MARKET ORIENTATION AND LEAN INNOVATION: INVESTIGATING THE LINKAGES TO NEW PRODUCT PERFORMANCE

Rawan Odeh Khalaf Alshawabkeh, Al-Ahliyya Amman University

ABSTRACT

The aim of this study is to investigate the effect of market orientation on new product performance through lean innovation. Data were collected throughout three weeks using an electronic questionnaire administered to a random sample of managers of industrial companies. The valid number of the questionnaires used in data analysis comprises 219 responses. The results found that market orientation had a significant effect on new product performance in the presence of lean innovation as a mediating variable. Examining the effects of the three dimensions of market orientation, i.e., customer orientation, competitor orientation, and interfunctional coordination, on lean innovation reveals that the first two dimensions showed significant effects on lean innovation while the third one did not. Therefore, managers are required to consider lean innovation in order to boost the role of market orientation in enhancing new product performance. The theoretical contribution of the study, practical implications, limitations and future research directions are also reported.

Keywords: Market Orientation, Lean Innovation, New Product Performance

INTRODUCTION

Numerous factors call organizations to implement marketing concept in an effective manner. Such factors include, but not limited to, meeting customer changing demands, intensive competition, and shorten product life cycle (Zehir, Köle & Yildiz, 2015) as well as achieving sustainability (Orji & Liu, 2020). Many new products fail in the market due to inability to meet customer needs (Khin, Ahmad & Ramayah, 2012). Thus, it became important for organizations to develop mechanisms to generate market information about the key players, analyze it, and respond accordingly (Alshahry & Wang, 2015). Therefore, organizations have to mark out strategies in order to attract customer. One of such strategies is market orientation (Abidemi, Halim & Alshuabi, 2017).

On the other hand, due to increasing uncertainty, complexity, turbulence in the environment, being a leader for change, organizations are required to have an innovation strategy (Tutar, Nart & Bingöl, 2015). This also requires moving from traditional patterns of innovation to more modern and effective patterns of innovation, which indicates special requirements for the implementation of lean thinking in innovation processes (Nicoletti, 2015. There is a growing need for lean approach to transforming an organization into an innovative culture with supporting processes and infrastructure to meet current business challenges (Fredrick, Lam & Martin, 2014). Lean innovation assists organizations to bring their new products to the market quickly (Ozkeser, 2018). Market oriented firms are becoming more innovative in their pursuit of delivering superior value to customers (Gupta & Sehgal, 2015). New product success and innovation have assumed increasing importance in strategies even for firms in emerging economies (Legat, Frankwick & Sulo, 2015). New product performance affects firm performance in a wide spectrum from sales, market share and profitability to productivity and efficiency (Tajudin, Musa & Musa, 2012).

Previous studies are concerned with testing the relationships between market orientation and organizational performance, market orientation and innovation, or innovation and new

Citation Information: Alshawabkeh, R.O.K. (2021). Market orientation and lean innovation: Investigating the linkages to new product performance. *Journal of Management Information and Decision Sciences, 24*(S6), 1-14.

product performance, however, to the authors' best knowledge no studies were found on the effect of market orientation on new product performance through lean innovation. Therefore, the aim of this study is to fill a research gap through examining the mediating role of lean innovation in the effect of market orientation on new product performance. This study is structured as follows. The next section represents a literature review on research variables. Section 3 shows the development of the research hypotheses. Section 4 covers research methodology followed by a section dedicated to research results and discussion. Section 6 highlights the conclusion and implications and finally section 7, which shows research limitations and future research direction.

LITERATURE REVIEW

Market Orientation

Searching the literature to recognize the conceptions of market orientation revealed that such a concept have been defined since the 1990s in terms of two approaches; Kohli and Jaworski's approach, i.e., market intelligence approach (Kohli & Jaworski, 1990), and Narver and Slater's approach, i.e., the behavioral approach (Narver & Slater, 1990). Both approaches were announced in the Journal of Marketing in April and October 1990, respectively. The market intelligence approach (Kohli & Jaworski, 1990) conceptualized market orientation as a construct consists of three dimensions, which are intelligence generation, intelligence dissemination, and responsiveness (Tajeddini & Ratten, 2020) while the behavioral approach (Narver & Slater, 1990) operationalized market orientation as a construct encompasses three behavioral elements, which are customer orientation, competitor orientation, and interfunctional coordination.

In fact, these two approaches of market orientation are consistent (Narver & Slater, 1990; Zehir et al., 2015). Kohli and Jaworski (Kohli & Jaworski, 1990) defined market orientation as organizationwide actions related to generating information on customer current and future needs and preferences as well as factors affecting these needs and preferences, disseminating customer data among all departments in the organization to produce shared origin for responsive actions carried out to apply the findings of information generation and dissemination. Narver and Slater (Narver & Slater, 1990) defined market orientation as activities related to disseminating the information collected about the buyers and competitors throughout the organization to produce coordinated customer value.

Hence, the current study follows Narver and Slater's perspective in which market orientation incorporates customer orientation, competitor orientation, and interfunctional coordination. Customer orientation advocates a proactive and continuous disposition toward meeting customers' requirements (Han, Kim & Srivastava, 1998) by gathering information about the needs of the current and potential customers and using it for creating a superior customer value with disseminating such knowledge throughout the organization (Narver, Slater & Tietje, 1998). On the other hand, competitor orientation refers to organization's ability to understand the capabilities and strategies of the current and potential competitors and the use of such knowledge to respond to competitors' actions and create a superior customer value. Finally, interfunctional coordination consists of organizational coordinated efforts made to utilize information about customers and competitors by all departments to serve customers (Narver & Slater, 1990; Narver, Slater & Tietje, 1998).

