

Analyzing the Mediating Effect of Innovation Capability on Strategic Orientations in Agricultural Malaysia

NORAINDAH ABDULLAH FAHIM^{1,2}

ROHAIZAT BAHARUN¹

¹Faculty of Management

Universiti Teknologi Malaysia (UTM)

Johor, MALAYSIA

²Commerce Department

Metro Polytechnic of Johor Bahru

Johor, MALAYSIA

indafahim78@gmail.com, m-rohaizat@utm.my

Abstract: - Innovation has been a topic of interest to be applied in any firms as the best weapon to achieve competitive advantage position and to survive particularly in this competitive environment. Firms without innovation are reluctant to change and regards as laggard. Numerous studies on the combination of innovation with firm's strategic orientation were done in the developed countries, across sectors such as manufacturing or service sector, but lacking in the developing countries, particularly to the small agricultural sector. The contributions of agricultural sector in the economic growth of one country are undeniable. The sector provides one country with employment, reduce poverty rate, increase rural income, food security and growth to the economy. Although number of studies on small and medium enterprises on strategic orientations (SO) were done across sectors, however, farmer's strategies in making the business a success and can sustain longer in the market are lacking in numbers. Therefore, this paper aim to examine the determinants of strategic orientation towards the small and medium agricultural performance in Malaysia with mediation effect of innovation capability (IC) as a dynamic approach to farmers' sustainability. The exploration of SO and IC effect on small farmers in Malaysia were analyzed from 235 respondents throughout Peninsular Malaysia using scale's reliability, factor loading and hypotheses testing. Result showed that MLO and EO have greater positive impact to IC as well as farm performance. This paper contributed are on the conceptual model and the hypotheses development, particularly how MLO and EO give small farmers' ability to innovate and implement it towards better farm's performance.

Key-Words: market orientation, learning orientation, market learning orientation, entrepreneurial orientation, innovation capability, small farm performance

1 Introduction

The different kinds of dynamic capabilities by previous studies have shown positive impacts and outcome towards firms' performance. Many previous studies analyzed on different dynamic capabilities with firm's strategic orientations in developed countries, however, there are still lacking of studies who focused the strategies in developing countries, particularly towards the small and medium enterprises (SMEs) [4],[3] and specifically lacking in the agricultural sector. In this study, the dynamic capability of innovation is selected in order to examine how it will shape the SME agriculture's ability in developing, inventing, introducing and finally commercializing what firms have best to offer to their customers. Notably, this paper will look on which strategic orientations that able to help

agricultural SMEs to nurture its innovation capability.

Innovation has been the major lifeblood in any organizations, regardless of sectors. Scholars and practitioners have long recognized that innovation is significant where firms deploy effectively its available resources, skills and assets to meet with customers' demands as well as to stay longer in the business [3]. Innovation can be implemented in firm's products, process, marketing or administration. But how this innovation capability could help firm to yield a superior performance? Is it by applying innovation only would make firms be able to fulfil market demand? It is suggested that firms need to have plans and strategies following on what market wants and demands. That is the reason on why do some company successful in their business while some others are not.

Strategic orientation (SO) studies has emerged more than thirty decades ago. Until present, the study of SO is still relevant and mushrooming with different types of orientations, either individually, or complement with other orientations, either for firms' growth [29] or firms' innovation [39]. However, the SOs impact on innovation and performance by previous scholars were still limited [3]. Therefore, this paper will try to explore two types of SOs, the market learning and entrepreneurial orientations impact on innovation capability towards the agricultural SME sector, particularly in Malaysia.

On the other hand, this paper aims to provide one important theoretical contribution to the small firm business literature. Particularly, market learning orientation (MLO) consists on the simultaneous process of market orientation (MO) and learning orientation (LO). The assumption is that many of classic and contemporary studies have analyzed MO and LO on three situations: whether MO and LO are complement, contradict or involved a simultaneous process together [23], [17]. Although these situations give positive outcome on the relationship, however, the causality issues between both remains unsettled [7]. In addition to that, this paper will give special insight on the redundancy of term regarding the behavioral concept of MO by Kohli and Jaworski [27] who shared the same concept as LO theory by Huber [18]. Due to that, this study is to analyze on the combination of both concept as MLO as a new concept contribution, particularly to small firms' literature

In this paper, we will look into the literature review on agricultural, innovation capability and later on strategic orientation. Next on the method.

2 The Theoretical Framework

2.1 Agricultural Sector in Malaysia

Agricultural sector has long been acknowledged as the backbone of country's economic growth, either in the developed [34], [12] or developing countries [13]. They provide countries with employment, reduce poverty particularly in rural areas, food security and growth to the economy [13], [34]. In this study, only agricultural SMEs are being selected, mainly because, in general, SMEs' operations are more flexible than the large companies. In this case, any changes on the environment are easily adapted by SMEs according to the external needs, thus they can easily innovate according to market requirements [52].

