

INFLUENCE OF ORGANIZATIONAL LEARNING AND INNOVATION ON ORGANIZATIONAL PERFORMANCE IN ASIAN MANUFACTURING FOOD INDUSTRY

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ABSTRACT

The main objective of this paper is to find out the impact of organizational learning (OL) and organizational innovation (OI) on organizational performance (OP) in Asia manufacturing food industries. This study explores those linkages using structural equation modelling (SEM) with data from 172 companies in food manufacturing companies was selected from Taiwan, China, and Malaysia. The research model includes three latent variables including OL, OI, and OP. The results showed that OL and OI have positive effect on OP.

Keywords: Organizational learning, Organizational innovation, Organizational performance

INTRODUCTION

With a highly competitive environment, businesses must continuously learn and innovate to survive in the market. Leavy (1998) argued that failure to innovate may result to declining firm performance. García-Morales *et al.* (2007) argues that continuous learning is crucial to improving firm capabilities. Therefore, competitive advantage literature emphasises the importance of learning (Brockman and Morgan, 2003, Gayawali *et al.*, 1997, Nevis *et al.*, 1997) and innovation (Balkin *et al.*, 2000, Lyon and Ferrier, 2002, Utterback, 1994) in enhancing company performance. In the same vein, several studies viewed organisational learning, its output and knowledge are key

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to innovation (Cohen and Levinthal, 1990, Darroch and McNaughton, 2002, Nonaka and Takeuchi, 1995). The key assumption is that learning is important for companies speed and flexibility in innovation process (de Weerd-Nederhof *et al.*, 2002, Miles *et al.*, 1978). According to Jiménez-Jiménez and Sanz-Valle (2010) and Salim and Sulaiman (2011), organisational learning, innovation and performance are positively related to one another. In organisational studies, past studies show limited effect of learning and innovation on performance. In the same vein, past works on the interrelationship among the three in food industry is limited. This research tries to fill the gap by justifying the relationship among OL, OI and OP in food manufacturing industry. Further, this study shows firm age and size, industry and environmental effects as moderator on the relationship among three constructs in the model.

LITERATURE REVIEW

OI and OL

It is worth to note here that the learning capabilities of an organization have essential role in generation of innovation (Sinkula *et al.*, 1997). However, innovation itself implies generation, acceptance, and implementation of new ideas, processes, products, or services. Therefore, organizational innovation is considered as the utilization of the new ideas and their application to the organizational management. The new ideas maybe incarnated in products, processes, and management or marketing systems (Weerawardena *et al.*, 2006). As mentioned earlier, organizational learning and organizational innovation are two closely related phenomena. Calantone *et al.* (2002), concluded that, in regard with American R&D managers, the degree of organizational innovativeness depends on the level of the learning orientation of that organization. Weerawardena *et al.* (2006) have similarly concluded the higher the learning orientation, the greater the company's innovation level. In all these viewpoints, learning is regarded to be driver of innovations and innovative ideas within an organization. As a result of the empirical experiment, the relationship between learning and organizational innovation was verified and conformed. This means that the impact of learning on organizational innovation will be positive. Therefore, we in this part of study we can define the first hypothesis as follows: **H₁**: OL has positive impact on OI

OI and OP

Han *et al.* (1998) and Acheson and Ferris (1990) have pointed out that innovation is a quintessential factor contributing to better organizational performance and literature which associates the performance positively. According to their consideration, innovation and thorough and effective exploration and discovery of new manners substituting existing ones is usually encouraged by innovation. Innovation can produce some competitive ways and achieve optimal performance level regardless of whether as a result of a response to adaption to changes in environment or as a pre-emptive determination to affect the environment (Hult *et al.*, 2004). If the level of innovation and quality of services improve, organizations can retain current customers and

absorb more customers through attracting their loyalty, as a consequence of which their share in market and performance may increase (Rust *et al.*, 1994). Although the various dimensions of organizational innovation improve competitive position (Lefebvre and Lefebvre, 1993), there are still few studies specifically focusing on the synergies which could result from an integrated investigation of technological and management innovation. As an outcome of this discussion we can come to the following hypotheses: **H₂**: OI positive impact on OP

