

Supply chain agility and market orientation: The best approaches leading to SMEs performance

Jihad Mousa ALfarajat^{a*}

^aFaculty of Business and Economics, Al-Hussein Bin Talal University, Maan-Jordan

ABSTRACT

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The study aimed to examine the influence of market orientation on SMEs' performance with the mediating effect of supply chain agility and moderation of innovation capabilities. The data for the study were gathered from the manufacturing SMEs operating in major cities of Jordan. The questionnaire was distributed online to gather the maximum responses from managers of SMEs. The collected data were examined by using Smart PIs. The results highlighted that market orientation not only influences the SMEs' performance, but it also helps them in developing supply chain agility.

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1. Introduction

SMEs are considered the most common form of business organization around the globe. They possess some distinguishing characteristics that differentiate them from large corporations, but these characteristics help them in getting more profit and becoming efficient (Zayed & Sinha, 2019). In emerging countries, SMEs play an important role in economic growth by creating employment opportunities, innovating organizations, and boosting the volume of manufacturing production (Sajan et al., 2017; Chege & Wang, 2020). The manufacturing SMEs in Jordan have strengthened the manufacturing sector of Jordan, and now this sector is classified as the main industrial sector of the country (Hussein et al., 2019) contributing significantly to the GDP (Muhtaseb, 2015). Moreover, the government of Jordan sees the future of the country as an “industrial country”, which shows that the Jordanian economy will be based on industry instead of services (Fanek, 2015). This prediction and the growth of SMEs were affected by the COVID-19 pandemic. Al-Hyari (2020) highlighted that this pandemic adversely affected the manufacturing SMEs in Jordan, most of them faced issues related to the decline in sales, drop in demand, and hurdles in the supply chain. Therefore, the economy of Jordan was at risk during the COVID-19 pandemic (Trawnih et al., 2023) but even now many SMEs are unable to recover or continue their business operations. The business continuity of SMEs is linked with market orientation (Jatmiko, 2022) which can also enhance the SMEs' performance (Nursal et al., 2022).

In every organization, performance is always an important issue whether it's financial or non-financial. Therefore, managers always strive to explore the factors leading to organizational performance, so that they can take steps for their implementation (Abu-Jarad et al., 2010). This research has highlighted that market orientation is an important factor that can significantly influence performance. Therefore, this research aimed to examine the relationship between market orientation and the performance of manufacturing SMEs in Jordan. Many studies focusing on strategic orientations have highlighted the influence of market orientation on SMEs' performance (e.g. Mahmoud, 2011; Udriyah et al., 2019; Fatonah et al., 2022; Khamaludin et al., 2022), yet the empirical evidence of literature in the context of manufacturing SMEs in Jordan is limited. Mokhtar et al., (2014) examined the relationship between market orientation and the performance of Malaysian SMEs, further, they

* Corresponding author

E-mail address jihadfarajat@ahu.edu.jo (J. M. ALfarajat)

recommended that future studies should explore this relationship in the context of any other country. Moreover, many prior studies have recommended relating strategic orientation with other variables in the context of the Jordanian business environment (Masa'deh et al., 2018) because it helps organizations in achieving better performance (Tutar et al., 2015), innovation success (Eggers et al., 2020), and agility (Mandal & Saravanan, 2019). Hence, there is a need to contribute to the literature focusing on the relationship of strategic orientation with other variables, in the context of organizational performance (Masa'deh et al., 2018). Market orientation is part of strategic orientation (Ferraresi et al., 2012), and this research has highlighted that it can be linked with supply chain agility to enhance SMEs' performance.

Supply chain agility is considered an important source of competitive advantage as it can help businesses even in a turbulent business environment (Zhu & Gao, 2021). Studies have been conducted with the aim to investigate the outcomes of supply chain agility such as export performance (Ayoub & Abdallah, 2019), operational performance (Manzoor et al., 2022), export performance (Khan et al., 2023), supply chain performance (Abdallah et al., 2021) and competitive advantage (Chen, 2019). Moreover, the literature has also highlighted the antecedents of supply chain agility including information sharing (Jermsittiparsert & Rungtornchatur, 2019) and innovation capability (Iddris et al., 2014). Most of these studies emphasized the operational and behavioral perspective and there is a lack of investigation from the perspective of enterprise strategy. Therefore, this research has considered supply chain agility as a mediator between market orientation and SMEs' performance.

