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The Impact of Knowledge Management on Organizational Performance by Considering Structure and Culture in Vietnam

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Abstract

The purpose of the existing work is to inspect the impact of knowledge management on organizational performance. Business experts now appreciate how important knowledge management is for organizational performance. Earlier studies have investigated the research model with causal linkages, however, only a few of them have considered sample-selecting bias problems when analyzing the model of knowledge management on organizational performance. The number of 312 executives related to knowledge management from 312 enterprises that have been approved with quality management systems offered suitable responses for analyses. The data was employed to investigate the effect of knowledge management on organizational performance, considering sample-selecting bias. The empirical outcomes indicate that sample-selecting bias exists in the causal impact of knowledge management on organizational performance. The empirical findings are helpful to scholars of knowledge management as well as business executives by giving an insight into the casual effect of knowledge management on organizational performance with the intervention of sample-selecting bias. The acceptance of knowledge management should be tailored to improve competitive advantages that will lead to better organizational performance.

Keywords: Knowledge Management, Organizational Performance, Vietnam

JEL Classification Code: C51, L25, M14, O34

1. Introduction

According to Gholami et al. (2013), businesses that are interested in keeping a competitive advantage over their competitors need information and knowledge enhancement. Management of knowledge enables enterprises to have an appropriate understanding of the enterprises' internal involvements and external resources. The key aim of knowledge management is the fast, operative, and inventive application of knowledge resources to improve organizational performance (Darroch, 2005). According to Yap et al. (2010), the management of knowledge is seen as being very important to organizational success since it can help businesses create ongoing internal assets and maintain competitive advantages in uncertain environments. In the ever-changing business environment, enterprises are obliged to find novel tools to develop organizational performance (Noruzy et al., 2013).

Enhancing organizational performance needs numerous characteristics to be inserted within a business. Carneiro (2000) emphasized the increasing significance of knowledge management due to its worth of inventiveness that allows the change of one kind of knowledge to another, that has been taken into management and incorporates knowledge in business activities to achieve organizational goals. The adoption of knowledge management leads executives to enjoy various competitive advantages. Previous studies suggested that adopting knowledge management will increase organizational effectiveness (Droge et al., 2003; Toften & Olsen 2003; McKeen et al., 2006). Hereafter, it could generate superior organizational efficiency. Those studies examined the influence of knowledge management on organizational performance by analyzing the whole sample. Therefore, the empirical results could not appropriately reflect the causal linkage from knowledge management to

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organizational performance; because there are differences between the adopters and the non-adopters of knowledge management.

The current work tries to investigate the causal linkage between knowledge management and organizational performance only for the adopters of knowledge management, but it also takes into consideration elements that determine the probability of accepting knowledge management within their organizations. In addition, organizational performance is considered by linking the efficiency the accepters of knowledge management attain after applying knowledge management in business to that before applying knowledge management in business. The current research employs the processes of Heckman sampling selection to discover the causal connection between knowledge management to organizational performance with the determinants of the possibility of accepting the management of knowledge being taken into account. According to what the author knows, the existing research work is one of the first to apply the techniques of Heckman sampling selection to determine the influence of knowledge management on organizational performance with the reflection on the antecedents of the possibility of accepting the management of knowledge in business. To knowledge investigators, the empirical results of this work shed light on knowledge management and its effects on organizational performance.

The existing research is also aimed to offer business executives a better understanding of how organizational performance is enhanced by knowledge management that is accepted in running businesses. The rest of the existing research work is organized as below. The next section reviews the related literature and develops the research model of knowledge management and organizational performance, followed by another section that offers the empirical results. Finally, it will provide some conclusions.

2. Literature Review

To attain greater organizational performance, enterprises should emphasize the management of knowledge that is vital in performing daily functions successfully and competently that in return, will improve organizational performance (Muthuveloo et al., 2017). Preceding academics asserted the acceptance of knowledge management in a business will add more value to the whole organizational performance and also support an organization to be more industrious, more effective as well as more inventive (Toften & Olsen, 2003). Whereas the acceptance of knowledge management could result in organizational efficiency, the likelihood of accepting knowledge management can be affected by organizational structure and culture. The effect of knowledge management on organizational performance, considering the antecedents of adopting knowledge management in business is going to be argued below.

