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RESEARCH ARTICLE :

Partial least square structural equation modeling in knowledge management orientation: A role of marketing capability in a model to firm performance of agri-input retailer

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SUMMARY : The increasing importance of knowledge in the modern and globalized organization had initiated a need to focus on managing knowledge as an organizational and competitive asset. Some of agri-input retailers attended training programmes to enhance their knowledge. The study was deemed essential to study the relationship between the Knowledge Management Orientation, Marketing Capabilities and Firm Performance. Accordingly, the study was undertaken to analyze the Knowledge Management Orientation and performance of agri-input retailers in western zone of Tamil Nadu. The population for this study comprised of trained and untrained agri-input retailers in the Western zone of Tamil Nadu comprising Coimbatore and Erode districts. From the population of agri- Input retailers, 120 trained and 120 untrained retailers were selected by convenience sampling method. Hence, the total sample size was 240 agri-input retailers drawn from the population of study. The component based Structural Equation Method was used to analyse the relationship between KMO, MC and FMP. In the indirect relationship between the KMO, MC and FMP, it was concluded that there was positive influence of KMO on MC which in turn had positive relationship with Firm Performance. The partial mediation of Marketing Capabilities was confirmed. Among the Marketing Capabilities, the influence of Brand Management Capability on Customer Performance was insignificant.

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BACKGROUND AND OBJECTIVES

The globalization of business activity coupled with the increasingly rapid development and diffusion of technology gradually led to an erosion of traditional sources of competitive advantage (Jacome *et al*., 2002), requiring firms to clearly understand the changing nature of competition and adopt complementary and /or supplementary strategic approaches (Jackson *et al.*, 2003). A firm could be conceptualized as a set of

competences. The ability of the firms to accumulate, protect and develop competences was considered key to getting the competitive advantage. In order to survive and to enhance competitive advantage, firms have to possess a knowledge base and capabilities which add value to the firm (Pena, 2002). The increasing significance of knowledge and technology in economic growth had led to the concept, knowledge-based economy. Traditional production functions focused on labour, capital, materials and energy. Knowledge and technology were external influences on production.

The increasing importance of knowledge in the modern and globalized organization had initiated a need to focus on managing knowledge as an organizational and competitive asset. The traditional agri-input retailers located in villages have played significant role in agricultural production process. Some of agri-input retailers attended training programmes to enhance their knowledge. The study was deemed essential to study the relationship between the Knowledge Management Orientation and Marketing Capabilities and Firm Performance of agri-input retailers. Accordingly, the study was undertaken to analyze the Knowledge Management Orientation and performance of agri-input retailers in western zone of Tamil Nadu.

Training and its importance :

Kozlowski and Klein (2000) reported that the knowledge and skills of workers acquired through training had become important in the face of the increasingly rapid changes in technology, products, and systems. Most organizations invested in training because they believed that higher performance would result. Salas and Cannon-Bowers (2000) stated that there was an increasing awareness in organizations that investment in training could improve organizational performance in terms of increased sales and productivity, enhanced quality and market share, reduced turnover, absence and conflict. Soliman and Spooner (2000) viewed employees' collective knowledge as competitive advantage and suggested that the training function was well positioned to ensure the success of KM programmes which were directed at capturing, using and re-using employees' knowledge.

Knowledge management orientation :

Walters *et al*. (2002) stated that knowledge management within strategic operations enabled an organisation to make more effective decisions about how to structure value chain operations to maximize customer satisfaction. Sharkie (2003) stated that knowledge could be reused and new knowledge could be integrated with current knowledge to develop even more valuable knowledge and strategically valuable new insights, creating a unique valuable synergy to improve the firm's performance. James (2005) posited that KM could improve efficiency and effectiveness, along with responsiveness and flexibility to market changes. It could also be used to improve product development, innovation and quality, and develop a better understanding of customer and stakeholder relationships.