Although several of contributions were given by this sector to the nation as a whole, nevertheless,

there are certain problems faced by farmers. First, despite of aids and supports were given by the government, the contribution of this sector towards the Gross Domestic Products (GDP) of Malaysia is still low and number of imported foods from the neighboring countries are still high [2].

Secondly, the normal practice of business in this sector involved middlemen. Currently, the Government has implemented the Middleman Elimination program or "*Jihad Hapuskan Orang Tengah*". The reason is that in the normal agricultural distribution systems, it involves different layers of distributors such as few numbers of middlemen or retailers to reach the products to the end users. And this might result toward unreasonable high price setting and being cheated while the profit flows into the middleman's or trader's pocket who are working within the supply chain. Unfortunately, farmers are the one who not getting much from what they produce. Therefore, the program would help farmers to gain all their hard works and would able farmers to penetrate market widely.

But how the traditional farmers react to this situation is still under question, whether they are able to do it by themselves. Therefore, in this study, it is suggested that farmers need to expose themselves with SOs and innovation in order to be successful. Moreover, SOs will help agricultural SMEs in term of providing them with guidelines to innovate [4]. In fact, the available literatures on agriculture focused on attitude, acceptance or capital problems but not on SOs or innovation.

2.2 Market Learning Orientation (MLO)

The MO concepts has been developed by several researchers, and the prominent scholars of MO were Kohli and Jaworski [27] and Narver and Slater [36]. This concept has, until present, been proven to give far-reaching effects on market and being recognized as an important intelligence system approach to help large or SME firms to analyze any potential opportunities within the environment [27],[36].

However, MO alone is not enough to cater the environment. MO only focus and implement on what customers want to buy and try to deliver the value that customers are looking for [27],[36], but MO alone is not sufficient, particularly to facilitate types of innovation that will breed long-term competitive advantage [1]. Thus, this study is to relate MO with other business orientation towards better performance, and the suggested orientation in this study is LO.

The significant of firm to learn and focus on market can help in the contribution of marketing

towards business strategy [51]. Firm will be able to learn on market faster with the existence of endogenous learning. This is supported by Jiménez-Jiménez and Cegarra-Navarro [23] who highlighted the importance of both MO [27], [36] and LO [44] to gain the competitive advantage position.

On the other hand, there is a similarity of construct between MO by Kohli and Jaworski [27] and LO by Huber [18], namely knowledge/intelligence acquisition and knowledge/intelligence distribution. Intelligence generation and intelligence dissemination of MO on behavioral perspectives by Kohli and Jaworski have the same concept with knowledge acquisition and knowledge distribution of LO theory by Huber respectively, where it representing on how market information is generated, processed and distributed.

Moreover, Slater and Narver [44] mentioned that MARKOR's scale "have facilitated research on organizational learning by developing measures of the effectiveness of the information acquisition, intelligence dissemination and organizational responsiveness stages of the learning process..." (p.72). Thus, it indicates that there is a construct redundancy on Kohli and Jaworski's who relate MO with LO. Virtually, the definition of both is referring to the same process. Although previous literatures relate LO with management studies and MO to marketing, however, both MO and LO are important in any studies as both are related and required particularly towards the innovation of firms [25]. To avoid any redundancy of both MO-LO application and terms, this study will use market learning orientation (MLO) as to refer on both market and learning as well as applying the behavioral learning perspective to explore its effect on performance.

However, to the knowledge of author, limited number of studies on market learning have been done towards the small or micro sized firms, particularly in the developing countries, where these countries are facing with limited domestic market growth [46]. Albeit ML will lead firms towards superior growth and innovation performance, the impact of ML towards this sector is undeniable and significance.

Knowledge gained from external market learning environment and is shared willingly by the internal environment which is employees will increase the level of efficiency in production and product development [6] due to knowledge is far more important than other factors of production [11], yet, limited studies on the influence of market learning have been done [15]. With knowledge, firms will be able to make a wise decision particularly when involves with customers, competitors, distributors of

products itself [11]. The significant impact to exploit and explore on MLO at the front end to enhance market sensing, innovation as well as performance as being stressed such as by Kim and Atuahene-Gima [26] rather only focusing on MO only.

2.2 Entrepreneurial Orientation (EO)

Small firms normally have limited resources and capabilities [46], consequently are required not to depend too much on customers. Firms are not to focus much on customers as they are naturally short-sighted, will lead firm fail to embrace breakthrough innovation and may be exceeded by competitors [54]. Indeed, small firm's need entrepreneurial inclination so that firm would be able to move position into another level.

The entrepreneurial orientation (EO) is one of the entrepreneurial activities with a wide-range of firms' behavior such as decision making or practices and efficiently use resources to exploit any opportunities [28]. The entrepreneurial activities are also important to firms with smaller size because they are normally very flexible as compared to large firms with many departments. The advantages of small firms are in term of changes and quick response on opportunities. Findings have proven that EO in small firm had perform greater than the large one [40].

