among telecommunication services providers in Malaysia is very stiff. In this highly competitive marketing environment, the existing customers as well as potential customers are heavily exposed to various advertising messages from the competing firms through all sorts of media communication. The existing customers of a service provider are encouraged to switch their service to the competing firm by offering certain incentives. Among the incentives offered to the switchers are switching benefits, price reduction, flexible service, and attractive package. Certainly, there are service providers which would feel threatened that their customer base could be affected by the persuasive offer. These firms, in turn, would design their own loyalty programs in order to retain their customer base at bay, and at the same time would launch their own switching incentives to attract customers of other service providers into their service. In the end, customers are being exposed to various offers and counter offers from these competing service providers.

Today, the telecommunication customers in the country are facing difficulty in selecting the most reliable service provider for their needs since the range of products and services offered by the competing firms are almost similar in nature. The existing customers who qualify to enjoy price reduction through loyalty programs would probably stay put with their current firm. However, those who do not enjoy loyalty incentives offered due to certain reasons as well as potential customers would always be looking for the best service provider for them.

1.1 Review of Literature

The corporate reputation literatures revealed that competing firms offering similar range of products and services could differentiate themselves from their competitors and could enjoy certain competitive advantage by deploying their valuable resources and capabilities that are superior, scarce, and inimitable (Roberts and Dowling, 2002). Business literatures define corporate reputation as the stakeholders' overall impression of an organization over time (Bailey, 2005), and it reflects the organization's relative standing, internally with its employees, and externally with its other stakeholders (Fombrum et al., 2000). The literatures also suggested the corporate reputation as the outcome of managers' efforts to prove their success and excellence in managing the organization. The firms could achieve favorable levels of corporate reputation through acting reliable, credible, trustworthy and responsible in the market in the eyes of their stakeholders. The role of corporate reputation in marketplace is similar to brand equity, particularly when the company's name is a part of brand identification (Yoon et al., 1993).

Some sectors in the service industry, especially banks, hotels, hospitals, consulting firms, and educational institutions rely heavily on their corporate reputation to attract and retain their customers (Nguyen and Leblanc, 2001). In fact, this study believes that almost all retailers in the market today regardless of what products they are selling are interested to develop and preserve their respective corporate reputation. The study done by Nguyen and Leblanc (2001) found that the customers are more inclined to purchase the products or services from companies whom they perceived as having favorable reputation among their competitors. Fombrum (1996) stressed that a good corporate reputation would enhance profitability because good reputation would attract customers to products, attract investors to securities, and attract employees to do their jobs properly.

Thus, corporate reputation of a firm should be considered as an asset and wealth that gives that firm a competitive advantage because the firm will be regarded as reliable, credible, trustworthy and responsible for employees, customers, shareholders and financial markets. Meanwhile, Gupta (2002) found the empirical evidence between corporate reputation and competitive advantage for the firms by successfully differentiating it from competitors. Among the components of competitive advantage are willingness to purchase, willingness to pay premium price, customer satisfaction and customer loyalty. Meanwhile, the components of company's reputation found by Gupta (2002) are corporate ability and corporate social responsibility. This finding supports the popular view in business literature that when customers are faced with parity in price and quality of a product, they would prefer to choose products from the company that contributes to corporate social responsibility when making the consumption related decision.

Quality is the most important factor underlying the long-term success not only for products and services, but also the survival of the organization itself. Everybody in the management is talking about improving quality as the main weapon to help the company to survive in difficult times. However, it is now well established that it is not quality per se but customers' perception of quality that drive preferences and consequently satisfaction, loyalty, sales, and profitability (Zeithaml, 1988). Perceived quality is the overall subjective judgment of quality relative to the expectation of quality. These expectations are based on one's own and others' experiences, plus various other sources including brand reputation, price, and advertising (Boulding et al. 1993; Johnson et al., 1995). Thus, it is not necessary to use or examine a product to form the perception of its quality.

According to Nguyen and LeBlanc (1998), perceived value is a more comprehensive form of customer evaluation of service compared to perceived quality. Rust and Oliver (1994) conceptualized perceived value as the overall evaluation of service consumption experience. Just like perceived quality and customer satisfaction, perceived value can be encounter specific and can also be global evaluation of consumption experience. Specifically speaking, perceived value represents the trade off between costs and benefits and arises from both quality and price. Zeithaml (1988) stressed that perceived value is more situational and personal than perceived quality and it can take on different meaning at various phases of service consumption process. Nguyen and LeBlanc (1998) hypothesized that customer choice is influenced by functional, social, emotional, epistemic, and conditional values. Functional value refers to economic utility derived from choice, while social value is associated with the value gained from the notice of others. Emotional value is derived from acquiring goods that are liked, and epistemic value is the capacity of the choice object to provide novelty. Meanwhile, conditional value refers to situational conditions that influence the choice itself (Sheth et al., 1991).

1.2 Objective of the study

The general objective of this study is therefore to determine the influence of corporate reputation of the competing telecommunication service providers in term of customers' intention to subscribe for their services. The specific

objectives are three-folds, namely (i) to assess the direct influence of corporate reputation of a firm on its competitive advantage in term of customers' intention to subscribe its services., (ii) to assess the indirect influence of corporate reputation of a firm on its competitive advantage through customers' perceived value towards its services, and (iii) to assess the indirect influence of corporate reputation of a firm on its competitive advantage through customers' perceived quality towards its services.

2. Methods and materials

2.1 Hypothesis development

This study has put forward three research hypotheses to be examined empirically.

H₁: The favorable corporate reputation of a firm has a positive and direct effect on the customers' perceived quality towards its services.

H₂: The favorable corporate reputation of the firms has a positive and direct effect on the customers' perceived value towards the firm

H₃: The customers' perceived quality towards the services has a positive and direct effect on their intention to subscribe the services from the firm.

H₄: The customers' perceived value towards the firm has a positive and direct effect on their intention to subscribe the services from the firm

H₅: The favorable corporate reputation of the firms has a positive and direct effect on the customers' intention to subscribe the services from the firm.

2.2 Population and sample

This study was conducted in Malaysia. The Population for this study consists of the existing subscribers of three mobile telecommunication companies in the Malaysia namely Maxis, Celcom, and DIGI. These people have been using the service from their respective firm for more than three years. During the time, they have experienced the service provided by their firm, they have heard about the service provided by the competing firms through friends, families, and media. They also have been exposed by various advertisements offers either from their own firm or from the competing firms. The study obtains a sample of 600 bank customers using the self-administered questionnaire. The respondents selected falls in the bracket of middle to higher socio-economic status in term of qualification, occupation and income. Their monthly income ranges from RM3, 000-RM 15,000. The self-administered questionnaires were sent directly to the respondents at their workplace. The respondents were given the opportunity to respond the questionnaires at their own convenient time. They returned their response through the self-addressed envelope. A total of 450 completed responses received within the specified time period. The response rate is 75% and considered quite satisfactory.

2.3 Dependent, Independent and mediating variables

The dependent variable is competitive advantage of a firm, which is the variable of primary interest in the study. From the search in the literatures, the competitive advantage items consist of intention to subscribe the service, willingness to pay more for service, intention to provide positive words of mouth & recommendation, and market retention (intention to remain loyal). However, the independent variable is corporate reputation of a service provider. The study adopts three corporate reputation items namely the emotional appeal towards a firm, the corporate social responsibility of a firm, and the appeal towards its services.

The first mediating variable in the study is customers' perceived quality towards the services provided by the firms. The study adopted two perceived quality items namely the perceived quality of the contact personnel in the firm, and the perceived quality of the technology employed by the firm. Meanwhile, the second mediating variable in the study is perceived value towards the firms. Zeithaml (1988) defined the customer's definition of perceived value items as "what I get for what I give", and "quality I get for the price I pay". According to Rust and Oliver (1994), perceived value is the overall evaluation of service consumption experience. And like perceived quality and satisfaction, perceived value can be encounter specific or a more enduring global evaluation by the customers.

2.4 Data measurement for each variable

The respondents were asked to rate how strongly they agree or disagree with the items under each variable. They are free to indicate their response anywhere from 1 to 10, where the score of "1" indicates "strongly disagree" and "10" indicate "strongly agree" with the statement presented. Since there is no "fixed and forced choice" to the respondents, the data obtained is considered interval and would theoretically be normally distributed. Somehow, the study still has to prove that the data is actually normally distributed before proceeding with further analysis. The "normally distributed" data would certainly meet the requirement for using the Parametric Statistical Methods for data analysis.

2.5 Data analysis

Since there are more than one item used to measure each variable in the study (Corporate Reputation = 3 items, Perceived Quality = 2 items, Perceived Value = 2 items, Competitive Advantage = 4 items), the analysis of data using the Ordinary Regression Equation in SPSS is no longer appropriate and valid. Hence, the study employed the Structural Equation Modeling using SPSS-AMOS.

3. Results and discussions

The result of this study is consistent with the findings obtained by Zainudin (2007) and Zainudin et al. (2008). In the study of outgoing undergraduate students, Zainudin (2007) found the significant influence of corporate image of a university on students' loyalty towards their university in term of intention to pursue postgraduate at the same university (market retention), and provide recommendation to their friends, families, and employers to engage with the university (positive words of mouth). In the study done by Zainudin et al. (2008) on customers of household furniture, they found the significant impact of corporate reputation on competitive advantage for firms dealing with household furniture items. In contrast to the above findings, the study done by Ou and Abratt (2006) found the impact of corporate reputation is not significant on competitive advantage for grocery stores since the firms are dealing with perishable products.

From Table 1, all fitness indexes namely the Normed Fit Index (NFI), Relative Fit Index (RFI), Incremental Fit Index (IFI), Tucker Lewis Index (TLI), and the Comparative Fit Index (CFI) are above 0.90 which indicate that the model employed in the study is a good fit to the data (Bentler & Bonet, 1980; and Bollen, 1989).

Insert Table 1 here

The present study contributes to the literature in term of better understanding concerning the impact of corporate reputation of a firm on its competitive advantage in the marketing of mobile telecommunication services. This empirical research showed that the direct impact of corporate reputation of a firm on its competitive advantage is not significant since hypothesis 5 is not supported.

Since hypothesis 1 and hypothesis 3 are supported, the study can conclude empirically that the corporate reputation of a firm has an indirect impact on competitive advantage through the perceived quality towards the services offered. Another conclusion this study can make is concerning the perceived value of a firm. Since hypothesis 2 and hypothesis 4 are also supported, the study can conclude empirically that the corporate reputation of a firm has an indirect impact on competitive advantage through the perceived value of a firm.

These findings indicate that the strength of corporate reputation of the firms alone does not at all help them to survive through the competitive environment of mobile telecommunication industry. The competing players need to instill favorable quality of their services and also favorable value of their firms in the eyes of their customers in order to gain competitive advantage in the market. This is because once the service orientations are uniformed and customer choices are plenty, customers are looking for something else to base their decision. And, in the case of telecommunication industry, the corporate reputation helps.

In this case the firm should project and communicate its corporate reputation effectively to their stakeholders internally and externally. In the long-term, the corporate reputation would trigger stakeholders' perception towards the firms in particular, and towards the services in general positively as having reputable corporate citizen, reliable services, and more importantly good value for money.

In other words, the management's job in achieving favorable corporate reputation for their firm is one issue, but communicating the favorable corporate reputation to stakeholders is another struggle. In this case, the management should not just think to achieve the favorable level of corporate reputation for their firm but they should also think how to communicate their favorable corporate reputation accordingly so that the firm could enjoy the benefits in the form of competitive advantage.

In any behavioral research study, like the current survey, common method bias is one aspect that might occur. Such biases could pose a rival explanation for the strength of relationships between constructs (Podsakoff et al., 2003). A possible obstacle is that the sample for this study was taken among respondents of bank executives. The respondents are said to fall into certain bracket of socio-economic status in term of education, occupation, and income. Further study should consider samples from different socio-economic status in order to verify the consistency of the results. Another obstacle is this study only focused on the telecommunication industry, which is a highly technology-based service. The result might be different if the study is done for short term consumable items or the long-term households items.

4. Conclusion

Corporate reputation is a long-term judgment and evaluation of a firm by its stakeholders where a long-lasting, collective assessment rendered over a long period of time is required. The judgment, evaluation, and assessment by stakeholders include the emotional appeal of a firm, the range of products and services offered the vision of its

leadership, the workplace environment in the firm, the social and environmental responsibility of the firm, and its financial performance is critically significant.

This study found all three items of corporate reputation namely emotional appeal towards the services, emotional appeal towards the firm, and corporate social responsibility of the firm provides highly significant contribution to the corporate reputation of the firm itself. Among the three, the corporate social responsibility of the firm provides the highest score. The results indicate that corporate social responsibility is the utmost importance as far as corporate reputation of a firm is concerned, and the firm should not neglect on this if they want to be perceived positively by their stakeholders.

The main challenge for any management is to lead their firm not just to survive competition but also to grow into the future amid the growing number of competitors competing for a stagnant market. In order to achieve this, the firm needs to have its own competitive advantage, and the competitive advantage can only be secured through its corporate social responsibility. In other words, the firm is judged positively by its stakeholders by how much it gives back to the society. Above all, the corporate reputation of a firm is an effective panacea for its growth and survival!

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Table 1. The Fitness Index for the Model

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	0.922	0.911	0.929	0.900	0.929



Mobile Handset Buying Behavior of Different Age and Gender Groups

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Abstract

The prime objective of the study was to understand the variation in the importance given by different age and gender groups to the select factors while buying mobile handsets in India. The study concludes that the mobile handset users of age group of 18-30 years are less price sensitive than consumers of other groups; rather they consider 'physical appearance', 'brand', 'value added features', and 'core technical features' more important than users of any other age groups. On the contrary, the consumers of age group 50 years and above have given greater importance to 'price' than consumers of other age groups. There were significant differences between different age groups as regards to the importance given to all the factors except 'post - purchase services'. The difference was highest for the 'brand' closely followed by 'core technical features' of the handset. Gender differences have also existed for these factors.

Keywords: Buying behavior, Mobile handsets, Age groups, Gender groups, Factors, GSM

1. Introduction

India is the world's 12th largest consumer market. It is projected that by 2025, it will be ahead of Germany and will become the fifth largest economy of the world. There is an explosive growth in almost all the areas of consumer goods and services. Communication that accounts for 2 percent of consumer's spending today will be one of the fastest expanding categories with growth of about 13 percent (McKinsey, 2007). Mobile telecommunication industry has shown a tremendous growth over the last few years and at present there are about twenty crore (1 crore = 10 million) subscribers of the mobile telecom services in the country. The market for the mobile handset is also growing with the growing demand for mobile telecom services. This demand will continue to grow in future also. India at present is the second largest market for mobile handsets (Indian Brand Equity Foundation, 2005). The growth in this sector has been improved due to liberalization of telecommunication laws and policies. The consumers of both rural and urban areas, from college - going students to mature elders, of almost all income groups have started using mobile telecom services. The growth is fastest in mobile services as compared to fixed lines where it is modest (The World Factbook, 2008). Some of the consumers particularly college - going students have to rely on their parents for the buying of products like mobile handset and automobile. This is so because large majority of such people are not economically independent till the age of 22-24 years. Therefore, they have to satisfy themselves with what their parents buy for them. But now-a-days, these people have become more able to influence their parents in buying the products of their choice. This is probably due to small family size of one or two children these days, where parents comply more with the requests of their children as compared to the past.

The increasing competition between the telecom service providers has increased demand for both mobile telecom services as well as the handsets. According to Indian Brand Equity Foundation (2005), the mobile handset market, which was worth about \$ 2 Billion two years ago, had shown a growth of 60% per annum. The GSM (Global System for Mobile Communications) handsets had 84% share and CDMA (Code Division Multiple Access) handsets has 16% market share. There are various players in the GSM market. Nokia was leading the market with 59% market share

(Prashant, 2005). Among the other players, the prominent are Sony Ericsson, Samsung, Motorola and LG. They are offering wide range of models for the users of different preferences. The manufacturers are introducing newer and newer models in quick succession of time. They are motivated to do so because Indian mobile subscribers are prepared to pay for upgrades, value-based services, and advanced models. The cut throat competition between manufacturers has forced manufacturers to reduce their costs and therefore, they are thinking of manufacturing handsets in India. The low wage rates will help manufacturers to reduce their costs (Indian Brand Equity Foundation, 2005). Besides this, the service providers and manufacturers are offering value added services to make up losses in revenues, which have resulted due to decrease in tariff rates. Thus mobile value added services has become an important element in the growth of mobile telephony in India.

Mobile phones today have moved beyond their fundamental role of communications and have graduated to become an extension of the personality of the user. In spite of breeding of offers for content-rich mobile data services other than text messaging, the adoption of advanced services such as mobile phone payment, online mobile gaming and mobile email have yet to reach the noteworthy levels of usage in India. There is a discernible preference for mobile phones with color screens over those with black and white displays. Short Message Service (SMS) is very much popular and its importance is increasing further as the subscribers can now participate in large number of contests/polls etc. Consumers are also making wide use of handsets for clicking photographs, playing games, downloading icons/screensavers/logo/ring tones, sending camera-phone taken photos, and playing offline games with their mobile phones. And yet the consumers are expecting much more from their mobile phones.

For many years now, service providers and telecom equipment manufacturers have been debating the convergence of fixed and mobile telecommunications. The debate that was started on cost benefits has turned into a commercially viable option for service providers. Mobile service providers, who were once competing fiercely with fixed-line operators, are now facing stiff competition from alternative technologies. Their revenue stream fuelled by voice minutes is rapidly declining not because consumers are making less calls, but because alternative technologies are providing voice services at very competitive rates. As market is driven by consumers' demands for high-quality voice services at lower prices, the service and equipment providers have to work closely to develop new innovations.

India is the second-fastest growing major economy after China. There is an increasing emphasis on consumption and infrastructure development. The growing economy has created large number of employment opportunities and consequently, the spending power of an average Indian has increased than ever before. This has resulted in higher disposable incomes and faster acceptance of new technologies with a willingness to pay for these.

2. Literature Review

Sabnavis (2002) identified three different consumer types of three generations in India. Traditional consumers of pre-liberalization phase (1960-70s) were, stable, inward looking and had limited choices. They kept their family needs on the top and their own personal needs were subordinate to their family needs. They avoided risk. In the transient phase (1980-90s), the consumers were more risk taking than their predecessors. They had experienced multi-choices and had a tendency to be better off than their parents. Economically, they had no fears or concerns. The new millennium consumer tends to enjoy life. He has greater self-control, and looks for personal style and pleasure. Exposures to variety of products and enhancement of economic status have changed the attitudes of the upper middle – class consumers towards brands. Indian society being hierarchical in nature is therefore, status conscious (Sahay and Walsham, 1997). Indians give very high value to brands. In India, a brand is a cue to quality because the quality of the unbranded products varies widely (Johansson, 1997). According to study conducted by Maxwell (2001) on testing of homogeneity versus heterogeneity of global consumption in a cross-cultural price/brand effect model; Indian consumers in comparison to Americans are tougher for the marketers to sell their products. However he found Indian consumers more price and less brand conscious.

Technological innovations such as cellular phones and digital televisions have attracted the attention of marketing researchers as regards to their adoption process (Saaksjarvi, 2003). Rogers (1976) has provided a classification of adopters in terms of innovators, early adopters, early majority, late majority and laggards. But now consumers are also looking into the compatibility of the new products to their self-image and life style (Saaksjarvi, 2003). Funk and Ndubisi (2006) observed a considerable association between color and the choice of an automobile. The study further identifies the gender moderation on the relationship between different color dimensions and the product choice. According to Barak and Gould (1985), younger consumers are greater fond of fashionable/stylish products than older ones. Young consumers are normally more willing to try new products and they are interested in asking more information than older ones. It makes them self-confident and that is why they are more likely to be opinion leaders and less hesitant in brand switching. But one should not ignore the older consumers also. The studies have revealed that the older consumers are wealthy, innovative and they also have a tendency to be the part of a typical consumption system (Szmigin and Carrigan, 2001). They can be a prime market for the luxury products. However they give more preference to comfort or convenience than any other feature of the product. It also needs to be recognized that most older people

accept and enjoy their life stage, and are as willing to spend their money as any other generation, but only if the product and the message are relevant (Carrigan and Szimigin, 1999). On the other hand, the youth, which is more informed, pragmatic, opportunistic, demanding and restless, will always seek excitement in products and services (Sharma, 2004). It is normally perceived that young buyers try new products, seek greater information and are more self-confident in decision-making. Elderly consumers are selectively innovative and they accept only those innovations that provide exclusive benefits (Nam *et al*, 2007). Therefore, age and life cycle can be the delicate variables (Kotler and Keller, 2006) in the consumer behavior process.

H₁: The importance of factors varies among different age groups.

Men and women purchase and relate products for different reasons (Dittmar *et al*, 1996). They are subjected to different social pressures (Darley and Smith, 1995). Male and female have a propensity to be right and left hemisphere reliant respectively (Meyers-Levy, 1994). Males are generally self-focused while females are responsive to the needs of both self and others (Meyers-Levy, 1988). Coley and Burgess (2003), in their empirical study on wide range of products such as clothing, consumer electronics and books etc. had found significant differences between men and women with respect to both affective and cognitive process components. Rocha *et al* (2005) had also experienced different requirements for clothing and fashion products based upon age and gender. Laroche *et al* (2000) had found gender differences in relation to acquisition of in-store information for buying Christmas clothing gifts. Vankatesh and Morris (2000) studied the moderating role of gender in the adoption of a new software system. They revealed that the determinants of adoption vary between genders; perceived usefulness of the technology was the major factor considered by men for the acceptance of new software. In contrast, the perceived ease of use of the software and the normative influence (i.e. influence of peers and superior perception) were found key determinants for women. Ease of use and normative influence had not been found significant for men. Men consider the most prominent sign; they are more likely to focus on task effectiveness of a technology without considering risk. In contrast, women are detailed processors and consider all information available including the ones that are understated and potentially disconfirming. Women are then more likely to incorporate risk and other secondary information in their decisions and behavior (Graham *et al*, 2002). Williams (2002) investigated the effect of social class, income and gender effects on the buying perceptions, attitudes and behavior. The products like dress clothing, garden tools, automobiles, wedding gifts, living room furniture, children's play clothing, kitchen appliances, casual clothing and stereos were selected that varied in durability, necessity, expressiveness and gender orientation. The study emphasized on understanding the evaluation criteria, which correspond to product attributes and the benefits expected by the consumers. Both men and women rated utilitarian criterion high over the subjective criterion. Women attached importance to all criteria across all products, while men gave importance to only price. However Goldsmith (2002) found consistency for both men and women while examining personal characteristics of frequent clothing buyers.

H₂: The importance of factors is gender specific.

3. Methodology

The study has been carried out by interviewing 240 consumers based on convenience sampling during November 2007, to April, 2008 with the help of a questionnaire in Ludhiana, Jalandhar and Amritsar cities of Punjab state (Province) of India. The cities were chosen for the reason that even though the mobile telecom services are expanding across the country, yet these are concentrated in urban areas (The World Factbook, 2008). The respondents who were using GSM mobile handsets were asked to rate the select factors on a five point scale (1 for lowest consideration and 5 for highest consideration) that they considered most while buying their latest mobile handsets. These factors were selected from the study conducted by Nasir *et al*, (2006) on laptop purchases. Five of the seven factors evolved through principal component analysis of the study were selected keeping in view of their relevance to the mobile handsets. This is so because mobile phones technologically in India are perceived as recently innovative as laptops. The sixth factor-'brand' was selected for the reason that it is being considered as the proxy for the quality determination in the absence of any other intrinsic quality determinant in case of mobile handsets. Indians give very high value to brands. In India, a brand is a cue to quality because the quality of their unbranded products varies widely (Johansson, 1997).

