Impact of Economic Performance on Organizational Capacity and Capability: A Case Study in Airline Industry

Hashem Salarzadeh Jenatabadi

1 Applied Statistics Department, University of Malaya, Malaysia

Correspondence: Hashem Salarzadeh Jenatabadi, Applied Statistics Department, University of Malaya, Malaysia. E-mail: hashem.salarzadeh@gmail.com

Received: June 7, 2013 Accepted: July 11, 2013 Online Published: August 10, 2013
doi:10.5539/ijbm.v8n17p112 URL: http://dx.doi.org/10.5539/ijbm.v8n17p112

Abstract
This paper offers an integrated investigation of the interrelations among economic performance, organizational capacity, and organizational capability in airline industry. Airline capacity and capability are measured based on organizational capacity & capability theories and examined this relationship with structural equation modeling from 209 airline companies annual report data. The research findings demonstrate the significant and intertwined roles of economic performance in enhancing the airline capacity and capability.

Keywords: airline capacity, airline capability, economic performance

1. Introduction
The main purpose of this study is empirically to find out the best measures of macroeconomic performance, organizational capacity, and organizational capability in the context of the variables was chosen by researchers. The second contribution of this study is to establish the relationship among these three constructs.

It can interpret economic performance in industrial and country level. In the industrial level researcher tried to use indicators like and country level most of the studies have used familiar economic indicators include GDP, GNP, Inflation rate.

The results, which emphasize the differential importance of factors associated with the development of organizational capacity and capability, can be used by national airline policy makers. Specially, macroeconomic infrastructure appears to be important for both organizational capacity and capability.

2. Literature Review and Hypothesizes
Capacity is defined as the managerial and strategy system required for realization of performance improvement (Jas & Skelcher, 2005). However, a more comprehensive definition of organizational capacity is suggested by Osborne and Flynn (1997) who introduce innovative capacity, as defined by culture, structural patterns, institutional norms and rules, and the organizational contexts.

Organizational capacity covers the study of the capacity within the organizational level (Child & Faulkner, 1998; Finger & Brand, 1999), shares the collective knowledge (Beeby & Booth, 2000), and makes productive utilization of the organizational knowledge (Cohen & Levinthal, 1990). These features include the absorptive capacity concept (Cohen & Levinthal, 1990). However, potential capacity can be illustrated from recognized capacity (O'Connor, Roos, & Vickers-Willis, 2007; Zahra & George, 2002) which deals more with anticipations of future requirements and the resources and relationships management (O'Connor et al., 2007), to enhance future capacity.

The creation and development of capacity within the private sector are urged by the necessity of adaptation to the environment and survival against the external threats (Child & Faulkner, 1998) as well as the achievement of commercial advantage (Cohen & Levinthal, 1990) even under competitive pressure. Organizations in the public sector, also encounter similar challenges to those in the private sector. Organizational capacity in the public sector is essential for the creation of adaptive organizations, mobilization of organizational and cultural modification processes (Hartley, Butler, & Benington, 2002; Martin, 1999), development of local, resources, skills and capacity (Harrow, 2001; Martin, 1999), distribution and share of knowledge (Hartley & Allison, 2002; Hartley & Rashman, 2007; L. Rashman & Hartley, 2002), as well as providing high quality, efficient and fair service standards (Unit, 2006).
The term “capability” is defined as the integration of a firm’s of knowledge, skills, routines and ability to create and deliver a product or service that is of superior value to their customers (Day, 1994). Organizational capability has an extensive concept contain many characteristics and elements (O’Regan & Ghobadian, 2004). For example, Kusunoki et al. (1998) identifying three types of organizational capability, which are process, architectural, and local capabilities. Many authors believe that organizational capabilities as a “source of competitive advantage” (Santos-Vijande, Sanzo-Pérez, Trespalacios Gutiérrez, & Rodríguez, 2012; Teece, Pisano, & Shuen, 1997; TICHÁ, 2010). Furthermore, Chandler (1990) defines organizational capacity as a firm’s collective physical facilities, in addition to the skills of its employees, in tandem with the ability and aims of its top management.