Marketing capability :

Hult and Ketchen (2001) concluded that the firms with superior market orientation achieved superior business performance because they had a greater understanding of customers' expressed wants and latent needs, competitor capabilities and strategies, channel requirements and developments and the broader market environment than their rivals. Zahay and Handfield (2004) stated that marketing capability created value for the firm within three important categories of organizational processes - namely, the new product development process, the customer management process and the supply chain management process. Morgan *et al*. (2009) argued that firms should increase their marketing capabilities which included market sensing capability, customer relationship management capability and brand management capability in key functional areas that were more competitive in business.

Firm performance :

Fathy *et al*. (2000) said that firm performance measured as metrics employed to quantify the efficiency and/or effectiveness of actions, and had always remained a problematic issue in business research. Vorhies and Morgan (2003) concluded that firm performance could be measured subjectively and objectively. The subjective measures were based on the opinion or estimates provided by the respondents who were asked to assess their firm's performance. The objective measures were based on independent observable facts, either by asking respondents to report absolute values or by accessing secondary sources.

RESOURCES AND METHODS

The population for this research comprised of trained and untrained agri-input retailers in the Western zone of Tamil Nadu comprising Coimbatore and Erode districts. For this study, 120 trained and 120 untrained retailers were selected by using convenience sampling method. Hence the total sample size was 240 agri-input retailers drawn from the population of study.

The well structured interview schedule was prepared by adopting the scales from various research studies. Knowledge Management Orientation was measured using the instrument developed by Wang *et al*. (2008). This instrument measured the four dimensions of Knowledge Management Orientation such as Organizational Memory, Knowledge Sharing, Knowledge Absorption and Knowledge Receptivity. The KMO instrument had totally 16 items. According to Vorhies and Morgan (2003), Marketing Capabilities was defined as the processes by which firms planned appropriate combinations of available knowledge and other resources to deploy into their market place (s) and executed these planned resource deployments, transforming them into realized value offerings for target market (s). Marketing Capabilities was measured using the instrument developed by Morgan *et al*. (2009). This instrument measured the three dimensions of Marketing Capabilities namely Market Sensing Capability, Customer Relationship Management Capability and Brand Management Capability. The Marketing Capabilities instrument had totally 15 items. The Firm Performance is measured using the instrument developed by Lee and Lee (2007) which contained totally 7 items. This instrument measured the two dimensions namely Customer Performance and Financial Performance. This instrument measured a relative performance of the indicators. So that it could be applied universally to all organizations (Deshpande *et al.,* 1993 and Drew, 1997).

Component based SEM :

The determination of the role of Marketing Capabilities in the relationship between Knowledge Management Orientation and Firm Performance was done by comparing a run of a PLS algorithm on the direct relationship between KMO and FMP with another run of a PLS algorithm with MC included in the relationship between KMO and FMP. If both tests resulted in significant relationship, then it indicated the presence of partial mediation. On the other hand, if the test showed that after the inclusion of a mediating variable the direct relationship was no longer significant, then it indicated the present of a full mediation (Guenzi *et al.*, 2009 and Ismail and Fazli, 2012).

In PLS, the structural model visualized therole of marketing capabilities in relationship between the Knowledge Management Orientation and Firm Performance with the help of a path diagram (Fig 1). For hypotheses testing, researcher looked at path co-efficient values. A t-test was carried out to determine the significance of the interrelations between the latent endogenous and latent exogenous variables using bootstrapping procedure (Hansmann and Ringle, 2005). Henseler *et al*. (2009) suggested that the number of cases for running a bootstrapping analysis in PLS-SEM should be equal to the number of actual observation. The main criterion for assessment of the structural measurement model was the R^2 (*i.e.,* co-efficient of determination), which represented the amount of explained variance of each endogenous variable.

The study hypotheses proposed in study was

H2:

Marketing Capabilities (MC) mediates the relationship between the Knowledge Management Orientation and Firm Performance (FP).