The prime objective of the study was to understand the variation in the importance of the factors given by different age and gender groups. Among the 240 consumers, 122 were male and 118 were female. These were further classified into three groups based on their age. These three groups were 18-30 years, 30-50 years, and 50 years and above. There were 96 respondents (48 male and 48 female) of 18-30 years age group, 78 (40 male and 38 female) of 30-50 years group, and 66 (34 male and 32 female) of 50 years and above age group.

Two-way ANOVA has been applied for the data analysis and drawing conclusions. The approach was chosen to understand both main independent impacts as well as interaction effects of variables - age and gender. The respondents were asked to rate the following factors: 'Brand', 'Physical Appearance' (weight, size, color and design), 'Price', 'Value Added Features' (messaging, music, games, videos, photos etc), 'Core Technical Features' (GPRS, Bluetooth, memory etc), and 'Post-Purchase Services' (warranties, maintenance and repairs, technical support etc).

4. Limitations of the Study

The study has been carried out with two variables - age and gender. However consumer buying is a complex process in which number of factors like social status, economic factors and psychographic factors influence the buying of the consumer.

5. Data Analysis and Results

The distribution of respondents of different age and gender groups has been summarized in Table 1.

The frequency distribution of mobiles handsets being used by the respondents at the time of study has been summarized in Table 2.

Table 2 reveals that Nokia was being used the most (45%) by both male and female respondents followed by Motorola (19%), Sony Ericsson (15%), Samsung (12%), LG (6%), and others (3%).

The overall importance of factors influencing mobile handset buying has been summarized in Table 3. It can be inferred that overall, 'physical appearance' of the handset got the highest importance (4.01) and 'core technical features' got the least importance (3.30). 'Brand' (3.78) was considered the second most important factor (3.78) followed by 'post - purchase services' (3.73). 'Value added features' (3.65) got greater importance than both price (3.47) and core technical features.

It can be further inferred from Table 3 regarding the differences in three age and two gender groups about the importance of factors influencing buying decision of mobile handsets. 'Physical appearance' (4.33), 'brand' (4.27), 'value added features' (4.21), and 'core technical features' (3.85) influence the age group of 18-30 years more than consumers of other age groups. These consumers have given least importance to 'price' (2.94). The consumers of age 50 years and above are price sensitive as they have given greater importance to 'price' (4.06) than any other age group. They have given least importance to 'core technical features' (2.39) that is the least importance given to any factor among all the three age groups studied. Like 18-30 years age group, the consumers of 30-50 years age group have given the highest importance to 'physical appearance' (4.08) closely followed by 'brand' (4.00). These consumers like 50 years and above age group have given least importance to 'core technical features' (3.38). They have rated 'Post - purchase services' highest (3.82) than any other age group. 'Brand' (3.93) closely followed by 'physical appearance' (3.92) has been the highest rated by male respondents. 'Price' (3.56) got the least importance from the male respondents. On the other side, female respondents gave highest importance to 'physical appearance' (4.10) and least importance to 'core technical features' (3.00). 'Physical appearance' is the only factor that has been rated high by female respondents than their male counterparts. However in 18-30 years age group, the same has been rated high by male consumers than their female counterparts. All other factors have been rated high by male respondents than their female counterparts among all the age groups except 'post-purchase services' in 30-50 years age group; where the rating of female respondents is greater than male respondents and 'price' in 50 years and above group; which has been rated equally by both the gender groups. Male consumers of 18-30 years age group rated 'Physical appearance' (mean 4.38) the highest among all the factors studied across different age and gender groups. Female consumers of 50 years and above age group rated 'core technical features' (2.00) the least among all the factors studied across different age and gender groups.

The difference in three age and two gender groups about the importance of factors that influence the buying decision of a mobile handset has been summarized in Table 4. No interaction has been observed between two variables – age and gender for any of the factors studied. This implies that the effect of each variable was independent of each other. Hypothesis H₁ has been found largely true. There were significant differences between different age groups as regards to the importance given to all the factors except 'post - purchase services'. 'Post - purchase services' have been given importance to an equal extent by the different three age and two gender groups. The difference has been found the highest for 'brand' closely followed by 'core technical features'. These differences further go on decreasing for factors - 'value added features', 'price' and 'physical appearance'. This is so because that the consumers of 18-30 years age groups have given more importance to 'brand', 'core technical features' and 'value added features' than consumers of other age groups. On the contrary, the consumers of age group 50 years and above have given greater importance to 'price' than consumers of other age groups. The significance is comparatively less in 'physical appearance' factor. This is so because that even many mature consumers are also style conscious. Hypothesis H₂ has been found partially true. There are significant differences between two gender groups for 'core technical features' and 'brand'. Male respondents have greater tendencies to prefer handsets with advanced and latest technical features than their female counterparts. The differences between genders are relatively less significant in terms of value added features' and 'physical appearance'. No significant differences have been observed between genders for the factors – 'price' and 'post-purchase services'.

6. Discussion and Conclusions

The mobile telecom services are now being widely consumed by the Indian society. Rather these have become an essential part of their lives. Besides communication, people now seek entertainment and other features that are compatible to their self-image and lifestyle. The self-image and lifestyle may vary among genders and different age groups. Therefore, the study was carried out among consumers of different age and gender groups to understand the importance of factors that influence their mobile handset buying. The intense competition between manufacturers has forced them to expand their market base. The study concludes that the users of age group of 18-30 years are less price sensitive than consumers of other groups; rather they consider 'physical appearance', 'brand', 'value added features', and 'core technical features' more important than users of any other age groups. This may be due to the reason that majority of Indian youth seeks excitement in the products and also they are more exposed (Sabnavis, 2002) to new technological developments than other age groups particularly mature ones. The mature consumers on the other hand may have priorities for other products due to other obligations. That is why they are more price-sensitive. Also they have less knowledge about new technological developments and therefore, consider 'value added features', 'brand' and 'core technical features' less important. Overall, people have given the least preference to the 'core technical features'. This is probably due to the high price difference between handsets with highly advanced technical features and other handsets. Also female consumers gave only low to moderate preference to this factor. As most of the respondents were above 30 years of age and owed family obligations, therefore they have a chance to seek these features in other products also. The study also reveals that the consumer does not bother much about the price of handset provided they are satisfied with other features. This may probably be due to the fact that majority of the respondents were of the age less than 50 years and therefore, their sensitivity to price was relatively less as compared to other factors.

The gender differences were very conspicuous in 'core technical features' and 'brand'. This is probably due to less familiarity of female consumers with core technical aspects. Though less significant, yet gender differences also emerged in 'value added features' and 'physical appearance'. The female consumers probably due to their overwhelming orientation to 'physical appearance' of handset do not find 'brand' as much important as men do. Moreover, India remained a man-dominated society over a longer period and Indian women did not enjoy much freedom in terms of independent communication. In India, traditionally, a woman has only been seen as a member in a family or a group in the role of a daughter, wife, or mother. She has largely been denied the role as an individual with an identity, aspiration, or right of her own. Even the British rule could not change the role of women in the Indian society (Ghosh and Roy, 1997). Now with the social change that provides them greater freedom, probably has made Indian women so pleased just with the possession of an independent handset that they are so far less oriented than men to other features such as 'core technical features' and 'brand'. However, in future, these differences may disappear because the attribute-linked satisfaction may change over time (Mittal *et al*, 1999). Even though the income levels of an average Indian has increased considerably, yet mobile handset is being considered a high value product. Therefore, like other value products, the consumers of all age groups are equally concerned about 'post - purchase services'. 'Physical appearance' does matter for all the age groups, though it is of greater importance for 18-30 years age group. This is so because new Indian consumer is more style and pleasure seeking than ever before (Sabnavis, 2002). People in India particularly youth have two types of tendencies - one to show their possessions to others and second relating their possessions to their own physical looks and style.

A handset of reputed brand, smart appearance and with advanced value added features is the choice of 18-30 years age group. However these sets with advanced and moderate core technical features may exclusively be offered to male and female consumers respectively of this age group. Male consumers of 30-50 years age group look for a handset of reputed brand and with all other features moderate, while the female consumers of the same age group prefer to buy a handset of attractive appearance with all other features fair. A handset with moderate appearance, and lowly developed core technical and value added features; is the probable liking of 50 years and above age group but at the low price. However the male consumers of this age group may see brand leverage fairly in selecting the handset but not at the increased price.

7. Scope for Future Research

The study can be extended to more number of variables such as different income groups, different occupations, and different personality traits and lifestyles of consumers. The future studies may further investigate reasons for differences between different consumer groups.

8. Managerial Implications

India has become the second largest mobile handset market in the world. It is now worth about US\$ 2 billion, but will rush forward by over 60 percent (Indian Brand Equity Foundation, 2005). It is very important for the marketers to understand the preferences of the users belonging to different age and gender groups. The marketers must be very clear about their customer base while offering the products. Different customers value a product or a firm differently. Therefore, all products are not meant for all customers (Ganesh *et al*, 2000). Therefore, the companies must translate

preferences of their target segments into the diverse models meant for different segments. Moreover the companies may design their communication messages according to the factors considered the most important by a definite age and gender group. The companies without any fear of price increase; may add as many frills as they like, for the products to be offered to the young and envied class of 18-30 years group. But at the same time they must consider that there can be some consumers (up to age group of 22-24 years), who though may have these preferences, yet they depend upon others (parents) for finances. In such cases, it becomes important to understand their ability to buy independently. Parents now-a-days often accede to their requests for buying the handsets of their choice when they please their parents with their performance in competitive events such as examinations, sports and other events. The advertising messages showing mutual reciprocation between children and parents in terms of child producing the desired performance in the competitive events and the parents gifting the mobile handset as of his/her choice as an award, may help a lot in breaking this barrier.

In many number of cases, children are taken into confidence when a parent buys an item like handset as a gift to be given to the other parent on special occasions like anniversaries. This implies that these people may not only act as independent buyers, but influence the buying of people of other age/gender groups. The marketers of handsets can earn a lot of admiration from Indian female consumers by offering a wide range (colors and designs) of models that are not only attractive in appearance but also compatible to their physical looks and style. The companies that wish to target Indian youth must strengthen their brand equity besides improving 'appearance', 'value added features' and 'core technical features'. It will help them in increasing their revenues manifold in India due to the reason that Indian market is youth rich with median age of 24 years (The World Factbook, 2008). The companies with poor brand equity may find a niche in 50 years and above age group, provided they reasonably improve 'appearance' and 'post-purchase services' and keeping the prices as low as possible. The gray-market products from countries like China due to the lack of adequate 'post-purchase services'; did not get much success despite all other technical, value added features and low price.

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Table 1. Distribution of Respondents According to Three Age and Two Gender Groups

Age Group	Frequency			Per cent (Total)
	Male	Female	Total	
18-30 Years	48	48	96	40
30-50 Years	40	38	78	33
50 Years and above	34	32	66	27
Total	122	118	240	100

Table 2. Frequency Distribution of Mobile Handsets

Brand	Frequency									Grand Total	Per cent (Grand Total)
	18-30 Years			30-50 Years			50 Years and above				
	M	F	T	M	F	T	M	F	T		
Nokia	30	22	52	20	18	38	10	08	18	108	45
Samsung	04	04	08	06	06	12	04	04	08	28	12
Motorola	08	10	18	08	06	14	08	06	14	46	19
Sony Ericsson	04	06	10	06	08	14	04	08	12	36	15
LG	02	04	06	00	00	00	04	04	08	14	06
Others	00	02	02	00	00	00	04	02	06	08	03
Grand Total	48	48	96	40	38	78	34	32	66	240	100

M=Male, F=Female and T=Total

Table 3. Comparative Importance given by Three Age and Two Gender Groups to Factors Influencing Buying Decision of Mobile Handset

Factors	Consumer Groups							Overall	
	Age (Years)	18-30		30-50		50 and Above			
	Gender	Mean	S D	Mean	S D	Mean	S D	Mean	S D
Brand	Male	4.29	0.77	4.20	0.79	3.12	1.04	3.93	0.99
	Female	4.25	0.79	3.79	0.81	2.50	0.80	3.63	1.07
	Total	4.27	0.77	4.00	0.82	2.82	0.98	3.78	1.04
Physical Appearance	Male	4.38	0.64	3.95	0.68	3.24	0.89	3.92	0.86
	Female	4.29	0.71	4.21	0.62	3.69	1.00	4.10	0.81
	Total	4.33	0.68	4.08	0.66	3.45	0.96	4.01	0.84
Price	Male	3.00	1.05	3.80	0.89	4.06	0.69	3.56	1.02
	Female	2.88	1.02	3.42	0.92	4.06	0.67	3.37	1.02
	Total	2.94	1.03	3.62	0.89	4.06	0.68	3.47	1.01
Value Added Features	Male	4.25	0.79	3.85	0.92	3.00	1.04	3.77	1.03
	Female	4.17	0.81	3.47	0.92	2.63	1.04	3.53	1.01
	Total	4.21	0.79	3.67	0.94	2.82	1.05	3.65	1.07
Core Technical Features	Male	4.08	0.65	3.70	0.91	2.76	1.02	3.59	1.00
	Female	3.63	0.70	3.05	1.01	2.00	0.95	3.00	1.09
	Total	3.85	0.71	3.38	1.01	2.39	1.05	3.30	1.09
Post-Purchase services	Male	3.79	0.71	3.80	0.69	3.76	0.70	3.79	0.70
	Female	3.48	0.68	3.84	0.69	3.75	0.72	3.67	0.70
	Total	3.69	0.71	3.82	0.68	3.76	0.70	3.73	0.70

SD= Standard Deviation

Table 4. Difference in Three Age and Two Gender Groups about the Importance of Factors Influencing Buying Decision of Mobile Handset

Factors	Source	SS	DF	MS	F
Brand	Gender (g)	7.45	1	7.45	10.82**
	Age Groups (a)	94.25	2	47.12	68.42**
	g x a	3.32	2	1.66	2.41
	Error	161.16	234	0.69	
	Total	258.73	239		
Physical Appearance	Gender (g)	2.58	1	2.58	4.56*
	Age Groups (a)	31.43	2	15.72	27.78**
	g x a	2.88	2	1.44	2.54
	Error	132.38	234	0.57	
	Total	167.98	239		
Price	Gender (g)	1.63	1	1.63	2.02
	Age Groups (a)	49.91	2	24.95	30.95**
	g x a	1.48	2	0.74	0.92
	Error	188.67	234	0.81	
	Total	243.73	239		
Value Added Features	Gender (g)	4.53	1	4.53	5.48*
	Age Groups (a)	77.28	2	38.64	46.67**
	g x a	1.11	2	0.56	0.67
	Error	193.74	234	0.83	
	Total	274.6	239		
Core Technical Features	Gender (g)	22.77	1	22.77	30.39**
	Age Groups (a)	88.06	2	44.03	58.76**
	g x a	0.93	2	0.47	0.62
	Error	175.33	234	0.75	
	Total	282.4	239		
Post-Purchase Services	Gender (g)	0.53	1	0.53	1.09
	Age Groups (a)	1.39	2	0.69	1.43
	g x a	1.42	2	0.71	1.46
	Error	113.47	234	0.48	
	Total	117.4	239		

SS=Sum of Squares, DF= Degrees of Freedom, MS=Mean Square

**significant at both 0.01 and 0.05 significance levels

*significant at 0.05 significance level only



From the Perspective of the Industrialization of Agriculture in Yunnan Menglian Case Analysis of Local Government Functions

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Abstract

After the Yunnan Meng Lian event occurs, many media tracks reported this event, also has caused in society's some disputes. This article through to the Meng Lian event's review, carries on the analysis from the agricultural industrial production angle to the Meng Lian event, unearths the behind agent which the Meng Lian event occurs, near and carries on the thorough analysis to Local authority's function, displays the Local authority function fully the positive role, the promotion agriculture industrial healthy development, escorts for the region economic development, serves, the legal system Local authority for the construction to put forward the related policy proposal.

Keywords: Agricultural industrialization, Local government, Meng Lian event

After the Yunnan Meng Lian event occurs, has caused huge shocking in the society, has the huge social impact. Many media tracked and reported this event, also has caused in society's some disputes and the discussion. The surface looks like is the Local authority and the rubber agriculture initiation conflict, materially is in the agricultural industrial production various benefits main body dispute, the Local authority has not played the good function. Also constructs, magistrate's ruling ability from another side test on our country legal system society to propose stern. This article is from the agricultural industrial production angle, analyzes the behind agent which the Meng Lian event occurs, nearly pondered that the Local authority the function which should display in the agricultural industrial production, to serve the government, the legal system government for the construction to make the positive exploration. Full display Local authority function positive role, promotion agriculture industrial healthy development, also escorts for the region economic development.

1. Introduction

The agricultural industrial production development needs the Local authority to intervene suitably, carries on the effective macroeconomic regulation and control. The first agricultural industrial production follows the socialist market economic system to develop, market by no means multi-purpose, when the market malfunctions needs the Local authority to intervene suitably. Our country is a developing country, the market economy system is imperfect, especially needs Local authority's cultivation and the effective management, therefore needs the Local authority to carry on the certain extent to the market the intervention. One of next agricultural industrial production participation main bodies is a farmer, but farmer's market consciousness lacks, the information is unenlightened, needs the Local authority to carry on the positive support and the guidance. Finally the agricultural industrial production takes a complex systems engineering, needs the Local authority to carry on many coordinated. If between the Leading enterprise and peasant household's benefit joint mechanism carries out needs the Local authority to carry on the positive communication and the coordination.

The Local authority in the macroeconomic regulation and control, wants the reasonable fulfillment government function, must defer to the market economy development the intrinsic request and the rule management. Otherwise, the Local authority displays the function dislocation, will harm the agricultural industrial production participation main body the benefit, will harm the region economy the healthy development. In the Leading enterprise and in the peasant household benefit assignment uneven situation, the Local authority must take on the coordinator, completes the arbitration role, will otherwise intensify between the agricultural industrial production participation main body the contradiction, will cause the agricultural industrial production participation main body to have the extreme behavior. The Yunnan Meng

Lian event is the Local authority in the agricultural industrial production, excessively many policies favor the Leading enterprise, the neglect rubber agriculture to own benefit demand, creates the rubber agriculture and Local authority's conflict.

2. Meng Lian event's review and analysis

2.1 Meng Lian event's review

On July 19, 2008, the Yunnan Province Pu'er city Meng Lian Dai national minority Lahu national minority Wa national minority Autonomous County has a police people conflict event. more than 300 polices have the conflict with more than 500 accumulation rubber agriculture, causes 2 villagers to die, 41 polices, 3 cadre, 17 villagers are injured, 9 carry out the duty vehicles to break, 102 police equipment damages or loss. After the Meng Lian event occurs, causes the community and even the overseas public opinion close attention rapidly. The Yunnan provincial government also takes seriously, forms the work team to rush to the scene rapidly. The event has four days later, Pu'er municipal government news office on July 23 4:00 pm holds the press conference, the event qualitative is "the colony thunderbolt", thought that on this event surface looked is the police people conflicts, materially is a more serious colony security, social thunderbolt which the rubber rubber agriculture and enterprise's economic interest long-term dispute initiates. In September 4 Chinese Communist Party Yunnan Provincial party committee decided that except took the blame to resign one group of local government, simultaneously to the Pu'er city, the Meng Lian county participation rubber company will buy stock, draws bonus with business, rents the rubber forest the leading cadre to receive disciplinary inspection Supervision department's further making a deep study.

The Meng Lian event occurs the most immediate cause is in the county level government's part main officials gathers enterprise's advantage, everywhere maintains the enterprise benefit, makes the behavior favors the enterprise naturally. When the enterprise and the rubber agriculture have the conflicts of interest, the Local authority is not stands the maintenance rubber agriculture benefit standpoint, but on the enterprise requested makes striking hard "the countryside evil force" the erroneous decision, the reassignment police forces to the partial rubber agriculture implementation capture, initiate from this 2 die 61 wound serious police people conflict events.

2.2 Meng Lian event under agricultural industrial production angle of view analysis

The Meng Lian county's rubber industry starts is the use "the company + base + peasant household" the pattern develops, the rubber agriculture sold to according to the negotiated price the rubber latex the rubber company. since 2005, the rubber price has climbed largely, rises from original one ton several thousand Yuan to 25,000 Yuan above, but the company does not make the adjustment to the rubber latex purchase price, the rubber price soars the benefit which cancels with the agricultural special tax brings by the rubber company to monopolize, bringing about rubber agriculture indignation. The rubber agriculture decided that stops selling the rubber latex for the Domestic enterprise, sold to voluntarily bids the high acquirer, encounters the security impediment which the Domestic enterprise sends out, both sides have the conflict many times, but the Local authority actually slowly has not put out the effective solution dispute plan, intensified the conflict unceasing promotion. The Meng Lian event occurs the essence is the rubber agriculture and the rubber company long-term benefit dispute, the Local authority not prompt effective addressing populace's reasonable benefit demand, causes the rubber agriculture to be deep to the rubber company accumulated grievances date, but the Local authority has the tendentious involvement, the rubber agriculture inflates unceasingly to Local authority's opinion, thus passes the burden to Leading enterprise's disaffection to Local authority's disaffection, finally has only then caused the Meng Lian conflict event's occurrence.

The magistrate sought the behavior and the place benefit has induced in the Local authority administration process deviation. The magistrate stemming from the place benefit's consideration, mainly based on the tax revenue and the employment consideration, excessively many decisions-making favors the enterprise. Magistrate's inspection had also decided the magistrate to economic indicator's craving, big has surpassed the social efficiency to economic efficiency's pursue. The individual magistrate is in own benefit the consideration, seeks the atmosphere energetically, multiplied local government's corruption, also causes the Local authority to give the enterprise to look after. These factors cause the immediate cause which the Meng Lian event occurs.

In the agricultural industrial production development, the Leading enterprise and peasant household's benefit joint mechanism is the agricultural industrial production development core. In the information is asymmetrical gambles under the situation, the peasant household own factor's restriction, is often in the transaction process the inferiority status, lacks the driving negotiated price right, passive the price which accepts the enterprise to give, this has formed the enterprise and peasant household's is not coordinated in gambling strength. Simultaneously because the Leading enterprise and peasant household's benefit joint mechanism is not close, the peasant household for own benefit, will also take the action unilaterally, tore the formerly contract, according to the market price, sold to the product bids high. The Leading enterprise and the peasant household benefit joint mechanism is not close, also gave Meng Lian event's occurrence to lay down the foreshadowing.