Organizational capacity and capability are regarded as two distinct concepts (Drabek & Haas, 1969; Hou, Moynihan, & Ingraham, 2003; O’Connor et al., 2007; L. J. Rashman, 2008; Ulrich & Lake, 1991). Hoskisson et al. (2008) defines capability as an organization’s capacity to carry out an activity or task in an integral procedure. This alludes to the fact that capabilities, whether existing or potential, has a significant influence on strategic decision. Capacity represents the system’s capability’s need to make or provide a product-mix (Rajendran, 2008). Despite these rather intertwining relationship between these two concepts, the relationship between capacity and capability has rarely been explored (Kuhlicke & Steinführer, 2010), and this is evident in literature, for example, Wisner (2004) regards both terms as one and the same, while Baser and Morgan (2008) goes to great length to differentiate between both. Capability, in their conceptualization, is “the collective skill or aptitude of an organization or a system to carry out a particular function or process”, contributing to the overall capacity of a system/organization to create public values. Organizational capability can be regarded as an organization’s ability to repeat productive tasks that are related to a firm’s potential in value via manipulating the transformation of inputs/outputs (Grant, 1996). Therefore, certain studies affirm the relationship between organizational capacity and organizational capability. In other words, capacity will positively influence the capability of an organization and therefore the first hypothesis of this study is,

H1: organizational capacity has positive effect on organizational capability.

Lusthaus (2002) introduced Institutional and Organizational Assessment Model (IOA Model) based on three main indicators. These are internal operating, external operating environments, and organizational capacity. Organizational capacity includes the physical infrastructure, staffing, financial resources, strategic leadership, programme and process management, technology and IT, and its links with other business groups and companies. External operating environment, which includes legal and administrative systems, economic conditions and trends, political environment, and the cultural and social contexts in which the company operates. The internal environment “refers to internal indicators that influence the direction of the organization and the energy displayed in its activities” (Metzger, University of Guelph. University School of Rural, Development, University of Guelph. School of Environmental & Rural, 2007). Therefore Lusthaus (2002) illustrated that external environment (or economic performance) can effect on organizational capacity and internal environment (or organizational capability). Therefore in airline industry we have:

H2: economic performance has positive effect on organizational capacity.

H3: economic performance has positive effect on organizational capability.

Another contribution of this study is that economic performance can effect on organizational capability indirect trough organizational capacity. In other words, organizational capacity will be a mediator. Therefore we have,

H4: organizational capacity is a mediator in the relationship between economic performance and organizational capability.

![Figure 1. Research framework](image-url)
3. Research Methodology

Data analysis is done by structural equation modelling (SEM) application. SEM is used in so many topics like knowledge management (Chen & Xu, 2010; Liao & Wu, 2009), supply chain management (Agus & Hassan, 2008; Dargusch & Ward, 2010), leadership style (Sahaya, 2012; Snaebjornsson & Edvardsson, 2012), customer satisfaction (Siddiqi, 2011), and job satisfaction (Danish & Usman, 2010). We applied AMOS Version 16 for data analysis. AMOS is a graphical user interface software and suitable to design model based on structural equation modelling. Two main procedures were conducted in our analysis. These are measurement model and structural model. We used measurement model to make sure that the research construct are valid and applied structural model to testing research hypotheses.

3.1 Sample and Data

The airline industry has two main organizations, i.e., Air Transport World (ATW) and International Air Transport Association (IATA). The total number of members of IATA in 2009 amounted to 230 airlines while ATW had 437 members for the same period of time. The population of this study has been taken from ATW since the number of ATW airlines is greater than the number of the airlines in IATA, and most of the famous airlines are members of ATW, e.g., Air Asia, the most popular largest airline in South East Asia.

Nevertheless, it is notable to mention that airline companies are classified as a service-providing sector whose main task includes service provision to their customers, i.e. passengers. These sorts of companies are grouped into three categories based on the kind of service: airline companies specializing in transfer of passengers, airline companies specializing in cargo transfer, and airline companies specializing in both passenger and cargo transfer. The current study; however, only focuses on the airline firms specializing in passenger transfer although they also concurrently provide services for cargo transfer. Moreover, the cargo transferring aspects of the case have been excluded from the present research domain.

According to ATW, airline areas are categorized into five regions, namely: a) the Middle East and Africa b) Asia and Pacific, c) Latin America and the Caribbean, d) Europe, and e) North America. Therefore, the ATW regions can be stratified into five levels accordingly, as illustrated in Figure 2, which shows the number of airlines and population samples in each region. In this study 214 companies were selected using stratified.