Lean Innovation

Innovation has been conceptualized in a different ways (Jimenéz-Jimenéz et al., 2014). It has been describes as a process of converting knowledge into value to a company by implementing new or improved products, services, processes and systems (Ferraresi et al., 2012). Similarly, innovation has been termed as implementation of new ideas to create a generic

Citation Information: Alshawabkeh, R.O.K. (2021). Market orientation and lean innovation: Investigating the linkages to new product performance. *Journal of Management Information and Decision Sciences, 24*(S6), 1-14.

value for the organization (Kalkan, Bozkurt and Arman, 2014). In order to translate innovation theory into practice while concurrently keep eyes on resource optimization and waste elimination, Schuh, Lenders and Hieber (2008) introduced an approach called lean innovation. The authors identified ten main principles of such an approach that should be carried out in R&D. These principles are embedded into three specific steps named structure early, synchronize easily, and adapt securely.

The first step, i.e., structure early, is took place by setting and motivating the innovation team, building the hierarchy of value and prioritizing its requirements in the system, as well as composing the product by defining its architecture. The second step, i.e., synchronize easily, includes identifying the most effective and efficient ways of innovation through the application of the value stream mapping and capacity planning. The third step, i.e., adapt securely, sets the process of continuous innovation of product design and making sustainable adjustments to satisfy the values and changing customers' requirements (Schuh, Lenders and Hieber, 2008).

Lean thinking aims to eliminate all activities that add no value and line up all value adding activities to both internal and external customers (Hoppmann et al., 2011). Lean innovation must adopt a 7Ds process, which consists of define, discover, design, develop, digitize, deploy, and diffusion (Nicoletti, 2015). However, lean innovation represents a distinct capability that enables organizations to manage its limited resources through resource reallocation (Bicen and Johnson, 2015). The authors added that resources alone are no sufficient to create the desired value for the organization; organizations are required to integrate certain resources and capabilities with market orientation to allow outcomes that are more efficient in the achievement of competitive priorities. The current study adopts Bicen and Johnson's definition (Bicen and Johnson, 2015) by describing lean innovation as a distinct capability used for the benefit of the organization in the optimal utilization of its limited resources during the process of innovation.

New Product Performance

New product performance can be defined as the success of products or services in delivering and fulfilling customer's requirements (Adis & Jublee, 2010). As indicated by Meyer and Utterback (1992), new product performance is the outcome of new products in the market that depends on the design, specifications, and translating the customer's needs into product specifications (Fong, Lo & Ramayah, 2014). In previous studies, scholars have different views of the measures of new product performance. Langerak, Hultink and Robben (2004) pointed out that new product performance could be in the form of second-order scale consisting of five subscales reflecting the dimensions of market level, financial, customer acceptance, product level, and timing measures of new product. Such measured were adopted for the purpose of the current study. Tajudin, Musa and Musa (2012) argued that there are four subscales to measure new product performance: financial, technical, customer related, and global presence. Fok-yew (2014) assessed new product development performance by market performance, creativity performance, time performance, and cost performance. Akman and Okudan (2009) defined five measures of new product performance, which are cost, delivery, flexibility, innovation, and quality. Storey and Easingwood (1999) identified three dimension of new product performance: sales performance, enhance opportunities, and profitability. Table 1 shows examples of the measures of new product performance.

Table 1
MEASURES OF NEW PRODUCT PERFORMANCE

Source	Measures
Adis and Jublee (2010); Langerak, Hultink and Robben (2004)	• Market level measures • Financial measure • Customer acceptance measures • Product-level measures

Citation Information: Alshawabkeh, R.O.K. (2021). Market orientation and lean innovation: Investigating the linkages to new product performance. *Journal of Management Information and Decision Sciences, 24*(S6), 1-14.

	• Timing measures
Tajuddin et al. (2012)	• Financial • Technical • Customer related • Global presence
Zarezadeh et al. (2014)	• Customers' satisfaction • Sales of other products • Met objectives
Molina-Castillo, Munera-Alemán & Calantone (2011)	• Short-term new product performance: – Time to market – Sales take-off • Long term new product performance: – Market share – Customer acceptance – Customer loyalty – ROI
Fork-Yew (2014)	• Market performance • Creativity performance • Time performance • Cost performance
Storey and Easingwood (1999)	• Sales performance • Enhance opportunities • profitability
Joshi and Sharma (2004) (Compared to competitors)	• Profitability • Market share • Growth rate

Hypothesis Development

The Relationship between Market Orientation and Lean Innovation

Under high market turbulence, managers may leverage their market orientation (customer and competitor orientations, as well as the interfunctional coordination), in order to support the development of new processes, products, or idea in the organization, and devising innovative solutions to business problems (Hult, Hurley & Knight, 2004). Market orientation induces innovation through assisting the organization to recognize new customer needs and new business processes (Altuntaş, Semerciöz & Eregez, 2013). A number of previous studies have confirmed the relationship between the marketing orientation, innovation, and organizational performance (e.g. Grinstein, 2008; Dev, Agarwal & Erramilli, 2008; Osman et al., 2015; Gupta & Sehgal, 2015). Gatignon and Xuereb (1997) claimed that firms wishing to develop an innovation superior must have a strong market orientation, which would be useful because it enables firms to develop innovations with lower costs. In addition, scholars reported significant effects of market orientation on innovation. Hortinha, Lages and Lages (2011) found that customer orientation is more important than other component of market orientation in developing pure exploitative innovations. Al-Dmour and Ahmad Amin (2012) revealed that there is a statistically significant effect of market orientation on service innovation. The results of Gupta and Sehgal (2015) revealed that only customer orientation exerts a strong and positive influence on incremental and radical innovation.