OL and OP

Learning helps the companies to maintain sustainable competitive moods and weather successfully through any possible upcoming and unexpected turmoil (Dickson, 1996). The results of some studies provide substantial amount of evidences to support the positive impacts of the organizational learning on company performance. For example, Baker and Sinkula (1999b) joint study has revealed that learning orientation directly affects organizational performance of a company. Furthermore, some other studies, utilizing a culture measure of learning, have arrived at similar conclusions (Keskin, 2006). Another study conducted by Bontis *et al.* (2002) has also concluded that organizational learning has positive effects on company's performance. However, Bontis *et al.* (2002) have concentrated on the challenges and stocks of learning at three levels, namely, individual, group and organizational. However, there are only a few researches that concentrate exclusively on the organizational learning process. Concerning the process of organizational learning, Tippins and Sohi (2003) have distinguished five stages within the organizational learning process which affect organizational performance positively. As stated earlier, these stages are: information acquisition, information dissemination, shared interpretation, declarative memory and procedural memory. Darroch and McNaughton (2002) have also provided sufficient evidences supporting the positive influence of the whole process of organizational learning exerted on better organizational performance. Therefore, we can define the third hypothesis as follows: **H₃**: OL positive impact on OP

METHODOLOGY

Sampling

A quantitative research survey is employed to examine the hypotheses proposed in the research framework. The data collection period spanned between October 2012 and February 2013 for a period of five months. The prepared questionnaires were distributed among 650 randomly selected from food manufacturing in Malaysia, Taiwan, and China. Senior manager, director manager, or CEO, were chosen as the key informants. Only 174 food manufacturing companies returned the completed (without missing data) questionnaires which provide d this study with a response rate of 23%.

Measures

The research model includes three constructs which are OL, OI, and OP. The first construct, independent latent variable, is OL and there are some literature on theoretical (Lei *et al.*, 2000, Slater and Narver, 1993) and empirical (Baker and Sinkula, 1999b, Hurley and Hult, 1998, Salim and Sulaiman, 2011, Som *et al.*, 2012) studies, this research measures the OL based on Jerez-Gomez *et al.* (2005) study which is considered four dimensions; management commitment (OL1), system perspective (OL2), openness and experimentation (OL3), and knowledge transfer and integration (OL4). The second construct is OI which is considered as mediator in the research model. OI has some theoretical (Manu, 1992, Liu, 2004) and empirical (Jiménez-Jiménez and Sanz-Valle, 2010) literature, the current research measure the OI construct based on (Damanpour, 1991) study which is determined two main dimensions which are administrative (OI1) and technical (OI2) innovation. Three dimensions of OP were applied based on Emden *et al.* (2005) research. These are contain; financial (OP1), marketing (OP2), and partnership (OP3) performance.

RESULTS

Table 1 shows the descriptive statistics contains means and standard deviations of the latent variables, and the correlations between them. Linkage between OL and OI: OL has a significant impact on OI, meaning that in food manufacturing industry include China, Malaysia, and Taiwan with more OL show higher capability in enhancing effective OI. Linkage between OL and OP: OL has a significant impact on OP, meaning that in food manufacturing industry include China, Malaysia, and Taiwan with more OL show higher capability in enhancing effective OP in three dimensions of financial, marketing, and partnership performance. Linkage between OI and OP: OI has a significant impact on OP, meaning that in food manufacturing industry include China, Malaysia, and Taiwan with more OI show higher capability in enhancing effective OP in three dimensions of financial, marketing, and partnership performance.

