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Construct validation on organizational strategies and performance dimensions using confirmatory factor analysis

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ABSTRACT

The research tries to observe the psychometric properties of the organizational strategies and performance scales which consist of competitive strategy, market orientation, innovation strategy and organizational performance. SPSS v21 and Amos v20 were utilized to analyse the dataset. The outcomes found support for the fact that organizational strategies and performance can be measured by the four variables that adapted from prior literatures. The results also indicated adequate internal consistency and construct validity for all the variables. The findings show that instrumentation used in this study is a valuable and apt in evaluating the organizational strategies and performance in context of Malaysia hotel industry. Finally, implications, limitations and recommendations are also discussed.

Key words: Organizational strategies, Organizational performance, Construct validity

1. Introduction

Every organization doesn't matter either manufacturing or service sector crucially needs effective execution of organizational strategies to remain competitive in the uncertain and competitive business environment. In Malaysia, the service sector has turned into one of the key contributors to the economic development (Awang, Ishak, Radzi and Taha, 2008). Particularly, the hotel business is believed to be one of the most important contributors to Malaysia commercial development (Mohammad, Rashid and Tahir, 2013; Razalli, 2008). Therefore, Malaysian government prepared various national agendas to implement in order to uphold the quality and performance of the hospitality industry (NKEA report, 2011). Thus, to achieve the objectives of national agendas, the hoteliers need to ensure that their organizational strategies constantly fit for better performance attainment. Thus, this study found a research gap in the strategic management literatures and highlighted the effective alignment of competitive strategy (business strategy), market orientation and innovation strategy (functional strategies) which could best fit into organizational direction to attain superior performance.

The measures of competitive strategy, market orientation, innovation strategy and organizational performance have been used extensively in many empirical studies from different setting (Koseoglu, Topaloglu, Parnell and Lester, 2013; Ramayah, Samat and Lo, 2011; Tajeddi and Trueman, 2012). However, very limited studies were conducted on the basis of integrating these strategic research instruments to measure the organizational strategies and performance holistically in the context of hotel industry in Malaysia.

Furthermore, insufficient researches have been directed on the construct validation of these strategies and performance measures. So, this suggested that researchers should focus on complete theoretical understanding of the constructs and its measures. Put it differently, construct validation is significant to assure the results are theoretically worthy. The inadequacy demands this study make an attempt to bridge the theoretical gap.

1.1 Research questions and objectives

This study has adapted, varied measures in assessing the constructs. There is a necessity to develop a complete tool that systematically clarifies these strategies and performance factors. Therefore, the study seeks out to collect outcomes based on subsequent research inquiries; what is the internal consistency of each dimension? And does the organizational strategies and performance instrument possess good construct validity? First, this study assesses the internal consistency or reliability of organizational strategies and performance dimensions. Secondly, it assesses the construct validity of strategies and performance instrument by utilizing confirmatory factor analysis.

2. Literature review

Competitive strategy described the direction and scope of the organization to acquire superior competitive advantage (Porter, 1980). Porter (1980) proposed cost leadership, differentiation and focus strategies. Cost leadership strategy and differentiation strategy were the main two generic strategies which emphases on creating competitive advantage, whereas focus strategy is a subset of the latter strategies (Hilman, 2009; Seedee, Sulaiman and Ismail, 2009; Porter, 1980, 1985). Porter (1980, 1985) stated cost leadership strategy is about running business activities to be the lowest cost producer in the whole industry. Meanwhile, differentiation strategy is relatively on offering superior, different and unique product or service to the customer (Hlavacka, Bacharova, Rusnakova and Wagner, 2001; Porter, 1980). Numerous studies were found significant link between competitive strategies and organizational performance (Nandakumar, Ghobadian and Regan, 2011; Hilman, 2009; Seedee et al., 2009; Allen and Helms, 2006).

Market orientation is considered as a culture that effectively created an essential behaviour for superior value to the customer (Narver and Slater, 1990). Competitor orientation sees the rivals thoroughly, understands short term fortes and flaws and long term capabilities plus strategies of present and possible rivals (Narver and Slater, 1990). Zhou, Brown and Dev (2009) said customer orientation considerate the target customers adequately to create greater value for them. This study investigates the effects of competitor orientation and customer orientation only. The notion of market orientation effects on business performance has been well proven (Razghandi, Hashim and Mohammadi, 2012; Ellis, 2006; Kirca, Jayachandran and Bearden, 2005).