![Figure 2. Number of total airlines and sampling](image)

3.2 Measures

GDP is one of the most familiar economic indicator which has been treated in airline performance modelling research since 2000 (Ramanathan, 2001). Inflation rate indicator has also been employed by various researchers (Aderamo, 2010; Jenatabadi & Ismail, 2007) for modelling of airline performance. Human Development Index (HDI) is another indicator that has proven its importance among other economic factors during recent decades is the. However, this factor has never been used in airline industry studies. The present research introduces the
economic performance construct with combination of GDP, HDI, and inflation rate. Lusthaus (2002) is divided organizational capacity into resources (technological, human, physical, and financial) and management (networking and linkage, plan and process management, and leadership). Due to structure of our data, available seat kilometer (ASK) is indicating for physical and financial resources, number of employees is an indicator of measuring human resources, and network size for networking, technological, and financial resources. Therefore, we can measure organizational capacity based on three measurements. These are number of employees, network size, and ASK.

Organizational capability is the dependent variable in the research model. This construct in include some indicators which are changeable by the airline managers based on many conditions like company's policies and strategies or economic performance. We measure this construct with number of departure, average stage of length, advertising expenses, and vehicle kilometer indicators based on Duliba et al. (2001) study.

4. Data Analysis

4.1 Measurement Model

Table 1 illustrates that a) the composite reliability for three latent variables is bigger than 0.8, b) the average variance extract is bigger than 0.50, and c) all factor loadings were higher than 0.70, with the exception of inflation rate. However, inflation rate can be included due to its significant correlation (Teo, 2010) i.e., (r = -0.601), with other items, ln (GDP), in the same construct. These three procedures have been proposed by Fornell and Larcker (1981) to evaluate the convergent validity of the measure in a research model (see Table 1).

<table>
<thead>
<tr>
<th>Construct</th>
<th>Indicators</th>
<th>Factor Loading</th>
<th>Crobbach’s α</th>
<th>AVE</th>
<th>Construct correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic</td>
<td>Inflation Rate</td>
<td>0.62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Ln(GDP)</td>
<td>0.97</td>
<td>0.78</td>
<td>0.57</td>
<td>(0.69)</td>
</tr>
<tr>
<td></td>
<td>HDI</td>
<td>0.87</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>ASK</td>
<td>0.77</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capacity</td>
<td>Network Size</td>
<td>0.73</td>
<td>0.71</td>
<td>0.57</td>
<td>0.025 (0.57)</td>
</tr>
<tr>
<td></td>
<td>Number of Employee</td>
<td>0.76</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Departure</td>
<td>0.90</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Capability</td>
<td>Stage of Length</td>
<td>0.93</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Advertisement</td>
<td>0.93</td>
<td>0.85</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Vehicle Kilometre</td>
<td>0.93</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Fornell et al. (1982) said “there is discriminant validity when the variance shared between a construct, and any other construct in the model is less than the variance that constructs shares with its indicators”. The assessment of this relationship was carried out based on the comparison between the AVE square root for a construct and the correlations that relate that construct to other ones. When the AVEs’ square roots for the off-diagonal elements in the columns and rows that correspond is bigger than the correlations that relate a construct to other constructs in a given model, it can be strongly claimed that the correlation between a construct and its indicators is stronger than the correlations between the other constructs available in the model. Table 1 shows replacement of the diagonal elements in the matrix of correlation with the AVEs’ square roots. As the Table 1 conforms, discriminant validity seems to be quite satisfactory for all the constructs in the model.

This study is conducted confirmatory factor analysis (CFA) to assess the degree of model fitting include three constructs and ten measurements. The measurement model provides a suitable criterion for model fitting. The results of model fitting test show that the research model with these three constructs had a good fit as brought out by Chi-square Fit [$\chi^2$=76.104, df=32, p-value<0.001]; goodness of- fit index [GFI]=0.936; Relative fit index [RFI]=0.938; Normed fit index [NFI]=0.956; incremental fit index [IFI]=0.974; Tucker Lewis index [TLI]=0.963;comparative fit index [CFI]=0.974; Root Mean Square Error of Approximation [RMSEA]=0.018. The RMSEA statistic is less than 0.05 and the GFI, RFI, NFI, IFI, TLI, CFI statistics are bigger than 0.90 which is recommended by (Hoyle & Panter, 1995).Therefore, the model fitted well.