2.1. Knowledge Management on Organizational Performance

Knowledge is the capability of individuals and groups to uninterruptedly create and renovate themselves to cope with challenges and prospects. It is regarded as a product that could be employed in the business for improvements (Ahmad et al., 2017). Likewise, it is defined as an organizational capability that enables its workers to together produce, seize, and leverage cooperative knowledge to augment organizational performance. Organizational knowledge allows businesses to obtain superior achievements in the ever-changing business environment. According to Lakshman (2007), the management of knowledge is utilized to manage organizational knowledge to create as well as maintain competitive advantage, which will enhance organizational performance. The management of knowledge is defined in the current research as the extent to which enterprises are contented with the attainments in knowledge management. In addition, the management of knowledge is related to knowledge sharing consisting of three elements, and knowledge application comprising two elements, adapted from Lin and Lee (2005).

Furthermore, organizational performance is referred to as the real consequences of financial and non-financial performances in business. The current article measures organizational performance as the efficiency that corporations attain after accepting knowledge management compared to that they obtained before accepting knowledge management. Economic effectiveness is grounded on the elements proposed by Droge et al. (2003), whereas, non-economic effectiveness is evaluated on the elements stipulated by Kaplan and Norton (2007). Basically, to remain organizational survival in the existing dynamic business environment, organizational performance could not be ignored in framing organizational business strategies (Wang et al., 2015). Likewise, Gholami et al. (2013) applied the knowledge-based theory as a related theory to help meaningfully towards recognizing the vital role of knowledge management. The theory recommends the management of knowledge such as knowledge acquirement, knowledge storing, knowledge creation, knowledge sharing, and knowledge application imposes an imperative role in attaining higher efficiency, and financial and non-financial performances, which will lastly improve maintainable competitive advantages over their competitors (Spender, 1996; Soderberg & Holden, 2002).

Toften and Olsen (2003) disclosed the acceptance of knowledge management in business can create more value for businesses and make them quicker, more effective as well as more inventive. Additionally, a research project by Droge

et al. (2003) implied the acceptance of knowledge management could result in superior organizational performance. Numerous research projects emphasized the management of knowledge affects organizational performance by improving organizational abilities (Siu, 2006; Karim et al., 2012). In a relevant study, Sigala and Chalkiti (2007) asserted, knowledge is likely an imperatively competitive practice that could considerably boost organizational adaptation and then augment organizational performance. They emphasized knowledge resources as typical competitive advantages by augmenting organizational performance. Furthermore, Gharakhani and Mousakhani (2012) highlighted, the ways that are united into organizational capabilities have been a strategic tool for organizational performance. Clever executives have all the time been conscious of the requirement to employ and cultivate knowledge for the benefit of the firm.

Moreover, knowledge resources are replacing natural capital and working capital as the basic economic sources; which relates to organizational competitive advantages and also organizational performance (McKeen et al., 2006). The findings indicated the acceptance of knowledge management in business could impact organizations in two key ways. First, the management of knowledge could lead to creating knowledge, contributing to organizational performance. Second, the management of knowledge could result in enhancements in organizational performance. Therefore, Chen and Huang (2007) mentioned the management of knowledge as one of the most critical factors that support and improve organizational performance. Additionally, Hsu et al. (2007) demonstrated the acceptance of knowledge management in business could be associated with organizational performance; whereas Zack et al. (2009) confirmed a significant influence of knowledge management in organizational performance. Mills and Smith (2011) further highlighted, knowledge resources are likely to contribute greatly to organizational performance for firms.