Furthermore, a number of studies showed that market orientation have direct significant effects on innovation (e.g. Pardi et al., 2014; Ramirez, Guzman & Serna, 2014; Alshahry & Wang, 2015; Tutar, Nart & Bingöl, 2015; Zainul, Astute, Arifin & Utami, 2016). On the other hand, a study by Hult, Hurley & Knight (2004) found that market orientation has a significant and positive effect on innovativeness. Measuring market orientation as a construct consists of customer orientation, competitor orientation, and interfunctional coordination, Han, Kim & Srivastava (1998) found positive relationships between customer orientation and organizational

Citation Information: Alshawabkeh, R.O.K. (2021). Market orientation and lean innovation: Investigating the linkages to new product performance. *Journal of Management Information and Decision Sciences, 24*(S6), 1-14.

innovativeness, while there were positive significant relationship between competitor orientation and innovativeness in administrative areas but not in technical areas. Their results rejected the hypothesis that interfunctional coordination is positively related to innovativeness. Altuntaş, Semerciöz & Eregez (2013) indicated that market orientation generates various direct and indirect benefits involving innovativeness, product quality and ultimately firm performance

Despite these studies, research on the relationship between market orientation and lean innovation is still limited. Nicoletti (2015) mentioned that lean innovation is based on taking a deep look at the value system practices, which focus on market orientation of products and services, while products and services heavily rely on the supply chain process to contribute to the value system. Schuh, Lenders and Hieber (2008) argued that lean innovation has to secure a continuous adaptation to changing market and customer requirements. Subsequently, the result is a constantly "fresh" product from the market perspective. This is an indication of the importance of market orientation in promoting lean innovation. Thus, it is hypothesized that:

H1: Market orientation is positively related to lean innovation.
$H1_a$: Customer orientation has a positive relationship with lean innovation.
$H1_b$: Competitor orientation has a positive relationship with lean innovation.
$H1_c$: Interfunctional coordination has a positive relationship with lean innovation.

The Relationship between Lean Innovation and New Product Performance

Previous studies have examined the influence of innovation on new product development and performance. Chao, Feng and Li (2014) argued that product innovation has a direct impact on new product performance. From the same perspective, Gupta and Sehgal (2015) believed that creating and delivering superior customer value requires creative ideas and continuous innovation for long-term customer retention and sustenance in the marketplace. Legat, Frankwick and Sulo (2015) added that the innovative organization is one that aims to enhance production or delivery capabilities through improvements and facilitating the production of new products. Studies by authors such as Tajudin, Musa and Musa (2012) found a significant direct impact of innovativeness on new product performance.

According to the relationship between lean innovation and new product performance, Guimarães, Romero and Medeiros (2014) pointed out that steps of lean innovation must be made continuously in order to obtain increased perfection in the new product development process. Lean innovation approach can be applied to large or small companies; whether it have R&D or not. With the use of the lean innovation approach during some stages, it is possible to achieve results in time and cost reduction in new product development. Broichhausen (2013) claimed that the ideal product development department of market leader, who is consequently following the lean innovation philosophy, is characterized by a strong focus on creation of customer value in combination with a high level of creativity. This combination leads to product development projects are clearly prioritized and related unambiguously to the planned products; waste is eliminated as far as possible and development goals achieved, as well as the products are clearly structured. Thus, lean innovation may be considered as one of the main driver of new product performance. Based on the above, the study hypothesized:

H2: Lean innovation is positively related to new product performance.

The Relationship between Market Orientation and New Product Performance

Previous researches showed that market oriented organizations have capability of achieving new product success (Abidemi, Halim & Alshuabi, 2017). Studies (e.g., Gatignon & Xuereb, 1997; Chien, 2010; Adis & Jublee, 2010) supported the positive impact of market orientation on new product success and performance and firms with strong market orientation may successfully develop new products. In addition, Khin, Ahmad & Ramayah (2012)

Citation Information: Alshawabkeh, R.O.K. (2021). Market orientation and lean innovation: Investigating the linkages to new product performance. *Journal of Management Information and Decision Sciences, 24*(S6), 1-14.

emphasized the importance of customer orientation in several aspects, including new product development. Grinstein (2008) argued that the cumulative evidence suggests that information sharing and communication across functional units especially in the context of market information positively affect new product development and performance. Therefore, developing new products and processes to meet the emerging needs of the market is the means by which a market orientated firm implements the marketing concept (Legat, Frankwick and Sulo, 2015). In line with most scholars in relevant previous studies, the study hypothesizes that:

H3: Market orientation is positively related to new product performance.

Lean Innovation as a Mediator

There still an ongoing debate about the source of new product idea. Some scholars advocate the importance of staying closer to the customer and competitor at the market and learn directly from the external environment. The project performance concerns with the overall organization's effort invested to innovate faster, cheaper & high quality (Beyene, Shi & Wu, 2016). Innovation has become over the last decades an essential factor for survival of the organizations. With the clear objective of increasing competitiveness, thereby making the mission to innovate becomes the responsibility of all employees in all areas. Accelerated competition has pushed companies to use innovation management tools in research and new product development (Guimarães, Romero and Medeiros, 2014). It is generally accepted that market oriented behavior facilitates organizational innovation, which in turn has a positive effect on business performance (Maçães, Farhangmehr & Pinho, 2007). Zehir, Köle and Yildiz (2015) found that innovation capability has a partial mediating effect on market orientation dimensions and export performance. Further, Gupta and Sehgal (2015) revealed that service innovation performs a mediating role in the relationship between market orientation and organization performance. A study of Legat, Frankwick and Sulo (2015) also revealed that market orientation positively affects innovation, which in turn positively affects performance. In addition, Langerak, Hultink and Robben (2004) emphasized that the market orientation cannot be directly related to the new product performance. Therefore, lean innovation can be considered more efficient and effective than the traditional view of innovation capability in mediating that relationship. Thus, it is hypothesized that:

H4: Lean innovation mediates the effect of market orientation on new product performance.

METHODOLOGY

Research Theoretical Model

Figure 1 shows the theoretical model of the study. It portrays four potential effects between market orientation and lean innovation (H1), lean innovation, new product performance (H2), market orientation, new product performance (H3), market orientation, and new product performance through lean innovation (H4).

Citation Information: Alshawabkeh, R.O.K. (2021). Market orientation and lean innovation: Investigating the linkages to new product performance. *Journal of Management Information and Decision Sciences, 24*(S6), 1-14.