The indirect effect of mediating variable was identified by multiplying the partial regression co-efficient (B) for Knowledge Management Orientation predicting Marketing Capabilities, and the partial regression coefficient (B_1) for Marketing Capability predicting Firm Performance,

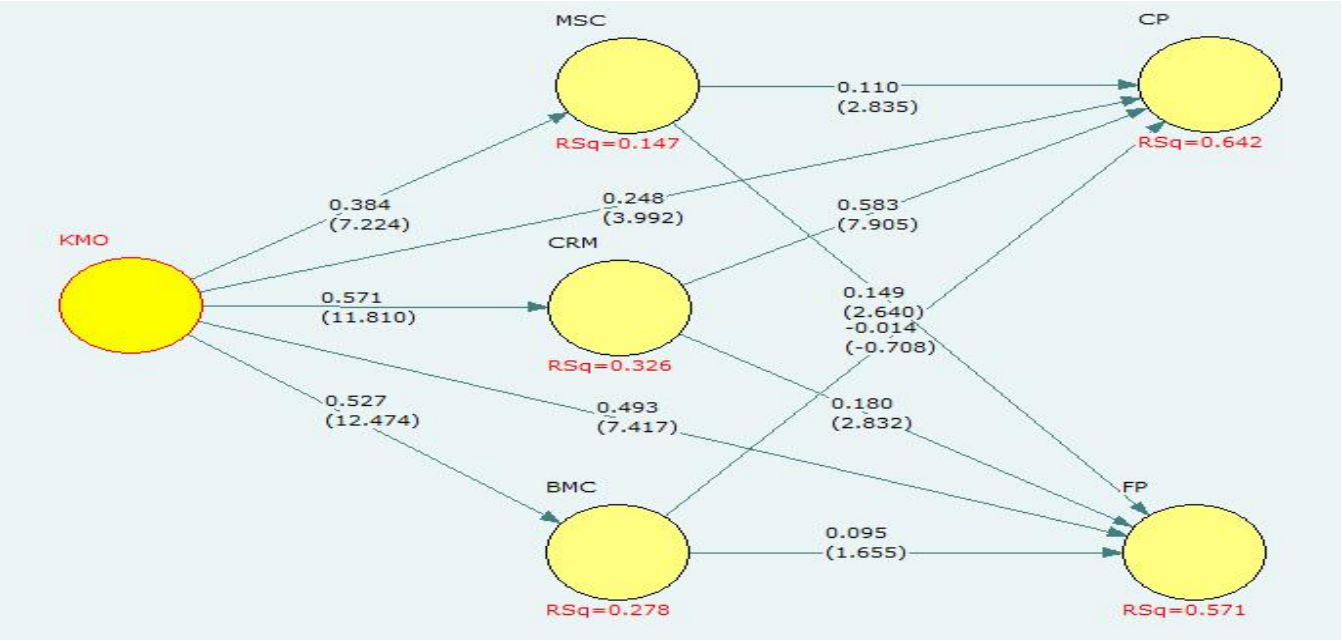
Mediation (Indirect) effect = B_1 * B

OBSERVATIONS AND ANALYSIS

The results obtained from the present study as well as discussions have been summarized under following heads:

Indirect relationship between KMO, MC and FMP :

The indirect effects of independent constructs such as Knowledge Management Orientation, Marketing Capabilities *viz.,* Market Sensing Capability and Customer Relationship Management Capability on the two dependent constructs Customer Performance and



KMO	- Knowledge management orientation	BMC	- Brand management capability
MSC	- Market sensing capability	CP	- Customer performance
CRM	- Customer relationship management capability	FP	- Financial performance

Fig 1: Indirect effects of KMO on marketing capability and firm performance – A structural model

Financial Performance which measured the Firm Performance was explored. The results are presented Fig 1.

The productiveness of the structural model was assessed by the R^2 values for the dependant variables. From the Fig.1, it could be seen that the Customer Performance as explained by the Knowledge Management Orientation of agri-input retailers along with Marketing Capabilities (Market Sensing Capability, Customer Relationship Management Capability and Brand Management Capability) was attached by an R^2 value of 0.642 that stands for a 64.2 per cent of variation. Likewise Financial Performance as explained by the Knowledge Management Orientation of agri-input retailers along with the three Marketing Capabilities was attested by an R^2 value of 0.571 that stands for a 57.1 per cent of variation.