Likewise, Pathirage et al. (2007) indicated the management of knowledge has been increasingly associated with maintaining organizational performance than other resources; therefore, they regarded the management of knowledge as one of the extremely vital factors determining organizational capabilities to sustain competitive advantages. In addition, Syed et al. (2021) scrutinized the interplay among knowledge management, knowledge sharing attitude, and educational performance, emphasizing the important role of knowledge management in businesses; while Tran (2021) indicated the management of knowledge is one of the most significant factors affecting the link between transformational leadership organizational performance. Furthermore, Seo et al. (2018) specified, that the management of knowledge can reinforce the effectiveness of organizational business activities. Overall, based on the abovementioned synthesis, it can posit the following hypothesis about the impact of knowledge management in business on organizational performance. H1: The adoption of knowledge management can affect organizational performance.

2.2. Determinants of Accepting Knowledge Management

As the above-mentioned discussions, the application of knowledge management in business could help to attain preferred improvement and favored organizational performance in business; however, it could be intimidating and thought-provoking jobs, because it is dependent on several factors such as organizational structure and organizational culture. Therefore, to investigate the role of knowledge management in enhancing organizational performance, it had better consider the determinants of knowledge management in business.

Organizational structure plays an imperative role in running the business, due to its relation with effective practices of work as well as communication within the business. Chen and Huang (2007) referred to organizational structure as a variable of decentralization, mutual adjustment, and integration. Investigating the influence of organizational structure on the adoption of managerial accounting, Chenhall and Morris (1986) recommended organizational structure determines the acceptance of managerial practices. Organizations that are decentralized could accept more sophisticated managerial systems than centralized ones (Abdel-Kader & Luther, 2008). Additionally, Chen and Huang (2007) ascertained, organizational structure puts a positive influence on the application of knowledge management. Likewise, Yap et al. (2010) contended, when the management of knowledge is accepted to run a business, the managers had better consider organizational structure. Furthermore, Enayati and Ghasabeh (2012) disclosed organizational structure is extremely vital to the approval of knowledge management. The management of knowledge is manifest in various activities within a business, which is supported by developing an organizational structure to improve organizational performance (Hojabri et al., 2014).

Jaw and Liu (2003) referred to organizational culture as an innovative cooperative climate; while Sivadas and Dwyer (2000) defined it as trust, communication, and coordination among workers. In addition, Chen and Huang (2007) indicated a positive effect of organizational culture on the acceptance of the management of knowledge in business. Yap et al. (2010) emphasized managers should take organizational culture into account if they need to adopt knowledge management in their businesses. Furthermore, organizational culture has been recognized as an important determinant of accepting knowledge management in business (Enayati & Ghasabeh, 2012). The practices of knowledge management

in business are supposed to be tailored to organizational culture (Magnier-Watanabe, 2011). Likewise, Erwee et al. (2012) discovered, organizational culture is a vital cause of strategic plans that could lead to the adoption of knowledge management practices. Aldulaimi (2015) recommended a positive influence of organizational culture on the adoption of knowledge management in business; because it utilizes its impact via determining employees' behavior within a business. Consequently, organizational culture could be positively related to the adoption of knowledge management. Overall, it can postulate the following propositions about the effects of organizational structure and organizational culture on the acceptance of knowledge management.

3. Research Method

The four main variables were utilized in the model. The acceptance of knowledge management in business (AMT), the possibility of accepting the management of knowledge in business (PMT), organizational performance (ORP), organizational structure (ORS), and organizational culture (ORC).

Acceptance of knowledge management in business (AMT) consists of five elements: (AMT1) knowledge sharing between supervisors and subordinates, (AMT2) knowledge sharing amongst employees, (AMT3) knowledge sharing across divisions, (AMT4) active management of diverse sources and kinds of knowledge, and (AMT5) adoption of knowledge into practical use. A five-point scale was employed to calculate the elements, modified by Lin and Lee (2005). The possibility of adopting knowledge management in business (PMT) takes 1 if contentment with the acceptance of knowledge management is manifest in an enterprise, and otherwise takes 0 (zero).