Enterprise collective action to Local authority decision-making influence strengthening. The enterprise has formed one pressure group operation mechanism gradually, had has taken the collective action the possibility. The benefit expression and the political participation already no longer paused in one kind of individual sex act, but presented the collectivization trend. A large quantities of related benefit enterprise has set up the profession association spontaneously, develops into enterprise's benefit to represent the mechanism and the political participation mechanism gradually, promoted the enterprise benefit expression organization degree greatly. But disperses the peasant household to move to the Local authority decision-making influence attenuation. The peasant household is quite scattered, ideology's limit, each one is the camp, forms the effective collective action with difficulty. The individual peasant household has strives for oneself benefit the trend, but the strength is light, forms effectively with difficulty leans states this benefit social stratum the effective channel. Simultaneously the peasant household is very difficult the profession association which forms, has not formed the effective collective action strength, also does not have the channel to participate in and to express this group the wish.

Because the enterprise and the peasant household affect to the Local authority the strength is not coordinated, the Local authority will make is advantageous to enterprise's policy, nearly has injured peasant household's benefit. Has the achievement Local authority should positively to coordinate the good enterprise and the peasant household relates, maintains the good achievement weak trend status the peasant household benefit, makes the positive contribution for the equal transaction and the establishment benign market environment. Should display the Local authority fairly fully, the positive function, must strengthen variously to the Local authority administration behavior surveillance, urges on the Local authority in the administration process, the practical maintenance good peasant household benefit, carries out Central authorities' wish truly, completes in the region the pacificator role.

3. The Local authority the function which should display in the agricultural industrial production

The Local authority is the agricultural industrial production fast development powerful impelling force. The Local authority to the agricultural industrial production development's intervention and the regulative behavior and the function, originally should not decide by the people subjective will, but decides by the market economy development condition and the market nature, is the market economy intrinsic request.

3.1 Plan instruction function

The Local authority must display the plan instruction function fully. Is must, in does not intervene the Leading enterprise and the peasant household and so on under the microscopic main body economic activity premise, plans in the region leading industry. Take the market as the guidance, take the economic efficiency and the social efficiency as the center, reasonable carries on the characteristic industry layout. Must act as circumstances permit in the superiority characteristic industry's choice, the key development has the region characteristic and on the latent competitive power product. The Local authority must enlarge to the characteristic industry development investment, guides the peasant household and Domestic enterprise's development positively. Simultaneously wants the reasonable plan product mix and the industrial layout, in perfect region market system construction. Must build the technical demonstration garden, the support model scientific establishment and the poor household, carries on the industrial production management knowledge education, the scientific knowledge education and so on, guides the enterprise and the peasant household carries on the production according to the advanced agricultural industrial production management rule and the pattern, causes the agricultural market economic activity and the national macroeconomic regulation and control request tallies. The Local authority plans the instruction function key point is develops and cultivates the region superiority characteristic industry, serves in the broad masses, guides the people to become rich, stimulates the region economy.

3.2 Public administration function

The public administration function Local authority the market regulation invalid or does not adjust to the agricultural industrial production development in the domain carries on the management and the surveillance, the goal is overcomes "the market malfunction", eliminates the agricultural industrial production development the barrier, creates the good social environment for the enterprise and the peasant household. Local authority's public administration function, mainly manifests in the following several aspects: First, market regulation function. Local authority's market regulation function including the market infrastructure and the management, the execution country relevant law and acts according to this region actual formulation market transaction rule, carries on the management by supervision legally to the market transaction activity, attacks the market unlawful trading, provides the good transaction environment and the platform for the market transaction. Second, to peasant household risk management. The agricultural production has created the farming income risk to the biology and the natural special dependence. The risk existence causes the farmer tends to be conservative in the production decision-making, thus affects the overall benefit enhancement. The agricultural product production's risk is the market mechanism inextricability, must solve by the government, or strengthens each kind of contract management through many kinds of form's subsidies, guards against the agricultural risk, the safeguard agriculture industrial development health continues the steady progression. Third, public infrastructure management. Mainly refers to the path which, in the agricultural industrial production management the

peasant household and the Leading enterprise cannot solve aspect and so on water conservation irrigation facility management. Fourth, agriculture ecological environment management. To soil examination, agricultural product health safe examination, water source pollution examination, agricultural products processing waste goods processing control inspection and so on.

3.3 Coordinated conformity function

The Local authority must build the docking platform for the Leading enterprise and the peasant household. The Local authority must support in the agricultural industrial production the weak trend peasant household, solves take the family production as unit's peasant household to market information unenlightened, own product and the market engagement are not close, cannot follow the market demand change the rhythm, is unable to dodge questions and so on market risk. Strengthens joint mechanism which the Leading enterprise and the peasant household cooperate, and carries on the active oversight to the benefit joint mechanism, guarantees the bilateral benefit. This may cause the dispersion the peasant household forms the joint effort, realizes the economies of scale, the Leading enterprise can also reduce the production cost, does makes the strong enterprise greatly. When the Leading enterprise and the peasant household benefit mechanism present the contradiction, the Local authority wants to stand promptly, acts as the contradictory coordinator, displays the Local authority pacificators to affect. Eliminates between the benefit main body the barrier, maintains the good bilateral benefit, advances the region economy to develop fast. The Local authority must carry on the conformity to the local resources, regarding the characteristic industry, carries on the industrial layout, according to the market demand information, forms the industrial colony. The help Leading enterprise does greatly strongly, does not carry on the conformity to the economies of scale production, forms the information to have the characteristic industrial colony unobstructedly, promotes the region economy healthy development.

3.4 Service safeguard function

In the agricultural industrial production, the government provides the safeguard service function concrete manifestation in: First, consultation instruction service. To the peasant household, the Leading enterprise propagandizes involves the agricultural industrial production aspect the law, the laws and regulations, explains and the instruction legally fords the farming item. Second, technology training service. Establishes in the perfect region the agricultural science and technology service point, the training popularization agriculture scientific knowledge, the employment advertise agriculture scientists and technicians, establishes the science and technology development facility, the demonstration to promote the new technical skill and so on. Third, fund safeguard service. Refers to the investment essential financial funds and the credit fund, the construction and the consummation agricultural use infrastructure, the support superiority industry and the leading product, assists the peasant household to produce, supports the Leading enterprise and the production base construction. Fourth, perfect market service. The establishment and the consummation agricultural product trade the place and the transaction system, provides the peasant household and the Leading enterprise market information service, assists the peasant household, the enterprise to carry on the market survey, develops the market, assists aspect and so on foreign negotiations services.

4. Conclusion

The conclusion Meng Lian event's occurrence, in the prominent performance agriculture industrial developing process, Local authority's localization is not also clear, the magistrate for the vested interest, has neglected the rubber agriculture benefit demand, has created the malignant event. Also explained the partial local governments and the enterprise have the internal benefit association relations, receives advantage which the enterprise gives, multiplied partial magistrate's embezzlement and corruption. Also reflects our country legislative work not to be perfect, magistrate's surveillance and the system of examining and assessment are imperfect. Should strengthen to local government's surveillance, omni-directional, multiple perspectives inspection local government, sharpens our country local government's ruling ability, strengthens the Local authority in the region economy important pushing effect.

The Local authority must establish the correct role localization, gives full play to the Local authority function. The Local authority is in this region the economic activity pacificator, but is not the economic activity participant, is the contradictory coordinator, but is not the aggravating contradictory pusher. Must understand correctly the Local authority does decision-making, to agricultural industrial production participation main body influence. Breaks through in the region development to meet the benefit fetter, embarks from the development general situation, maintains the good peasant household's benefit, the practical display Local authority guides the function positively. Sets up the science reasonable Local authority administration plan, overcomes the Local authority to pursue the place benefit the limitation, strengthens the maintenance company and peasant household's cooperation. Perfect and the perfect company and peasant household's benefit links the mechanism, plays Local authority's in region development guidance role, makes the contribution for the agricultural industrial production development, escorts for the region economic development.

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Stock Market Anomaly: Day of the Week Effect in Dhaka Stock Exchange

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Abstract

This paper examines the presence of day of the week effect anomaly in Dhaka Stock Exchange (DSE). Several hypotheses have been formulated; dummy variable regression and the GARCH (1, 1) model were used in the study. The result indicates that Sunday and Monday returns are negative and only positive returns on Thursdays are statistically significant. Result also reveals that the mean daily returns between two consecutive days differ significantly for the pairs Monday-Tuesday, Wednesday-Thursday and Thursday-Sunday. Result also shows that the average daily return of every working day of the week is not statistically equal. Dummy variable regression result shows that only Thursdays have positive and statistically significant coefficients. Results of GARCH (1, 1) model show statistically significant negative coefficients for Sunday and Monday and statistically significant positive coefficient for Thursday dummies. The conclusion of all the findings is that significant day of the week effect present in DSE.

Keywords: Stock market anomaly, Day of the week effect, Dhaka Stock Exchange, Dummy variable regression, GARCH (1, 1) model

1. Introduction

The famous efficient market hypothesis (EMH) was introduced by Fama (1965) few decades ago which claims that in an efficient market stock prices always fully reflect available information. If the stock markets are efficient, stock prices are supposed to follow random walk. The random walk hypothesis states that future prices are not predictable on the basis of past prices, that is, stock price changes are unpredictable. The information contained in the past prices is fully and instantaneously reflected in current prices in an efficient market as argued by Fama (1965). Subsequent to study of Fama (1965) a good number of researches have been conducted to examine the randomness of stock price behavior to conclude about the efficiency of a capital market. More recently One of the popular areas of research in finance literature is finding out a particular seasonality or pattern in stock returns which demonstrate the inefficiency of the market. Since the introduction of EMH by Fama (1965) which states that the expected return on a financial asset should be uniformly distributed across different units of time, researchers have documented several calendar anomalies in the stock returns such as January effect, Turn of the month effect and Day of the week effect or Monday effect, Holiday effect and so on. The existence of the calendar anomalies is a denial of the weak form of efficient market hypothesis which states that stock returns are time invariant which means that there is no short-term seasonal pattern in the stock returns. The subsistence of seasonal pattern in the stock return infers that a market is inefficient and investors should be able to earn abnormal return. That's why finance researchers have been interested to find out the existence of the calendar anomalies or seasonality in the stock returns in different markets. Among the calendar anomalies day of the week effect is most widely documented anomaly and have been comprehensively investigated by the finance researchers in different markets of different countries considering different securities and indices and different institutional framework. Empirical studies have shown that day of the week anomaly not only present in the financial markets of the developed counties [for example, Gibbons and Hess (1981), Keim and Stambaugh (1984) Jaffe and Westerfield (1985) Lakonishok and Smidt (1988)] but also in the developing markets [for example, Aggarwal and Rivoli (1989), Islam and Gomes (1999), Choudhry (2000), Aly, et al. (2004), Nath and Dalvi (2004), Hossain (2007), Agathe (2008)].

The specific objective of this study is to investigate the existence of day of the week effect anomaly in Dhaka Stock Exchange (DSE) which is the prime stock market in Bangladesh. The results of this study will have important practical implications for capital market participant like investors, managers and regulatory authorities.

A good number of empirical studies have been conducted so far to examine the existence of day of the week effect in various markets of various countries for the last few decades. Researchers have found day of the week effect in a variety of forms in different markets. In most of the developed markets, empirical studies found negative Monday returns and positive Friday returns such as Cross (1973), French (1980), Gibbons & Hess (1981), Lakonishok and Levi (1982), Rogalski (1984), Keim & Stambaugh (1984), Theobald and Price (1984), Jaffe & Westerfield (1985), Harris (1986), Simrlock & Starts (1986), Board and Sutcliffe (1988), Lakonishok and Smidt (1988), Kim (1988), Jaff, Westerfield and Ma (1989), Cohers and Cohers (1995), Tang and Kwok (1997), Mehdian and Perry (2001) and so on. One possible explanation for such day of the week effect anomaly may be that most of the positive economic news comes at the week end and investors show affirmative and hopeful investment behavior which result in a positive return on Fridays. On the other hand, most of the negative economic news comes at the beginning of the week and investors try to sell their investment which result in a negative return on Mondays. Some other studies found day of the week effect in different forms specifically negative returns on Tuesday such as Condoyanni, O'Hanlon & Ward (1987), Solnik & Bousquet (1990), Kato (1990), Athanassakos & Robinson (1994), Kim (1988), Aggarwal & Rivoli (1989), Ho (1990) Wong, Hui and Chan (1992), Agrawal and Tandon (1994), Balaban (1995), Bildik (1997) and Özmen (1997) and so on. Some other studies found no day of the week effect existed in capital markets such as Santemases (1986), Malaikah (1990), Aybar (1992), Pena (1995) and Gardezabal and Regulez (2002) and so on. So there is no empirical harmony among the researchers regarding the issue which justifies the need of more research in this area.

In a country like Bangladesh where the economy is still emerging and capital market is in a vulnerable condition, empirical studies to examine the presence of day of the week effect in this market is very few such as Islam and Gomes (1999) and Hossain (2007). No study has yet been made to examine the presence of day of the week effect considering all the three indices of DSE which has encouraged us to conduct the study to contribute to finance literature.

The remainder of the paper is organized as follows. Section 2 provides literature review. Section 3 discusses testable hypotheses, the data, time frame considered right through the study and methodological issues. Section 4 provides empirical results and findings. A summary is given in section 5.

2. Literature Review

Extensive literature is available regarding day of the week effect and other market anomalies across the globe. In an early attempt French (1980) investigated two alternative models of the process generating stock returns. He concluded that during most of period studied from 1953 through 1977, the daily returns to the Standard and Poor's composite portfolio are inconsistent with both models. He also found out that the average return for Monday was significantly negative but the average return for the other four days of the week was positive. Gibbons and Hess (1981) examined the existence of day of the week effect in the US market using Dow Jones Industrial Average. They found strong and persistent negative mean returns on Monday for stocks and below average returns for bills on Mondays. Keim and Stambaugh (1984) made a similar study using longer time period and additional stocks and found consistently negative returns for the S & P composite as early as 1928, for exchange traded stocks of firms of all sizes and for actively traded over the counter (OTC) stocks. Jaffe and Westerfield (1985) examined daily stock market return for the U.S., U.K., Japan, Canada and Australia. They found so called week-end effect in each country. They contrasted the previous studies of the U.S and concluded that lowest mean returns for both the Japanese and Australian markets occur on Tuesday. Harris (1986) examined weekly and intraday patterns in common stock prices using transaction data. He found that for large firms, negative Monday return accrue between the Friday close and the Monday open and for small firms they accrue primarily during the Monday trading day. He also concluded that on Monday morning, prices drop, while on the other weekday mornings, they rise. In some related studies Theobald and Price (1984), Simrlock and Starts (1986), Board and Sutcliffe (1988), Cohers and Cohers (1995) and Tang and Kwok (1997) and many others support the previous studies and concluded that Mondays average return are negative and Fridays average return are positive. That means, share prices tend to decline on opening day (Monday) of the week and tend to increase on the closing day (Thursday) of the week.

Lakonishok and Smidt (1988) used 90 years of daily data on the Dow Jones Industrial Average to test the existence of persistent seasonal patterns in the rates of return. They found evidence of persistently anomalous returns around the turn of the week. Aggarwal and Rivoli (1989) examined seasonal and daily patterns in equity returns of four emerging markets: Hong-Kong, Singapore, Malaysia and the Philippines. Their results support the existence of a seasonal pattern in these markets. They found a robust day of the week effect. They concluded that these markets exhibit a weekend effect of their own in the form of low Monday returns. Lakonishok and Maberly (1990) documented regularities in trading patterns of individual and institutional investors related to the day of the week. They found a relative increase in trading activity by individuals on Mondays. They also concluded that there is a tendency for individuals to increase the number of sell transactions relatively to buy transactions, which might explain at least part of the weekend effect. Agarwal and Tandon (1994) examined five seasonal patterns in the stock markets of eighteen countries. They found a

daily seasonal in nearly all the countries but a weekend effect in only nine countries. Dubois and Louvet (1996) re-examined the day of the week effect for eleven indices from nine countries from 1969-1992 period. They found that the returns to be lower at the beginning of the week for full period but may not be on Monday. They also found that the anomaly disappears for most recent period in the USA but the effect is still strong for European countries, Hong-Kong and Toronto. Wang and Erickson (1997) showed that the well-known Monday effect occurs primarily in the last two weeks of the month. They also concluded that the mean Monday return of the first three weeks of the month is not significantly different from zero. Islam and Gomes (1999) examined the day of the week effect in the Dhaka Stock Exchange. They found the presence of daily return variations and large positive returns for the last day of the week. The week end effect found to be significantly large and positive. Choudhry (2000) investigated the day of the week effect in seven emerging Asian markets: India, Indonesia, Malaysia, Philippines, South Korea, Taiwan and Thailand from January 1990 to June 1995. Their result indicates the presence of significant day of the week effect on both stock returns and volatility although the result involving both the return and volatility are not identical in all seven cases. Mehdiian and Perry (2001) re-examined the Monday effect in the US stock market from 1964 to 1999 using daily returns. Result obtained indicates that Monday returns are significantly negative in all five stock indices for a period before 1987. But in the post 1987 period they found a significant reversal of the Monday effect since Monday returns are significantly positive. Lyrouti, Subeniotis and Komisopoulos (2002) examined day of the week effect in Greek stock market for the period January 1, 1997 to December 30, 1999. They found that the day-of-the-week effect was existent in the Greek stock market. They found positive and statistically significant returns on Tuesdays and Wednesdays. On the other hand, they also found negative and statistically insignificant returns on Thursdays.

Patev, Lyrouti and Kanaryan (2003) investigated the existence of the day-of-the-week effect in eight Central European stock markets: Romania, Hungary, Latvia, Czech, Russia, Slovakia, Slovenia and Poland for the period September 22, 1997 to March 29, 2002. They found mixed results in their study. They found that the Czech and Romanian markets have significant negative returns on Monday and the Slovenian market has significant positive returns on Wednesday and has insignificant negative returns on Fridays. They also concluded that the Polish and Slovak markets have no day-of-the week effect anomaly. Aly, et al. (2004) investigated the existence of the day-of-the week effect in the Egyptian stock market, for a period of April 26, 1998 until June 6, 2000. Egyptian stock market has only four trading days (Monday to Thursday).. They accomplished that Monday returns in the Egyptian stock market are positive and significant on average, but are not significantly different from returns of the rest of the week. Nath and Dalvi (2004) examined the day of the week effect in the Indian equity market. They found significant day of the week effect in the market before rolling settlement in 2002. Chukwuogor-Ndu (2006) examined the financial markets' trends in 15 emerging and developed European financial markets. He found the presence of day of the week effect during the period of 1997 to 2004. He also found that seven of the European financial markets experienced negative returns on Monday and seven others experience negative returns on Wednesday. They also concluded that generally there was high volatility of returns in the European financial markets. Hossain (2007) investigated day of the week effect in small portfolios in Bangladesh. The result showed that the strategy "buy on day 1 and sell on Monday" generates the highest mean daily return from D1-D6 strategy-buy on day one and sell on day six. The study also found that on average, above average return is not possible if portfolios are sold on Saturdays and Mondays. Agathee (2008) investigated the existence of day of the week effect in the emerging market of Mauritius using observations from Stock Exchange of Mauritius for a period of 2006. The study found that the Friday returns are higher relative to other trading days. The study also concluded that the mean returns across the five week days are jointly not significantly different from zero.

3. Testable hypothesis, Data and Methodology

To study whether the day of the week effect anomaly is experimental in Dhaka Stock Exchange or not, the following hypotheses have been formulated.

3.1 Testable Hypotheses

3.1.1 Hypothesis 1

H_0 : The average daily return of every working day of the week is not statistically different from zero.

H_1 : The average daily return of every working day of the week is statistically different from zero.

That is,

Null Hypothesis is $H_0: \mu_{ij} = 0$

Alternative Hypothesis is $H_1: \mu_{ij} \neq 0$

$i = 1, 2, 3$ (the examined index)

$j = 1, 2 \dots 5$ (the working weekdays from Sunday to Thursday)

3.1.2 Hypothesis 2

H_0 : The average daily returns between two sequential working days are not statistically different.

H_1 : The average daily returns between two sequential working days are statistically different.

That is,

Null Hypothesis is $H_0: \mu_1 - \mu_2 = 0$

Alternative Hypothesis is $H_1: \mu_1 - \mu_2 \neq 0$

If μ_1 and μ_2 are the population means of these sequential days.

3.1.3 Hypothesis 3

H_0 : The average daily return of every working day of the week is statistically equal

H_1 : The average daily return of every working day of the week is statistically different

Null hypothesis is $H_0: \mu_1 = \mu_2 = \mu_3 = \mu_4 = \mu_5$

μ_1 = Average return of Sunday

μ_2 = Average return of Monday

μ_3 = Average return of Tuesday

μ_4 = Average return of Wednesday

μ_5 = Average return of Thursday

Alternative hypothesis: $H_1: \mu_1 \neq \mu_2 \neq \mu_3 \neq \mu_4 \neq \mu_5$

μ_1 = Average return of Sunday

μ_2 = Average return of Monday

μ_3 = Average return of Tuesday

μ_4 = Average return of Wednesday

μ_5 = Average return of Thursday

3.2 Data

Data used in the study include daily closing prices of DSE indices such as DSE all share prices index (DSI), DSE general index (DGEN) and DSE 20 index (DSE 20) for a period of 04.09.2005-08.10.2008. All the data have been collected from DSE library.

3.3 Methodology

First of all, the following equation is used to determine the average daily return of the particular index for each working day of the week.

$$R_{it} = \frac{P_{i,t} - P_{i,t-1}}{P_{i,t-1}} \quad (1)$$

$R_{i,t}$ is the return of index i on day t , $P_{i,t}$ is the price of index i on day t and $P_{i,t-1}$ is the price of index i on day $t-1$.

In the next step, we tested whether the average daily return of all the week days are statistically different from zero or not. In order to test this hypothesis we use one-sample t-test. The t-statistic is calculated according to the following formula:

$$t = \frac{\bar{X} - \mu}{\frac{\delta}{\sqrt{n}}} \quad (2)$$

Where, \bar{x} is the average return for each day of the week from Sunday to Thursday and for each index, μ is hypothetical mean which equal to zero, δ is the standard deviation of the each day's return from Sunday to Thursday, n is the number of observations of each week day from Sunday to Thursday and $\frac{\delta}{\sqrt{n}}$ is the standard error.

In the next step, we tested whether the average daily returns between two sequential working days are statistically different from zero or not. To test this hypothesis we use two-sample t-test. The t-statistic is calculated according to the following formula:

$$t = \frac{\bar{x}_1 - \bar{x}_2}{\sqrt{\frac{SD_1^2}{\eta_1} + \frac{SD_2^2}{\eta_2}}} \quad (3)$$

Where, \bar{x}_1 is the average return of day 1 (e.g. Sunday's average return), \bar{x}_2 is the average return of day 2 (e.g. Monday's average return), SD_1^2 is the standard deviation of returns of day 1 (e.g. Sunday), SD_2^2 is the standard deviation of returns of day 2 (e.g. Monday), η_1 is sample size of day 1 (e.g. Sunday) and η_2 is sample size of day 2 (e.g. Monday).

In the next step, we tested whether the average daily return of every working day of the week is statistically equal or not. In order to test this hypothesis we use single factor ANOVA. The standard F-statistic is calculated as following:

$$F = \frac{BSS / df_B}{WSS / df_w} \quad (4)$$

where, BSS is between sum of squares, WSS is within sum of squares and df_B is degrees of freedom between groups and df_w is degrees of freedom within groups.