2.3 Innovation Capability (IC)

Innovation could help firms to thrive significantly in this competitive environment. Nowadays, the non-adapting innovation firms may eventually become late adopters. The capacity of finding and creating new resources and produce superior products and services than competitors is being viewed as an innovation capability (IC) [20]. In order to achieve the innovation capability, the involvement of employees to manage and maintain market knowledge play critical role to make it success. Market knowledge gained by individual is nothing unless is being transferred and shared between and within firms, thus will fuel the innovation capability [6].

However, previous studies on innovation were mainly focused on high-tech or manufacturing firms, either large or medium firms, [4], [46] [51], while limited numbers were on the small or micro firms [10], [5], [38], while very little on agricultural sector. Regardless of what kinds of businesses and sizes the firms are, this paper specifically examine on how small and micro agricultural firms could overcome the resources and capabilities limitations [46] while would be able to apply innovation as one

of firm's assets to fuel up performance. As far as small and medium firms are concern, the limited resources may hinder firms from pursuing innovation.

However, innovations could happen when firms include a combination of existing and new knowledge from incremental learning [16] or knowledge exploration and exploitation [41]. The process of knowledge creation will lead to firm's new capability and this new capability will turn products or process of firm into something that have economic value to market [41]. Through knowledge sharing, firms may encourage an innovative thinking which later will instill the IC development and utilization [6]. Through MLO and EO as firms' resources, firms will be able to innovate their processes or products towards better performance.

3 Conceptual Framework and hypotheses development

2.1 MLO and Firm performance

Market learning (ML) is the exploration and exploitation ability of firm to organize, appropriate and apply new external knowledge or build from prior existing knowledge and use it for the development of innovation [15]. Market learning is regard as one of the firm's business strategy in relation to the importance of firm to orient their firms' learning behavior about market to gain competitive advantage position.

Different concepts related with market learning are recognized such as market-based organizational learning (MBOL) by Sinkula et al. [43] or market learning capability by Weerawardena [48] and have been applied in various sectors or industries such as towards the exporting firms [3], high-tech business [15] or manufacturing [26]. Moreover, many of the market learning related studies were conducted in the developed countries [51] or in the Asian countries [15], [26].

MLO is required by firms due to the uncertainty level in many aspects such as local demand, product adoption, intense domestic competition, purchasing behavior or product acceptance on new, either domestic or international operated market [49], [4]. Thus, it suggests the following hypothesis:

H1: There is significant relationship between MLO and firm performance

2.2 EO and Firm performance

In fact, the study on the relation of EO and firm performance have been conducted since 1980s (see meta-analysis [40]). Perhaps, growing numbers of

research interest of EO are regardless of sectors and across regions. For instance, numbers of studies have relate a positive significant relationship between EO and performance in service business of Japanese food restaurants [30], US small manufacturer [8] and Europe small firms [28], [12].

Until present, the studies on EO-performance relationship has widely emerged with various extensions. For example, Wiklund and Shepherd [50] have applied an approach to examine the effect of the relation on EO dimensions with financial capital and environments as moderators. Again, the results showed a positive impact on EO and Swedish SME performance. Thus, the following hypothesis is suggested:

H2: There is significant relationship between EO and firm performance

2.3 IC and Firm performance

Innovation plays a significant role in creating value and sustaining competitive advantage position. Innovation is different than invention. Invention involves on creating new or improved products only, but innovation will bring that new or improved products to market successfully [5]. As far as IC is significant towards large firms, it is also important to the small or medium sized firms [5], [10], [38]. The studies on IC implementation by large companies suggested a significant contribution as they have all the abilities and capacities of doing so as compared to small and medium firms [22].

Nevertheless, the small firms need IC if they want to stay longer in the market. Although small firms gave limited resources and capabilities [46], [38], the owner or manager needs to deploy both to be successful. A summary done by Saunila [42] has indicated that IC, regardless of the different terms by previous scholars, are mainly referred on four perceptions: the ability to do innovation, fitting together with firms' internal strategy, involves continuous enhancement and to give value added to firms. This to indicate that the IC involves on how firms utilize and deploy their internal resources and capability to leverage firms' performance [22]. Firms with greater IC will lead to a higher innovative output besides generate higher sales growth [53]. Firms must innovate and promote innovation so that they can sustain in the industry and achieved competitive position [48].

Number of studies in several industries have identified IC has the positive relationships with firm performance. The positive relationship between IC and performance are shown by many studies across countries, industries as well as sizes (such as [5],

and [10]. Therefore, this next hypothesis suggests the positive influence of IC to firm performance.

H3: There is a significant relationship between IC and firm performance

2.4 IC as mediator

Additionally, this paper addresses innovation as mediator between MLO, EO and firm performance. Once firms have gathered information on customer's current and future needs, what should firms do following from the intelligence gathering and dissemination? The market exploitation helps to increase the new product development speed while market exploration can improve product innovativeness which will help to influence new product financial performance [15]. Hurley and Hult [20] highlighted the impact of market focus and market learning style on innovation which will give greater firm growth. These market information should be transformed into product innovations to meet with the needs, provided that firms have the capacity to innovate. IC is the reflection of knowledge firm's learn from the market [48], [4].