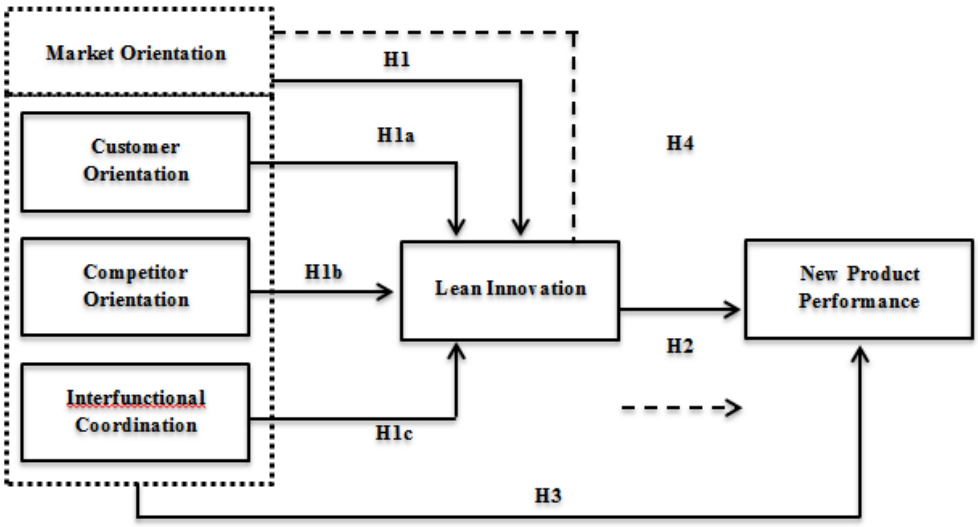

FIGURE1
RESEARCH THEORETICAL MODEL

Moreover, Figure 1 shows three proposed sub-hypotheses related to the effects of market orientation dimensions; customer orientation (H1a), competitor orientation (H1b), and interfunctional coordination (H1c) and new product performance. H1, H2, and H3 were suggested to explore the effects of market orientation on both lean innovation and new product performance as well as the mediating role of lean innovation in this regard as suggested in H4. H1a, H1b, and H1c were presumed to determine the extent to which these three independents are positively related to lean innovation.

Research Population, Sample, and Data Collection

The population of the study consists of all managers of different managerial levels in industrial companies. A sample consisted of 250 managers were randomly drawn. Data were collected using an electronic questionnaire sent to sample members and 219 questionnaires were returned complete. Out of the respondents, there were 72% (n=158) with a bachelor's degree while 28% (n=61) hold a master's degree. Moreover, about 60% (n=131) of the respondents had more than 15 years work experience. In fact, no managers were found with work experience less than 5 years.

Research Instrument

Market orientation as a construct of customer orientation, competitor orientation, and interfunctional coordination was measured using a nine items of the modified Narver and Slater's (1990) scale of market orientation based on the final measurement model introduced by Ward, Girardi and Lewandowska (2006: 170). Four items adopted from Dey et al. (2019) were used to measure lean innovation. Four items based on previous studies were used to assess new product performance (Zarezadeh et al., 2014; Molina-Castillo, Munera-Alemán & Calantone, 2011; Joshi and Sharma, 2004). In terms of the common method bias, three remedies was used before data collection following Jakobsen and Jensen (2015) and Podsakoff, MacKenzie, and Podsakoff (2012). First, the initial questionnaire was revised for language clarity. Second, data on the dependent variable was collected in the first week; data on the mediating variable was gathered in the second week, while data on the dependent variable was collected in the third week. Third, the cover letter of the questionnaire asked respondents to provide their current status rather than past status.

Citation Information: Alshawabkeh, R.O.K. (2021). Market orientation and lean innovation: Investigating the linkages to new product performance. *Journal of Management Information and Decision Sciences, 24*(S6), 1-14.

Validity and Reliability

Using IBM SPSS V25, exploratory factor analysis was conducted on all questionnaire items in order to identify the number of the components extracted with eigenvalues greater than 1 (Sun & Das, 2021), determine the cumulative percentage of the total variance extracted and explore the factor loadings of the items (Schreiber, 2021). Items factorability was checked based on KMO-Bartlett's test. KMO refers to Kaiser-Meyer-Olkin Measure of Sampling Adequacy. The value of KMO should be greater than 0.60 and the Chi-Square value of the Bartlett's test should be significant (Chaudhary & Chanda, 2015). Validity was tested based on the results of EFA, i.e., standardized factor loadings and average variance extracted (AVE), while reliability was checked using Cronbach's alpha coefficient (α) and composite reliability (CR). The results in Table 1 confirm that all factor loadings and AVE values were greater than 0.50, which assured scale validity (Shook et al., 2004). Furthermore, all CR values were higher than 0.70 (Asad, Chethiyar & Ali, 2020) alpha coefficients were higher than 0.70, which emphasizes a reliable scale (Rivaz, Tavakolinia & Momennasab, 2021).

Table 2
RESULTS OF SCALE VALIDITY AND RELIABILITY

Variables		Items	FL	AVE	CR	α
Market orientation	Customer orientation	MO1	0.742	0.59	0.85	0.98
		MO2	0.781			
		MO3	0.769			
		MO4	0.789			
	Competitor orientation	MO5	0.877	0.73	0.88	0.91
		MO6	0.729			
		MO7	0.778			
	Interfunctional coordination	MO8	0.951	0.91	0.95	0.96
		MO9	0.953			
Lean innovation		LI1	0.773	0.72	0.91	0.93
		LI2	0.847			
		LI3	0.885			
		LI4	0.873			
New product performance		NPP1	0.834	0.66	0.88	0.91
		NPP2	0.844			
		NPP3	0.869			
		NPP4	0.684			

RESULTS AND DISCUSSION

Hypotheses Testing

Research hypotheses were tested using two models. First, a model used to test the effect of market orientation as a whole construct on lean innovation as suggested in H1, the effect of lean innovation on new product performance as proposed in H2, and the effect of market orientation on new product performance as assumed in H3. As well, the mediating role in the effect of market orientation on new product performance as in H4. Second, a model linked three sub-dimensions of market orientation (customer orientation, competitor orientation, interfunctional coordination) to new product performance as suggested in H1a, H2b, and H3c.

Table 2 shows the results of hypotheses testing. The results accepted the hypotheses that market orientation is positively related to lean innovation ($\beta=0.73$, $P<0.05$), new product performance ($\beta=0.56$, $P<0.05$), and lean innovation is positively linked to new product performance ($\beta=0.25$, $P<0.05$). That is, H1, H2, and H3 were supported. For the mediating role of lean innovation, the results showed a significant indirect effect of market orientation on new product performance through lean innovation ($\beta=0.19$, $P<0.05$), which means that H4 was also supported. These results are shown in Figure 1.