BSS and WSS are calculated as follows:

$$BSS = \eta_1 (\bar{x}_1 - \bar{x})^2 + \eta_2 (\bar{x}_2 - \bar{x})^2 + \dots + \eta_n (\bar{x}_n - \bar{x})^2 \quad (5)$$

where, $\eta_1, \eta_2, \dots, \eta_n$ is the sample size of every working day from Sunday to Thursday, $\bar{x}_1, \bar{x}_2, \dots, \bar{x}_n$ is the mean return of every working day from Sunday to Thursday, and \bar{x} is the population mean.

$$WSS = (\eta_1 - 1)SD_1^2 + (\eta_2 - 1)SD_2^2 + \dots + (\eta_n - 1)SD_n^2 \quad (6)$$

where, $\eta_1, \eta_2, \dots, \eta_n$ is the sample size of every working day from Sunday to Thursday, $SD_1^2, SD_2^2, \dots, SD_n^2$ is the standard deviation of returns of each working day from Sunday to Thursday.

To detect the presence of day of the week we use the following dummy variable regression:

$$R_{it} = \beta_1 D_{1t} + \beta_2 D_{2t} + \beta_3 D_{3t} + \beta_4 D_{4t} + \beta_5 D_{5t} + \varepsilon_t \quad (7)$$

Where,

R_{it} is the daily index return

D_1 – dummy variable equal to 1 if t is a Sunday and 0 otherwise;

D_2 – dummy variable equal to 1 if t is a Monday and 0 otherwise;

D_3 – dummy variable equal to 1 if t is a Tuesday and 0 otherwise;

D_4 – dummy variable equal to 1 if t is a Wednesday and 0 otherwise;

D_5 – dummy variable equal to 1 if t is a Thursday and 0 otherwise;

ε_t is the stochastic disturbance term

β_1 = Average return of Sunday

β_2 = Average return of Monday

β_3 = Average return of Tuesday

β_4 = Average return of Wednesday

β_5 = Average return of Thursday

The hypothesis to be tested for testing the presence of the day of the week effect is as follows:

$$\beta_1 = \beta_2 = \beta_3 = \beta_4 = \beta_5 \quad (8)$$

If the daily returns are drawn from an identical distribution, they will be expected to be equal. The null hypothesis will indicate a specific pattern in the stock return thus the presence of day of the week anomaly.

The above regression equation has a limitation that it assumes the existence of constant variance. So if there is a time varying variance it may result in inefficient estimates. For this reason, we include the changing variance in the estimation. Our assumption is that the error term of the return equation has a normal distribution with zero mean and time varying conditional variance. To model conditional variance we regress the stock return to day of the week dummy variables. We include AR terms and GARCH (1, 1) terms in the regression to take into account the conditional mean and conditional volatility. The regression model is as follows:

$$R_t = \sum_{i=1}^5 \alpha_i R_{t-i} + \sum_{j=1}^5 \lambda_j D_j + \varepsilon_t \quad (9.1)$$

where,

$$\varepsilon_t / \varepsilon_{t-1} \approx N(0, h_t^2) \quad (9.2)$$

$$h_t^2 = \omega + \gamma_1 \varepsilon_{t-1} + \gamma_2 h_{t-1}^2 \quad (9.3)$$

where D_j are significant dummy variables from equation which take the value 1 if the corresponding day is Sunday, Monday, Tuesday, Wednesday or Thursday and 0 otherwise and α is the market price of risk.

The gamma coefficients in the conditional variance equation, γ measure the seasonality in volatility of the market. If the inclusion of h_t in the conditional mean equation renders the dummy variables in the mean equation insignificant, we could explain that the significant dummy variables due to daily variation in stock market risk. Alternatively, if the dummy variables remain significant as explanatory variables in spite of the inclusion of h_t in the conditional mean equation, we can conclude that the seasonality in the daily returns is not due to temporal variation in stock market risk, as proxied by the GARCH (1, 1) model.

4. Empirical Results and Findings

Table 1.1, 1.2 and 1.3 represent daily mean returns, standard deviation of returns and coefficient of variation. To test the first hypothesis, the tables also represent t-values and their corresponding p-values for DSI, DSE-20 and DGEN index respectively. From the tables we can see that for all the three indices mean returns for Sunday and Monday are negative and for all other days mean returns are positive. It is also evident that only positive returns on Thursdays are statistically significant at 1% significance level for all the three indices thus our testable first hypothesis is rejected for all the three indices. So we can say that significant day of the week effect observed in DSE for all the three indices

Table 2.1, 2.2 and 2.3 represent daily mean returns for the pair of days. To test the second hypothesis, the tables also represent t-values and their corresponding p-values for DSI, DSE-20 and DGEN index respectively. It is apparent from the tables that the mean daily returns between two consecutive days differ significantly for the pairs Monday-Tuesday, Wednesday-Thursday and Thursday-Sunday for all the three indices thus the second hypothesis is rejected for these pair of days. For the other pair of days mean returns do not differ significantly thus the null hypothesis is accepted. So we can draw the similar conclusion that the DSE is experiencing significant day of the week effect.

Table 3.1, 3.2 and 3.3 represent ANOVA tables for DSI, DSE-20 and DGEN index respectively. It is obvious from the tables that for all the three indices calculated F-values are greater than critical F-values thus our third hypothesis is rejected for all the three cases. So we can infer that the average daily return of every working day of the week is not statistically equal which supports the existence of day of the week effect in DSE.

Table 4.1, 4.2 and 4.3 represent OLS regression results for DSI, DSE-20 and DGEN index respectively. It is clear from the tables that only Thursdays have positive and statistically significant coefficients for all the three indices which is consistent with our previous results. Sundays and Mondays have statistically significant and negative coefficients which is also consistent with our previous result. Thus we can further conclude that significant day of the week effect present in DSE.

Table 5.1, 5.2 and 5.3 represent parameter estimates of equation 8.1 for DSI, DSE-20 and DGEN index respectively. From the table we can see statistically significant negative coefficients for Sunday and Monday and statistically significant positive coefficient for Thursday dummies for all the three indices. The Thursday coefficient is 0.320607, 0.390151 and 0.38385 which implies that the conditional mean return on Thursday is 32%, 39% and 38% points higher than the conditional mean return for all the week days of the week taken together for DSI, DSE-20 and DGEN index

respectively. Results also indicate that the conditional mean return tends to shift to the positive direction on Thursdays and negative direction on Sundays and Mondays.

5. Conclusion

In this paper we have examined the presence of day of the week effect in DSE. We considered daily closing values of DSE indices for a period of 04.09.2005-08.10.2008. We formulated several hypotheses and used one-sample t-test, two-sample t-test and ANOVA to test those hypotheses. We used dummy variable regression to infer whether day of the week anomaly exist in DSE. We also used the GARCH (1, 1) model to test the volatility of return. The result indicate that for all the three indices mean returns for Sunday and Monday are negative and for all other days mean returns are positive. It is also evident that only positive returns on Thursdays are statistically significant for all the three indices. Result also reveals that the mean daily returns between two consecutive days differ significantly for the pairs Monday-Tuesday, Wednesday-Thursday and Thursday-Sunday for all the three indices. For the other pair of days mean returns do not differ significantly. It is obvious from the result that for all the three indices calculated F-values are greater than critical F-values thus we can infer that the average daily return of every working day of the week is not statistically equal which supports the existence of day of the week effect in DSE. Dummy variable regression result shows that only Thursdays have positive and statistically significant coefficients for all the three indices which is consistent with our previous results. Sundays and Mondays have statistically significant and negative coefficients. Results of GARCH (1,1) model shows statistically significant negative coefficients for Sunday and Monday and statistically significant positive coefficient for Thursday dummies for all the three indices. Results also indicate that the conditional mean return tends to shift to the positive direction on Thursdays and negative direction on Sundays and Mondays. We can conclude from all the results that statistically significant negative returns occur on Sundays and Mondays where as high and statistically significant positive return occur on Thursdays which reveals that significant day of the week effect present in DSE for all the three indices for the period examined. One possible explanation for such day of the week effect anomaly may be that most of the positive economic news comes at the week end and investors show affirmative and hopeful investment behavior which result in a positive return on Thursdays. On the other hand, most of the negative economic news comes at the beginning of the week and investors try to sell their investment which result in a negative return on Sundays and Mondays.

The results have important practical implications to different capital market participants such as investors, managers and regulatory authorities. Investors can formulate their investment strategies and timing on the basis of this result and can earn some abnormal return by predicting future prices. More specifically said, as we conclude negative Sunday and Monday returns and significantly positive return on Thursday so investors can buy the shares on Sunday and Monday and can sell the share on Thursday. By following this trading strategy investors are expected to earn some abnormal return. One weakness of the study is that it does not consider individual share price rather it considers market index. So investment strategy on the basis of the finding of this study in case of individual share may not provide expected result. But if the size of the portfolio is larger that closely represent the market then investment strategy on basis of the finding of this study is expected to provide some abnormal return to the investors. As the presence of the day of the week anomaly indicates inefficiency of the market, it informs the regulators and policy makers that appropriate measures should be taken to bring informational and operational efficiency in the market. It is argued by Islam and Gomes (1999) that a combination of factors like inadequate financial information, thin and discontinuous trading, reliance on price momentum as a basis for trading and manipulation by the market makers creates the conditions that lead to the positive weekend effect. Thus the regulators should take appropriate steps to remove such anomaly to bring the efficiency of the market.

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Table 1.1 Mean Daily Return of DSI

Day	Obs.	Mean Return (%)	Standard Deviation (%)	Coefficient Of Variation	t-value	p-value
Sunday	140	-0.0717	1.271334	1773	-0.67	0.5057
Monday	146	-0.15751	1.125504	714	-1.69	0.0930
Tuesday	145	0.195425	1.238948	633	1.90	0.0595
Wednesday	147	0.149072	0.99324	666	1.82	0.0709
Thursday	143	0.391211	0.989469	253	4.73***	0.0001

*** denotes significant at 1% significance level

Table 1.2 Mean Daily Return of DSE-20

Day	Obs	Mean Return (%)	Standard Deviation (%)	Coefficient Of Variation	t-value	p-value
Sunday	140	-0.04093	1.375521	3361	-0.35	0.7253
Monday	145	-0.20223	1.145441	566	-2.13**	0.0352
Tuesday	145	0.092911	1.052477	1133	1.06	0.2896
Wednesday	147	0.076727	1.015188	1323	0.92	0.3610
Thursday	143	0.369396	1.006851	273	4.39***	0.0001

*** denotes significant at 1% significance level and ** denotes significant at 5% significance level

Table 1.3 Mean Daily Return of DGEN

Day	Obs	Mean Return (%)	Standard Deviation (%)	Coefficient Of Variation	t-value	p-value
Sunday	140	-0.06477	1.306767	2018	-0.59	0.5585
Monday	145	-0.14333	1.182611	825	-1.46	0.1466
Tuesday	145	0.122094	1.106028	906	1.33	0.1859
Wednesday	147	0.141989	1.027941	724	1.67	0.0961
Thursday	143	0.398971	0.957339	240	4.98***	0.0001

*** denotes significant at 1% significance level

Table 2.1 Mean Return of Two Sequential Days of DSI

Pair days	Mean return	t-value	p-value
Sunday Monday	-0.0717 -0.15751	0.60	0.5457
Monday Tuesday	-0.15751 0.195425	-2.54**	0.0115
Tuesday Wednesday	0.195425 0.149072	0.35	0.7244
Wednesday Thursday	0.149072 0.391211	-2.08**	0.0385
Thursday Sunday	0.391211 -0.0717	3.41***	0.0007

*** denotes significant at 1% significance level and ** denotes significant at 5% significance level

Table 2.2 Mean Return of Two Sequential Days of DSE-20

Pair days	Mean return	t-value	p-value
Sunday Monday	-0.04093 -0.20223	1.07	0.2823
Monday Tuesday	-0.20223 0.092911	-2.28**	0.0231
Tuesday Wednesday	0.092911 0.076727	0.13	0.8937
Wednesday Thursday	0.076727 0.369396	-2.46**	0.0143
Thursday Sunday	0.369396 -0.04093	2.86***	0.0044

*** denotes significant at 1% significance level and ** denotes significant at 5% significance level

Table 2.3 Mean Return of Two Sequential Days of DGEN

Pair days	Mean return	t-value	p-value
Sunday Monday	-0.06477 -0.14333	0.53	0.5948
Monday Tuesday	-0.14333 0.122094	-1.97**	0.0494
Tuesday Wednesday	0.122094 0.141989	-0.16	0.8736
Wednesday Thursday	0.141989 0.398971	-2.20**	0.0285
Thursday Sunday	0.398971 -0.06477	3.40***	0.0007

*** denotes significant at 1% significance level and ** denotes significant at 5% significance level

Table 3.1 ANOVA table of DSI

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	27.61233	4	6.903082	5.416906	0.000267***	2.384368
Within Groups	912.4409	716	1.274359			
Total	940.0533	720				

***denotes significant at 1% significance level

Table 3.2 ANOVA table of DSE-20

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	25.28322	4	6.320804	4.989042	0.00057***	2.38439
Within Groups	905.8602	715	1.266937			
Total	931.1434	719				

***denotes significant at 1% significance level

Table 3.3 ANOVA table of DSE-20

ANOVA						
Source of Variation	SS	df	MS	F	P-value	F crit
Between Groups	25.44458	4	6.361146	5.057365	0.000505***	2.38439
Within Groups	899.3259	715	1.257799			
Total	924.7705	719				

***denotes significant at 1% significance level

Table 4.1 Regression Result of DSI Index

Variable	Coefficient	Std. Error	t-statistic	Prob.
Intercept	0.3912	0.0944	4.1441	0.0000
Sunday	-0.4630	0.1342	-3.44953***	0.0006
Monday	-0.5487	0.1328	-4.1315***	0.0000
Tuesday	-0.1958	0.1330	-1.4716	0.1416
Wednesday	-0.2421	0.1326	-1.8262	0.0682
Thursday	0.3614	0.1059	3.41178***	0.0007
R-squared	0.029373	Sum squared resid		912.4409
Adjusted R-squared	0.023951	F-statistic		5.416906
Standard Error	1.128875	Prob (F-statistic)		0.000

***denotes significant at 1% significance level

Table 4.2 Regression Result of DSE-20 Index

Variable	Coefficient	Std. Error	t-statistic	Prob.
Intercept	0.369396	0.094126	3.924489	0.0001
Sunday	-0.41033	0.133825	-3.06613***	0.00225
Monday	-0.57162	0.132654	-4.30912***	1.87E-05
Tuesday	-0.27649	0.132654	-2.08425	0.037492
Wednesday	-0.29267	0.132206	-2.21375	0.027161
Thursday	0.387251	0.105393	3.67436***	0.000256
R-squared	0.027153	Sum squared resid		905.8602
Adjusted R-squared	0.02171	F-statistic		4.989042
Standard Error	1.125583	Prob (F-statistic)		0.00057

***denotes significant at 1% significance level

Table 4.3 Regression Result of DGEN Index

Variable	Coefficient	Std. Error	t-statistic	Prob.
Intercept	0.398971	0.093786	4.254063	0.0000
Sunday	-0.46374	0.133342	-3.47786***	0.0005
Monday	-0.5423	0.132175	-4.10291***	0.0000
Tuesday	-0.27688	0.132175	-2.09478	0.0365
Wednesday	-0.25698	0.131728	-1.95085	0.0515
Thursday	0.38385	0.105042	3.654251***	0.0003
R-squared	0.027514	Sum squared resid		899.3259
Adjusted R-squared	0.022074	F-statistic		5.057365
Standard Error	1.121516	Prob (F-statistic)		0.000505

***denotes significant at 1% significance level

Table 5.1 Stock Market Volatility using DSI Index

	Coefficient	Std. Error	z-Statistic	Prob.
GARCH	-0.002911	0.153969	-0.018907	0.9849
C	0.342524	0.197721	1.732361	0.0832
SUNDAY	-0.439782	0.127687	-3.4442***	0.0006
MONDAY	-0.543117	0.121274	-4.4784***	0.0000
TUESDAY	-0.117421	0.127783	-0.918911	0.3581
WEDNESDAY	-0.214626	0.123772	-1.734038	0.0829
THURSDAY	0.320607	0.102164	3.138166***	0.0017
Variance Equation				
C	0.285207	0.17259	1.652513	0.0984
RESID(-1)^2	0.090126	0.04649	1.938626	0.0525
GARCH(-1)	0.689909	0.159425	4.327495	0.0000
T-DIST. DOF	6.901892	1.946925	3.545021	0.0004
R-squared	0.028303	Mean dependent var		0.101454
Adjusted R-squared	0.016003	S.D. dependent var		1.142641
S.E. of regression	1.133462	Akaike info criterion		3.048697
Sum squared resid	913.4473	Schwarz criterion		3.112229
Log likelihood	-1089.055	F-statistic		2.301033
Durbin-Watson stat	1.856571	Prob(F-statistic)		0.014995

***denotes significant at 1% significance level

Table 5.2 Stock Market Volatility using DSE-20 Index

	Coefficient	Std. Error	z-Statistic	Prob.
GARCH	0.509417	0.347525	1.465842	0.1427
C	-0.311955	0.446382	-0.698852	0.4846
SUNDAY	-0.491927	0.126466	-3.889809***	0.0001
MONDAY	-0.568054	0.125463	-4.527665***	0.0000
TUESDAY	-0.230353	0.12105	-1.902952	0.0570
WEDNESDAY	-0.300983	0.122701	-2.452985	0.0142
THURSDAY	0.390151	0.100336	3.888452***	0.0001
Variance Equation				
C	0.543355	0.307784	1.765378	0.0775
RESID(-1)^2	0.072625	0.044546	1.630319	0.1030
GARCH(-1)	0.506718	0.251595	2.014019	0.0440
T-DIST. DOF	5.227122	1.165668	4.484228	0.0000
R-squared	0.027786	Mean dependent var		0.059058
Adjusted R-squared	0.015462	S.D. dependent var		1.138004
S.E. of regression	1.129172	Akaike info criterion		3.02185
Sum squared resid	905.2706	Schwarz criterion		3.085451
Log likelihood	-1077.866	F-statistic		2.254658
Durbin-Watson stat	1.789687	Prob(F-statistic)		0.017272

***denotes significant at 1% significance level

Table 5.3 Stock Market Volatility using DGEN Index

	Coefficient	Std. Error	z-Statistic	Prob.
GARCH	0.241758	0.2197	1.100401	0.2712
C	0.08316	0.266682	0.311832	0.7552
SUNDAY	-0.525563	0.138793	-3.786674***	0.0002
MONDAY	-0.579945	0.130695	-4.437404***	0.0000
TUESDAY	-0.247839	0.13049	-1.899296	0.0575
WEDNESDAY	-0.237057	0.127148	-1.864416	0.0623
THURSDAY	0.38385	0.105042	3.654251***	0.0003
Variance Equation				
C	0.094316	0.070855	1.331113	0.1832
RESID(-1)^2	0.040726	0.023277	1.749617	0.0802
GARCH(-1)	0.884998	0.069885	12.66371	0.0000
T-DIST. DOF	8.707873	3.081067	2.826253	0.0047
R-squared	0.027753	Mean dependent var		0.091358
Adjusted R-squared	0.015428	S.D. dependent var		1.134103
S.E. of regression	1.12532	Akaike info criterion		3.050506
Sum squared resid	899.1057	Schwarz criterion		3.114107
Log likelihood	-1088.182	F-statistic		2.25187
Durbin-Watson stat	1.838079	Prob(F-statistic)		0.017418

***denotes significant at 1% significance level



Is IT Industry Productive: A Performance Based Investigation of IT Sector Firms Operating in Pakistan

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Abstract

This paper investigates the effect of eleven independent variables as subsets of Employee Orientation, Environment and Organizational System, on the overall performance of the IT sector firms, operating in the area of Islamabad, Pakistan. Variables are investigated by targeting a sample of 15 leading IT sector firms. A total of 225 questionnaires were distributed. The Cronbach's Alpha for the questionnaire resulted in a score of 0.8398. Extensive analysis after the application of multiple regression analysis revealed that, there is an overall average level of relationship between the variables considered. IT sector has shown tremendous progress.

Keywords: Organizational performance, Employee orientation, Environment, Organizational system, Industry

1. Introduction

Productivity of the organizations operating in the industry usually defines the overall performance of the industry in true letter and spirit. Researchers have comprehensively evaluated and analyzed the subject of productivity in terms of performance related to operations of the firms within the concerned industries. The definition of productivity in the context of our study is usually defined as a performance measure that indicates how effectively an organization converts its resources into its desired products or services. It is a relative measure and it is used to compare the effectiveness of a country, organization, department, workstation or individual over a certain time period (Internet, Answers Search Engine, 02nd, September 2007). Productivity is generally measured by the ratio of inputs to outputs produced efficiently and effectively with in the given timeframe where, factors affecting productivity may range from categories like; product, process, labor force, capacity, external influences, to quality, but this study encompasses a different angle of performance evaluation of IT sector firms operating in Pakistan. Here the main objective is to investigate the true association of factors taken as independent variables with the dependent variable which are further explained in detail in this study. These factors are associated with three broad categories which are; employee orientation, Industrial environment and organizational system, which are considered as the pillars on which performance of an organization can be measured and once the performance of a significant number of firms from the selected sample are recorded, the overall performance in terms of productivity of the IT industry can be estimated and compared with the published growth statistics by an authenticated publishing source in the country. The focus of this research study is the Information Technology Industry of Pakistan.

In Pakistan the IT industry is comparatively new and initiated its operations bit late as compared to her neighboring country India, which is said to be 15 years ahead of us. In spite of this latency the IT industry of Pakistan has progressed at a remarkable pace. These days IT industry is one of the most progressing and dynamic sectors in the country. Almost all the leading world IT companies have their branches in Pakistan and this shows the strength of IT industry in Pakistan. According to the statistics presented in Pakistan Software Export Board, press release, 3rd may (2007), showed that, in IT industry of Pakistan the revenue growth is 30 to 40 percent per year for the last couple of years and the total IT

industry revenues crossed USD 2 billion in fiscal year (2005-06) whereas, total exports crossed USD 1 billion. This growth of IT industry exports in the last three years was around 50 percent, while the domestic market has grown at 33 percent per annum. The global IT companies like NCR, IBM, Oracle, Hyundai IT, and Halliburton are operating for South Asia and Middle East from Pakistan. Hundreds of millions of quality software is being developed and over 60 thousand professionals are employed in this industry. Recent publications in the country confirms that Pakistan is now on the world IT map and the overall size of IT industry is on the path of expansion.

2. Rationale of the study

The numerical figures and data stated above motivated us to initiate a study which evaluates and analyzes the productivity of IT industry based on performance of individual IT firms. We also want to investigate that, up to what extent an individual IT firm is contributing to the overall growth of the IT industry of Pakistan?. In-order to accomplish this task, eleven factors representing three main areas for performance evaluation are taken as independent variables which are; Organizational Commitment and Esprit de Corps as factors of Employee Orientation; Marketing Turbulence, Competitive Intensity, Technology Turbulence, and Market Dynamics as factors of Environment; Formalization, Centralization, Departmentalization, and Rewards as factors of Organizational System. The dependent variable in this study is Organizational Performance. This study basically targets the companies operating in the IT industry in the geographical area of Islamabad, the capital of Pakistan.

