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LEVERAGE OF KOWLEDGE MANAGEMENT ON PERFORMANCE: COMPARISON OF THREE MODELS

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Abstract. This study aims to clarify effect of knowledge management (KM) on organizational performance (OP) through innovation and intellectual capital (IC) as mediator. This research proposed 3 (three) alternative models that recommend different configuration from IC and innovation as intermediary. The method used is quantitative analysis, by stage of research literature studies to build models, and then compares predictive power from these models using Structural Equation Modeling (SEM) path modeling based on data collection from Indonesian public sector. The study found that all models respectively influenced performance, but according to empirical result, the third model which is positioning IC and innovation simultaneously as intermediary has the biggest predictive power on enhancement performance. It may help practitioners and academics to understand the importance of IC and innovation synchronously mediating role from intercourse between KM and OP (whether internal or external performance) especially in public field.

Keywords: Knowledge management; Innovation; Intellectual capital; Organizational performance.

INTRODUCTION

Cannot be denied, Competitive era forces whether public or private sector to create, maintain, and manage the sustainable competitive advantage. Competitive advantage in public sector mainly related with enhancement in performance that is continually improved in order to provide better public service based on intimate relation with society and stakeholders (Popa, Dobrin, Popescu, and Draghici, 2011). Presently, when information could be gathered, disseminated and utilized rapidly, knowledge become the most important asset for organization, hence process to manage knowledge within organization is critically important for organization whether in public sector or private sector. Particularly in public sector, KM activities propose new approaches, options, capabilities, and practices to increase public service effectiveness and enhance OP (Wiig, 2002).

Although some researchers have highlighted KM barrier and challenge in public sector (Liebowitz and Chen 2003; Syed Ikhsan and Rowland 2004) and emerged a lot of skepticism about KM contribution on organization (Gupta, Iyer, and Aronson, 2000) was inevitable, but plentiful researches has clarified and proved that KM positively influenced OP (Kasim, 2008; Gholami Asli, and Shirkouni 2013), furthermore abundant prior study has highlighted that Innovation and IC play mediating role in order to intercede the leverage of KM on OP (Daud and Yussof, 2011; Nicolas and Cerdan, 2011; Noruzy, Dalfard, Azhfari, Shirkouni and Rezazadeh, 2013).

However, hardly any paper has proposed and investigated the best alternative performing model that encompass the effect of KM on specific performance in public field (whether internal and external performance) with IC and innovation as mediator. Research gap that mentioned above is a major reason to examine this study. This article fulfils the aims by building three models that is conceptual framework based on literature studies and then conduct empirical test using quantitative analysis to describe and compare predictive power of these models. Result of a survey are reported, and ultimately conclusion are drawn.

LITERATURE REVIEW

KM is defined in many different ways in the literature. Dahiya, Gupta, and Jain (2012) noted in their work that KM refers to process related with attempt to create, acquire retained, share, and utilize knowledge in order to increase productivity, individual and organizational performance. Knowledge that is managed conceptualized as tacit knowledge and explicit knowledge. Tacit knowledge refers to knowledge which is hard to express, in the domain of subjective, cognitive and experiential learning. While explicit knowledge refers to codified knowledge, well-documented and accessible knowledge, technical and rational data comprise procedures, documents, policies, etc. (Polanyi, 1958). In short, KM is a planned and well organized process related with public institution attempt to manage tacit and explicit knowledge comprise activities to acquire, generate, share, arrange, reserve, renew and utilize all knowledge as an organizational asset which aim to enhance organizational ability and generate value, in line with organization strategy.