Schumpter (1934) as cited by Wang and Ahmed (2004) innovation considered as developing new product/service, new approaches of production, recognizing new market, new resources and improving new organizational systems. Process innovation is considered as introducing new production methods, management approaches and technology to improvise the production and management process (Wang and Ahmed, 2004). O'Sullivan and Dooley (2009) defined service innovation as making beneficial changes in the service that the customers use. The relationship between innovation strategy and performance is well established in prior studies (Tajeddini and Trueman, 2012).

Kaplan and Norton (1992, 1996) created balanced scorecard to provide balanced performance measurement by retaining financial and adding non- financial perspectives; customer, internal process and learning and growth in assessing the organizational performance. The present study uses the subjective approach to assess the organizational performance of hotels in balanced scorecard setting.

3. Research methodology

The research questionnaires were distributed to the top and middle managers in three to five star rating hotels in Malaysia. The researchers sent the questionnaires together with a cover letter which explained about the research objectives. 475 surveys were distributed through mail and 144 were returned. But, only 114 feedbacks were used for further investigation.

3.1 Measurements

All items for organizational strategies and performance were rated on a seven point Likert scale. The survey has five sections. Section 1 is about the respondent's position, hotel ratings, number of rooms, hotel location, occupancy rate, number of employees and years of operation which adapted from Auzair (2011) and Kasim and Minai (2009). Section 2 is about competitive strategy consist of four items for cost leadership strategy and seven items for differentiation strategy which adapted from Auzair (2011). Section 3 is about market orientation consist of five items for competitor orientation and five items for customer orientation which adapted from Grawe, Chen & Daugherty (2009). Section 4 is about innovation strategy consist of four items for process innovation and five items for service innovation which adapted from Hilmi, Ramayah, Mustapha and Pawanchik (2010) and Grawe et al. (2009). Finally, Section 5 is about organizational performance using six items in a balanced scorecard setting which adapted from Hilman (2009) and Kaplan and Norton (1996). The respondents were asked regarding their perception of the hotel's performance in the past five years.

3.2 Data screening and analysis

The 114 dataset was kept in SPSS v21 and evaluated by Amos v20. First, data screened for outliers, all the 114 data sets were possessed Mahalanobis (D2) values lower than the ($\chi 2 = 67.99$; n = 36, p < 0.001), so 114 datasets to be used for analysed. The researcher used Z score values of skewness and kurtosis statistics (Tabachnik and Fidell, 2007). All the values were within the range of +2 and -2. Some assessments were conducted; descriptive analysis, reliability, composite reliability, construct, convergent, discriminant validities and testing the model fit.

4. Results

Respondents were from top and middle management. The majority or 53.5% of respondents were from top management and 46.5% were from middle management. For the hotel characteristics, 43.9% of hotels were three star, 36% of four star and 20.2% of five star rating. The results show that 14% hotels with under 100 rooms, 30.7% of hotels has 101-200 rooms, 31.6% hotels has 201-300 rooms, 14.9% of hotels has 401 and above rooms and only 8.8% of hotels has 301-400 rooms. Furthermore, 17.5% of hotels have 51%-60% occupancy rates, while only 18.4% of hotels have more than 80% of occupancy rates. The findings show that 28.1% of hotels have employees below 100, 38.6% of hotels have 101-200 employees, while

only 7.9% of the hotels has employees more than 501. Finally, 25.4% of hotels were operated 5-9 years, 30.7% hotels operated since 10-15 years, 26.3% of hotels operated more than 15 years, while only 17.5% of hotels were operated under 5 years.

4.1 Descriptive Analysis

The findings showed all the items post Cronbach alpha values as low as 0.83 to as high as 0.90, well above Nunnally and Bernstein (1994) recommendation of 0.60. This indicates all the items possess strong internal consistency. Refer to table below.

Table1: Descriptive statistics and reliability

Variables	No of items	Mean	Standard deviation	Cronbach alpha
Cost leadership	4	4.015	1.227	0.83
Differentiation	7	4.099	1.120	0.90
Competitor orientation	5	4.286	1.036	0.84
Customer orientation	5	4.342	1.130	0.87
Process innovation	4	4.349	1.173	0.87
Service innovation	5	4.342	1.160	0.89
Organizational performance	6	6.266	0.491	0.84

4.2 Convergent Validity

CFA result found that standardized regression estimates of all variable were adequately ranging from 0.803 to 0.852. All the factor loadings were above recommended threshold of 0.50 values (Hair, Black, Babin and Anderson, 2010). This indicates that all the constructs confirmed to the construct convergent validity test. Table 2 shows findings of variance extracted (VE).