This study will definitely be a value addition to the knowledge base and will be beneficial for the academic institutions, research organizations, individual researchers, technocrats and industrial analysts in Pakistan and abroad, who want to improve their understanding regarding performance of Information Technology Industry of Pakistan.

3. Purpose of the study

The purpose of the paper is to test the association developed in the question stated below and also to test the formulated hypothesis:

What is the level of association of the independent variables that are; Organizational Commitment, Esprit de Corps, Marketing Turbulence, Competitive Intensity, Technology Turbulence, Market Dynamics, Formalization, Centralization, Departmentalization, and Rewards with the dependent variable that is; Organizational Performance of IT sector firms operating in Islamabad, Pakistan?

4. Literature review

4.1 Organizational Productivity and Performance

The study of Vonortas and Auger (2002) found that the firm's productivity ultimately defines the overall performance of the industry in which they operate. They also stated that market share of any firm also predicts its performance in the industry. There is considerable evidence available from the previous researches, which indicates that high performance human resource practices are associated with organizational performance as it was found by Wright, Gardner, Moynihan and Allen (2005); Bartel (2004); Appelbaum et al. (2000); Bae and Lawler (2000); Batt (2002); Guthrie (2001); Huselid (1995); MacDuffie (1995) and Arthur (1994).

4.2 Organizational Commitment

In the study of Fey and Bjorkman (2001) and Kling (1995) it is mentioned that with the involvement of more employees under the concept of empowerment and decentralization, where employees can easily perform the operational decision making, can substantially contribute to the organizational performance. In multiple studies and books, it is mentioned and emphasized that a proper work structure of the organizations, where employees perform their tasks, have a positive impact on the performance of the organization. This statement indicates that organizational commitment will be greater in those employees who find working environment comfortable and conducive, and this phenomenon will ultimately enhance the organizational productivity. Kelley (1993) stated that organizational commitment generally translated into organizational goals and values. For example if a manager of an organization feels more committed to the organization and accepts the values and objectives assigned by the organization will eventually put his maximum efforts for the well being of the organization as stated by Locke and Latham (1990); Kother and Heskett (1992). In multiple studies, organizational commitment was found positively associated with employee performance and it is obvious that when an employee performs well on his job, its organizational performance also increases as stated by Brown and Peterson, (1993); Singh et al. (1996) and Parker et al. (2003).

4.3 Esprit de Corps

The field study of Banker and Field's (1996) reported that the effect of work teams on the organizational manufacturing performance, where the effect of work teams is also pronounced as Esprit de Corps, resultant of devotion and commitment of team members, has enhanced the quality and labor productivity in the organization.

4.4 Market Turbulence

Market turbulence is the rate of change in the composition of customers and their preferences reported in the study of Jaworski and Kohli (1993). If the market is turbulent then the preferences of the customer changes frequently whereas in the stable market the preferences of customers show little fluctuations overtime. So, organizational performance needs to be adjusted as according to the market turbulence and dynamics.

4.5 Competitive Intensity

The effect of market's environment on an organization as stated in the previous researches is often used as an independent variable to predict the organizational performance as found and stated by Cooper (1993), Cooper and Gimeno Gascon (1992) and Keeley and Roure (1990). Jaworshi and Kohli (1993) found that the organizations that face less competition or operate in low competitive or intense environment may get success because in this case customers have no other choice other than demanding the current firm's product or service. The research of Appiah-Adu and Singh (1998) found that the firms that usually operate in turbulent markets provide prompt information to their customers and competitors' in-order to reduce the factor of uncertainty. Competitive intensity as reported by Joworski and Kohli (1993) is a condition of high competition, where there are multiple options available to customers in the market to fulfill their demands, which determine that, in an intense competitive environment an organization can loose its business. Thus, evidence shows that, competitive intensity has a strong impact on the performance of the business.

4.6 Technological Turbulence

The study of Jaworski & Kohli (1993) found an inverse relationship between technological turbulence and organizational performance. Bennett and Cooper (1981), Houston (1986), Kaldor (1971) and Tauber (1974) reported that the competitive advantage of an organization is associated with the fact that how fast an organization changes itself with the changing technological orientation of the industrial environment, because an obsolete technology can not benefit an organization and fulfill the changing demands of the customers, who are dependent on the state of the art technologically manufactured products.

4.7 Market Dynamics

Muller, Walter and Gemuenden (2001) found that the market dynamics is associated with the short span of product life in market due to the high innovativeness of the competition related to software products. Gray et al. (1998) reported that market environment also has a great impact if it is taken as moderating variable in the study.

4.8 Government Policies

It is observed as well as reported by researchers that, if the governmental policies are in favor of the organization in particular and industry in general the overall performance of the organization on individual level and industry on collective level improves.

4.9 Formalization

Formalization is a central dimension of decision making structure as reported by Argouslidis and Baltas (2007). There are three basic dimensions of the organizational research which are specialization, formalization and centralization. Hall, Hans and Johnsons (1967) reported that, formalization represents the degree to which rules define roles, authority relations, communications, norms and sanctions and procedures. So, formalization has strong ties with the organizational performance.

4.10 Centralization

Hage and Aiken (1970) found that the centralization refers to the inverse of the amount of delegation of decision-making authority throughout an organization and the extent of participation by organizational members in decision making. In the study of Pugh, Hickson, Hinings and Turner (1969) it is reported that the centralization determines the intensity up to which the power regarding decision making is confirmed to the upper hierarchy of organizational management, in which autonomy, locus of control and authority delegated are considered as administrative tools. Arthur (1994) evaluated thirty mini-mills on the basis of productivity and found that when the authority is decentralized, the turnover was reduced among the employees, thus, enhanced the organizational commitment and resulted in increased organizational performance.

4.11 Reward System

The observations of Delery and Doty (1996) predicted that when an organization provides job security and rewards to its employees, it results in long-term commitment of the employees with the organization which will ultimately compel them to put-in their best to increase organizational performance. Lawler (1990) found that the corporate reward strategy should be adopted by the organizations that will certainly help them to leap ahead of their competitors in the market and also at the same time provide them a competitive advantage.

4.12 Departmentalization

Jaworski and Kohli (1993) found that the Departmentalization basically refers to the numbers of departments into which organizational activities are segregated and compartmentalized. (See figure-1)

4.13 Mathematical Model

The diagrammatical research model shown in figure-1 is written in a mathematical form below:

$$\text{OrgPer}_{i,t} = \alpha_0 + \beta_1 \text{OrgComt}_{i,t} + \beta_2 \text{EsDec}_{i,t} + \beta_3 \text{MarTub}_{i,t} + \beta_4 \text{CompInt}_{i,t} + \beta_5 \text{TechTub}_{i,t} + \beta_6 \text{MatDyn}_{i,t} + \beta_7 \text{GovtPol}_{i,t} + \beta_8 \text{Form}_{i,t} + \beta_9 \text{Centz}_{i,t} + \beta_{10} \text{Re wSys}_{i,t} + \varepsilon_{i,t}$$

In above mathematical model, (i) represents the firm having a certain level of performance at a particular time t. So, organizational performance is the function of x having (t > 0) and (i approaches to n number of firms) to be evaluated regarding their level of performance. Thus, the sum of predictors in above mathematical equation can be written as follows:

$$\text{Ind Pr od}_{n,t} = f(x)_{n,t} = \alpha_0 + \text{OrgPerf} \sum_{i=1}^n \left[\begin{array}{l} \beta_1 \text{OrgComt}_{i,t} + \beta_2 \text{EsDec}_{i,t} + \\ \beta_3 \text{MarTub}_{i,t} + \beta_4 \text{CompInt}_{i,t} + \\ \beta_5 \text{TechTub}_{i,t} + \beta_6 \text{MatDyn}_{i,t} + \\ \beta_7 \text{GovtPol}_{i,t} + \beta_8 \text{Form}_{i,t} + \\ \beta_9 \text{Centz}_{i,t} + \beta_{10} \text{Re wSys}_{i,t} \end{array} \right] + \varepsilon_{i,t} \quad (\text{where. } t > 0)$$

The equation mentioned above represents the sum of variables contributing to the industrial productivity where i ranges from (1 to n) number of firms operating in the industry. Now, the above equation can be written as:

$$f(x)_{n,t} = \alpha_0 + \text{OrgPerf} \sum_{i=1}^n \left[\begin{array}{l} \text{Factors of Employee Orientation} \\ + \text{Factors of Organizational Environment} \\ + \text{Factors of Organizational System} \end{array} \right] + \varepsilon_{i,t}$$

The above written equation represents that the function of x is equal to the sum of the factors of employee orientation, organizational environment and organizational system sigma to the organizational performance of the firms ranging from (1 to n) operating in the industry plus constant and model errors.

The interpretations of the above mathematical equation are given in the table 1. (See table-1)

5. Hypothesis Development

The hypotheses formulated after review of the literature are given below:

Hypothesis - 1: There is strong relationship between (organizational commitment) high performance human resource practices and organizational performance.

Hypothesis - 2: Espirit de Corps has a strong relationship with the quality and labor productivity in the organization.

Hypothesis - 3: There is an inverse (negative) relationship between market turbulence and organizational performance.

Hypothesis - 4: Competitive intensity has an inverse (negative) relationship with the performance of the business.

Hypothesis - 5: There is an inverse (negative) relationship between technological turbulence and organizational performance.

Hypothesis - 6: The market dynamics is inversely (negative) associated with the organizational performance due to the high innovativeness of the competition related to software products.

Hypothesis - 7: There is strong relationship between government policies and organizational performance.

Hypothesis - 8: There is strong relationship between formalization and organizational performance.

Hypothesis - 9: There is an inverse (negative) relationship between centralization and organizational performance.

Hypothesis - 10: here is strong relationship between reward system of employees and organizational performance.

The testing of the hypotheses is confined to the primary data collected from the area of Islamabad.

6. Methodology

6.1 Sample

The sample is drawn from the total number of employees working in the IT sector firms operating in Islamabad, Pakistan, in a non-contrived environment. We have selected fifteen leading IT sector firms [i.e, ZTE, Motorola, Teralight, Bentley, Averox, IBM, Falcon, Netsol, Nortel, CISCO, Askari Information Systems (AIS), Pakistan Software Export Board (PSEB), DPS, Pakistan Revenue Automation Limited (PRAL), LMKR] from which respondents were pooled up in the sample. Each organization was given 15 questionnaires which resulted in a total of 225 questionnaires. A convenient sampling technique (non-probability sampling method) was adopted to tap the responses from the respondents. A total of 142 employees of IT sector firms responded and returned the completely filled questionnaires, for which the response rate resulted into a score of 63 percent.

6.2 Instrumentation

The instrument used to collect data from the subjects was a questionnaire having different sub-parts. The instrument was basically comprised of three parts in which questions were distributed regarding, employee orientation, environmental component, organizational system, and organizational performance. The sub-parts of the three major parts incorporated in the questionnaire were adopted from different previous studies; Part 1 (Organizational Commitment, Espirit de Corps), Part 2 Market Turbulence, Competitive Intensity, Technological Turbulence), Part 3 (Formalization, Centralization, Departmentalization, Reward Systems) and Part 4 (Organizational/ firm Performance, question 1 & 2) are adopted from the study of Jaworski & Kohli (1993). Part 2 (Market dynamics) and Part 4 (Organizational/ Company Performance, questions 3 to 7) are adopted from the study of Mueller, Walter & Gemuenden (2001). After collecting 142 responses the reliability of the instrument was checked by the help of Statistical Package for Social Sciences which resulted in a Cronbach's Alpha score of 0.8398, which confirmed the reliability of the instrument. All the items of the questionnaire were designed on five point scale ranging from (Strongly Disagree as "1" to Strongly Agree as "5") (see annexure).

6.3 Procedure

The data collection was done by means of well developed, adopted questionnaire having four parts. This questionnaire was further arranged according to the needs of the current study. All of the questionnaires were distributed among the respondents in the area of Islamabad personally by the researchers. The data was collected in the time frame of 55 days and then responses were fed into the Statistical Package for Social Sciences (SPSS) for analysis and evaluation. Multiple regression analysis was used as a statistical test to determine the degree of relationship/association between the variables involved in this study.

7. Results

The "Table 2" explains that the probability of F statistics is 6.471 for the overall regression analysis ($p > 0.001$), ($p > 0.05$). The un-standardized coefficients (beta for IV-2, IV-4, IV-6 & IV-9 are negative) show that, they have inverse relationship with other independent variables of the study. The ($p > 0.05$ for IV-10, IV-1 & IV-7) shows that, they are the major contributors in the overall strength of the relationship among the independent and dependent variables considered in this study. (See table 2)

The significance values for (IV-2, IV-3, IV-4, IV-5, IV-6, IV-8, IV-9) is ($p > 0.05$) which shows that these independent variables have no significance relationship with the dependent variable, whereas, result of ($p < 0.05$) for (IV-1, IV-7, IV-10) shows that these independent variables have a significance relationship with the dependent variable. The value of R-square 0.331 shows that, there is an average level of relationship in the overall models of independent variables with the dependent variable.

The testing of hypotheses developed earlier revealed the following results after which the mathematical model of this research has been modified:

$$Ind\ Pr\ od_{n,t} = f(x)_{n,t} = \alpha_0 + OrgPerf \sum_{i=1}^n \left[\begin{array}{l} \beta_1 OrgComt_{i,t} - \beta_2 EsDec_{i,t} - \\ \beta_3 MarTub_{i,t} - \beta_4 ComplInt_{i,t} - \\ \beta_5 TechTub_{i,t} - \beta_6 MatDyn_{i,t} + \\ \beta_7 GovtPol_{i,t} - \beta_8 Form_{i,t} - \\ \beta_9 Centz_{i,t} + \beta_{10} Re\ wSys_{i,t} \end{array} \right] + \varepsilon_{i,t} \quad (\text{where, } t > 0)$$

The above modification of the mathematical model is done after the analysis which shows that function of 'x' representing the industrial productivity, has strong association with the organizational commitment, governmental policies and reward system of the employees. Rest of the variables in the model have weak association with the organizational performance and thus considered as weak predictors of the industrial productivity.

8. Discussion

It is evident from the results as predicted by the figures illustrated in the table 2 that, organizational commitment has a strong relationship with the organizational performance as it is supported by the multiple studies of: Brown and Peterson (1993); Singh et al. (1996); Parker et al. (2003). It is true because in IT sector of Pakistan, firms have a good salary structure which is generally a factor which retains the young professionals in these IT firms. The ($p < 0.05$) for the independent variable for government policies which is also an understood case, because a favorable policy devised by government always brings improvement in the performance of the industry and it is evident from the current improvements in the policy structure regarding 'doing business in Pakistan' by the government and also introduced multiple strategies and procedures clearly stated in the Medium Term Development Framework (MTDF) (2005 – 10) road map to enhance the capacity of domestic industries as well as to attract FDIs.

The third case in which ($p < 0.05$) is of reward system which can be supported by the evidence from the study of Delery and Doty (1996) in which they reported a positive association of rewards system with the performance of the organization. In Pakistan, the IT sector always rewards medals and certificates to its employees on their performances. It is not restricted to the firms but the former Minister for Information Technology, Mr. Owais Ahmed Lagari had also given achievement of excellence awards to the best performers on yearly basis in the IT industry of Pakistan. This culture of rewarding best IT people is still present in the industry.

The ($p > 0.05$) for the independent variables which are, Esprit de Corps, Marketing Turbulence, Competitive Intensity, Technology Turbulence, and Market Dynamics, Formalization and Centralization. Here, we can generally support this result with the argument that, the IT industry of Pakistan is relatively new industry with around 15 -20 years of tenure, where firms are developing at a fast pace. In-addition, the last fiscal year's revenue also predicted the high performance of the IT industry and it is obvious that individual firms are also on the path of growth and prosperity. These associations and confirmation of null hypothesis also explains that in IT industry of Pakistan, if software market is turbulent, competitive and dynamic the performance level of each firm operating in the industry will be affected. We found that productivity is enhanced in those firms which have well organized departments led by an experienced and professional department head.

Globalization along with its dynamics and challenges has a strong impact on the technology being used by the firms across the world. So, as world advances in time, technology being used by the firms gets obsolete. This obsolescence factor of technology resulted in the adaptation of new state of the art technology to meet and exceed the needs of the customers and created competitive advantage for the organization. In our study technological turbulence resulted in direct relationship with the performance of the firms operating in the IT sector of Pakistan and this result is not concurrent with the hypothesized statement.

The firms studied have centralized structure which was evident from the tall hierarchy of these firms. It can be supported by the fact that majority of the organizations in Pakistan have centralized system of operations and all decisions are directed from top to bottom. So, similar is the case with the firms selected for this paper. Instead of a strong centralized organizational structure, we found non-formalized working environment in these firms.

Esprit de Corps, translated as teamwork is not so popular in companies operating in Pakistan as managers and employees pursue their individual assignments as part of the project assigned to them. This basically resulted in an inverse association of Esprit de Corps with the organizational performance in the IT sector firms of Pakistan.

9. Conclusion

This research encompasses an in-depth analysis of the association of the independent variables with the dependent variable. The results and analysis from SPSS confirmed that organizational commitment, governmental policies and reward systems have a strong association, where as Esprit de Corps, Marketing Turbulence, Competitive Intensity, Technology Turbulence, and Market Dynamics, Formalization and Centralization have negative association with the organizational performance as in this case we have rejected the alternate hypothesis developed after the literature review.

In the culture of Pakistan where economy is growing at GDP rate of 7.0 percent per annum, old firms are growing, and new are emerging as well as entering in to the industries of multiple disciplines operating in Pakistan. Similar is the case of Information Technology industry where firms are growing and expanding their businesses. The current political stability and good economic indicators have given confidence to the local as well as foreign investors to indulge in business activities in Pakistan without any hindrance. But, being a young IT industry, the firms have to face certain challenges and this factor changed the responses, and altered some of the associations in the study. The findings of the

study as assessed after the application of multiple regression analysis elucidated the fact that there exists an average level of association among the variables considered in the current study. Thus, we are confident that the overall performance of the IT sector of Pakistan is satisfactory and the industry is productive.

There is a room for improvement in this sector which can be achieved by enhancing the productivity of the IT firms by greater emphasis on issues regarding human capital, up-gradation of existing infrastructure, constant up-gradation of the existing technology and equipment as well as close coordination of all stakeholder to uplift this industry, so that it can become one of the leading software exporting industry of the Asian region.

10. Further research

There is a need to utilize tools other than we have adopted like; productivity ratios for “Total Factor Productivity” to assess the overall productivity of the IT sector firms as well as the industry. The list of concepts used in this research can be extended to get insight into other factors of productivity in which infrastructure, technology and quality can be used as variables. The performance of firms operating across Pakistan especially in the cities of Lahore and Karachi, (among the major metropolitans of Pakistan) can also be tapped to expose useful information regarding important factors of productivity, in-order to understand the complete picture of Information Technology industry of Pakistan.

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Table 1. Symbols and their meanings of the mathematical model

Symbol	Meaning	
α	Constant	
ε	Model error	
i	Firm i operating in the industry	
t	Firm performance at a particular time	
n	Number of Firms in the industry	
IndProd	Industrial Productivity	
Constant	OrgPerf	Organizational Performance
IV-1	OrgComt	Organizational Commitment
IV-2	EsDec	Espirit De Corps
IV-3	MarTub	Marketing Turbulence
IV-4	CompInt	Competitive Intensity
IV-5	TechTub	Technological Turbulence
IV-6	MatDyn	Market Dynamics
IV-7	Govtpol	Governmental Policies
IV-8	Form	Formalization
IV-9	Centz	Centralization
IV-10	Rewsys	Reward System

Table 2. (Beta Coefficients, Standard error in parenthesis, t-Value in Brackets and P-Values in italics)

Const.	IV-1	IV-2	IV-3	IV-4	IV-5	IV-6
2.489	0.394	-0.078	0.009	-0.026	0.003	-0.032
(4.221)	(0.134)	(0.123)	(0.142)	(0.133)	(0.173)	(0.166)
[0.590]	[2.936]	[-0.634]	[0.066]	[0.192]	[0.015]	[-0.109]
<i>0.556</i>	<i>0.004</i>	<i>0.527</i>	<i>0.948</i>	<i>0.848</i>	<i>0.988</i>	<i>0.850</i>
Result of Hypothesis Testing	H1 Accepted	H2 Rejected	H3 Rejected	H4 Rejected	H5 Rejected	H6 Rejected
IV-7	IV-8	IV-9	IV-10	R Squ.	F-Stat.	
0.469	0.009	-0.143	0.455		6.471	
(0.162)	(0.102)	(0.102)	(0.117)			
[2.893]	[0.089]	[-1.40]	[3.90]	0.331		
<i>0.004</i>	<i>0.929</i>	<i>0.164</i>	<i>0.000</i>		<i>0.000</i>	
H7 Accepted	H8 Rejected	H9 Rejected	H10 Accepted			

Legend: IV-1: Measure of frequency of respondents regarding organizational commitment.
 IV-2: Measure of frequency of respondents regarding esprit de corps.
 IV-3: Measure of frequency of respondents regarding marketing turbulence.
 IV-4: Measure of frequency of respondents regarding competitive intensity.
 IV-5: Measure of frequency of respondents regarding technological turbulence.
 IV-6: Measure of frequency of respondents regarding market dynamics.
 IV-7: Measure of frequency of respondents regarding governmental policies.
 IV-8: Measure of frequency of respondents regarding formalization.
 IV-9: Measure of frequency of respondents regarding centralization.
 IV-10: Measure of frequency of respondents regarding reward system.