4.2 Structural Model

Structural Equation modelling (SEM) with Maximum likelihood estimation was used to test the research
hypotheses. Figure 3 presents the recommended structural model. Based on Table 2, the finding data analysis for H1 (capacity → capability; $\beta_1=0.80$, $p<0.001$) and H2 (economic → capacity; $\beta_2=0.15$, $p=0.047$) and H3 (economic → capability; $\beta_3=0.13$, $p=0.015$) suggest that economic performance has a significant impact on both organizational capacity and capability. This finding supporting the widespread idea that economic performance of couturiers is an initial resources of organizational capacity and capability’s improvement. Moreover, impact of economic performance on organizational capacity is higher than its impact on organizational capability. Taking into account the fact organizational capacity also improve organizational capability, these findings seems to illustrate that organizational capacity partially mediates the relationship between economic performance and organizational capability.

![Figure 3. Structural model](image)

**Table 2. Parameter estimated**

<table>
<thead>
<tr>
<th>Relationship</th>
<th>Standardized Estimates</th>
<th>C.R</th>
<th>P</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capacity→Capability</td>
<td>0.80</td>
<td>10.304</td>
<td>&lt;0.001</td>
<td>Supported H1</td>
</tr>
<tr>
<td>Economic→Capacity</td>
<td>0.15</td>
<td>1.982</td>
<td>0.047</td>
<td>Supported H2</td>
</tr>
<tr>
<td>Economic→Capability</td>
<td>0.13</td>
<td>2.437</td>
<td>0.015</td>
<td>Supported H3</td>
</tr>
</tbody>
</table>

**5. Discussion**

**5.1 Discussion of the Finding**

Three constructs have been used in the research models (Figure 3). The initial construct, economic performance, includes inflation rate, ln (GDP) and HDI. Except inflation rate, the other two indicators in this construct have high factor loading (bigger than 0.7), however, the measure of inflation rate, has a significant relationship with ln (GDP) in the same construct. Therefore, all of the measures should be considered in the economic performance construct. The relationship between economic performance and ln (GDP) and HDI is significant
and positive; however, it has a significant negative relationship with inflation rate. In addition, in such a relationship, the absolute value of standard coefficients for HDI (0.86) and ln(GDP) (0.98) are greater than that of inflation rate (0.61). Therefore, the impact of the HDI and ln(GDP) indicators on the economic performance is higher. An increase of one unit in the values of inflation rate, i.e., in the rate of HDI and ln(GDP), results in an increase in the economic performance value by 1.23 (0.86+0.98-0.61) units. Therefore, it can be claimed that the economic performance as an external factor has a strong positive effect on organizational capability.

Organizational capacity is the second construct of the research model and includes network size, available seat kilometre, and employee. Network size has the most significant effect on airline capacity with a 0.77 factor loading. The construct of organizational capability is the third construct of research model that contains four measurements including the number of departures, average stage length, advertising, and vehicle kilometres. As illustrated in Table 1, the values of factor loading of the variable are over 0.7. Therefore, the relationship between them and the organizational capability construct is significant. However, the highest factor loadings belong to vehicle kilometres and stage of length (0.94).

5.2 Limitation of the Study

One of the most importance limitations that this study suffers from are related to the documentary data, especially, data collected from companies’ annual reports. This is because the annual reports of the organizations are not always accessible to researchers, and, hence, the data collection in this study and other studies of a similar nature is normally restricted to the available data sources. Another limitation in this research is related to stochastic sampling, which, in turn, results from the limited access to the annual reports, some of which were even inaccessible.

Some airline companies, especially governmental or public sector, receive financial support from their governments under the name of subsidy (Bhadra, 2009), which can be one of the most influential factors affecting a company’s performance. According to the limitations in data and data collection, as mentioned earlier, this factor, as a moderator or internal operation variable, was not taken into consideration in the assessed and evaluated models in this research.

Since the data are collected from annual reports in this research and the structure of customer satisfaction database is based on questionnaires, this study cannot use customer satisfaction variables for estimating airline performance. Furthermore, as the population in the study is global airlines, collecting these kinds of data is very expensive.

5.3 Future Works

As mentioned earlier, in the limitations section, the subsidy that some companies receive from government can be considered as a moderator variable or internal indicator. Furthermore, a similar study can be conducted on the relationship between CEO compensation and airline performance (Perryman, 2009), which can also be taken as a moderator for research models.

References

Liao, S., & Wu, C. (2009). The Relationship among Knowledge Management, Organizational Learning, and


Rashman, L. J. (2008). Organizational knowledge and capacity for service improvement in UK public organizations.


**Copyrights**

Copyright for this article is retained by the author(s), with first publication rights granted to the journal. This is an open-access article distributed under the terms and conditions of the Creative Commons Attribution license (http://creativecommons.org/licenses/by/3.0/).