Moreover, current research by Jayawardhana and Weerawardena [21] further supported on MLO to be conducted as one of the key antecedent of innovation. The firm who is capable to focus on MLO can successfully be more innovative [6] as MLO and IC has not been studied extensively from prior research [48]. Market knowledge on customers and competitors are among the important antecedents of innovation. This can be seen in the study of Fang, Chou, Yang and Ou [14] who relates market learning with innovation and concern on how innovation is affected through market learning such like Apple who able to produce innovative products which satisfy their customers [14].

The importance of MLO towards creating innovativeness can also be seen from the study by Watanabe, Lei and Ouchi [47] on Canon's printers. They learned from computer producers which they cooperate with other competitors to integrate relevant knowledge in order to produce innovative indigenous printer products.

Additionally, Baker and Sinkula [1] have analyzed three different models of MLO and EO on their direct effect with profitability. The findings showed that the combination of MLO and EO is mediated by innovation success to gain profitability. Firms' innovation success can be achieved when firms are able to translate what they have learn from the market (MLO) while EO will proactively seize opportunities from the MLO [1]. Innovation success is achieved from implementation and translation of

MLO and the aggressive action by the small entrepreneur.

With entrepreneurial oriented behavior, farmers are able to be more innovative, risk taker and aggressive in seize opportunities [8]. That is to say, both MLO and EO are describe as SO facilitation and fuel on farmers' efficiency and capability towards farm's growth.

In spite of the existence association between entrepreneurship and innovation, both terms seem to have slight dissimilarities. From the entrepreneurship point of view, innovativeness of EO is referring to the willingness of owners to use the new ideas to improve the firm's operation and leave what exactly that new idea means to the respondent/audience. While innovation involves the entering new or established market with new or existing products or services [46]. However, Hurley and Hult [20] mentioned that innovation focuses only on the implementation and adoption of new ideas, products or process but not entering new markets. In particular, they mentioned that the firm's orientation towards innovation (i.e. innovativeness) could increases the firm's capacity and capability to adapt and implement innovation (i.e. innovation capability). Therefore, a test on the mediation effect of IC on MLO and EO has been suggested.

H4: There is a significant mediator relationship between MLO and IC

H5: There is a significant mediator relationship between EO and IC

3 Data Collection and Analysis

In this study, SMEs are selected due to the contribution to the nations in driving economy and acted like a bridge to fill in the gaps between large companies with customers [52]. First, the set of questionnaire was undergone the back-to-back translation from English to the Malaysia's mother tongue, *Bahasa Melayu* as to give farmers an easier understanding on the items by translating service companies. Next, the questionnaire was translated back to English by other language expert to make sure the translation did not change the meaning of original items. After the translation process, the questionnaire was pre-tested with seven potential farmer respondents, two field experts from Federal of Agricultural Marketing Authority (FAMA) of Malaysia and three academic experts from local university, resulting some alterations and deletions of items according to suitability of farmer's context. The choice of research setting was guided from the review that agricultural sectors not only to be

modern, but also need to sustain in the market as they faced risks and challenges from many directions. Moreover, agricultural sector is among the understudy sectors on strategic orientations, particularly in Malaysia. The focus of this study was with those who have registered in the contract farming program (CFP), as among one of the agriculture's high impact program (HIP) suggested by the government.

Next, pilot test was conducted to 50 respondents and the Cronbach alpha values were all above the cut off 0.5. The unit of analysis involved was the firms and represented by the owner as respondent. Data of CF farmers gained from FAMA as population frame, consists of 1594 participants from Northern, Southern, Eastern and Western regions in Malaysia. A systematic random sampling was employed and 300 set of questionnaires was distributed. The selection criteria were (1) respondents have registered as participants as contract farming farmers (2) respondents who have at least three workers (to be considered as micro to small sized firms) and will omit those with less than two workers (see [12] who analyzed on agro-food firms). After the selection processes as according to the criteria, 235 participants were selected and analyzed through IBM SPSS Statistics version 21 and three proposed relationships were tested through regression analysis.

3.1 Measurement

This study applied the existing and adopted measurement based on the purpose of this study. Purified items were measured by five-point Likert scales ranging from "strongly disagree" to "strongly agree". The MLO measurement consists of 19 item-scale by Spillan, Kara, King, and McGinnis [45] and Zhang and Duan [53] on market intelligence generation, dissemination, and responsiveness while interpretation with five items adopted from Hult, Ketchen, and Slater [19] and Jiménez-Jiménez and Cegarra-Navarro [23].

EO scale was adopted from Mirzaei, Micheels, and Boecker [33] and Rosairo and Potts [41] with 15 item-scale measuring innovativeness, risk taking and pro-activeness. 16 items for IC measurement was adopted from Liao, Fei, and Chen [31], Camelo-Ordaz, García-Cruz, Sousa-Ginel, and Valle-Cabrera [6] and Ozkaya, Droge, Hult and Calan [39] consists of four dimensions, product, process, management and marketing. Lastly, the firm performance was measured from the scale developed by Micheels and Gow [32] and purified to five items.