The Knowledge Management Orientation had significant positive influence on the Customer relationship Management ($\beta = 0.571$) followed by BMC ($\beta = 0.527$). In contrast, KMO ($\beta = 0.384$) had comparatively less impact on Market Sensing Capability. Among the Marketing capabilities components, Customer Relationship Management Capability was found to be the most important criterion with the value of its standardized regression weight being 0.583 ($p<0.001$) followed by Market Sensing Capability which also had a significant effect ($\beta=0.110$; $p<0.001$) on Customer performance. In contrast, Customer Relationship Management Capability ($\beta=0.180$; $p<0.001$) had comparatively less impact followed by Market Sensing capability on Financial performance, whereas the Brand Management Capability was significant with Financial Performance of agri-input retailers at 10 per cent significance level and had a positive correlation with the beta value of 0.095 and the 't' value of 1.655. BMC was not significant with the Customer Performance which was evidenced by a negative correlation ($\beta = -0.014$, $t = -0.709$). The research studies of Morgan *et al*. (2009) concluded and proved that the Brand management capability had a significant, positive effect on revenue growth rate and negative effect on marginal growth rate. Hence the effect of Brand Management Capability could not be fully eliminated.

In over all, Support was found for the hypothesis proposed in this study as Knowledge Management Orientation is positively related to Marketing Capabilities which in turn is positively related to Firm Performance.

Direct relationship between KMO and FMP :

The direct relationship between the KMO and Firm Performance was anaysed and the results of the analysis are presented in the Fig 2 and Table 1.

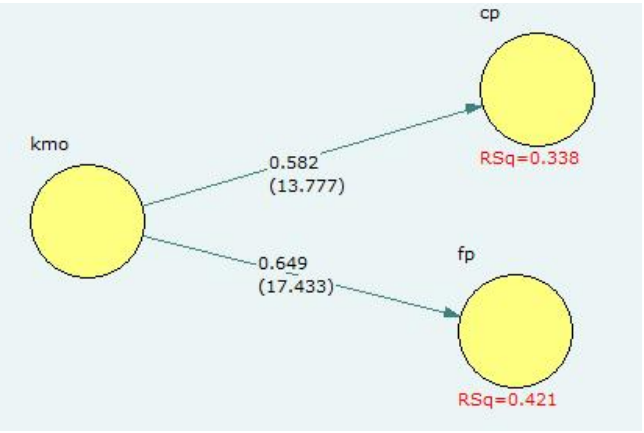


Fig 2: Direct effects of KMO on firm performance

Table 1 : Relationship between the KMO and FMP

Relationship	Path co-efficient (Beta)	Std. error	T-statistic
kmo->cp	0.582	0.042	13.78**
kmo->fp	0.649	0.037	17.43**

** indicate significance of value at P≤ 0.01

The path co-efficient of Customer Performance and Financial Performance with KMO was 0.582 and 0.649, respectively. The t statistics indicated that there was a significant association between Knowledge Management Orientation and CP and FP.

It could be conducted from Fig. 2, that the KMO of agri input retailers explained 33.80 per cent of variation in Customer Performance and 42.10 per cent of variation in Financial Performance.

The presence of mediation could be confirmed by comparing the direct relationship between the KMO and FMP (Fig. 2) and the indirect relationship between KMO and FMP through the mediating variable (MC) (Fig. 1). Both the tests resulted in significant influence of KMO on Firm Performance. The R^2 value of Customer Performance and Financial Performance was higher in the indirect relationship than the direct relationship, indicating the presence of a partial mediation.

Conclusion :

As the theoretical model linking the Knowledge Management Orientation, Marketing Capabilities and Firm Performance was found to be an appropriate fit, the hypothesis stating that the Marketing Capabilities mediates the relationship between a Knowledge Management Orientation and the Firm Performance of agri-input retailers is accepted.

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