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Furthermore, IC is the total amount of knowledge that embedded in organization, influences organizational activity and organizational competitive advantage (Nahapiet and Ghoshal, 1998). This study follows view from Wang, Wang, and Liang (2014) who noted in their work that IC divided into three elements namely human capital, structural capital and relational capital. Aramburu and Saenz, (2011) noted in their work that IC mostly grouped into two categories. The first one is knowledge base perspective and the second is holistic perspective, view things from wider perspective. Knowledge base perspective interpret human capital as employee ability, skill and knowledge, while holistic perspective has wider scope, it supplies elements comprise employee behaviour and motivation. Moreover, knowledge base perspective defines organizational capital as knowledge that embedded in databases, working procedures, and documents, in other side holistic perspective defines organizational capital as knowledge that embedded in internal structure and organizational culture involve software, hardware, management system, information flow and databases, leadership, etc. Finally, knowledge base perspective implies relational capital as knowledge capital and learning ability that exist due to the organizational relation with stakeholders and external environment, while holistic perspective expands definition of relational capital as knowledge, customer loyalty, and reputation that reside in organizational relation with stakeholders and external environment. This research prefers using holistic perspective to knowledge base perspective with consideration to comprise wider scope of public IC.

Walker (2006) interpreted innovation as effort or activities in order to develop and implement new ideas, new behaviours, new products, new service, new process, new plan, or new policy to gain competitive advantage. Organization creates innovation to adapt with rapid change of technology and management, society demand, market dynamic and many other aspects (Damanpour, Walker, and Avellaneda, 2009). Regarding all exist definitions, this paper defines innovation as attempt to develop and utilize new ideas, new behaviours, new service, new process, new plan, and new policy to gain competitive advantage in public organization. OP in this study is confirmed as the criterion of organizational progress and development. It shows how well an organization achieves its goals (Koohang, Paliszkiewicz, and Goluchowski, 2017). In many literatures OP grouped into financial and operational performance (Sulina, 2014; Wang, Sharma, and Cao, 2017). Financial performance, related with financial aspect concerns in profit and market share, whereas operational performance indicated by customer satisfaction, service quality, productivity, and efficiency (Wang, et al., 2017). This paper focuses on public sector achievement goals based on primary task and authority and prefer operational performance to financial performance due to the fact that public sector nature which is non-profit-based. This operational performance used in this study comprise internal and external performance. Internal performance (IP) is organizational performance that related with internal productivity, efficiency, and working process improvement in order to provide service, whereas external performance (EP) related with public service quality and wider impact from public product and service (Kim, 2005).

Linking all constructs, this study proposed the first model, departing from research that conducted by Wang et. al. (2014) which proved that KM has significant and positive impact on all component of IC. KM will positively leverage on increasing IC through improvement of employee competence, working ability, and behaviour, it also helps organization to provide knowledge for sustainable working procedure completion, and optimize the acquisition of necessary knowledge from outside organization (Reychav and Weisberg, 2009; Dalkir, 2011). Thereafter, IC will lead on innovation escalation (Rodrigues, 2013; Verde, Castro, and Salvado, 2016). Ultimately, innovation positively contribute on public service performance enhancement, in that innovation generates change, required capabilities, working process improvement and specific competencies which help organization to improve sustainable organizational efficiency, effectiveness, service quality and productivity (Damanpour, et.al., 2009). Thus, the first model configure KM impact IC first, next IC affect Innovation, and finally innovation lead to OP enhancement.

The second model was build based on assumption that KM may enhance innovation by stimulating conducive situation to generate innovation and help organization to adapt with progressive change outside organization, it ensures that sustainable renewed knowledge process as basis for emerging innovation, as of innovation is the implementation of new knowledge or combination between existing knowledge and new one (Plessis, 2007; Dalkir, 2011). Plentiful of empirical research has proved that KM has positive effect on innovation (Andreeva and Kianto 2011; Nawab, Nazir, Zahid, and Fawad, 2015). Subsequently, innovation will enrich IC, through escalation of employee capability, skill, and creativity, also through renewal working procedure and strengthening organization relation with stakeholders (Marquez, Simon, and Canana, 2006). Eventually, all component of IC will positively affect on escalating OP. Human capital positively leverages on improving productivity and individual performance and cumulatively enhance organizational productivity and capability, while employee attitude and behaviour definitely determine public organization ability to provide excellent service (Moreno and Melendez, 2011). Database and working procedure will ensure and guide working result meet with determined standard. While, the existing knowledge outside the organization will lead organization to act properly with public service receiver demand and potentially generate public service receiver satisfaction. This study creates the second model with assumption that KM affect on Innovation first, subsequently innovation lead on IC, ultimately IC influence OP.