Table-1. Descriptive Statistics and Correlation between the indicators and constructs

indicators	Mean	STD	Correlation Matrix													
			1	2	3	4	5	6	7	8	9	10	11	12		
1. OL	3.4	.82	1.0													
2. OI	3.1	.76	.44	1.0												
3. OP	2.9	.56	.57	.95	1.0											
4. OI2	3.8	.83	.40	.91	.87	1.0										
5. OL3	3.7	.98	.96	.42	.56	.39	1.0									
6. OL1	3.2	.88	.85	.37	.49	.34	.82	1.0								
7. OL4	3.3	.56	.98	.43	.56	.40	.95	.83	1.0							
8. OL2	3.9	.91	.89	.39	.51	.36	.86	.76	.88	1.0						
9. OI1	3.7	.76	.39	.88	.84	.81	.38	.33	.38	.35	1.0					
10. OP3	3.8	.89	.41	.68	.71	.62	.40	.35	.40	.37	.60	1.0				
11. OP2	3.9	.77	.44	.73	.77	.67	.43	.37	.43	.40	.64	.55	1.0			
12. OP1	3.2	.68	.43	.71	.74	.65	.41	.36	.42	.38	.62	.53	.57	1.0		

Table 2 presents the overall path model fit and the all hypothesis and Figure-1 shows casual research model. As shown, the statistic indicators of path analysis proof an adequate fit: adjusted goodness-of-fit Index [AGFI] =0.912; incremental fit index [IFI] =0.918; comparative fit index [CFI] =0.933; goodness-of-fit index [GFI] =0.911; normed fit index [NFI] =0.931; Tucker–Lewis index [TLI] =0.901 and root mean square error of approximation [RMSEA]=0.044. The impact of the OL to OI (H_1 ; $\beta_1=0.44$, C.R=5.602) is significant. The positive impact of OL to OP (H_2 ; $\beta_2=0.19$, C.R=3.184) is also supported by our findings. While we have expected to illustrate a strong positive significant impact of OI to OP (H_3 ; $\beta_3=0.87$, C.R=9.564), our findings yield a significant impact among these three constructs.

Table-2. Results for theoretical model

Hypotheses	Path	Standardized coefficient	C. R	p	Result
H1	Organizational Learning ? Organizational Innovation	0.44	5.602	< 0.01	Supported
H2	Organizational Learning ? Organizational Performance	0.19	3.184	0.01	Supported
H3	Organizational Innovation ? Organizational Performance	0.87	9.564	< 0.01	Supported
AGFI=0.912		CFI = 0.933	IFI = 0.918	CFI = 0.933	
GFI = 0.911		NFI = 0.931	TLI = 0.901	RMSEA = 0.044	