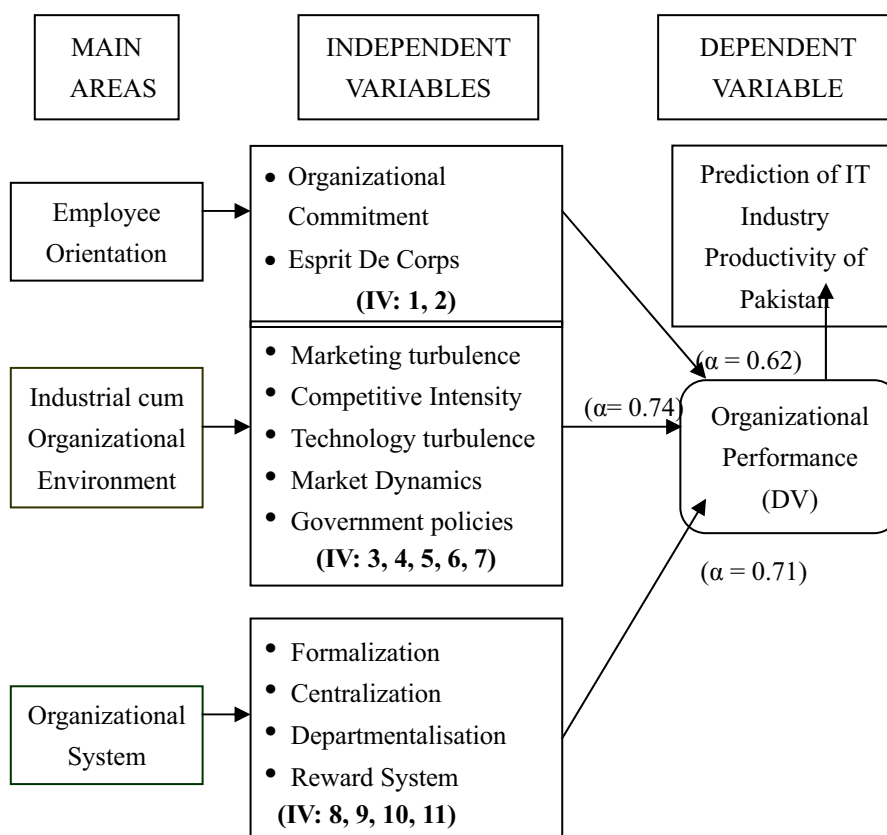


Figure 1. Research model (Theoretical Framework)

Annexure: Questionnaire adopted and re-designed for the research study

PART 1: Data collection regarding Organizational Commitment and Espirit de Corps_					
Scale	Strongly Disagree	Disagree	Nor Agree Nor Disagree	Agree	Strongly Agree
	1	2	3	4	5

1	Employees feel that as through their future is intimately linked to that of this organization	1	2	3	4	5
2	Employees would be happy to make personnel sacrifices	1	2	3	4	5
3	The bond between this organization and its employees is weak	1	2	3	4	5
4	In general, employees are proud to work for this organization	1	2	3	4	5
5	Employees often go above and beyond the call of duty to ensure the well-being of this organization	1	2	3	4	5
6	Our people have little or no commitment to this organization	1	2	3	4	5
7	It is clear that employees are fond of this organization	1	2	3	4	5
8	People in this organization/ company are genuinely concerned about the needs and problems of each other	1	2	3	4	5
9	A team spirit pervades all ranks in this organization	1	2	3	4	5
10	Working for this organization is like being a part of a big family	1	2	3	4	5
11	People in this organization feel emotionally attached to each other	1	2	3	4	5
12	People in this organization feel like they are “in it together”	1	2	3	4	5
13	This organization lacks an “spirit de corps”	1	2	3	4	5
14	People in this organization view themselves as independent individuals who have to tolerate others around them	1	2	3	4	5

PART 2: Data collection regarding Marketing Turbulence, Competitive Intensity, Technological Turbulence, Market Dynamics and Governmental Policies						
Scale	Strongly Disagree	Disagree	Nor Agree Nor Disagree	Agree	Strongly Agree	
	1	2	3	4	5	
1	In our kind of business, customers' product or service preferences change quite a bit over time			1	2	3
2	Our customers tend to look for new product or service all the time			1	2	3
3	Our customers are very price-sensitive			1	2	3
4	We are witnessing demand for our products and services from customers who never bought them before			1	2	3
5	New customers tend to have product or service-related needs that are different from those of our existing customers			1	2	3
6	We service many of the same customers that we used to service in the past			1	2	3
7	Competition in our industry is cutthroat			1	2	3
8	There are many "promotion wars" in our industry			1	2	3
9	Anything that one competitor can offer, others can match readily			1	2	3
10	Price competition is a hallmark of our industry			1	2	3
11	One hears of a new competitive move almost every day			1	2	3
12	Our competitors are relatively weak			1	2	3
13	The technology in our industry is changing rapidly			1	2	3
14	Technological changes provide big opportunities in our industry			1	2	3
15	It is very difficult to forecast our industrial technology in the next 2 to 3 years			1	2	3
16	A large number of new product/service ideas have been made possible through technological breakthroughs in our industry			1	2	3
17	Technological developments in our industry are rather minor			1	2	3
18	In our target market suppliers launched frequently new products or products with extended features			1	2	3
19	We had anticipated entry of new, additional competitors in our market			1	2	3
20	Needs and requirements of our customers changed rapidly			1	2	3
21	The competition reacted efficiently to changed customer requirements			1	2	3
22	The competitors changed their marketing activities frequently			1	2	3
23	Products and services on the target market became rapidly obsolete			1	2	3
24	Governmental policies are in favor of our organization			1	2	3
25	The organization is performing well under the policies of the government			1	2	3
26	I am satisfied with the overall performance of the organization			1	2	3
27	There is a need of consistency in the governmental policies related to the industry			1	2	3
28	Government should revise its policies related to the industry			1	2	3

PART 3**Data collection regarding Formalization, Centralization, Departmentalization and Reward Systems**

Scale	Strongly Disagree	Disagree	Nor Agree Nor Disagree	Agree	Strongly Agree
	1	2	3	4	5

Number of Departments in your Organization _____

1	I feel that I am my own boss in most of the matters	1	2	3	4	5
2	A person in this organization can make his own decisions without checking with anybody else	1	2	3	4	5
3	How things are done in this organization is left up to the person who does the work	1	2	3	4	5
4	People in our organization are allowed to do work in their own pleasing style	1	2	3	4	5
5	Most people in this organization make their own rules on the job	1	2	3	4	5
6	The employees are constantly being checked on for rule violations	1	2	3	4	5
7	People here feel that they are constantly being watched, to see that they obey all the rules	1	2	3	4	5
8	In this organization not a single action can be taken until a supervisor approves the decision	1	2	3	4	5
9	A person who wants to make his own decision would be quickly discouraged here	1	2	3	4	5
10	Even small matters have to be referred to someone higher up for a final answer	1	2	3	4	5
11	I have to ask my boss before I do almost anything	1	2	3	4	5
12	Any decision I make has to have my boss's approval	1	2	3	4	5
13	No matter which department they are in, people in this organization get recognized for their contributions	1	2	3	4	5
14	Customer satisfaction assessments influence senior managers' pay in this organization	1	2	3	4	5
15	Formal rewards (i.e., pay raise, promotion) are available to anyone who consistently provides good market intelligence	1	2	3	4	5
16	Employee performance in this organization is measured by the strength of relationships they build with the customers	1	2	3	4	5
17	Employee's monetary compensation is almost entirely based on their performance	1	2	3	4	5
18	We use customer polls to evaluate organizational performance	1	2	3	4	5

PART 4: Data collection regarding Company/ Organizational Performance					
Scale for Question 1 & 2	Poor	Average	Good	Very Good	Excellent
	1	2	3	4	5
Scale for Question 3 – 7	Strongly Disagree	Disagree	Nor Agree Nor Disagree	Agree	Strongly Agree
	1	2	3	4	5

1	The overall performance of the organization/ company year last year	1	2	3	4	5
2	The overall performance of the organization/ company relative to major competitors last year	1	2	3	4	5
3	The market-share of the organization has increased in the last 3 years	1	2	3	4	5
4	I am very satisfied with the financial success of the organization	1	2	3	4	5
5	The organization has reached a strong competitive position in the market	1	2	3	4	5
6	I am very satisfied with the market performance of the organization	1	2	3	4	5
7	The organization/company has reached an excellent technological competitive position	1	2	3	4	5



The Application of Experiential Marketing in China's Real Estate

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Abstract

This paper discusses Experiential Marketing as a new marketing model of a new era of economic, is necessary to be used in the real estate marketing, and propose that in real estate marketing processes works such as positioning, experiencing, surrounding and other aspects should be done well. We can conclude that in order to make the experiencing marketing become an important link in the process of improve the customer satisfaction and the brand loyalty.

Keywords: Experiential economy, Experiential marketing, Real estate marketing

1. Introduction

In recent years, with the rapid development of China's national economy and the house system reform, real estate has made great development, real estate market gradually improve, consumers become more mature and rational. With the increased competition, Real estate exploitation enterprises have more and more attention to marketing. Experience marketing is accompanied by the emergence of this trend, which can meet the psychological needs of consumers and communicate to consumers more effectively. It becomes a real estate marketing trend.

2. Experiential Marketing and Experiential Marketing in real estate

2.1 Experiential Economy

In recent years, the "Experiential Economy" as a unique economic phenomenon, has become the world's first cutting-edge business topics. Experiential Economy is characterized by: The consumption is only a process. At the end of the process, the memory of experience will be preserved in the minds of consumers permanently. As early as the 1970s, the American futurist Alvin • Toffler proposed the viewpoint that "Service industry will surpass the manufacturing industry eventually, and the experience production will also surpass service industry". The Economists Payne pointed out that: "The so-called experience, in essence refers to pasting a period of time in a personal way, a series of events that can be recalled from the process of the experience." economic offering will be divided into universal merchandise, general merchandise, services and experience and so on. In their view, experience is the forth- economic offering. Today, the economies of scale, which due to the large-scale production of products and services, led to the corresponding cost savings, low-cost competitive of products and value-added services difficulty. Extract the experience from the goods and services, which has opened up extraordinary new ways to expand the economy.

2.2 Experiential Marketing

Experiential Marketing is the operator standing on consumer's point of view of consumers to experience the concept of the purchase, process of the purchase, thoughts of purchase and driving force of the purchase, that is, from a consumer's senses, feelings, thinking, action and connection this five aspects to define and design of the way of thinking about marketing. Experiential Marketing has changed the past concept that only stressing "clients" or "customer service" manner. It advocates the experience, enables customers to experience and become directly involved as the main body, creating a kind of "feeling that will not forget" satisfy there needs mentally to the greatest extent in order to win customer trust and loyalty so that to promote product sales. Experiential Marketing breaking the assumption of the "rational

consumer" and believe that the consumer have both Sense and Sensibility, and consumers' experience in the pre-sale, sale, after-sale are the key to study the behavior of consumers and how to manage the brand of a competition.

2.3 Experiential Marketing in real estate

Experiential Marketing in real estate is an integrated marketing and managing system, including every segment of the process from product design to marketing. Buyers are the centre of which this methods of the whole process is designed, it is necessary to consider the feeling when the buyers see it, hear it, use it, even more concerning about the buyers in house experience should be fresh and multiple ,also can see and feel themselves better than their imagination, this is the real Experiential Marketing.

3. Experiential Marketing is an inevitable trend in real estate marketing

3.1 Real estate and "experience" are inseparable

Real estate and architecture are connected inextricably, at first architecture was a of aesthetics, and the center of the study of aesthetics is "experience" and even "aesthetic" the word itself means experience.

Real estate developers and real estate service providers should build a strong customer resources, access to high-value customer's personal preferences, and offer experience and improve the environment for the purchase basing on customers'hobbies to guide them to participate in order to set Unforgettable impression.

3.2 Experiential Marketing is the momentum of real estate's development

People's perception of things being multiple requires the enterprises no longer meet their need of performance of the house and price only, a number of "living" associated experience, such as food, clothing, transportation all became buyers' lifelong perceptions of the to be considered.

Fragmental requirements begin to make customers concerning about the details of their everyday life, but these details are usually hard to be considered during the time they were giving advertisement. So the most effective way for the real estate industry is to let the customer to have experience in the houses, to taste the food, wear their clothes, live, all the services, so that enterprises can get the most detailed and most market fitted feedback, through which they can organize the designation, development and operating activities. Direct requirements of the market means companies can not only rely on media ,a wonderful experience is the most persuasive; At the same time, cultures of the companies, lifestyle, and other abstract things which were used as imagination before for business purposes, now may also be offered to customers to integrate into their lives and be perceived directly.

3.3 Experiential Marketing can make up for deficiencies of the existing marketing model

Experiential marketing is an important change of the sales models, on the one hand, from the very beginning it is integrated with the market since the investment and the designation of real estate. The starting point is to create an atmosphere that can experienced by comprehensive customers, so that is conducive to fully catch with the market, and eliminate of much of bad facts created by marketing subjectively and thinking in one-sided in the past. On the other hand, the demands of the customer experience of marketing real estate is not just function, the environment, the price, they are selling lifestyle and value system, they constantly bring surprises into the experiences to show them unique lifestyles, according to the same time, at the same time according to some of the special requirements they design the entire personal service.

Finally, the key is to create an atmosphere, rather than selling itself, actually the experience makes you reluctant to leave or a desire for surprise are the goals of the experiential marketing, and the eventually selling of the properties is just such a effective by-product of innovative thoughts, which is different form the old method that take much attention to selling buy ignore the atmosphere.

4. The specific application of Experiential Marketing in China's Real Estate

4.1 Theme is the first step for leading to the experience

Experience that economic theory, Theme is the first step for leading to the experience, and is the key step. The whole experience should be designed around a theme, in line with the theme of the meaning.

In recent years, the subject of the development of real estate properties for sale has become the industry mainstream. Now the names of the properties for sale, " Sunbelt•Seaside City " "Lakeshore" As the name suggests, access to these properties for sale and you will know what the name implies. As an old Chinese saying "finishing touch", a good case is the "eyes", is the soul of the community as a whole, is the spiritual home of the banner.

And those top-level position as the theme of luxury properties for sale, often in the industry for the Great teachers, from the rare building materials, good interior decoration of the background to the design details of the individual requirements; from the construction of high quality equipment to the well - Configuration, from the landscape of rock mountains to the scarcity of copies can not be the best location. All those strive to visit the customers feeling "Who

Make's You Feel " with the memorable experience.

4.2 It must pay attention to customer experience sensory stimulation

Theme is the basis of experience, and experience must also be of great importance to customers of sensory stimulation to achieve impressive. Should be to create the impression that the experience of economic theory have to make a positive impression clues to achieve harmony. For example, the theme of education to real estate, for the realization of the theme of education, developers have focused on strengthening the district's education ancillary facilities to schools with name plate.

But the impression to shaping as a whole, show only positive factor is not enough .Experience economic theory would also like to phase out negative factors. As the theme for the market to suburbanization of the real estate development, general settlement of all households, such as car transport problems in the first place, to remove the "remote location" undermine the central theme of the link.

4.3 The guarantee of real estate marketing experiences-- Product Positioning

In the product design process, the real estate business based on market research to study the needs of buyers in depth, can exchange views with the agents, real estate, and other planning agencies, and timely give information feedback to the product designers, in order to excavate and integrate the whole concept of the product itself to project their own different characteristic and to make them live up to the object clients' mind and spice, and finally help the clients form a certain experience.

4.4 An important means of real estate marketing experience --Rich Humanistic Concern

Marketing experience should stand by the consumer's position ,and from the senses, feelings, thinking and action in five areas related to redefine and to design the ways of marketing thinking.However, for real estate marketing, emotional appeals and humanistic concerns are particularly important.

4.4.1 The productive meticulous design is the basis of experience marketing

For residential design requirements closely "people first" idea, and integrated into the modern design philosophy and culture. First of all, in the face of different consumer groups, the control unit the size, proportion and layout, taking into account the effect of privacy.and that pay attention to the growing problem of internal functions For example, like to design self-help owners set aside some space. In addition, green building materials to be widely used to reduce pollution and improve the quality of indoor living environment.

4.4.2 Complete Supporting Facilities and Area Environment

Complete supporting facilities to the people is convenient, comfortable and safe experience. Real estate business not only in the pursuit of matching the number of available, but more and more emphasis on strengthening its own characteristics and realize the difference of marketing. In addition to complete supporting facilities, in recent years, what real estate business in the residential environment do is that vigorously promote the zoologizement and let people return the nature to strive to built for harmony between human, nature and architecture.

4.4.3 Heart shape the human environment

Humanities marketing is a very prevalent way of real estate marketing in recent years,and also is to convey a kind of experience. An increasing number of properties for sale in the marketing promotion, More and more listings in the marketing promotion, pay attention to the adoption of the demands of the humanities , such as the target consumer groups, cultural and educational facilities and the clubs' vivid description, and so on, so as to show a unique lifestyle.

4.5 Experience scene setting

4.5.1 Sales offices

Sales offices is to display real estate products and direct sales sites. Buyers expressed interest in the product and sales offices to the consultation, sales at the scene is crucial to set the scene, which will directly affect the buyers of the final purchase decision.

4.5.2 The theme of a model room

The theme of a model room is the combination of decorative arts and real estate sales show. It is based on the product itself characteristics and the target customer base of the features of life to design a clear example of the theme of personalized room, Design from the target bit of life experience, not the model of the structure of the units designed in accordance with the "general sense" in space. The theme of a model room is closer to target customers and real life, and thus can be caused by customer response and moved the hearts of customers.

4.5.3 Housing Exhibition

Fair Housing through the beautiful life-like models, the staff detailed explanation and the different characteristics

materials, and matched to sound light, multi-angle pass to experience life to visitors. For fair housing, there is no need for the all projects or all business signs to display on the exhibition, which key is that there is a useful selling point or a clear breakthrough to show off, so that the buyers can form a clear and unique experience.

4.6 A variety of media is a major propaganda front of marketing experience

It is needful of the experience marketing to put up the dissemination of information. The buyers receive the advertising information of real estate through newspapers, television, radio, mail, Internet, outdoor advertising, etc., but they only believe that advertising campaign of the real products, such as introduce the product with a story or a scene which can be felt. Therefore, the enterprise must strengthen to exploit experiencing elementary of products.

5. Summary

Marketing experience as a new marketing model, its core is active customer participation, the ultimate goal is to create a full range of experience for customers. Therefore, the real estate business customers not only from the rational point of view of consumer marketing activities, but also consider the customer's emotional consumer needs, pay attention to two-way communication with customers, develop their hearts desire, scan and improve their products and services from the perspective of the customer experience, set up a stage to show customers personality. In order to make the experiencing marketing become a important link in the process of improve the customer satisfaction and the brand loyalty.

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Structure of Human Capital Enhancing Human Resource Management Practices in India

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Abstract

In any firms, human resource (HR) practices are the direct investments on employees' human capital through which firms achieve competitive advantage and employees enhance their human capital. Recognizing the structure of HR practices comprised of distinct patterns would maximize the chances to understand the firms' ways of developing core competencies. This paper analyzes 472 employees' responses who work in Indian manufacturing industries to identify the patterns of human capital enhancing HR practices. Reward strategy, career-oriented training, performance appraisal, recruitment strategy, career management, and performance-oriented training are the patterns or factors derived from the HR practices, and validity of this structure is also proved by confirmatory factor analysis. Furthermore, there are certain associations found between these patterns and characteristics of both employees and firms from regression analyses.

Keywords: Human capital, Human capital development, Human resource practices

1. Introduction

Human capital development, a new notion across organizations, replaces the concept of employee development to face radical changes in the market environment. Simultaneously, devising strategies for developing and managing employees' human capital also facilitates firms to achieve competitive advantage. As a result, firms are more likely to realize improvement in overall financial performance due to sustaining the advantage. However, it depends on how firms differentiate strategies implementation to manage and develop intangible assets or human resources (HR) over tangible assets. Human resource management (HRM) is an important studying field in which much research attention has been given on creating core competencies, because of its "policies, practices, and systems that influence employees' behavior, attitudes and performance" (Noe, Hollenbeck, Gerhart & Wright, 2000, p. 4). Organizational HRM is an integrated system from which a set of dynamic and effective HR practices are derived and executed to develop and manage employees in view of achieving business strategic goals and exploit organizational benefits. Since the last two decades of the 20th century, firms have begun to invest financial resources on high technologies and modern production systems (e.g. computer aided manufacturing, computer integrated manufacturing, and flexible manufacturing system) to gain overall operational performance improvement. Correspondingly, they also face the requirement of a HR system constitutes of various practices such as recruiting and selecting knowledgeable, developing the necessary skills and knowledge of employees, frequently appraising employees performance, and encouraging employees to reinforce their innovative behaviors for operating the manufacturing systems. Snell and Dean (1992) described these organizational HR practices as human capital investments.

For particularly describing human capital, it is defined as embodied knowledge, skills, innovativeness, and capabilities of employees applied to accomplish organizational goals (Bontis, 2001). Due to the remarkable supportiveness of human capital on firm's strategy designing and executing, it is in general highly valued in the labor market only when it has potential to contribute on other firm's strategy, and otherwise, it would be valued much in the current firm. So organizations do not claim of owning human capital anywhere as these intangible capitals have been naturally belonging to employees. Therefore, firms generate claimable intellectual products like patents and copyrights by

influencing human capital through implementing HR practices. Despite of not owning human capital, firms' investment on human capital depends upon employee contribution on organizational performance. At this moment, human capital theory states that organizations have fewer chances to invest on human capital when employees have less contribution on economic value of firm (Snell & Dean, 1992). Further, the theory also states that employees have willingness to invest on their human capital as they have higher future benefits in terms of improvement in earning, gaining authority and status, and participating in high valued project. Firms would be more likely to invest on human capital which is firm-specific, nontransferable, and inimitable to other firms. Therefore, organizations involve greatly in firm-specific human capital development than generic human capital because of its value and uniqueness (Becker, 1975; Snell & Dean, 1992). Consequently, organization likes to invest on firm-specific human capital since it is the source for competitive advantage (Lepak & Snell, 1999).

The prime focus of the HRM is achieving organizational benefits. For instance, set of HR practices as an HR system, is positively associated with firm productivity and quality (Macduffie, 1995; Youndt, Snell, Dean & Lepak, 1996); and HR practices including recruitment, training, performance appraisal, and reward strategy are developed in the form of employee skills and organizational structures and employee motivation, and which are positively related to firm productivity and overall financial performance (Huselid, 1995). Organizations thus derive notable benefits to achieve advantage by implementing human capital enhancing HR practices. However, valid structure of these practices that include all aspects and its association with employees and organizational characteristics are not widely reported in firms especially in Indian firms. In this direction, this study: first examines the patterns of human capital enhancing HR practices with a particular focus in Indian manufacturing industries because these practices are effectively implemented in these industries; second, analyzes the validity of the structure of human capital focusing HR practices; third, identifies the degree of association between the HR patterns or factors and employees' gender and human capital variables such as age, education, rank, and tenure; and finds the degree of association between the HR factors and organizational size and ownership.

2. Human resource management and human capital

The investment oriented functions of the integrated HRM system in any organization are bound up with enhancing the ability of employees to cope with implemented modern technologies of the manufacturing system, and as a result, firms achieve certain benefits to sustain competitive advantage (MacDuffie, 1995; Huselid, 1995). The investment perspective is considered while formulating HR strategies in regard of recruitment, training, performance appraisal, career management, and reward management. Although these exemplified strategies are featured with their own characteristics, the prime focus of these functions is investing in human capital. In particular, to increase the stock of the human capital, the necessity of recruitment strategy is "creating a strategic plan for the organization, having specific requirements for each job and aligning them with the corporate and business strategies of the organization" (Ghosh & Geetika, 2007, p. 6). Identifying the recruitment mode for human capital that contributes to firm's competitive advantage enables all HR related managers to reconfigure the entire current workforce based on their potential. In this direction, researchers (Lepak & Snell, 1999, 2002) constructed human capital value-uniqueness framework to classify human capital enhancing HR practices and their degree of potential to take part in firm's advantage. It is showed that HR practices that increase employees' commitment at all levels involve in developing human capital but there are more chances prevalent to create commitment through internal development mode.

Training, another component of human capital, has squarely related to human capital development, because of "the acquisition of skills, concepts, or attitudes which result in improved performance in another environment" (Goldstein, 1983, p. 3). There are two situations in which the importance of training is realized or firms will invest in current employees' human capital development through training programs: if it is difficult for firms to attract talents (Ulrich, Zenger & Smallwood, 1999); and if firms experience low productivity improvement (Schultz, 1960). Apart from the contribution of recruitment and training on human capital creation, the association between performance appraisal and human capital creation is also very well studied. Appraising is a general process of facilitating interpersonal relationship between employees and managers through performance related discussions to analyze matching up of employees' performance with organizational goals (Wilson & Western, 2000). Specifically, researchers (Latham & Wexley, 1981; Snell & Dean, 1992) concentrate on development-oriented performance appraisal to human capital creation as it shifts employees focus from daily routine work activities to innovativeness for contributing to competitive advantage. Ukko, Tenhunen and Rantanen (2007) found that performance oriented discussions between employees and managers are directly related to organizational performance. However, the aspects focused on the appraisal process play a pivotal role in human capital development, because elevating relevant competencies would balance firms marginal cost with marginal revenue. Although top management realizes the importance of competencies or aspects to be appraised at employees, execution of these aspects in the performance management system is highly concerned (Abraham, Karns, Shaw & Mena, 2001).