Citation Information: Alshawabkeh, R.O.K. (2021). Market orientation and lean innovation: Investigating the linkages to new product performance. *Journal of Management Information and Decision Sciences, 24*(S6), 1-14.

On the other hand, the results in Table 2 indicate that two dimensions of market orientation are positively associated to lean innovation, which are customer orientation (β=0.62, P<0.05) and competitor orientation (β=0.34, P<0.05), while there was no significant effect of interfunctional coordination on lean innovation (β=0.12, P>0.05). In other words, H1a and H1b were supported and H1c was rejected. These results are shown in Figure 2.

Table 2
RESULTS OF HYPOTHESIS TESTING

Hypothesis	Variables and paths			Direct effects			Indirect effects			Results
				β	P		β	P		
H1	MO	→	LI	0.73	0.000		-	-		Supported
H1a	CSO	→	LI	0.62	0.000		-	-		Supported
H1b	CPO	→	LI	0.34	0.010		-	-		Supported
H1c	INF	→	LI	0.12	0.51		-	-		Not supported
H2	LI	→	NPP	0.25	0.007		-	-		Supported
H3	MO	→	NPP	0.57	0.001		-	-		Supported
H4	MO	→	NPP	0.56	0.000		0.19	0.007		Supported

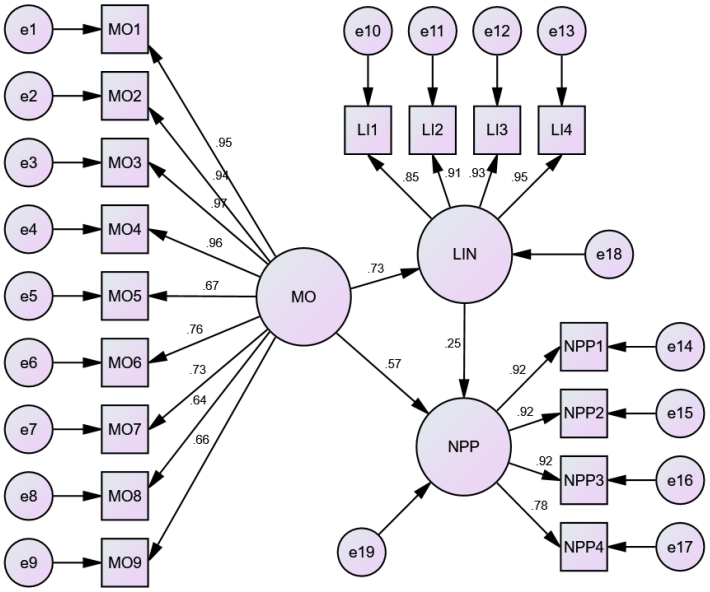

FIGURE 2
THE FIRST STRUCTURAL MODEL

The first structural model as portrayed in Figure 2 shows hypotheses testing for the effect of market orientation as a whole construct on both lean innovation and new product performance, while the second structural model illustrates hypotheses testing for the effects of customer orientation, competitor orientation, and interfunctional coordination on lean innovation.

Citation Information: Alshawabkeh, R.O.K. (2021). Market orientation and lean innovation: Investigating the linkages to new product performance. *Journal of Management Information and Decision Sciences, 24*(S6), 1-14.

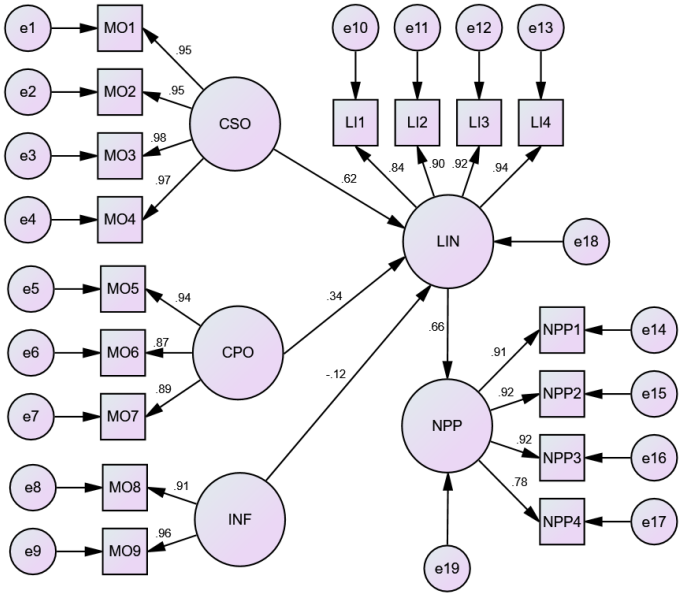

FIGURE 3
THE SECOND STRUCTURAL MODEL

Discussion

The current results are in line with several previous studies, which found a positive link between market orientation and innovation (Riswanto et al., 2020; Altuntaş, Semercioöz & Eregez, 2013; Grinstein, 2008; Dev, Agarwal & Erramilli, 2008; Osman et al., 2015; Gupta & Sehgal, 2015; Al-Dmour and Ahmad Amin, 2012; Wójcik-Karpacz, Karpacz & Rudawska, 2021; Hult, Hurley & Knight, 2004; Christa et al., 2020). Similarly, previous studies underlined a significant effect of innovation on new product performance (Chao, Feng and Li, 2014; Tajudin, Musa and Musa, 2012; Broichhausen, 2013). According to Yu, et al. (2020), the integration between lean practices and innovativeness increases the operational excellence of the organization. In terms of the effect of market orientation on new product performance, it can be stated that the currents results are echoed in numerous prior works (e.g., Gatignon & Xuereb, 1997; Chien, 2010; Adis & Jublee, 2010; Khin, Ahmad & Ramayah (2012; Legat, Frankwick and Sulo, 2015). To the author's best knowledge, no studies were found on the mediating role of lean innovation in the effect of market orientation on new product performance. However, scholars asserted that innovation has a significant effect on organizational performance in general (Maçães, Farhangmehr & Pinho, 2007). Zehir, Köle and Yildiz (2015) found that market orientation engenders performance through innovation capability, while Gupta and Sehgal (2015) showed that market orientation has a significant influence on organizational performance through service innovation.