3.2 Analysis and Results

The main objective of the analysis is to test the research hypotheses. The statistical data analysis involved several steps: verifying the reliability of measurement scale (Cronbach's alpha coefficient), determine the factor loading (Exploratory factor analysis) and research hypothesis testing (Pearson correlation and linear regression testing). Altogether, 60 items using 5 Likert-scale were used to measure MLO, EO, IC and firm performance.

The Cronbach alpha reliability and Exploratory Factor Analysis (EFA) tests were used prior from the hypotheses developed earlier and listed in **Table 1**. The rules of thumb for Cronbach alpha suggested to range over 0.7 as acceptable and reliable [9], [37] and results reported range from 0.854 to 0.906, thus suggesting all measures adopted are reliable. For the factor analysis, items with factor loading less than 0.5 should be eliminated. All the AVE values are more than 0.5 and retained as it is. Apart from 60 items listed, few items were been deleted due to low reliability and factor loading analysis resulting to only 55 items.

Table 1: The reliability and factor loading validity test

Variables	No. of Items	Mean	α	AVE	CR
MLO	22	4.142	0.904	0.572	0.965
EO	14	3.805	0.863	0.612	0.899
IC	15	3.742	0.881	0.667	0.923
Firm Performance	4	3.827	0.854	0.711	0.906

A summary of Pearson correlation for all the important factors in this study were shown in **Table 2**. All factors (MLO, EO and IC) were significant ($p < 0.0005$) and positively correlated with each other as well as the dependent variable, firm performance. The reading of correlations namely are weak (0.10-0.29), medium (0.3-0.49) and strong (0.5-1.0) (Cohen, 1988). Thus, the positive relationship between EO and IC ($r = 0.750$) is stronger than other relationships such as between EO with MLO ($r = 0.428$) while low relationship found between EO and performance ($r = 0.294$). Therefore, the high level of innovativeness, risk taking and pro-activeness of owner associated with high level of innovation capability of firms.

Table 2: Pearson correlations analysis

N= 235	MLO	EO	IC	PERF
MLO	1	0.428**	0.376**	0.348**
EO		1	0.750**	0.294**
IC			1	0.321**
PERF				1

**Correlation is significant at the 0.01 level (2-tailed).

The research hypotheses testing using liner regression is shown at **Table 3**. The relationship between MLO, EO, IC towards firm performance were significant ($\beta = 0.622, 0.352, 0.383, p < 0.001, F = 32.081, 22.02, 26.702, p < 0.05$). The coefficient of determination of R^2 revealed that 11.7%, 8.6% and 10.3% of the dependent variable (firm performance) variance is explained by MLO, EO and IC respectively. Hypothesis 1, 2 and 3 posits that MLO, EO and IC will have a positive relationship with firm performance. Hence, the result are supported with respect to firm performance. The regression model concerning IC as mediator were also significant ($\beta = 0.563, 0.751, p < 0.001, F = 38.392, 298.98, p < 0.05$) and the innovation capability variance is explained by the level of MLO (14.1%) and EO (56.2%). Thus,

	Variable	β	R^2	F	p
H1	MLO-Perf	0.622	12.7%	32.081	0.000
H2	EO-Perf	0.352	8.6%	22.02	0.000
H3	IC-Perf	0.383	10.3%	26.702	0.000
H4	MLO-IC	0.563	14.1%	38.392	0.000
H5	EO-IC	0.751	56.2%	298.98	0.000

Hypothesis 4 and 5 are supported with respect to IC.

4 Discussion and Conclusion

This study discussed on the influence of strategic orientations of MLO, EO and IC on small and micro farm performance as well as the IC as mediator to both MLO and EO. Previous and contemporary literatures have suggested the need to do research on the combination of market, learning, entrepreneurial and innovation on any of business success. The impact of MLO (market information generation, dissemination, interpretation and responsiveness), EO (innovativeness, pro-activeness and risk taking) and IC (product, process, management and marketing) would theoretically be called for testing. The results found from 235 participants have shown that all indicators, either individually or jointly, positively related to IC as well as towards small and micro farm successfulness

The first analysis is on the relationship between MLO and small and micro farm performance. As in line with classic and contemporary studies, the importance of having and knowing about external market knowledge, interpret and immediately respond by the farmers within their firms have shown positive impact on IC and farm performance. Individual employees play greater role in generating, transferring, translating and transform

the market knowledge learn from the external environments. The more the market information they generate, disseminate, interpret and respond to it, the more innovative and successful they are. Owners and employees need to invest more time to generate and develop market information will lead firms to innovation and success. These are in agreement with Weerawardena [48], Jiménez-Jimenez, Valle, and Hernandez-Espallardo [25], Morgan and Turnell [35], Jiménez-Jiménez and Sanz-Valle [24], Camelo-Ordaz et al. [6] and Choi [7].