Organizational performance (ORP) encompasses five elements: (ORP1) returns on asset, (ORP2) returns on equity, (ORP3) innovativeness, (ORP4) quality in productions or services, and (ORP5) client gratification. A five-point scale was utilized to estimate the elements, modified from prior research (Droge et al., 2003; Kaplan & Norton, 2007). Organizational structure (ORS) includes three elements: (ORS1) decentralization, (ORS2) mutual adjustment, and (ORS3) integration. A five-point scale was utilized to measure the elements, adapted from previous research (Rogers, 1995; Chen & Huang, 2007). Organizational Culture (ORC) comprises five elements: (ORC1) innovative climate, (ORC2) cooperative climate, (ORC3) trust, (ORC4) communication, and (ORC5) coordination. A five-point scale was employed to evaluate the elements, adapted from previous research (Jaw & Liu, 2003; Sivadas & Dwyer, 2000).

The targeted informants were executives involved in knowledge management in publicly listed enterprises in Vietnam. Only one executive in each enterprise was selected. Of the 500 questionnaires that were delivered to enterprises, only 312 questionnaires were suitably completed with sufficient information for analyses. Reliability analyses were undertaken to test the properties of constructs and their elements. An exploratory factor analysis was performed to test construct validity. Subsequently, the procedures of Heckman's two-stage sampling selection were employed to scrutinize the effect of knowledge management on organizational effectiveness by analyzing the impacts of organizational structure and culture on the likelihood of accepting knowledge management in business.

4. Empirical Results

To test the reliability and validity of constructs, the procedures of reliability and exploratory factor analyses were performed. The constructs comprising various elements were the acceptance of knowledge management in business (AMT), organizational performance (ORP), organizational structure (ORS), and organizational structure (ORS), which were entered into analyses. The findings are exposed in Table 1. All of the item-total correlations obtain the numbers above 0.5 level. All of the Cronbach's αs exceed the 0.7 value. Furthermore, all of the commonalities surpass the 0.5 limit. Moreover, all of the KMOs take numbers greater than the 0.7 threshold. All of the factor loadings gain values bigger than the 0.5 level. Additionally, all of the cross-loadings surpass the 0.3 limit.

Furthermore, factor loadings, average variance extracted (AVE), and construct reliability (CR) were explicitly measured to test convergent and discriminant validity. The results are exhibited in Table 2. All of the AVEs above 0.521 surpass the 0.5 thresholds and all of the CRs greater than 0.802 exceed the 0.6 level; which indicates the research model gains convergent validity. To evaluate discriminant validity, the average variance extracted estimates (AVE) for each construct are compared with their own squared inter-construct correlations (SIC. All of the AVEs surpass the corresponding squared inter-construct correlations (SIC), implying the research model satisfies discriminant validity. The abovementioned figures from the reliability and validity analyses can reach a conclusion where all of the multiple-item constructs obtain reliability and validity (Hair et al., 2012). Consequently, all of them can be reasonably retained for the next analyses.

To evaluate the causal effect of accepting knowledge management on organizational performance, the analysis of regression was undertaken, the findings of which are demonstrated in Table 3. As revealed in Table 3, the research model reaches the goodness of fit. The value of F is 218.055 at the 1% significance level. Furthermore, the measurement of the explained variance (R^2) has a value of 0.542, representing

Table 1: Reliability & Validity Analyses

Element	Element-Total Correlation	Cronbach's *α*	Factor Loading	Communalities	KMO
AMT1	0.695	0.826	0.756	0.665	0.839
AMT2	0.703		0.738	0.667	
AMT3	0.679		0.782	0.633	
AMT4	0.713		0.764	0.676	
AMT5	0.746		0.726	0.716	
ORP1	0.582	0.809	0.823	0.547	0.829
ORP2	0.626		0.806	0.606	
ORP3	0.635		0.793	0.613	
ORP4	0.569		0.839	0.533	
ORP5	0.638		0.795	0.616	
ORS1	0.681	0.816	0.779	0.628	0.887
ORS2	0.795		0.782	0.599	
ORS3	0.628		0.864	0.619	
ORC1	0.641	0.824	0.706	0.582	0.832
ORC2	0.706		0.757	0.681	
ORC3	0.791		0.795	0.782	
ORC4	0.746		0.738	0.723	
ORC5	0.627		0.748	0.569	