CONCLUSION AND IMPLICATION

Theoretical Contribution

The contribution of the current study to the body of knowledge lies in two main insights. First, the study adds new empirical findings on the mediating role of lean innovation in the effect between market orientation and new product performance. It is already acknowledged that market orientation exerts positive effects on both innovation process and organizational performance. However, little is known about the effect of market orientation on a specific kind of performance, i.e., new product performance, as well as the mediating role of lean innovation between market orientation and new product performance. For organizations to improve the performance of the new product, both orientation and capability are required. In line with the

Citation Information: Alshawabkeh, R.O.K. (2021). Market orientation and lean innovation: Investigating the linkages to new product performance. *Journal of Management Information and Decision Sciences, 24*(S6), 1-14.

current statement, the present study indicates that both market orientation and lean innovation are essential to enhance new product performance.

Second, examining the effects of market orientation as a multidimensional construct reveals that only two dimensions have significant effects on new product performance, which are customer orientation and competitor orientation. That is not state that the third dimension, which is interfunctional coordination is not important. The idea behind market orientation is that organizations collect information about customers and competitors, disseminating such information among departments to produce practical solutions for customers' needs and preferences along with the capabilities of the competitors. Thus, it is noted that information is the cornerstone of the market orientation of companies. It is obvious to say that coordination between the various relevant departments in the organization is necessary to benefit from this information. Accordingly, interfunctional coordination is complementary to benefit from information, and it is implicit in the process of orientation towards customers and competitors.

In summary, the contribution of the current study is that lean innovation is very important to enhance the effect of market orientation on new product performance. Lean innovation plays a significant role in this regard as a process used to achieve resource optimization, waste elimination, and continuous adaptation to customers' changing demands. Moreover, the aim of market orientation is to produce new adaptive solutions for customers considering competitors. Achieving such an aim requires a total effort through information sharing.

Practical Implications

Based on the results and the theoretical contribution of the study, managers are required to apply the concept of market orientation as a whole construct with a balanced concentration on both customers and competitors. Gathering information about customers and competitors is not enough to achieve the aim of such a concept. Market orientation is a process of collecting and disseminating customer and competitor information within the organization to identify how to meet customer needs and preferences. To gain a successful market orientation and to ensure its effective role in boosting new product performance, lean innovation is essential to make sure that the organization is able to adapt to the changing demands in the market.

Limitations and Future Research Directions

Limitations of this study are three. First, it is limited to a sample of managers and employees of industrial companies; therefore, future studies are required to investigate the impact of market orientation on new product performance through lean innovation in other industries. Second, market orientation was measured using three dimensions, which are customer orientation, competitor orientation, and interfunctional coordination; the results found that interfunctional coordination had no significant effect on lean innovation or new product performance; hence, further studies are requested to examine its role using samples from industrial and other sectors. Third, the mediating effects of lean innovation between customer orientation and competitor orientation and new product performance was investigated in the current study. Henceforth, researchers are called to test such a mediation effect.

REFERENCES

Abidemi, B., Halim, F., & Alshuabi, A. (2017). Market orientation and organizational performance: a proposed model on the moderating effect of technological turbulence. *Asian Journal of Multidisciplinary Studies, 5*(6), 111-117.

Adis, A., & Jublee, E. (2010). Market orientation and new product performance: The mediating role of product advantage. *African Journal of Marketing Management, 2*(5), 91-100.

Citation Information: Alshawabkeh, R.O.K. (2021). Market orientation and lean innovation: Investigating the linkages to new product performance. *Journal of Management Information and Decision Sciences, 24*(S6), 1-14.

Akman, G., & Okudan, G. (2009). *Benchmarking product development performance of manufacturing companies using analytic network process: A field study*. Paper presented at proceedings of the ASME 2009 international design engineering technical conferences & computers and information in engineering conference, California, USA.

Al-Dmour, H., & Ahmad Amin, E. (2012). The effect of market orientation on service innovation: a study on the information and communication technology (Ict) sector in Jordan. *International Journal of Humanities and Social Science, 2*(19), 232-253.

Alshahry, S., & Wang, A. (2015). Market orientation and innovation: a review of literature. *International Journal of Innovation and Economic Development, 1*(1), 17-26.

Altuntaş, G., Semercioöz, F., & Ergez, H. (2013). Linking strategic and market orientations to organizational performance: the role of innovation in private healthcare organizations. *Procedia-Social and Behavioral Sciences, 99*, 413-419.

Asad, M., Chethiyar, S.D., & Ali, A. (2020). Total quality management, entrepreneurial orientation, and market orientation: Moderating effect of environment on performance of SMEs. Paradigms. *A Research Journal of Commerce, Economics, and Social Sciences, 14*(1), 102-108.

Beyene, K., Shi, C., & Wu, W. (2016). The impact of innovation strategy on organizational learning and innovation performance: do firm size and ownership type make a difference?. *South African Journal of Industrial Engineering, 27*(1), 125-136.

Bicen, P., & Johnson, W. (2015). Radical innovation with limited resources in high- turbulent markets: the role of lean innovation capability. *Creativity and Innovation Management. 24*(2), 278-299.

Broichhausen, K. (2013). Time is money! Multi project management and task oriented sequencing. *Complexity Management Journal, 1*, 13-17.

Cásia, A., & Zilber, S. (2016). Strategic orientation and innovative activities: an analysis using the PINTEC data from 1998 to 2011, *Gest. Prod. São Carlos, 23*(3), 447-458.

Chao, M., Feng, S., & Li, F. (2014). The journey from market orientation to new product performance in the host country: a knowledge and learning perspective. *Journal of Marketing Development and Competitiveness, 8*(1), 62-73.

Chaudhary, T., & Chanda, A. (2015). Evaluation and measurement of performance, practice and pressure of green supply chain in Indian manufacturing industries. *Uncertain Supply Chain Management, 3*(4), 363-374.