Secondly, the impact of an EO on small farm performance which mainly associated with owner's willingness to do innovation, manage risk and pro-actively seek opportunities. The analysis found a strong positive relationship between EO and IC while the direct relation of EO with performance are weak. This is in line with Baker and Sinkula [1] who posits that small firms with higher EO are able to transform their available resources and capability into innovative outcome. Through innovative outcome, firms would achieve a greater competitive advantage positions than other firms.

With all these behaviors of farmers, particularly in absorbing external knowledge and with the entrepreneurial attitudes, farmers are able to develop their firms towards better improvement, whether in their new or existing product, process, marketing, and management innovation [48], [35]. These will later help farmers to offer a superior products/services to their customers [23], [24]. Market knowledge needs to be utilized efficiently and effectively as the external knowledge can help to foster product innovation [46].

5 Managerial Implications

The first managerial implication is highlighted by validating the hypotheses. It is important for small and micro farmers and their employees to study and analyze consistently about market, detect on any changes from customers preferences and reacted on competitors' behavior. Through the information gained, firms are able to develop innovation and lead towards better growth. The second managerial implication highlights the vital role of being innovative, risk taking and pro-activeness to develop innovation capability. Through EO and IC, firms are able to manipulate the existing market by improving their current or develop new products.

How the information gained is well used within the firms will depends on how the owner manipulate it and bring it towards success. Is all about owners'

strategic orientations to improve and enhance the farm's MLO and EO. This involves on how owners utilize and deploy farms' resources to frequently acquire information related to market. Moreover, owners must value employees, such as by giving rewards or training, so that employees can contribute into a higher degree of innovativeness, risk taking and pro-activeness. The success of farms depends not only on the hand of owners, but involves the collaboration with their internal resources strengths, to quick respond with environmental changes, bravely face risks and seize any opportunities. Although IC in small and micro farms is regards as costly and complex, owners need to develop unique and rare products. With owners, who are innovative towards market, are believed able to give better direction of farm towards achieving a superior performance and create a lifelong benefits and improving intense moves in farm's competitive positioning. Innovation will support the strategy of the farm and farm strategy will support on innovation.

Acknowledgement:

The authors would like to express our sincere gratitude and appreciation to the Ministry of Higher Education of Malaysia for granting the sponsorship under the Federal Training Scheme (HLP) to the main author. Our appreciation also goes to FAMA officers for the cooperation given throughout the preliminary study.

References:

- [1] Baker, W. E., & Sinkula, J. M., The complementary effects of market orientation and entrepreneurial orientation on profitability in small businesses, *Journal of Small Business Management*, Volume 47, Issue 4, 2009, Pages 443–464.
- [2] Bank Negara Malaysia, Bank Negara Malaysia Annual Report 2014. *Bank Negara Malaysia*, 2015.
- [3] Boso, N., Story, V. M., & Cadogan, J. W., Entrepreneurial orientation, market orientation, network ties, and performance: Study of entrepreneurial firms in a developing economy. *Journal of Business Venturing*, Volume 28, 2013, Pages 708–727.
- [4] Branzei, O., & Vertinsky, I., Strategic pathways to product innovation capabilities in SMEs, *Journal of Business Venturing*, Volume 21, Issue 1, 2006, Pages 75–105.
- [5] Çakar, N. D., & Ertürk, A., Comparing innovation capability of small and medium-sized enterprises: Examining the effects of organizational culture and empowerment, *Journal of Small Business Management*, Volume 48, Issue 3, 2010, Pages 325–359.
- [6] Camelo-Ordaz, C., García-Cruz, J., Sousa-Ginel, E., & Valle-Cabrera, R., The influence of human resource management on knowledge sharing and innovation in Spain: the mediating role of affective commitment, *The International Journal of Human Resource Management*, Volume 22, Issue 7, 2011, Pages 1441–1463.
- [7] Choi, S., Learning Orientation and Market Orientation as Catalysts for Innovation in Nonprofit Organizations. *Nonprofit and Voluntary Sector Quarterly*, Volume 43, 2014, Pages 393–413.
- [8] Covin, J. G., Green, K. M., & Slevin, D. P., Strategic Process Effects on the Entrepreneurial Orientation–Sales Growth Rate Relationship, *Entrepreneurship Theory and Practice*, Volume 30, Issue 1, 2006, Pages 57–81.
- [9] Cronbach, L. J., Coefficient Alpha and the Internal Structure of Tests. *Psychometrika*, Volume 16, Issue 3, 1951, Pages 297–334.
- [10] Dadfar, H., Dahlgaard, J. J., Brege, S., & Alamirhoor, A., Linkage between organisational innovation capability, product platform development and performance, *Total Quality Management & Business Excellence*, Volume 24, Issue 7/8, 2013, Pages 819–834.
- [11] Davenport, T. H., & Prusak, L., Working knowledge: how organizations manage what they know [Book Review]. Harvard Business School Press. 1998. Harvard Business School Press.
- [12] De Noronha Vaz, M. T., Cesário, M., & Fernandes, S., Interaction between innovation in small firms and their environments: An exploratory study, *European Planning Studies*, Volume 14, Issue 1, 2006, Pages 95–117.
- [13] Dethier, J.-J., & Effenberger, A., Agriculture and development: A brief review of the literature. *Economic Systems*, Volume 36, Issue 2, 2012, Pages 175–205.
- [14] Fang, S.-R., Chang, E., Ou, C.-C., & Chou, Internal market orientation, market capabilities and learning orientation, *European Journal of Marketing*, Volume 48, Issue 1, 2014, Pages 170–192.
- [15] Gao, Y., Li, Y., Cheng, M., & Feng, G., How does market learning affects radical innovation? The moderation roles of horizontal ties and vertical ties, *Journal of Business & Industrial Marketing*, Volume 32, Issue 1,