Table 2: Matrix of IC, SIS, AVE & CR

Correlations		IC	SIS	AVE	CR
AMT	AMT1	0.075	0.006	0.569	0.802
	AMT2	0.302	0.091		
	AMT3	0.283	0.080		
	AMT4	0.369	0.136		
	AMT5	0.319	0.102		
ORP	ORP1	0.071	0.005	0.521	0.857
	ORP2	0.261	0.068		
	ORP3	0.417	0.174		
	ORP4	0.299	0.089		
	ORP5	0.292	0.085		
ORS	ORS1	0.369	0.136	0.851	0.986
	ORS2	0.299	0.089		
	ORS3	0.816	0.666		
ORC	ORC1	0.323	0.104	0.679	0.898
	ORC2	0.407	0.166		
	ORC3	0.707	0.500		
	ORC4	0.292	0.085		
	ORC5	0.813	0.661		

Table 3: Regression Analysis

Independent Variables	*B*	S.E.	VIF
(C)	2.1919**	0.2229	
AMT	0.3981*	0.1967	1.083
Durbin-Watson	1.867		
χ^2/ Pχ^2	0.031/0.857		
R^2	0.542		
F/P_F	218.055/0.000		

Dependent variable: ORP; */**: Significance at 5%/1% levels.

the amount of variance explained by an independent variable of AMT is 54.2%. The Durbin-Watson measurement yields a value of 1.867, falling in their range between du and (4 - du), which excludes autocorrelation. Additionally, the Breusch-Pagan test measurement of $P\chi^2$ increases to 0.031 with 0.857 tests of $P\chi^2$, above the 5% level of significance and showing no heteroskedasticity.

Furthermore, the VIF measurement achieves a value below 2 levels with no multicollinearity. It was done to see how organizational performance correlated with knowledge management acceptability. Overall, research satisfies the goodness of fit (Nunnally, 1978). The acceptance of knowledge management in business positively determines

organizational performance with the 0.085 coefficient of B at the 5% significance level. Consequently, the findings provide statistical support for hypothesis H1: The acceptance of knowledge management in business affects organizational performance.

Subsequently, the procedures of Heckman's two-stage sampling selection were performed to explore the causal influence of accepting knowledge management in business on organizational performance with considering the effect of organizational structure and culture on the possibility of accepting knowledge management. The procedures of Heckman's two-stage sampling selection were employed to consider potential sampling-selection bias (Heckman, 1979). These procedures are undertaken in two stages.

The first stage of the technique was to develop a selecting equation. A probit-model by maximum likelihood estimation (MLE) was applied to conduct this stage for all of the observations. The valuations of α from this probit-model are then exploited to create dependable estimates of the inverse Mills ratios $-\chi_i(-Z_i\alpha)$: $\chi_i(-Z_i\alpha) = \rho(Z_i\alpha)/\theta(Z_i\alpha)$: (1). Where: ρ signifies the standard normal concentration function, and θ signifies the standard normal cumulative distribution function.

In the second stage, the consequence equation is assessed by regression analyses where the consequence equation enters both the descriptive factors and the values of the inverse Mills ratios: $y = a^*x + b^*x_i(-Z_i\alpha) + \varepsilon$: (2). The second stage only uses the uncensored observations. The estimators ('a' and 'b') from the Heckman two-stage model are consistent and asymptotically normal.