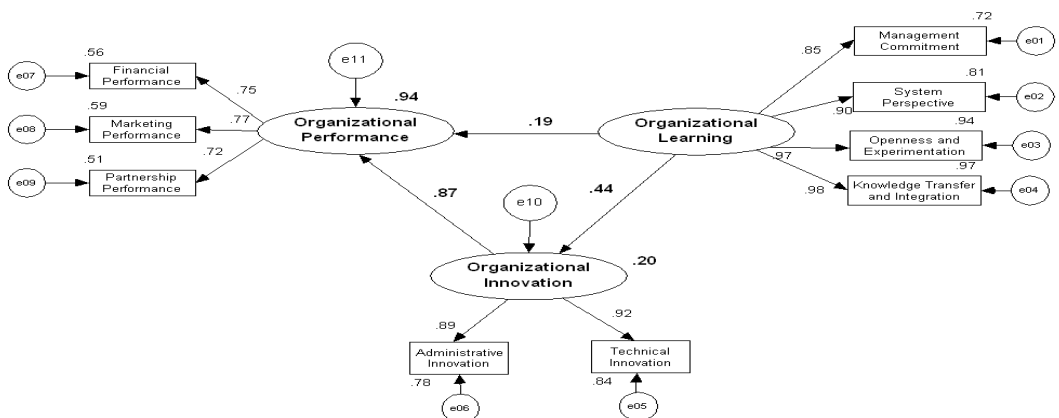


Figure 1: Research model results

DISCUSSION

Although literature review reveals existence of positive relationship among OL, OI, and OP (Pastuszak *et al.* 2012, Jiménez-Jiménez and Sanz-Valle, 2010, Calantone *et al.* 2002), there has been very few studies focusing specifically and empirically on these relationships in a model (Baker and Sinkula, 1999a, Santos-Vijande *et al.*, 2012, Sok *et al.*, 2013). Therefore, one of the significances of this study is investigation of such relationships in manufacturing food industry. The findings obtained from this research provide further evidences that the effect of OI on OP is

positive (Brown and Eisenhardt, 1995, Hitt *et al.*, 1997, Damanpour *et al.*, 1989, Damanpour and Evan, 1984, Roberts, 1999). Moreover, the findings reveal that the relationships between OL and OP (Baker and Sinkula, 1999b, Som *et al.*, 2012, López *et al.* 2005, Bontis *et al.*, 2002, Cho *et al.*, 2013, Yeh, 2013, Farsani *et al.*, 2013), and between OL and innovation are also positive (Wignaraja, 2012, Cohen and Levinthal, 1990, Liao *et al.*, 2008, Salim and Sulaiman, 2013). The findings further demonstrate that OL affects innovation positively and more strongly than affecting performance. This outcome can also support that OL affects OP mainly through facilitating innovation. These results are in line with the previous empirical (Jiménez-Jiménez and Sanz-Valle, 2010, Baker and Sinkula, 1999a) and theoretical (Cohen and Levinthal, 1990, Hedlund, 1994) studies.

Yet another point the current research contributes to literature is related to the innovation measurement and organizational learning in food industry. Despite reflected in literature of previous studies, instead of adopting a cultural viewpoint, current study applies a broad innovation measurement covering the number of the administrative and technology innovations, the proactive or reactive characters of the innovations and resources that companies dedicate to innovation and measurement of the process of OL. Despite innovation's requirement of foster learning of cultural values (Mumford, 2000), companies need develop an operational procedure of OL as well. With regard to this, the achieved conclusions may help the practitioners in food manufacturing industry who desire to promote innovation since modification of actions is easier than modifying existing values. The results of this study provide some implications for other researchers, especially practitioners in manufacturing food industry. Despite the recognition of the significant influence of innovation on performance by practitioners, the ways of dealing with and treating this process has not yet been clarified (Han *et al.*, 1998). This article also suggests that OL contributes to performance by facilitating innovation. Hence, a food company aspiring for enhancement of corporate performance by innovation needs improve its OL process firstly.

RECOMMENDATIONS AND FUTURE RESERCH

To successfully deal with this kind of environments, this article has some suggestions such as: Companies in Asian food manufacturing should promote new knowledge acquisition by encouraging or obliging employees to attend exhibitions and fairs in a regular base for example, which in turn consolidates their R & D policy and triggers new ideas and experimentation within the company. The overall policy of the firms should be in line with enhancement of knowledge interpretation and distribution within the company, by employing, for instance, formal mechanisms to secure sharing the best practice among employees with different capabilities and departments with different tasks and responsibilities, encouraging employees to discuss the issues and ideas through teamwork, enabling individuals to feel responsible to internally collect, assemble and distribute suggestions of the employees. Companies and organizations need to do their best to retain

the knowledge created through updating databases through different networks and facilitating access to these databases for future reference and use.

Some further suggestions for future researches can be summarized as: Comparing the influences between two consequent phases of OL process and various OI types (Terziovski, 2002) in manufacturing food industry. According to the previous studies, radical and incremental innovations could require various core competencies, resources, and OL activities (Darroch and McNaughton, 2002). Investigations are required to study the impact of firm size, age on the relationships among OL and innovation and performance in manufacturing food industry.

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