Chien, S. (2010). Market orientation and new product success: a mediator model based on intellectual capital. *Asia Pacific Management Review, 15*(3), 377-390.

Christa, U.R., Wardana, I., Dwiatmadja, C., & Kristinae, V. (2020). The Role of Value Innovation Capabilities in the Influence of Market Orientation and Social Capital to Improving the Performance of Central Kalimantan Bank in Indonesia. *Journal of Open Innovation: Technology, Market, and Complexity, 6*(4), 140.

Dev, C., Agarwal, S., & Erramilli, M. (2008). Market-driven hotel brands: linking market orientation, innovation, and performance. *Hospitality Review, 26*(1), 1-9.

Dey, P.K., Malesios, C., De, D., Chowdhury, S., & Abdelaziz, F.B. (2019). Could lean practices and process innovation enhance supply chain sustainability of small and medium-sized enterprises?. *Business Strategy and the Environment, 28*(4), 582-598.

Ferraresi, A., Quandt, C., Santos, S., and Frega, J. (2012). Knowledge management and strategic orientation: leveraging innovativeness and performance. *Journal of Knowledge Management, 16*(5), 688-701.

Fok-Yew, O. (2014). The determinants of new product performance in Malaysian industry. *Journal of ASEAN Studies, 2*(2), 49-61.

Fong, S., Lo, M., & Ramayah, T. (2014). New product development and performance in the banking industry. *Asia-Pacific Journal of Management Research and Innovation, 10*(4), 305-32.

Gatignon, H., & Xuereb, J. (1997). Strategic orientation of the firm and new product performance. *Journal of Marketing research, 34*(1), 77-90.

Grinstein, A. (2008). The effect of market orientation and its components on innovation consequences: a meta-analysis. *Journal of the Academy of Marketing Science, 36*, 166-173.

Guimarães, L., Romero, F., & Medeiros, H. (2014). *The application of the lean innovation aproach in the stage-gate model*. Second International Conference on Project Evaluation, ICOPEV 2014, Guimarães, Portugal, 109-113.

Guimarãs, L., Romero, F., & Medeiros, H. (2014). *The application of the lean innovation approach in the stage-gate model*. Paper presented at second international conference on project evaluation ICOPEV.

Gupta, G., & Sehgal, S. (2015). Market orientation and service innovation: examining the linkages to organization performance. *IMJ, 7*(2), 22-35.

Han, J., Kim, N., & Srivastava, R. (1998). Market orientation and organizational performance: is innovation a missing link? *Journal of Marketing, 62*(4), 30-45.

Hooley, G., Cox, T., Fahy, J., Shipley, D., Beracs, J., Fonfara, K., & Snoj, B. (2000). Market orientation in the transition economies of central Europe: tests of the narver and slater market orientation scales. *Journal of Business research, 50*(3), 273-285.

Citation Information: Alshawabkeh, R.O.K. (2021). Market orientation and lean innovation: Investigating the linkages to new product performance. *Journal of Management Information and Decision Sciences, 24*(S6), 1-14.

Hoppmann, J., Robentisch, E., Dombrowski, U., & Zahn, T. (2011). A framework for organizing lean product development. *Engineering Management Journal*, *23*(1), 3-15.

Hortinha, P., Lages, C., & Lages, L. (2011). The trade-off between customer and technology orientations: impact of innovation capabilities and export performance. *Journal of International Marketing*, *19*(3), 36-58.

Hult, G., Hurley, R., & Knight, G. (2004). Innovativeness: its antecedents and impact on business performance. *Industrial Marketing Management*, *33*, 429-438.

Jakobsen, M., & Jensen, R. (2015). Common method bias in public management studies. *International Public Management Journal*, *18*(1), 3-30.

Jimenéz-Jimenáz, D., Martínez-Costa, M., & Sanz-Valle, R. (2014). Innovation, organizational learning, orientation and reverse knowledge transfer in multinational companies. *The Electronic Journal of Knowledge Management*, *12*(1), 47-55.

Jushi, A., & Sharma, S. (2004). Customer knowledge development: antecedents and impact on new product performance. *Journal of Marketing*, *68*, 47-59.

Kalkan, A., Bozkurt, Ö., & Arman, M. (2014). *The impact of intellectual capital, innovation and organizational strategy on firm performance*. Procedia- Social and Behavioral Sciences, *150*, 700-702.

Khin, S., Ahmad, N., & Ramayah, T. (2012). The integrated effect of strategic orientations on product innovativeness: moderating role of strategic flexibility. *Procedia- Social and Behavioral Sciences*, *65*, 743-748.

Kohli, A., & Jaworski, B. (1990). Market orientation: the construct, research propositions, and management implications. *Journal of Marketing*, *54*, 1-18.

Langerak, F., Hultink, E., & Robben, H. (2004). The impact of market orientation, product advantage, and launch proficiency on new product performance and organizational performance. *The Journal of Product Innovation Management*, *21*, 79-94.

Legat, C., Frankwick, G., & Sulo, T. (2015). Market orientation and firm performance in emerging markets. *International Journal of Advanced Research, 3*(9), 271-279.

Mações, M., Farhangmehr, M., & Pinho, J. (2007). Market orientation and the synergistic effect of mediating and moderating factors on performance: the case of the fashion cluster. *Portuguese Journal of Management Studies. 12*(1), 27-43.

Meyer, M., & Utterback, J. (1992). The product family and the dynamics of core capability. *MIT Sloan Management Review*, 77-92.

Molina-Castillo, F., Munuera-Alemán, J., & Calantone, R. (2011). Product quality and new product performance: the role of network externalities and switching costs. *J. Prod. Innov. Manag.*, *28*, 915-929.

Moorman, C., & Miner, A. (1997). The impact of organizational memory on new product performance and creativity. *Journal of Marketing Research. 34*(1), 91-106.

Narver, J., & Slater, S. (1990). The effect of a market orientation on business profitability. *Journal of Marketing, 54*(4), 20-36.

Narver, J., Slater, S., & Tietje, B. (1998). Creating a market orientation. *Journal of Market-Focused Management, 2*(3), 241-255.