2017, Pages 57-74.

- [16] Gautam, M., Singh, S., Singh Arya, K., Tiwari, A., & Fartyal, G., An Impact of Learning, Entrepreneurial and Market Orientation on Innovation Competencies. *International Journal of Management*, Volume 7, Issue 1, 2016, Pages 69–78.
- [17] Han, X., Hansen, E., Panwar, R., Hamner, R., & Orozco, N., Connecting market orientation, learning orientation and corporate social responsibility implementation: is innovativeness a mediator? *Scandinavian Journal of Forest Research*, Volume 28, Issue 8, 2013, Pages 784–796.
- [18] Huber, G. P., Organizational Learning: The Contributing Processes and the Literatures, *Organization Science*, Volume 2, Issue 1, 1991, Pages 88–115.
- [19] Hult, G. T. M., Ketchen, D. J., & Slater, S. F., Market orientation and performance: An integration of disparate approaches, *Strategic Management Journal*, Volume 26, Issue 12, 2005, Pages 1173–1181.
- [20] Hurley, R. F., & Hult, G. T. M., Innovation, Market Orientation, and Organizational Learning: An Integration and Empirical Examination, *Journal of Marketing*, Volume 62, Issue 3, 1998, Pages 42–54.
- [21] Jayawardhana, K., & Weerawardena, J., Conceptualizing the Role of Market Learning In Social Innovation-Based Competitive Strategy, *In 11th International Conference on Business Management*, 2014, Pages 188–201.
- [22] Jeng, D. J.-F., & Pak, A., The variable effects of dynamic capability by firm size: the interaction of innovation and marketing capabilities in competitive industries. *International Entrepreneurship and Management Journal*, Volume 12, Issue 1, 2016, Pages 115-130.
- [23] Jiménez-Jiménez, D., & Cegarra-Navarro, J. G., The performance effect of organizational learning and market orientation, *Industrial Marketing Management*, Volume 36, Issue 6, 2007, Pages 694–708.
- [24] Jiménez-Jiménez, D., & Sanz-Valle, R., Innovation, organizational learning, and performance. *Journal of Business Research*, Volume 64, Issue 4, 2011, Pages 408–417.
- [25] Jiménez-Jimenez, D., Valle, R. S., & Hernandez-Espallardo, M., Fostering innovation: The role of market orientation and organizational learning, *European Journal of Innovation Management*, Volume 11, Issue 3, 2008, Pages 389–412.
- [26] Kim, N., & Atuahene-Gima, K., Using exploratory and exploitative market learning for new product development, *Journal of Product Innovation Management*, Volume 27, 2010, Pages 519–536.
- [27] Kohli, A., & Jaworski, B., Market orientation: the construct, research propositions, and managerial implications, *The Journal of Marketing*, Volume 54, Issue 2, 1990, Pages 1–18
- [28] Kraus, S., Rigtering, J. P. C., Hughes, M., & Hosman, V., Entrepreneurial orientation and the business performance of SMEs: A quantitative study from the Netherlands, *Review of Managerial Science*, Volume 6, Issue 2, 2012, Pages 161–182.
- [29] Laukkanen, T., Nagy, G., Hirvonen, S., Reijonen, H., & Pasanen, M., The effect of strategic orientations on business performance in SMEs: A multigroup analysis comparing Hungary and Finland, *International Marketing Review*, Volume 30, Issue 6, 2013, Pages 510–535
- [30] Lee, S. M., & Lim, S., Entrepreneurial orientation and the performance of service business, *Service Business*, Volume 3, Issue 1, 2009, Pages 1–13.
- [31] Liao, S., Fei, W.-C., & Chen, C.-C., Knowledge sharing, absorptive capacity, and innovation capability: an empirical study of Taiwan's knowledge-intensive industries, *Journal of Information Science*, Volume 33, Issue 3, 2007, Pages 340–359.
- [32] Micheels, E. T., & Gow, H. R., The Moderating Effects of Trust and Commitment on Market Orientation, Value Discipline Clarity, and Firm Performance, *Agribusiness*, Volume 27, Issue 3, 2011, Pages 360–378.
- [33] Mirzaei, O., Micheels, E. T., & Boecker, A., Product and marketing innovation in farm-based businesses: The role of entrepreneurial orientation and market orientation, *International Food and Agribusiness Management Review*, Volume 19, Issue 2, 2016, Pages 99–130.
- [34] Mok, H. F., Williamson, V. G., Grove, J. R., Burry, K., Barker, S. F., & Hamilton, A. J., Strawberry fields forever? Urban agriculture in developed countries: A review, *Agronomy for Sustainable Development*, 34(1), 2014, Pages 21–43.
- [35] Morgan, R. E., & Turnell, C. R., Market based Organizational Learning and Market Performance Gains, *British Journal of Management*, Volume 14, Issue 3, 2003, Pages