4.3 Composite Reliability (CR)

The CR evaluated based on the standardized factor loadings. The CR of all latent constructs is well above 0.60 (Nunnally and Bernstein, 1994). The result of CR shows all the items post values above 0.90 and also greater than the Cronbach alpha. This CR shows high readings for all the constructs, which indicating strong internal consistency. Table 3 shows outcomes of composite reliability.

4.4 Discriminant Validity

Average variance extracted (AVE) is compared to correlation squared of the interrelated variables (Fornell and Larcker, 1981). The result is presented in Table 4. The value of AVE must more than correlation squared (Table 5). For example, between the variables cost leadership and differentiation, the AVE= 0.813 (Table 4), while correlation squared= 0.706 (The figures in brackets in Table 5). Hence, AVE is greater than the correlation squared. Thus, discriminant validity is supported. All constructs used in this study supported by discriminant validity.

4.5 Goodness of Fit indices

A model has a good fit if the criteria such as GFI, CFI, TLI, and RMSEA are achieved (Bagozzi and Yi, 1988). All constructs produced a good fit as indicated for instance CMIN/df ratio (<2); p-value (>0.05); Goodness of Fit Index (GFI) of >0.95; and root mean square error of approximation (RMSEA) (<0.08) (Hair, Black, Babin, Anderson and Tatham, 2006). The table below is displaying the goodness of fit generated and revised model that met the criteria of the best fitting model. Only the organizational performance model was slightly revised using modification indices for better fit. So, item (1) return on investment (ROI) correlated with item (3) sales growth. The revised model indicated better goodness of fit. Refer to table 6.

Table 2: Variance extracted

Variables	SMC	Standard error	Variance extracted
CSCL1	0.593	0.147	
CSCL2	0.520	0.137	
CSCL3	0.587	0.142	
CSCL4	0.512	0.115	
Total	**2.212**	**0.541**	**0.803**
DIF1	0.603	0.126	
DIF2	0.549	0.117	
DIF3	0.605	0.106	
DIF4	0.577	0.118	
DIF5	0.453	0.109	
DIF6	0.482	0.116	
DIF7	0.592	0.147	
Total	**3.861**	**0.839**	**0.822**
COM1	0.352	0.121	
COM2	0.619	0.128	
COM3	0.492	0.126	
COM4	0.602	0.128	
COM5	0.553	0.114	
Total	**2.618**	**0.617**	**0.810**
CUS1	0.436	0.125	
CUS2	0.640	0.125	
CUS3	0.720	0.122	
CUS4	0.566	0.131	
CUS5	0.561	0.116	
Total	**2.923**	**0.619**	**0.810**
PI1	0.671	0.104	
PI2	0.611	0.112	
PI3	0.609	0.108	
PI4	0.616	0.112	
Total	**2.507**	**0.436**	**0.852**
SI1	0.603	0.115	
SI2	0.654	0.122	
SI3	0.592	0.123	
SI4	0.652	0.111	
SI5	0.579	0.109	
Total	**3.080**	**0.580**	**0.842**
OP1	0.289	0.495	
OP2	0.515	0.522	
OP3	0.561	0.558	
OP4	0.696	0.590	
OP5	0.429	0.246	
OP6	0.280	0.168	
Total	**2.770**	**2.579**	**0.520**

Table 3: Composite reliability

Variables	Standard loadings	Sum of std. loadings	Standard error	Composite reliability
CSCL1	0.770		0.147	
CSCL2	0.721		0.137	
CSCL3	0.766		0.142	
CSCL4	0.715		0.115	
Total	**2.972**	**8.833**	**0.541**	**0.942**
DIF1	0.777		0.126	
DIF2	0.741		0.117	
DIF3	0.778		0.106	
DIF4	0.759		0.118	
DIF5	0.673		0.109	
DIF6	0.694		0.116	
DIF7	0.770		0.147	
Total	**5.192**	**26.96**	**0.839**	**0.970**
COM1	0.594		0.121	
COM2	0.787		0.128	
COM3	0.701		0.126	
COM4	0.776		0.128	
COM5	0.744		0.114	
Total	**3.602**	**12.974**	**0.617**	**0.955**
CUS1	0.660		0.125	
CUS2	0.800		0.125	
CUS3	0.849		0.122	
CUS4	0.752		0.131	
CUS5	0.749		0.116	
Total	**3.810**	**14.520**	**0.619**	**0.960**
PI1	0.819		0.104	
PI2	0.782		0.112	
PI3	0.780		0.108	
PI4	0.785		0.112	
Total	**3.166**	**10.024**	**0.436**	**0.958**
SI1	0.777		0.115	
SI2	0.809		0.122	
SI3	0.769		0.123	
SI4	0808		0.111	
SI5	0761		0.109	
Total	**3.924**	**15.400**	**0.580**	**0.964**
OP1	0.537		0.495	
OP2	0.718		0.522	
OP3	0.749		0.558	
OP4	0.834		0.590	
OP5	0.655		0.246	
OP6	0.529		0.168	
Total	**4.022**	**16.176**	**2.579**	**0.862**