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While the third model departing from assumption that IC and innovation simultaneously mediate the relation between KM and OP. Some research has highlighted that both IC and Innovation as critical intermediary factor of KM effect on OP (Daud and Yussof, 2011; Nicolas and Cerdan, 2011; Noruzy et. Al., 2013), research may assume that IC and Innovation play equal mediating level of KM and OP relation. The model allow effect of KM on OP through either one or both construct. Three alternative models can be drawn as shown in figure 1 below.

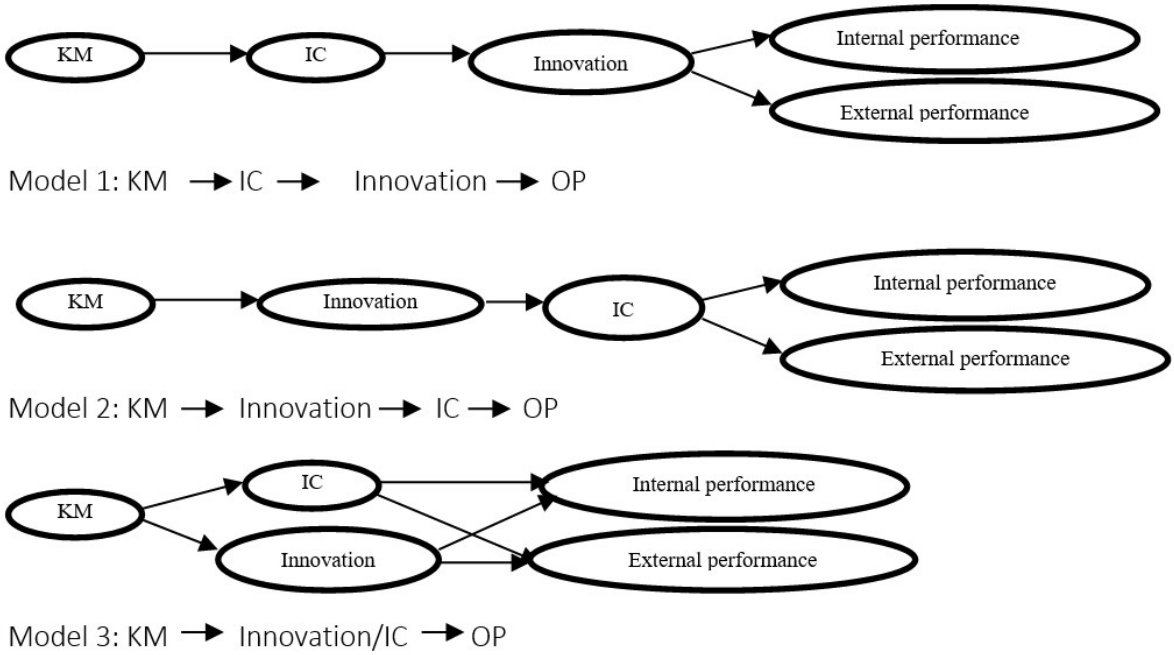

Figure 1. Three alternative models

METHODOLOGY

This research reaches the objective by determining the best predictive model that has been built according to R^2, standardized indirect effect and RMSEA Value, after validity, realibity, multicolinearility, normality and hetorodicity were tested. The analysis technique that used is SEM path modeling. The unit of analysis in this study is local government working units in South Sulawesi Province, and observation unit is the heads of local government department in 24 city/regency of South Sulawesi Province. The whole sample collected are 356.

In this study, KM was measured using the 16-item scale developed by Gholami, Asli, and Shirkouni (2013). While to measure IC in public sector, this study using eleven item developed by Ramirez (2010) who talked about intellectual capital in spain public sector. Furthermore, this research use indicator developed by Damanpour et.al.(2009) to measure innovation in public service. And to measure OP, we decided respectively using 4 item scale to measure internal performance and also 4 item scale to measure external performance in public sector, developed by Kim (2005).