The procedures of Heckman's two-stage offered the findings of the first stage in Table 4 and those of the second stage in Table 5. As seen in Table 4, The possibility of accepting knowledge management is explicated by organizational structure and organizational culture at the 1% significance level with estimates of 0.3822 and 0.4064 correspondingly. Furthermore, the model fit achieves a statistical significance at the 1% level. These findings designate, organizational culture imposes a stronger influence on the possibility of accepting knowledge management than organizational structure does. The first stage allows us to estimate the inverse Mills ratio $-\chi_i(-Z_i\alpha)$ as designated in equation (1).

Table 4: Heckman's First Stage

Independent Variables	*B*	S.E.	*z*	*P* > |z|
(C)	1.1815	0.2902	4.0713	0.000
ORS	0.3822	0.0622	6.1447	0.000
ORC	0.4064	0.0852	4.7700	0.000

Dependent variable: PMT; Prob > chi^2 = 0.000, Pseudo R^2 = 0.457.

Table 5: Heckman's Second Stage

Independent Variables	*B*	S.E.	*t*	*P* > |t|
(C)				
AMT	0.3416	0.0675	5.0607	0.000
$x_i(-Z_i\alpha)$	1.3882	0.3417	4.0626	0.000
CONS	3.1812	0.3114	10.2158	0.000

Dependent variable: ORP; Prob > F = 0.000, R^2 = 0.793.

The second stage of the Heckman technique as designated in equation (2) was started by including $\chi_i(-Z_i\alpha)$ into the consequence equation. As can be seen in Table 5, the consequence equation achieves the model fit at a 1% significance level. The estimate of $\chi_i(-Z_i\alpha)$ equal to 1.3882 is different from zero at a 1% statistical significance level. This indicates there is selection bias in the research model.

To compare the findings for the consequence equation between the regression analysis and the Heckman second stage as Table 3 is versus Table 5. There is a difference between influential estimates of accepting knowledge management on organizational performance in Table 3 and Table 5, where the influential estimate of accepting knowledge management on organizational performance is greater without $\chi_i(-Z_i\alpha)$ than with $\chi_i(-Z_i\alpha)$. This evidence can demonstrate that the impact of accepting knowledge management on organizational performance, when potential sampling-selection bias is not taken into consideration (as shown in Table 3), is greater than when potential sampling-selection bias is entered into the research model (as displayed in Table 5). Accordingly, sampling-selection bias can make the findings for casual relations improper. Investigators should consider sampling-selection bias when dealing with sampling-selection problems so that the empirical findings reflect more precisely.

5. Conclusion

The casual effect of accepting knowledge management in business on organizational performance has been empirically explored in previous studies. Nevertheless, to the best of the author's knowledge, none of them have analyzed the causal influence by considering sampling-selection bias or the intervention of organizational culture and organizational structure in accepting knowledge management in business. The current article applied the technique of Heckman's two-stage sampling selection to scrutinize the influence of accepting knowledge management in business on organizational effectiveness while considering the intervention of organizational culture and organizational structure in the research model. The findings indicate,

the acceptance of knowledge management in business is empirically evidenced as one of the most important determinants of organizational performance. Especially, the current research work reveals, the impact of organizational culture and organizational structure in accepting the management of knowledge causes a sampling-selection bias to the causal linkage between accepting knowledge management in business and organizational performance. When included in the research model, organizational culture and organizational structure reduce the influential strength of accepting knowledge management in business on organizational performance.

The current study is helpful to both the management body of knowledge and also the aspect of managerial practices. The evidence derived from the existing research demonstrates there is sampling-selection bias in the research model at the 1% significance level. In addition, a difference between the influences of accepting knowledge management in business on organizational performance can exist, if potential sampling-selection bias is not taken into account in comparison with if potential sampling-selection bias is considered.

It provides managerial academics with a better understanding of the significant role of the sampling-selection bias problem when scrutinizing the effect of accepting knowledge management in business on organizational performance. Sampling-selection bias could twist the empirical findings and can force them to become less precise. It is congruently useful to executives by offering them an insight into the link between the acceptance of knowledge management in business and organizational performance with the intervention of sampling-selection bias. Therefore, they can make better business decisions by applying knowledge management in business which can in turn enhance their organizational performance.

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