Focusing the impact on human capital by reward strategy, which is described as an integrated reward approach in which company strategy, pay systems, and employee behaviors are interrelated (Lawler, 1994) would highlight organization's transactional rewards and relational rewards execution among employees to promote their human capital. Mainly, transactional or tangible rewards arise naturally between the employer and employees related to pay and benefits for employees' transactional obligations. Relational or intangible rewards are appreciations and recognitions to encourage human capital development by increasing learning capacity and to develop consistent innovative behaviors (Armstrong, 2007). Generally, employees are transactionally and relationally rewarded for providing innovative suggestions to solve complex engineering problems (Kerrin & Oliver, 2002).

On focusing the relation between career management and human capital development, there are certain strong evidences to prove the positive association between the duos. Career management is a "process by which individuals develop insight into themselves and their environment, formulate career goals and strategies, and acquire feedback regarding career progress" (Greenhaus, Callanan & Godshalk, 2000, p. 423). A usual career management practice across global manufacturing firms is job rotation, which is positively associated with continuous improvement on problem-solving skills that enhances employee human capital (Marler, 1998). In addition, Noe (1996) found that career exploration of seeking career-oriented suggestions or information from managers has certain impact on employee developmental behaviors (e.g. attending workshops and participating in a project). Therefore, engaging in career management practices facilitates employees to develop idiosyncratic knowledge (Lepak & Snell, 1999).

On providing a comprehensive list of human capital development focusing HR practices in this study, human capital is described as the combination of employee's capability and commitment (Ulrich et al., 1999). In this direction, Snell and Dean (1992) did empirically extract factors of selective staffing, comprehensive training, developmental performance appraisal, and equitable reward systems from a bundle of HR practices in the United States' manufacturing environment. Subsequently, Macduffie (1995) explored some bundle of innovative HR practices focusing on firm's economic performance, and simultaneously classified these practices as employee skill and knowledge development and employee commitment and motivation generation. On searching especially for commitment creating HR practices, Lepak and Snell (2002) provided a certain set of HRM practices in which commitment related practices are considered. Laursen and Foss (2003) constructed a set of measures including 9 innovative HR practices and extracted two factors among Danish companies. However, there is a lacuna in the explored practices as which are not covered the entire HR system in the organization. The reason is that the said researchers provided a list of human capital enhancing HR practices in which the contribution of career management practices are not extensively covered. In this direction, Delery and Doty (1996) constructed a measure of HR practices in which career management practices are included to prove its contribution on organizational financial performance. Specifically, Budhwar and Baruch (2003) developed a measure comprising 19 career management practices and identified the structure among Indian manufacturing firms. Further, research on integrating human capital creation and HRM system, which features recruitment strategy, training, performance appraisal, career development, and reward strategy provided a guideline of inclusion of certain practices (Birasnav & Rangnekar, 2008). The most of the above studies were experimented in western countries, and so it is expected that work culture of India might have certain impact on the studying human capital oriented HR practices. For example, Mendonca and Kanungo (1996) particularly described about Indian work culture as high uncertainty avoidance culture, which discourages employees' innovativeness, and so the specified culture is more likely to affect human capital creation. Despite of human capital embodied with employees, they are more conscious on HR practices' enhancement of human capital. Due to these reasons, modifications are unavoidable on the selected human capital focusing HR measure to cope up with Indian manufacturing employees. Such modification activities are carried out jointly with academicians and managers working in the field of HRM and human capital management, and these modified measures are listed in Appendix I. On these measures, commonalities could also be found. For example, the top six practices associate with recruitment, and last five practices are related to reward. So it is expected that the studying human capital focusing HR practices could possess some clusters based on its functions and similarities. And merging these factors into one- or two- factor would diminish the significant behaviors or characteristics of other factors. Therefore, we propose and hypothesize that

Proposition 1: The studying HR practices comprise of various patterns or clusters that characterized by various functions and behaviors.

Hypothesis 1: The patterns are very unique to human capital enhancing HR practices, and the interrelationship among patterns could also be found.

There are certain literatures explain the relationship between HR practices and employee gender and human capital variables such as age, education, rank, and tenure. For example, Lin and Huang (2005) assert that employees who are highly educated have had more chances to be promoted, and so they are more likely to attend career management oriented activities. In this direction, we believe of prevalent of certain association between HR factors and human capital variables. On exploring the influence of gender, Metcalfe (1989) found that women give preference to intrinsic

values, for example, challenging job, development opportunities, and autonomy. In contrast, men significantly prefer extrinsic values of high earnings and job security. It is believed that this difference could also be reflected in the association with HR factors. In line with factors of HR practices and employee characteristics, some relationships are found between organizational size and ownership and factors of HR practices. For example, job rotation, a career management practice is widely used in private sector firms than public sector firms (Friedrich, Kabst, Weber & Rodehuth, 1998). Further, to attract talents, larger organizations create a competitive packages and benefits in the labor market than medium and small sized firms (Ghosh & Geetika, 2007). Therefore, we hypothesize that

Hypothesis 2: The clusters of HR practices might have certain relationships with employee human capital and gender variables.

Hypothesis 3: The clusters of HR practices might have certain associations with firm size and ownership.

3. Methodology

472 Indian manufacturing employees who possess high value and uniqueness of human capital (see Lepak & Snell, 2002) are selected with the help of both random and non-random sampling procedures to provide response to the questionnaire mentioned in the Appendix I. The demographic characteristics of the participated employees are shown in Table 1, and they are mainly working in the companies of electric power generation, boiler production, two and four wheelers manufacturing, product assembly, fertilizer production, pharmaceuticals, sugar production, leather processing, home appliances manufacturing, watch manufacturing, paper production, chemical manufacturing, and cement manufacturing. For reducing the complications during the analyses, participants' education (1 = under graduate, 2 = post graduate), rank (0 = non-managerial rank, 1 = managerial rank), and gender (1 = male, 2 = female) and their organization size (1 = small, 2 = medium, 3 = large) and ownership (1 = private, 2 = public) are numerically considered. The studying measures show a very good internal consistency coefficient of reliability (cronbach $\alpha = 0.90$). Further, SPSS 15 and LISREL 8.7 are used to perform exploratory factor analysis, confirmatory factor analysis, and regression analyses to test the proposition and hypotheses.

4. Results

4.1 Factor structure of HR practices

The conducted exploratory factor analysis by principal component analysis with equimax rotation revealed a six factor structure of human capital focusing HR practices, and is shown in Table 2. Employees are perceived their human capital creation through six patterns or factors of HR practices, which accounted for about 50 per cent of variation on the HR practices, and that are:

Reward strategy: The items, team-based reward, competency-based reward, risk-taking is rewarded, year/month of employee award, and top management appreciation are clustered to form this factor, which explains over 26 per cent of variance on the mentioned HR practices. It is common across manufacturing companies on allocating reward based on employees' initiatives or risk-taking, and high performers would often receive some kind of recognition or appreciation from the management. The clustered five similar variables purposefully concentrate on rewarding employees, and so this cluster should be described as *reward strategy*.

Career-oriented training: The variables, sponsoring employees to attend conferences, providing appropriate training, time spent for training by firm, and number of career-oriented workshops attended by employees are grouped together under this factor that account for over 5 per cent of variance on the mentioned HR practices. In general, providing training to employees would more likely to advance their career. In this direction, firms develop strategies in align with training and employees' career, and such *career-oriented training* pertains to human capital creation.

Performance appraisal: The variables, opportunity for overcoming weakness, high frequency of appraisal, beneficial performance discussions with superiors, the kind of performance measurement system, and relevant aspects included in the appraisal are clustered into this pattern, which accounts for over 5 per cent of variation on the mentioned HR practices. This is a kind of *performance appraisal* focused for developmental purposes mainly facilitating performance-oriented discussions between managers and employees, and as a result, the desired skills for achieving organizational goals are consolidated.

Recruitment strategy: The variables, creating new position for talents, organization attractiveness, significant investment on recruitment process, and right candidates' selection are clustered into this factor, which explain over 4 per cent of variance on the HR practices. For contributing to competitive advantage, well established human capital framework is needed for recruitment. So, *recruitment strategy* concentrates on identifying high performers in and out of the organization.

Career management: The variables, holding on to the talents, career exploration by employees, job rotation implementation, persistence to achieve career goal, and self-nomination are grouped to form the fifth factor, which accounts for about 4 per cent of variance. Managing career significantly explains the improvement of employee

developmental behavior at a certain extent, and therefore, focus on *career management* is unavoidable for creating human capital.

Performance-oriented training: The variables, time taken to recruit and select a talent, sufficient in-house training facilities, willingness to participate in training program, acquiring knowledge and qualification from educational institutes, and number of sources providing feedback to an employee are clustered together to form this final pattern, which explained about 4 per cent of total variation. In line with Schultz (1960), when employees' performance significantly not explaining the productivity, organizations will involve in providing training to improve their performance. Such *performance-oriented training* is necessary to enhance employee human capital.

For accepting a factor extracted from exploratory factor analysis, Hair, Anderson, Tatham and Black (2003) recommend that a factor must have an eigenvalue of at least one and internal consistency coefficient of reliability or cronbach alpha of minimum 0.60. According to them, the above explained factors or patterns' psychometric properties are acceptable (see Table 2). Thus, proposition 1 is strongly accepted.

4.2 Validating six factor structure of HR practices

To prove the uniqueness of the factors of HR practices, confirmatory factor analysis (CFA) is conducted. On the part of this analysis, various alternative models are created according to Hair et al. (2003). These alternative models are one-, two-, three-, four-, and five-factor model, which are formed by merging one factor over other. Results of CFA are presented in Table 3, which presents chi square (χ^2), degrees of freedom (df), akaike information criterion (AIC), non-normed fit index (NNFI), comparative fit index (CFI), normed fit index (NFI), and standardized root mean square residual (SRMR), and shows that the six-factor model of HR practices ($\chi^2 = 580.46$, $df = 335$, $AIC = 746.83$, $NNFI = 0.97$, $CFI = 0.98$, $NFI = 0.95$, $SRMR = 0.046$) is more preferable according to the criteria for goodness-of-fit indices suggested by researchers (Hair et al., 2003; Van Dierendonck, 2005). Thus, six-factor model of HR practices has very good fit with the data collected from Indian manufacturing employees. Further, the six-factor structure distinguishes it from the alternative factor structures (one-, two-, three-, four-, and five-factor model). Particularly, on account of chi square, the present structure carries low value among other models as low value of chi square indicates the better fit model. Therefore, CFA results confirm that the six factors are very unique in the structure of HR practices, and absence of a factor would cause for insignificant model. CFA also measured the correlation between these factors, which are presented in Table 4. The correlation results show that all the factors are significantly interrelated. For example, correlation coefficient between reward strategy and career-oriented training is 0.69 and between performance appraisal and career management is 0.79. Therefore, these CFA results strongly support the hypothesis 1.

4.3 Association between HR factors and participant characteristics

The conducted regression analysis found certain significant associations between employee gender and human capital variables and factors of HR practices (see Table 5). In particular, reward strategy and performance appraisal are positively related to employee age and rank. Career management and performance-oriented training are associated positively with employee age but negatively with employee tenure. Career-oriented training carries positive relations with employee rank only, and recruitment strategy does not have any association with employee characteristics. Further, it is observed that gender has significant influence on career management and performance-oriented training. Consequently, these results recommend supporting hypothesis 2 moderately.

4.4 Association between HR factors and organizational characteristics

The conducted regression analysis found certain significant associations between organizational size and ownership and factors of HR practices (see Table 6). Specifically, firm size (towards large) has negatively related to reward strategy, performance appraisal, and performance-oriented training. Firm ownership (towards public sector) also has negative association with reward strategy, career-oriented training, performance appraisal, and recruitment strategy. Therefore, these results moderately support hypothesis 3.

5. Discussions

According to the characteristics and functions, human capital enhancing HR practices were clustered together to form certain factors namely reward strategy, career-oriented training, performance appraisal, recruitment strategy, career management, and performance-oriented training. The working environment and the extent of implementing HR practices in Indian manufacturing firms cause for certain deviations from other countries. Due to employees' career management and performance factors, the identified structure was particularly and significantly diversified from the structure of human capital enhancing HR practices in US manufacturing firms identified by Snell and Dean (1992). To elevate the association between career management and human capital enhancement, the practice of job rotation makes employees to perceive improvement in knowledge of business strategies and environmental influences in the organization (Campion, Cheraskin & Stevens, 1994), and due to this reason, Indian manufacturing firms initiated to provide career-oriented training to align employee needs with organizational needs. Like career management, reward strategy improves employee human capital by motivating employees to show consistent developmental behaviors

through corporate enthusiasm of recognizing and appreciating employees behavior, and as a result, increase of commitment of employees proves human capital creation (Fawcett, Rhoads & Burnah, 2004; Ulrich et al., 1999). This type of motivational reward in addition with competence-based reward immensely exists in private firms than public firms. Hereby, we found certain deviations on reward strategies between private and public firms in line with Mathur, Aycan and Kanungo (1996).

In general, low tenured employees value their career greatly and have willingness to attend training programs to improve their performance in comparison with highly tenured employees. So they utilize the present opportunities like participating in career oriented workshops, and job rotation and self-nomination for job mobility within a firm (Campion et al., 1994), and however, this situation exists extensively in private firms. Due to these reasons, negative relationship between career management and both tenure and organizational ownership was found in line with the past researches (Campion et al., 1994; Noe, 1996; Friedrich et al., 1998). Nevertheless, higher rank employees are experienced of understanding the organizational system, having firm-specific job experiences, having authority and power to innovate, and creating a formal or informal social network comprised of colleagues and customers. Network maintenance facilitates them during performance appraisal by rendering high performance ratings. Therefore, overall experiences of higher rank employees within the organizational system are highly associated with the promotion or career outcome. Hence, higher rank employees are often participating in career-oriented training (Markham, Harlan & Hackett, 1987), and perceive reward strategy strongly as risk-taking is related to reward. The gender variable is positively related to performance-oriented training, performance appraisal, and career management. In general, for being promoted, women who work in top level of the organization require to show high performance rating especially than men (Lyness & Heilman, 2006). Therefore, to be successful and advanced in their career, female employees must show their competencies to achieve career goals. At that moment, undergoing performance-oriented training increases the chances to gain success in career management. In this direction, we could say that women tend to pay more time to advance their career from performance evaluations and improvements similar to male counterparts.

Surprisingly, we identified a positive relationship between age and career management, which is quite reverse with previous findings (Campion et al., 1994; Noe, 1996; Cleveland & Shore, 1992). Presently, all firms invest on manufacturing systems, technologies, and employees to withstand the competitive forces, and however, they require certain kind of optimization on these investments. In view of securing job and being performers as like younger employees, above moderated aged employees are forced to participate in performance-oriented training, and through which they take responsibility to manage their career. However, they attain satisfaction from the skills they have, and more endeavor to create, innovate, and risk-taking (Kooij, de Lange, Jansen & Dijkers, 2008), and consequently, they view reward strategy positively. This was not happened in the relations of performance appraisal and employees' age. Because based on dissimilarity model, the age difference between employees group and supervisor will always result of supervisor rendering higher performance evaluations for the employees (Villanova & Bernardin, 1989). In similarity model, similar age between supervisor and employees attracts each other through interpersonal relationship and positive affect, and in turn, lead to provide higher performance evaluations for employees (Ferris, Judge, Chachere & Liden, 1991). Further, certain differences found between private and public firms in regard of appraising performance. Public sector firms follow rigid guidelines to conduct appraisal, whereas private sector employee's performance is always monitoring by immediate supervisor and superiors and there is flexibility in guidelines in regard of conducting performance appraisal.

Firms also take efforts to formulate recruitment strategy to analyze high performers who are highly able and more productive. Consequently, organizations increase the stock of human capital but it could not be claimed that all the human capital pool could contribute to firm's competitive advantage. Expectedly, we found differences in recruitment strategy between both public and private firms. Private sectors easily amend new job positions as and when no job positions prevalent to a talent, whereas public sectors are not in a position to offer new positions in India due to a complex political system. The chances are to adapt strategy such as active and informal and recruiting through internet more in case of private sectors, whereas it is low in public sectors.

Simple organizational structure allows high proximity between superior and employees in small and medium firms. In Indian small and medium firms, this proximity and fraternity approach of superiors creates a motivating climate through providing monetary and non monetary rewards to employees. So high performers would be transactionally rewarded and relationally rewarded since no fixed pay structure like large organizations (Saini & Budhwar, 2008). In addition, employees are allowed to perform their work independently and so risk-taking and creativity are highly encouraged. In most of the Indian small firms, it is hard to find an implemented performance measurement system. However, feedback about performance of a manager from employees, suppliers, and customers is directly brought up to owner, who then encourages good performance or suggests immediate measure to rectify poor performance of that manager in front of all the sources. Employees' self experience would also help to enhance their performance in the form of training in small firms (Saini & Budhwar, 2008).

6. Concluding remarks

This study described the significance of HRM practices for human capital development and thus improving firm productivity and quality and financial performance. Primarily, these practices are very much focused to develop employees in all levels of the organization. However, employees possessing high value and unique human capital significantly contribute to generate intellectual products which support to achieve competitive advantage. This study empirically explained the patterns through which Indian manufacturing employees perceived human capital development from firms' investment on HR practices. These investment methods were reward strategy to reinforce employees' consistent innovative behaviors, career-oriented training to advance employees' career within the firm, performance appraisal to improve required skills of employees, recruitment strategy to increase the stock of the human capital, career management to improve developmental behaviors of employees, and performance-oriented training to develop skills and knowledge of employees. Importantly, this study showed that efforts to hide any of these factors would affect the entire structure of human capital focusing HR practices. In addition, these HR patterns had certain relationship with employee gender and human capital variables such as age, education, rank, and tenure, and these associations have had similarities and dissimilarities with the previous researches. Expectedly, there were certain relationships found between factors of HR practices and organizational size and ownership.

However, there are certain factors constrain the interpretation of the above findings particularly: ratio of male to female employees participated in the study; absence of small and medium public owned manufacturing companies in the study; and sample comprised of only 12 political states of India. So care should be taken to generalize the findings of this study. However, these limiting factors are unavoidable because of the manufacturing industries are much male dominated and included with no small public firms. Further analysis is also possible by covering all the remaining political states of this country to analyze the structure of HR practices. Significant pattern of HR practices and what extent it explains human capital creation would be identified from developing a measure for human capital creation.

Acknowledgements

We express our sincere gratitude to the employees participated in the study, and our thanks are due to Mr. A. Saravanan for his grammatical assistance to prepare this paper.

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Appendix I

1. Recruitment strategies attempt to hold on to the best talent (5 = definitely true, 1 = definitely false)
2. Creation of new job position for new talents in my organization (5 = greatly in existence, 1 = none in existence)
3. How well developed recruitment strategies are able to attract talents? (5 = completely, 1 = not at all)
4. Generally, money spent in selecting a talent in a given job (5 = a great deal, 1 = very little)
5. Selecting a best candidate for a job (5 = very important, 1 = not at all important)
6. Time taken by your organization to select talents for critical & sensitive projects (5 = very long, 1 = very short)
7. Organization sponsors employees to attend workshops and conferences (5 = definitely true, 1 = definitely false)
8. Availability of training facilities to meet the requirements of my job (5 = greatly in existence, 1 = none in existence)
9. I am very keen to attend training programs (5 = completely, 1 = not at all)
10. To gain knowledge & qualification, organization sends employees to educational institutes (5 = definitely true, 1 = definitely false)
11. Appropriateness of the given training (5 = completely, 1 = not at all)
12. Time spent on for a training program by the organization (5 = very long, 1 = very short)
13. I consider appraisal process as an opportunity to overcome my weaknesses (5 = definitely true, 1 = definitely false)
14. On average in a year, organization appraises our performance more than once (5 = strongly agree, 1 = strongly disagree)
15. To what extent are your performance-related discussions useful? (5 = a great deal, 1 = very little)
16. Organization's performance appraisal system is (5 = excellent, 1 = poor)
17. Sources of collecting feedback about my performance in the organization are (5 = increased greatly, 1 = decreased greatly)
18. The aspects used in my performance appraisal (5 = strongly relevant, 1 = strongly irrelevant)
19. How many different kinds of career-oriented workshops you attended? (5 = very many, 1 = very few)
20. To what extent do you give importance to your career exploration? (5 = a great deal, 1 = very little)
21. To what extent you have undergone job rotation to gain cross-functional experience? (5 = a great deal, 1 = very little)
22. How confident you are that you reach your career goal? (5 = a great deal, 1 = very little)
23. How often you inform superiors about your interests, skills, and accomplishments? (5 = always, 1 = never)
24. To what extent the offered reward in your organization motivated you to participate in a team (5 = a great deal, 1 = very little)
25. Impact of reward on your competency (5 = increased greatly, 1 = decreased greatly)
26. How much importance given to reward your risk-taking? (5 = a great deal, 1 = very little)
27. Offering best employee award (5 = greatly in existence, 1 = none in existence)
28. How often does top management appreciate your work on doing something new? (5 = always, 1 = never)

Table 1. Sample characteristics

Variables	Number	%	Variables	Number	%
<i>Age, years</i>			<i>Tenure, years</i>		
< 30	191	40.47	< 15	309	65.47
30-40	111	23.52	15-25	48	10.17
> 40	147	31.14	> 25	42	08.90
Non-Respondents	23	04.87	Non-Respondents	73	15.47
<i>Gender</i>			<i>Number of firms</i>		
Male	429	90.89	Small (< 201)	21	31.34
Female	28	05.93	Medium (201-999)	12	17.91
Non-Respondents	15	03.18	Large (> 999)	34	50.75
<i>Education</i>			<i>Ownership</i>		
Under Graduate	336	71.19	Public sector	205	43.43
Post Graduate	112	23.73	Private sector	267	56.57
Non-Respondents	24	05.08			

Table 2. Factor structure of HR practices

Q.No	Factors/Items	Factor loadings					
		1	2	3	4	5	6
1. Reward Strategy							
24	To what extent the.....	0.52	0.28	0.22	0.31	0.25	0.03
25	Impact of reward...	0.61	0.09	0.17	0.18	0.10	0.16
26	How much importance...	0.58	- 0.03	0.12	0.09	0.09	0.22
27	Offering best.....	0.65	0.21	0.10	0.18	0.09	0.10
28	How often does.....	0.44	0.28	0.03	0.14	0.30	0.00
	Eigenvalue	7.50					
	Variance explained	26.78%					
	Cronbach alpha (α)	0.78					
2. Career-oriented training							
7	Organization sponsors	0.06	0.63	0.04	0.16	0.01	0.09
11	Appropriateness of.....	0.13	0.51	0.19	0.23	0.09	0.30
12	Time spent.....	0.13	0.48	0.19	0.12	0.02	0.21
19	How many different.....	0.31	0.37	0.34	0.26	0.10	0.17
	Eigenvalue	1.61					
	Variance explained	5.77%					
	Cronbach alpha (α)	0.70					
3. Performance appraisal							
13	I consider appraisal...	0.00	0.18	0.43	0.15	0.38	0.13
14	On average in a ...	0.10	0.07	0.50	0.18	0.04	0.14
15	To what extent are ...	0.05	- 0.01	0.40	0.10	0.35	0.14
16	Organization's performance..	0.20	0.26	0.58	0.08	0.23	0.02
18	The aspects used.....	0.23	0.17	0.38	0.27	0.17	0.23
	Eigenvalue	1.55					
	Variance explained	5.54%					
	Cronbach alpha (α)	0.71					
4. Recruitment strategy							
2	Creation of new job	0.14	0.09	0.13	0.39	0.19	0.11
3	How well developed.....	0.16	0.17	0.08	0.58	0.11	0.18
4	Generally, money	0.21	0.23	0.07	0.42	0.05	0.18
5	Selecting a best	0.10	0.23	0.25	0.50	0.09	0.28
	Eigenvalue	1.18					
	Variance explained	4.21%					
	Cronbach alpha (α)	0.68					

Table 2. Factor structure of HR practices (continued)

Q.No	Factors/Items	Factor loadings					
		1	2	3	4	5	6
5. Career management							
1	Recruitment strategies...	0.05	0.09	0.18	0.16	0.31	0.05
20	To what extent do.....	0.11	0.04	0.09	0.16	0.41	0.27
21	To what extent you.....	0.08	- 0.02	0.06	0.01	0.37	0.12
22	How confident	0.23	0.08	0.20	0.09	0.35	0.13
23	How often you....	0.39	0.33	0.13	0.27	0.39	0.17
	Eigenvalue	1.08					
	Variance explained	3.86%					
	Cronbach alpha (α)	0.60					
6. Performance-oriented training							
6	Time taken by	0.07	0.08	0.08	0.16	0.16	0.36
8	Availability of.....	0.08	0.35	0.02	0.15	0.12	0.49
9	I am very keen	0.07	0.13	0.15	0.22	0.11	0.35
10	To gain knowledge.....	0.08	0.30	0.09	0.18	0.11	0.32
17	Sources of collecting.....	0.18	0.05	0.37	- 0.05	0.23	0.37
	Eigenvalue	1.06					
	Variance explained	3.78%					
	Cronbach alpha (α)	0.60					

Table 3. Results of confirmatory factor analysis

No	MODEL	ψ^2	df	AIC	NNFI	CFI	NFI	SRMR
1	Six-factor model	580.46	335	746.83	0.97	0.98	0.95	0.046
2	Five-factor model	621.36	340	785.65	0.97	0.97	0.94	0.047
3	Four-factor model	663.69	344	830.37	0.97	0.97	0.94	0.049
4	Three-factor model	714.44	347	898.87	0.96	0.97	0.94	0.050
5	Two-factor model	741.65	349	941.19	0.96	0.96	0.93	0.051
6	One-factor model	888.49	350	1160.98	0.95	0.95	0.92	0.056

Note: ψ^2 - Likelihood-ratio chi-square, df- Degrees of freedom, AIC- Akaike Information Criterion, NNFI- Non-Normed Fit Index, CFI- Comparative Fit index, NFI- Normed Fit Index, SRMR- Standardized Root Mean Square Residual.