- 255–274.
- [36] Narver, J. C., & Slater, S., The effect of Market Orientation on Business Profitability, *Journal of Marketing*, Volume 54, Issue 4, 1990, Pages 20–35.
- [37] Nunnally, J. C., *Psychometric Theory*, 1978, New York: McGraw-Hill.
- [38] O’Cass, A., & Sok, P., The role of intellectual resources, product innovation capability, reputational resources and marketing capability combinations in firm growth, *International Small Business Journal*, Volume 32, Issue 8, 2014, Pages 996–1018.
- [39] Ozkaya, H. E., Droge, C., Hult, G. T. M., & Calan-, R., Market orientation, knowledge competence, and innovation, *International Journal of Research in Marketing*, Volume 32, Issue 3, 2015, Pages 309-318.
- [40] Popadiuk, S., & Choo, C. W., Innovation and knowledge creation: How are these concepts related? *International Journal of Information Management*, Volume 26, 2006, Pages 302-312.
- [41] Rosairo, H., & Potts, D., A study on entrepreneurial attitudes of upcountry vegetable farmers in Sri Lanka, *Journal of Agribusiness in Developing and Emerging Economies*, Volume 6, Issue 1, 2016, Pages 39-58.
- [42] Saunila, M., Performance measurement approach for innovation capability in SMEs, *International Journal of Productivity and Performance Management*, Volume 65, Issue 2, 2016, Pages 162–176.
- [43] Sinkula, J. M., Baker, W. E., & Noordewier, T., A Framework for Market-Based Organizational Learning: Linking Values, Knowledge, and Behavior, *Journal of the Academy of Marketing Science*, Volume 25, Issue 4, 1997, Pages 305–318.
- [44] Slater, S. F., & Narver, J. C., Market Orientation and the Learning Organization, *Journal of Marketing*, Volume 59, Issue 3, 1995, Pages 63–74.
- [45] Spillan, J. E., Kara, A., King, D. O., & McGinnis, M. a., Market Orientation and Firm Performance: An Empirical Analysis of Ghanaian Microenterprises. *Journal of Global Marketing*, Volume 26, Issue 5, 2013, Pages 258–272.
- [46] Terziiovsk, M., Innovation Practice And Its Performance Implications In Small And Medium Enterprises (SMEs) In The Manufacturing Sector: A Resource-Based View, *Strategic Management Journal*, Volume 31, 2010, Pages 892–902.
- [47] Watanabe, C., Lei, S., & Ouchi, N., Fusing indigenous technology development and market learning for greater functionality development—An empirical analysis of the growth trajectory of Canon printers, *Technovation*, Volume 29, Issue 4, 2009, Pages 265–283.
- [48] Weerawardena, J., Exploring the role of market learning capability in competitive strategy. *European Journal of Marketing*, Volume 37, Issue 3/4, 2003, Pages 407–429.
- [49] Weerawardena, J., Mort, G. S., Liesch, P. W., & Knight, G., Conceptualizing accelerated internationalization in the born global firm: A dynamic capabilities perspective, *Journal of World Business*, Volume 42, Issue 3, 2007, Pages 294–306.
- [50] Wiklund, J., & Shepherd, D., Entrepreneurial orientation and small business performance: A configurational approach, *Journal of Business Venturing*, Volume 20, Issue 1, 2005, Pages 71–91.
- [51] Yannopoulos, P., Auh, S., & Menguc, B., Achieving fit between learning and market orientation: Implications for new product performance, *Journal of Product Innovation Management*, Volume 29, Issue 4, 2012, Pages 531–545.
- [52] Zehir, C., Köle, M., & Yıldız, H., The Mediating Role of Innovation Capability on Market Orientation and Export Performance: An Implementation on SMEs in Turkey. *Procedia - Social and Behavioral Sciences*, Volume 207, 2015, Pages 700–708.
- [53] Zhang, J., & Duan, Y., The impact of different types of market orientation on product innovation performance, *Management Decision*, Volume 48, Issue 6, 2010, Pages 849–867.
- [54] Zhou, K. Z., Yim, C. K., & Tse, D. K., The Effects of Strategic Orientations on Technology- and Market-Based Breakthrough Innovations, *Journal of Marketing*, Volume 69, Issue 2, 2005, Pages 42–60.