Nicoletti, B. (2015). Optimizing innovation with the lean and digitize innovation process. *Technology Innovation Management Review*, 29-38.

Orji, I.J., & Liu, S. (2020). A dynamic perspective on the key drivers of innovation-led lean approaches to achieve sustainability in manufacturing supply chain. *International Journal of Production Economics, 219*, 480-496.

Osman, J., Gilbert, D., Tan, C., Zainol, Z., & Jizat, J. (2015). *The significance of intellectual capital and strategic orientations on innovation capability and firm performance*. Paper presented at proceeding of the Australian conference on business and social sciences (in partnership with the Journal of Developing Areas), Sydney.

Ozkeser, B. (2018). *Lean innovation approach in Industry 5.0*. The Eurasia Proceedings of Science Technology Engineering and Mathematics, (2), 422-428.

Pardi, Suharyono, Imam, S., & Zainul, A. (2014). The effect of market orientation and entrepreneurial orientation toward learning orientation, innovation, competitive advantages and marketing performance. *European Journal of Business and Management, 6*(21), 69-80.

Podsakoff, P.M., MacKenzie, S.B., & Podsakoff. N.P. (2012). Sources of method bias in social science research and recommendations on how to control it. *Annual Review of Psychology, 63*, 539-569.

Podsakoff, P.M., MacKenzie, S.B., Jeong-Yeon, L., & Podsakoff. N.P. (2003). "Common method biases in behavioral research: A critical review of the literature and recommended remedies." *Journal of Applied Psychology, 88*, 879- 903.

Ramirez, R., Guzman, G., & Serna, M. (2014). The relationship between market orientation, entrepreneurial orientation, and innovation: evidence from Mexican SMEs. *Journal of Business and Economics, 5*(10), 1930-1940.

Riswanto, A., Rasto, R., Hendrayati, H., Saparudin, M., Abidin, A., & Eka, A. (2020). The role of innovativeness-based market orientation on marketing performance of small and medium-sized enterprises in a developing country. *Management Science Letters, 10*(9), 1947-1952.

Citation Information: Alshawabkeh, R.O.K. (2021). Market orientation and lean innovation: Investigating the linkages to new product performance. *Journal of Management Information and Decision Sciences, 24*(S6), 1-14.

Rivaz, M., Tavakolinia, M., & Momennasab, M. (2021). Nursing professional practice environment and its relationship with nursing outcomes in intensive care units: A test of the structural equation model. *Scandinavian Journal of Caring Sciences, 35*(2), 609-615.

Schreiber, J.B. (2021). Issues and recommendations for exploratory factor analysis and principal component analysis. *Research in Social and Administrative Pharmacy, 17*(5), 1004-1011.

Schuh, G., Lenders, M., & Hieber, S. (2008). *Lean innovation: introducing value systems to product development*. PICMET 2008 Proceedings, 27-31 July. Cape town, South Africa.

Shook, C.L., Ketchen Jr, D.J., Hult, G.T.M., & Kacmar, K.M. (2004). An assessment of the use of structural equation modeling in strategic management research. *Strategic Management Journal, 25*(4), 397-404.

Storey, C., & Easingwood, C. (1999). Types of new product performance: evidence from the consumer financial service sector. *Journal of Business Research, 46*, 193-203.

Sun, S., & Das, K.C. (2021). On the multiplicities of normalized Laplacian eigenvalues of graphs. *Linear Algebra and its Applications, 609*, 365-385.

Sweis, R.J., Al-Mansour, A., Tarawneh, M.Y., & Al-Dweik, G. (2013). The impact of total quality management practices on employee empowerment in the healthcare sector in Saudi Arabia: A study of King Khalid Hospital. *International Journal of Productivity and Quality Management, 12*(3), 271-286.

Tajeddini, K., & Ratten, V. (2020). The moderating effect of brand orientation on inter-firm market orientation and performance. *Journal of Strategic Marketing, 28*(3), 194-224.

Tajudin, M., Musa, O., & Musa, N. (2012). Effects of organizational culture, market orientation, and innovativeness toward new product performance among Malaysian SMEs. *International Journal of Innovation and Business Strategy, 1*, 24-48.

Tutar, H., Nart, S., & Bingöl, D. (2015). *The effects of strategic orientations on innovation capabilities and market performance: The case of ASEM*. Procedia- Social and Behavioral Sciences, *207*, 709-719.

Ward, S., Girardi, A., & Lewandowska, A. (2006). A cross-national validation of the Narver and Slater market orientation scale. *Journal of Marketing Theory and Practice, 14*(2), 155-167.

Wójcik-Karpacz, A., Karpacz, J., & Rudawska, J. (2021). The impact of market orientation on the performance of MSMEs operating in technology parks: The role of market dynamism. *Journal of Entrepreneurship, Management and Innovation, 17*(2), 29-52.

Yu, W., Chavez, R., Jacobs, M., & Wong, C.Y. (2020). Innovativeness and lean practices for triple bottom line: testing of fit-as-mediation versus fit-as-moderation models. *International Journal of Operations & Production Management, 40*(10), 1623-1647.

Zainul, M., Astuti, A., Arifin, Z., & Utami, H. (2016). The effect of market orientation toward organizational learning, innovation, competitive advantage, and corporate performance (a study of SME Sasirangan in South Kalimantan). *Journal of Administrative Sciences and Policy Studies, 4*(1), 1-19.

Zarezadeh, M., Moenaddin, M., & Nayebzadeh, S. (2014). Evaluating the effects of market orientation, intellectual capital and organizational learning capability on successfulness of a new product. *British Journal of Applied Science and Technology, 4*(13), 1905-1942.

Zehir, C., Köle, M., & Yildiz, H. (2015). *The mediating role of innovation capability on market orientation and export performance: an implementation on SMEs in Turkey*. Procedia- Social and Behavioral Sciences, *207*, 700-708.

Citation Information: Alshawabkeh, R.O.K. (2021). Market orientation and lean innovation: Investigating the linkages to new product performance. *Journal of Management Information and Decision Sciences, 24*(S6), 1-14.