FINDINGS AND ARGUMENT

Assessment of the validity and reliability of all constructs is displayed in Table 1 below

Table 1 Convergent validity and reliability

Construct	Item	Loading	P-Value	AVE	CR	Construct	Item	Loading	P-Value	AVE	CR
KM	KM1	0.67	0.00	0.50	0.96	Innovation (IN)	IN1	0.79	0.00	0.63	0.94
	KM2	0.78	0.00				IN2	0.78	0.00		
	KM3	0.51	0.00				IN3	0.80	0.00		
	KM4	0.64	0.00				IN4	0.82	0.00		
	KM5	0.72	0.00				IN5	0.78	0.00		
	KM6	0.77	0.00				IN6	0.79	0.00		
	KM7	0.62	0.00				IN7	0.78	0.00		

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	KM12	0.88	0.00			IP	IP1	0.79	0.00	0.65	0.92
	KM13	0.67	0.00				IP2	0.82	0.00		
	KM14	0.77	0.00				IP3	0.81	0.00		
	KM15	0.78	0.00				IP4	0.81	0.00		
	KM16	0.70	0.00			EP	EP1	0.85	0.00	0.70	0.92
IC	IC1	0.75	0.00	0.70	0.90		EP2	0.83	0.00		
	IC2	0.74	0.00				EP3	0.85	0.00		
	IC3	0.55	0.00				EP4	0.82	0.00		
	IC4	0.79	0.00								
	IC5	0.69	0.00								
	IC6	0.71	0.00								
	IC7	0.68	0.00								
	IC8	0.65	0.00								
	IC9	0.78	0.00								
	IC10	0.80	0.00								
	IC11	0.66	0.00								

Based on the data that shown in table 1, it can be confirmed that all path loading fulfill threshold value, some literatures recommended above 0,6 value, but Hair, Black, Babin and Anderson (2010) allowed at least 0,5 value. Furthermore, the results show that AVE and CR Value reach suggested threshold value (0,5 and 0,7 respectively). In short, all reflective constructs was decently to used. After performing a series of test that conducted in this study, the result of all model predictive power that proposed in this study displayed in Table 2 below.

Table 2. Explanatory power

Model	R Square		R		Std. Indirect Effect		RMSEA	
	IP	EP	IP	EP	IP	EP	IP	EP
Model 1	0.479	0.381	0.692	0.617	0.094	0.082	0.044	0.0429
Model 2	0.558	0.516	0.747	0.718	0.098	0.095	0.0394	0.0344
Model 3	0.614	0.536	0.784	0.732	0.188	0.159	0.0267	0.0264

Table 2 show us that model 3 (IC and Innovation simultaneously mediate leverage KM on OP) is the best predictive performing model in order to enhance whether IP or EP. This can be seen from R square, Std. Indirect effect and RMSEA Value. Model 3 has lowest RMSEA Value and has highest R square and standard indirect effect among the three models.

CONCLUSIONS

Based on result which is proved in this paper, can be concluded that the third model has the best predictive power to clarified effect of KM on both internal and external performance through IC and Innovation. Managers in public institution should focus on improvement of innovation and IC simultaneously. Hence, the integration of these two process lead to superior predictive power of OP. They also should conceive that highest OP Enhancement achievable not by escalation sequentially IC first and then innovation or vice versa, but through synchronously both of them, which KM became key antecedents.

Future research could utilize this study's model to examine a broader scale, in other work environments within private or public sector, in other regions and globally to strengthen generalization. Consequently, this paper limited only in discussing how KM, IC, and innovation configure in a model and predictive best power that affect on performance, future research should conduct theoretical modeling using other aspects that influence performance in order to enrich OP escalation model. Furthermore, it is interesting to investigate reciprocal relation between IC and Innovation based on several studies such as research that held by (Subramaniam and Youndt, 2005; Marquez, et. al., 2006) who noted in their work that organization ability to utilize and improve IC will be strengthen the innovation in organization, while conversely organization which focus on innovation will be more efficient in internal competence improvement, technology ability and human capital development.

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