Table 4: Average variance extracted

Variables	1	2	3	4	5	6	7
Cost leadership	**1.000**						
Differentiation	0.813	**1.000**					
Competitor orientation	0.807	0.816	**1.000**				
Customer orientation	0.814	0.824	0.818	**1.000**			
Process innovation	0.828	0.837	0.831	0.839	**1.000**		
Service innovation	0.823	0.832	0.826	0.834	0.847	**1.000**	
Organizational performance	0.662	0.671	0.665	0.673	0.686	0.681	**1.000**

Table 5: Correlation and correlation square

Variables	1	2	3	4	5	6	7
Cost leadership	**1.000**						
Differentiation	-0.840 (0.706)	**1.000**					
Competitor orientation	0.848 (0.719)	-0.816 (0.666)	**1.000**				
Customer orientation	-0.856 (0.733)	0.821 (0.674)	-0.851 (0.724)	**1.000**			
Process innovation	0.834 (0.696)	-0.826 (0.682)	0.909 (0.826)	-0.843 (0.711)	**1.000**		
Service innovation	-0.890 (0.792)	0.863 (0.745)	-0.872 (0.760)	0.863 (0.745)	-0.892 (0.796)	**1.000**	
Organizational performance	0.095 (0.009)	-0.111 (0.012)	0.074 (0.005)	-0.124 (0.015)	0.030 (0.001)	-0.050 (0.003)	**1.000**

Table 6: Goodness of fit

Final model	Competitive strategy	Market orientation	Innovation strategy	Organizational performance	Organizational performance (Revised model)
Items remain	11	10	9	6	6
Chi-square	63.722	59.433	43.550	73.914	9.646
Df	43	34	26	9	6
Ratio	1.482	1.748	1.675	8.213	1.608
GFI	0.914	0.912	0.919	0.846	0.972
CFI	0.970	0.960	0.975	0.772	0.987
RMSEA	0.065	0.080	0.077	0.253	0.073

5. Discussions

The research mainly assessed the construct validity of organizational strategies and performance measures which consists of cost leadership, differentiation, competitor orientation, customer orientation, process innovation, service innovation and organizational performance. The instruments were adapted from Auzair (2011); Grawe et al., 2009; Hilmi et al., 2010; Hilman, 2009; Kaplan and Norton, 1996 which extensively used for organizational strategies and performance measures. However, very limited proof of psychometric properties of the measures has been testified since most of the researches interested in

examining the outcomes of the relationship of organizational strategies towards performance. Very limited studies attempt to explore the psychometric properties of these measures to empirically find the internal consistency reliability, convergent validity, discriminant validity and goodness of fit. Hence, this study investigates the psychometric properties of organizational strategies and performance measures. Specifically, CFA utilized to measure the construct validity, discriminant validity and convergent validity of the instrument. The outcomes indicated a strong support for convergent validity. Moreover, findings also informed strong composite reliability for all the dimensions ranging 0.862 to 0.970. The VE value of all dimensions is relatively high. Furthermore, all the AVE were greater than correlation square, so it shows good discriminant validity. Importantly, this study found that the dimensions of organizational strategies and performance showing better goodness of fit.

5.1 Implications, limitations and recommendations

This study contributes on constructing validation of organizational strategies and performance measures in the context of Malaysia hotel industry. Previous literatures suggested that construct validation gives meaningful results and value for any research (Johari and Yahya, 2012). Up to researcher knowledge, very few studies were conducted on the basis of construct validation especially in confirmatory factor analysis. Based on this limitation, the researchers scrutinize the measurement validation in the Malaysia context, particularly in hospitality sector. The findings of this study were limited to the hotel industry in Malaysia. Therefore, the results could not be generalized to other sectors. Future studies should be done to further validate these organizational strategies and performance measures in different setting.

5.2 Conclusion

The research outcomes and considerations indicate that organizational strategies and performance measures can be useful in examining the strategy and performance link in Malaysia hotel industry. Specifically, the organizational strategies and performance instrument validity measured the cost leadership, differentiation, competitor orientation, customer orientation, process innovation, service innovation and organizational performance. So, this study showed that the instrument used to measure the strategies and performance linked in hotel industry of Malaysia was reliable and valid.

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