Table 4. Correlation between HR factors

Factors	1	2	3	4	5	6
1 Reward Strategy	1.00					
2 Career-oriented training	0.69**	1.00				
3 Performance appraisal	0.64**	0.74**	1.00			
4 Recruitment strategy	0.66**	0.79**	0.69 [†]	1.00		
5 Career management	0.82**	0.76**	0.79**	0.74 [†]	1.00	
6 Performance-oriented training	0.62 [†]	0.86**	0.75 [†]	0.77 [†]	0.79 [†]	1.00

** p < 0.05; [†] p < 0.1

Table 5. Regression between HR factors and employee's characteristics

Variables	RW	COT	PA	RS	CM	POT
Age	0.21**	0.04	0.23*	0.08	0.26*	0.25*
Gender	0.02	0.07	0.09 [†]	0.07	0.11**	0.12**
Education	0.03	0.08	0.05	0.00	0.04	0.00
Rank	0.17*	0.13**	0.15**	0.10	0.06	0.01
Tenure	- 0.04	0.01	- 0.09	- 0.05	- 0.18**	- 0.17 [†]

Note: Standardized beta values are shown. * $p < 0.01$, ** $p < 0.05$; [†] $p < 0.1$

RW- Reward Strategy, COT- Career-oriented training, PA- Performance appraisal, RS-Recruitment strategy, CM- Career management, POT- Performance-oriented training

Table 6. Regression between HR factors and organizational size and ownership

Variables	RW	COT	PA	RS	CM	POT
Size	-0.16*	-0.09	-0.11 [†]	-0.08	-0.06	-0.15**
Ownership	-0.16*	-0.29*	-0.11 [†]	-0.24*	-0.02	-0.04

Note: Standardized beta values are shown. * $p < 0.01$, ** $p < 0.05$; [†] $p < 0.1$

RW- Reward Strategy, COT- Career-oriented training, PA- Performance appraisal, RS-Recruitment strategy, CM- Career management, POT- Performance-oriented training



The Choice of Market Entry Mode: Cross-Border M&A or Greenfield Investment

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Abstract

Multinationals may enter a host market by different modes of foreign direct investment (FDI). Two are widely used: Cross-Border M&A and Greenfield Investment. In practice, M&A transaction has increased dramatically in China over the last several years. This paper examines the choice of FDI modes, and makes a comparison between the two modes from the external and internal impacts. Then get the conclusion that we should choose the right mode according to the different situation about the firms in the international market. The purpose of this paper is going to analyze the two entry modes specifically and helps us better understand the two modes.

This article consists of four parts. Part I is a short introduction to China today. Part II briefly introduces the current status of M&A and Greenfield Investment. Part III compares the two entry modes from their implementations, cost, external and internal sides. At the last part, we get the conclusion and make the suggestions to our investors.

Keywords: Foreign direct investment, Multinational firms, Merger and acquisition, Greenfield investment

1. Introduction

In China, there is a very famous proverb that says “Xi Bian Bu Liang, Dong Bian Liang”. This proverb describes a celestial phenomenon, but it can also be used to vividly depict a true picture of the world economy. In 2008, it is very unusual for whole world. Our China suffered from so many disasters, while most places of the world are also experiencing an economic slowdown this year. China, which is also involved into the finance tsunami to some extent, however, on the whole the economics of China is balanced.

After its accession to the WTO and further opening to the outside world, China has been one of the most important countries to receive an increasingly strong flow of FDI, with 40,772 million USD in 2000; 46,846 million USD in 2001; 52,700 million USD in 2002; and 53,505 million USD in 2003. (See Exhibit 1) After 2003, until 2007, China continuously maintained this strong momentum in assimilation of FDI inflows. China, with total FDI inflows surpassing 53 billion USD, is one of the world's two largest recipients of FDI. (UNCTAD (2007) *World Investment Report 2007*)

FDI has occupied a lofty position in China, however, in my view, because of this year's finance crisis, the next following years; the trend of FDI inflows to China may be influenced. Therefore, I suppose it is the time for us to expand our investments to international market. In order to enter into the international market, there is no doubt we will also adopt the strategy of FDI. Next, we should choose the specific model. There are two common models: Greenfield Investment and Cross-border Mergers and Acquisitions. Before making a right choice, the enterprise should firstly understand the characteristics of these two models from the internal and external impacts. As soon as we understand the two modes, then we can make a right choice.

2. Current status of M&A and Greenfield Investment

According to the *World Report 2003-2005 of FDI*, we get the fact that before 1980s; majority of multinational companies entered the host country by the way of Greenfield investment (See the Exhibit 2). After 1980s, firms increasingly enter foreign markets by acquiring a local producer (*acquisition*) instead of opening a new subsidiary (Greenfield investment). In 1987 to 2000, M&A had increased for 14 years continuously. The amount of M&A had been accounted for more than half of the total FDI since 2000 and the ratio was as high as 82.11 percent. In 2001, due to the bubble busted of the global stock market, the Cross-border M&A experienced the cold current and fall off 48.21%. The investment capital even accounted for less than 50%. (See the Exhibit 3) With the world economic recovery in 2004, M&A also resumed again, the accounting for the proportion of multinational investment rose to 58.73 percent.

3. The Comparison between M&A and Green-field Investment

3.1 The Comparison from their Implementations

A firm can establish a wholly owned subsidiary in a country by building a subsidiary from the ground up, the so-called green-field strategy, or by acquiring an enterprise in the target market. That is M&A. From their definitions we can see that Green field investment is one of the most typical ways of internal growth and M&A is the one of external growth. Both internal growth and external growth have advantages. Each of the investment way could bring different outstanding achievements and can develop and expand the company, but there are also some differences between the two entry modes.

The basic difference between M&A and Greenfield Investment is the implementation differences. M & A is an investment model by expanding the internal organization of firms through the external market trading, which regards the enterprise as a special commodity. At first the acquiring firms often overpay for the assets of the acquired firm. What is more, in the beginning, it will not increase host country's production capacity. This point may let the host country worry about their industry market's structure and competition. Especially to developing countries, it may cause the adverse concern whether this mode of investment way can influence the host country's economic sovereignty. Greenfield investment attaches importance to make good use of the capacity of the enterprises' internal organization and resources, then in order to establish the new production capacity and obtain the scale, purchasing land, machinery and means of production from the market. In the model of Greenfield, the behavior of market transactions have been replaced by the behavior of trading in the enterprises' internal organization, although this way can eliminate some cost caused by market transactions, the internal management also exists cost of the same page. (Zhou 523) The differences between the internal organization management cost and market transaction cost is determined by the capacity of the enterprise and resources. As a result, the substance of M&A and Greenfield Investment is going to make a choice between the market and internal organization according to the cost and return.

In addition to the cost, M&A and Greenfield Investment also show some differences in the effects of external factors and internal configuration. With the development of the strategic theory, enterprises are not only pursuing short-term interest, in order to achieve long-term strategic objectives, they have to consider the effective and efficient investment behavior from comprehensive sides. They aim to achieve a strategic business activities and access to sustainably competitive advantage at the core. As I mentioned above, so the ultimate option between M&A and Greenfield Investment should focus on business development strategies. (Bjorvatn, 14) I would like to set Lenovo as an example, which spend almost 20 years to grow into regional company through Greenfield Investment, however, it became a global company in a short period of time through M&A. Lenovo completed its expansion by external growth which internal growth cannot be achieved or have to take for a long time to accomplish its strategic goal. From it, we can know that every company should make a right decision according to the actual situation. Next, I will analyze from the internal and external side.

3.2 The Comparison from the External Impacts

3.2.1 Intensity of Market competition

To this point, the difference between the two is that M&A is an adjustment to the market's present firms in an industry, while Greenfield Investment adds the new supply to the market. In the market-oriented environment, weak competition often accompanied with high profits of the industry. At this time, FDI is inclined to Greenfield Investment to enter into the market. When the effective supply on the market is far from meeting the demand; then Greenfield Investment may be able to grab a place in such a situation, which can gain its competitive advantages. Due to the promising market prospects, it will be attracted a large number of investors, but the appropriate acquired firms will be very scarce and at the same time the cost will be very high. As a result, wise investors would prefer Greenfield Investment rather than M&A. On the contrast, with enhancing the supply by the market, the market is becoming saturated. As a result, the new investors have almost zero return from the entry and the competition is becoming more and more intensive as the supplies have surpassed the demands. In order to survive, companies cut the price for market shares. In such situation, M&A won his position again, a rapid increase in M&A can gain market share and production capacity reduce the cost at one time.

The degree of competition in the market is often accompanied by the development of the industry cycle. Most of the development of the industry experienced four processes: start-up, development, maturity and the decline. With the appearance of new products and new technologies, the industry began to experience a new developing cycle. In the initial stage of the development, because of less competition, Greenfield Investment is the mainstream during this period. As the industry maturing and competition increasing step by step, enterprise started to pursue economies of scale and excess production capacity. Our Greenfield investment model should be replaced by M&A. Under the influence of competition, M&A will become the mainstream of the FDI.

3.2.2 Resource constraints

Company's core competitiveness lies in its main product and the form of the product depends on some specific resources. Different enterprises have different investment performances according to the characteristics of the resources. From another perspective, the choice of investment models is constrained by the objective conditions which are caused by specific resources. Sometimes, good resources bring the competitive advantage to the enterprise. However, some resources are limited to the number or location of the binding nature. In this case, in order to obtain advantages of resources, M&A may be the only way. Recently, China carries out M&A frequently in the international energy market, such as CNOOC's acquisition of JUNIK, this aim was making up the shortage of domestic resources.

3.2.3 Transferability of resources

M&A and Greenfield Investment is essentially expanding their own companies' ability and resources. Companies expand and spread the core competencies within the enterprise through the way of Greenfield Investment. The way through M&A is a part of the strategies that the enterprise transplants other companies' core competencies or core resources as a whole. Therefore, M&A or Greenfield Investment is determined by whether the resources and capabilities own the ability of transferability.

We have learnt that if it is the capital centralized, and then the investment tends to Greenfield Investment. If it is the human capital centralized then the investment tends to M&A. Human capital belongs to implicit asset. It is very difficult to transfer of the asset such as knowledge and technology even within the same country not mention to cross-border. But we can obtain the acquired firms' technology, patents and related professional and technical personnel directly by the way of M&A, which will save the cost of research and technology development, reduce the risk of time and the risk of failure and achieve the pace of upgrade. In addition, the core products which have formed by the human capital centralized enterprises are difficult to catch up with. New recruits are required to spend a lot of energy to overcome the existing household brands. Mergers and acquisitions can solve the problem quickly by establishing operating advantages and avoiding risk.

3.2.4 Changes in the demand for industry

In general, if we are going to enter into an industry in which the demands change constantly, we would prefer to M&A. Because the constantly changes request the enterprise should have the foresight to the high-risk operation in the near future. M&A which can better respond to the changes will enable new entrants occupy the market quickly. On the contrary, the demand for the industry is stable, then companies are often able to form a more effective and predictable plan through Greenfield Investment.

3.3 The Comparison from the Internal Impacts

3.3.1 Quick to Execute

By acquiring an established enterprise, a firm can rapidly build its presence in the target foreign market compared with Greenfield Investment. When face the business expansion, majority of enterprises would regard M&A as a short cut. In terms of economic globalization, the pace of corporate is not only the key to accessing to relevant market, but also has a bearing on the survival and development of enterprises. To the point about speed, M&A is often the first choice for decision-makers. Through M&A, the company can significantly reduce the project's construction period. Acquiring firm can access to the local market with a high speed; and gain a head start in the market among the fierce competition. If we choose Greenfield Investment, we have to prepare enough time to face the complicated procedure. It related to the general argument, the examination and the official approval, infrastructure, equipment installation and so on. There are the numbers of uncertain factors waiting for the investors. Research shows that the creation of Greenfield Investment from business to business negotiations have to take 2-3 years to the general. Most have to wait for another 3-5 years when it reaches a certain size. In contrast, M&A only need a few months time. (Friedman, 78) With the development of science and technology, compared with Greenfield Investment, M&A saves from trouble brought by the pressure of time and risk. When the German automobile company Daimler-Benz decided it needed a bigger presence in the U.S. automobile market, it did not increase that presence by building new factories to serve the United States, a process that would have taken years. Instead, it acquired the number three U.S. automobile company, Chrysler, and merged the two operations to form Daimler-Chrysler. Firms make acquisitions because they knew that is the quickest way to establish a sizable presence in the target market.

3.3.2 Corporate culture

Culture is the embodiment of a system of an organization and the performance. Although the corporate culture is intangible, it is the reflection of enterprise and is driven by the business activities of companies. Corporate culture accumulates in business operation. It is very difficult to change once it has been formed. Not mention to copy or transfer it. U.S. International Joint Company had tried to imitate the success of the cost strategy from Southwest

Airlines. However, they failed; the reason is that they cannot copy the company's culture rather than the aircrafts, routes or the rapid way of turnover.

When a company acquired another company, it is a long way to go due to their culture different. These differences can be formed by different countries or different industries. From the perspective of corporate culture, Greenfield Investment is much better than M&A because enterprises can build a new one and implant the new culture into the new body. So the investors can maintain a high degree of consistency. However, to the companies whose culture is less distinct and more likely to achieve diversity, M&A does matter under this culture.

3.3.3 Management

There is a wide range of enterprise operates in a low efficient not just because they are in a low degree of resources, but also due to their inefficient management. Therefore, one of intrinsic the motivations for M&A is the different level of management. As the different degree of the composition of each enterprise management, enterprises' management efficiency of each page is different. For illustration, there are two companies A and B, when A's management is more efficient than B's, A can gain more if he implant his management to B. Then A has the motivation to acquire B. Through M&A, the Company A's management resources can make maximal return. However, to some extent, enterprises with low management level had better choose Greenfield Investment to circumvent the high level of risk of management.

4. Conclusion

The choice between M&A and Greenfield Investment is not an easy one to make. Both modes have their advantages and disadvantages. In general, the choice will depend on the circumstances conforming the firm. If the firm is seeking to enter a market where there are already well-established incumbent enterprises, and where global competitors are also interested in establishing a presence, it may pay the firm to enter via an acquisition. In such circumstances, a Greenfield Investment may be too slow to establish a sizeable presence. However, if the firm is going to make an acquisition, its management should be cognizant of the risks associated with acquisitions that were discussed earlier and consider these when determining which firms to purchase. It may be better to enter by the slower route of a Greenfield Investment than to make a bad acquisition.

If a firm is considering entering a country where there are no incumbent competitors to be acquired, then a Greenfield Investment may be the only mode. Even when incumbents exist, if the competitive advantage of the firm is based on the transfer of organizationally embedded competencies, skills, routines and culture, it may still be preferable to enter via a Greenfield Investment. Things such as skills and organizational culture, which is based on significant knowledge that is difficult to articulate and codify, are much easier to embed in a new venture than they are in an acquired entity, where the firm may have to overcome the established routines and culture of the acquired firm. (Charles, 342)

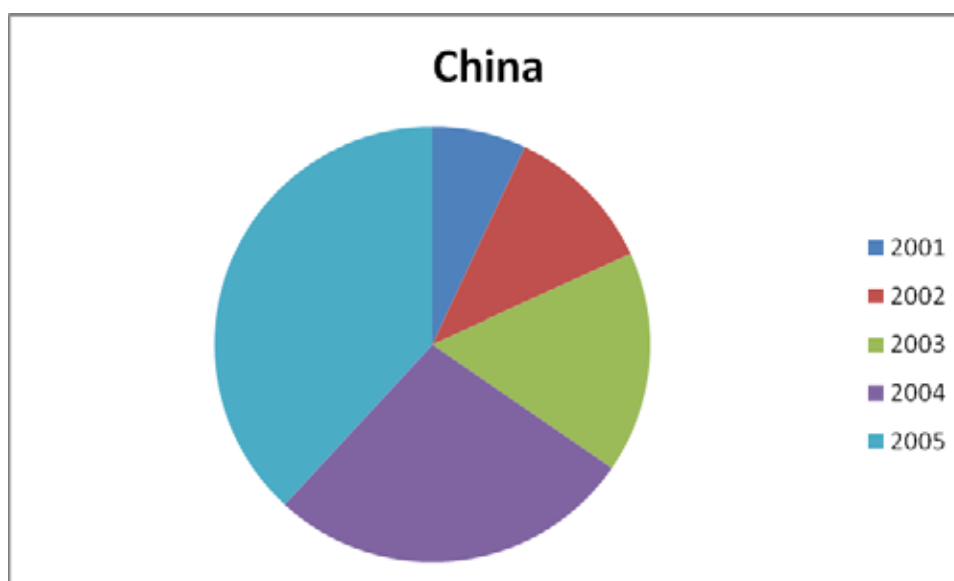
In a word, if the investors choose the right way to enter into the target market, it can save cost and reduce the risk. However, if they choose the wrong way, they cannot live up to their expectation. Therefore, I suggest that all the investors should think over the two entry modes before taken action.

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Appendix

Exhibit 1



The share of M&A in FDI from 2001 to 2005

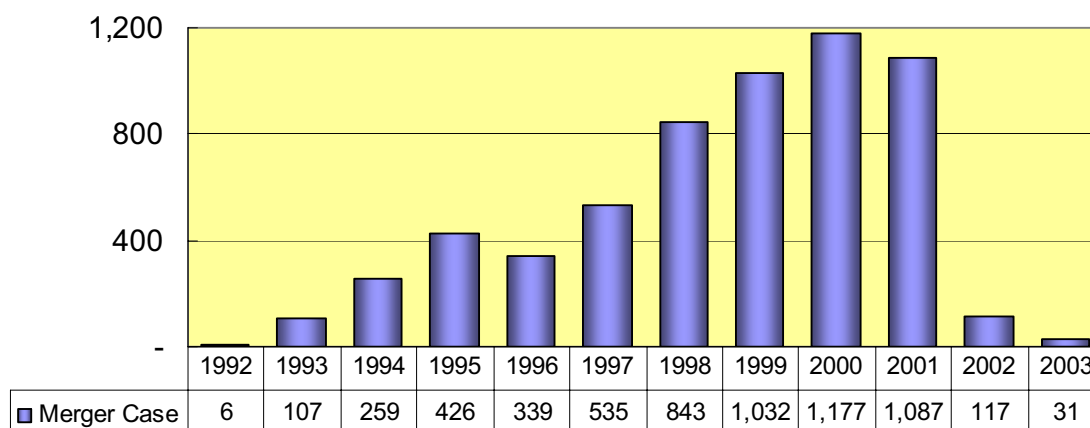
Exhibit 2

Types of FDI	Elasticity on total fixed capital formation	Contribution to the increase of total fixed capital formation (billion US dollars)
Greenfield investment	0.11	8.72
Cross-border M&A	-0.04	-3.19

The impacts of FDI on capital formation of aggregated Chinese Industry

Source: www.ite.poly.edu/people/brao/cross-border_case.htm

Exhibit 3



Merger Case Statistics

Source: www.17stu.com/lunwen/77/165/lw_17223.html

Exhibit 4

Types of FDI	Industrial sectors	Correlation coefficient with capital formation	Correlation coefficient with employment
Greenfield investment	Manufacturing	0.36	0.35
	Wholesales & Lodging Services	0.42	0.54
	Entertainment & Cultural Services	0.09	-0.34
Cross-border M&A	Manufacturing	-0.23	0.00
	Wholesales & Lodging Services	-0.31	-0.60
	Financial & Insurance Services	-0.28	-0.61

The impacts of FDI on Different Industries IN China

Source: www.sasac.gov.cn/n1180/n2429527/n2438790/4945132.html

Exhibit 5



A journal archived in Library and Archives Canada
A journal indexed in Canadiana (The National Bibliography)
A journal indexed in AMICUS
A journal archived in National Library of Australia
A journal indexed in APAIS (the Australian Public Affairs Information Service)
A journal included in DOAJ (Directory of Open-Access Journal)
A journal included in Google Scholar
A journal included in LOCKSS
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