Innovation capability is an important capability that can influence the performance of SMEs (Maldonado-Guzmán et al., 2018). In addition, Caballero-Morales (2021) highlighted innovation as the best survival tool that can be focused on by SMEs even after the COVID-19 pandemic. Thus, this research has considered innovation capability as a moderator between market orientation and SMEs' performance.

To boost their market share, manufacturing SMEs need to emphasize their different competitive priorities for manufacturing activities (Al-Jobor et al., 2020), these priorities may include supply chain agility, market orientation, and innovation capability. Therefore, the first aim of this study is to focus on the Jordanian manufacturing SMEs and highlight how their performance is influenced by market orientation and supply chain agility. The second objective is to evaluate the mediating role of supply chain agility between market orientation and SMEs' performance. The third objective is to investigate the moderation of innovation capability between market orientation and SMEs' performance. Innovation capability is an ordinary capability (Zhou et al., 2019), whereas supply chain agility is a dynamic capability. Further, market orientation is highlighted by resource-based view theory (RBV) as an organizational capability that can help organizations in achieving superior performance (Affendy et al., 2015). Therefore, by using the theoretical lens of Dynamic Capability Theory and Resource-Based View (RBV), this research examined the influence of market orientation on SMEs' performance with the moderating role of innovation capability and mediation of supply chain agility. The objectives of this research are given below:

RQ1: To highlight the role of market orientation in SMEs' performance.

RQ2: To examine the mediating role of supply chain agility and moderation of innovation capabilities between the relation of market orientation and SMEs' performance.

2. Literature Review

2.1. Market orientation and SMEs' Performance

Affendy et al. (2015) explained market orientation as an organizational culture that focuses on gaining knowledge of the market condition in terms of competitors and customers. The notion of market orientation is becoming very popular in the business and the academic world because of its importance in driving business success (Zebal & Sabel, 2014), particularly the success of SMEs. Highly market-oriented organizations can enhance their performance by satisfying the needs of customers and they can understand the market conditions by gathering competitor's information (Affendy et al., 2015).

Grinstein (2008) reported that among several types of strategic orientations including entrepreneurial orientation, learning, and innovation orientation, market orientation contributes more to firm performance. Moreover, the market orientation approach can be used by SMEs facing an economic downturn to enhance their performance (Petzold et al., 2019). Prior studies have highlighted that market orientation is an important factor leading to SMEs' performance (Bamfo & Kraa, 2019; Ali et al., 2020; Puspaningrum, 2020) but there is a paucity of literature focusing on the manufacturing sector in Jordan. Therefore, to examine the relationship between market orientation and SMEs' performance, the following hypothesis is developed:

H₁: *Market orientation is positively related to SMEs' performance.*

2.2. Supply Chain Agility as a Mediator

The market-oriented organizations evaluate the customers to understand their needs and want for providing them with new products and services. Therefore, these firms need agility for better evaluation and development of strategies in line with the market and the customer. The best and fit agility for winning the competition is supply chain agility (Ehtesham Rasi et al., 2019). In the supply chain, agility can be conceptualized as an ability that can help organizations to respond to the changing

needs of customers, and organizations can attain greater capabilities through the increase in market orientation (Jermstiparsert & Wajeetongratana, 2013). Qrunfleh and Tarafdar (2013) mentioned that the organizational supply chain should have a chain with agility concepts and competitive suppliers having competitive capabilities. Sheel et al., (2020) highlighted supply chain agility as a dynamic capability. Further, they concluded that market orientation positively influences supply chain agility. The studies have examined the relationship between market orientation and supply chain agility (Ehtesham Rasi et al., 2019; Jermstiparsert & Wajeetongratana, 2013; Sheel et al., 2020) but no research has highlighted this relationship in the context of SMEs. Therefore, it's important to examine the influence of market orientation and supply chain agility of manufacturing SMEs in Jordan. To examine the relationship, the following hypothesis is developed:

H₂: *Market orientation is positively related to supply chain agility.*

Supply chain agility enables organizations to balance supply and demand for reducing transportation and inventory cost (Eckstein et al., 2015). The agile supply chain is essential for responding to turbulent customer demand (Agarwal et al., 2006). Supply chain agility enhances the operating routines modifications and improves the sensing ability of a firm (Gligor et al., 2016) for example, identifying new markets and suppliers, switching the previous supplier or joining the supplier for designing new products can help the companies to do the reduction in cost (Lee, 2002; Eckstein et al., 2015). The prior studies focusing on supply chain agility have mainly focused on examining its influence on supply chain performance (Cadden et al., 2022), and export performance (Ayoub and Abdallah, 2019; Khan et al., 2023), thus, there is a need to evaluate the relationship between supply chain agility and SMEs performance. Therefore, we hypothesized that:

H₃: *Supply chain agility is positively related to SMEs' performance.*

Market orientation significantly influences supply chain agility as it enables organizations to respond swiftly to changes, promptly address opportunities, and rapidly deal with threats evolving from a volatile business environment (Gligor et al., 2016). Prior studies have highlighted the relationship between market orientation and performance (Udriyah et al., 2019; Fatonah et al., 2022) and supply chain agility (Ehtesham Rasi et al., 2019; Sheel et al., 2020). Moreover, the relationship between supply chain agility and performance has also been explained extensively in the literature. Therefore, supply chain agility can mediate the relationship between market orientation and SMEs' performance. Thus, we formulated the following hypothesis:

H₄: *Supply chain agility significantly mediates the relationship between market orientation and SMEs' performance.*

2.3. Innovation Capabilities as Moderator

Organizations develop some important capabilities for their long-term survival, and even they design their organizational structure based on these capabilities. Within these capabilities, innovation capability is foremost important in this competitive and volatile business environment because it can help organizations in attaining a competitive advantage (Zehir et al., 2012). Lawson and Samson (2001, p. 384) defined innovation capability as "the ability to continuously transform knowledge and ideas into new products, processes, and systems for the benefit of the firm and its stakeholders". Tutar et al., (2015) found that market orientation positively influences innovation capability and leads to superior market performance. Therefore, this research has proposed that innovation can strengthen the relationship between market orientation and SMEs' performance. Thus, to highlight the role of innovation capability as a moderator in the relationship between market orientation and SMEs' performance, we have developed the following hypothesis:

H₅: *Innovation capability significantly moderates the relationship between market orientation and SMEs' performance.*

Based on literature given above, the following model is developed (See, Fig. 1).

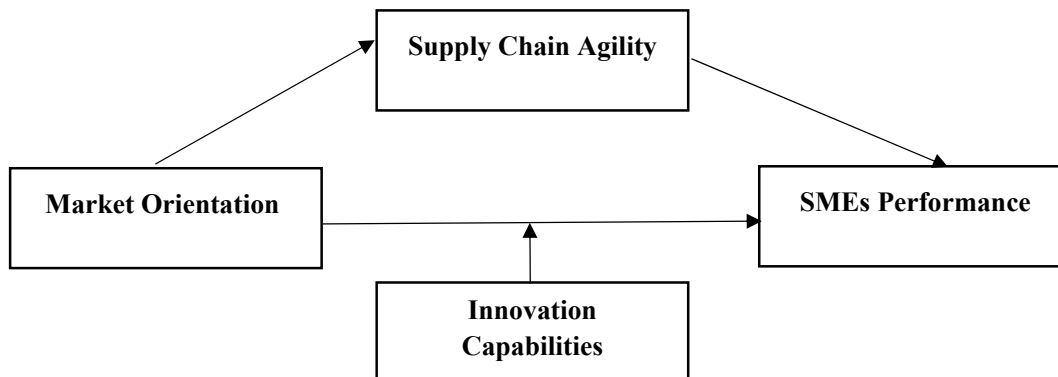


Fig. 1. The proposed method

3. Methodology

The measurement of performance in SMEs always remained a hot debate (Garengo et al., 2005) among researchers, and they found different factors leading to SMEs’ performance. Most of them focused on different strategic orientations that can increase performance. Buli (2017) highlighted that the integration of market orientation and entrepreneurial orientation into the operations of small and medium enterprises can help them in enhancing their performance and survive in turbulent economic environments. This study has examined the influence of market orientation on SMEs’ performance. Moreover, it has investigated the mediating role of supply chain agility and moderation of innovation capabilities in the relationship between market orientation and the performance of manufacturing SMEs in Jordan.

In Jordan, SMEs are defined as enterprises having up to 250 employees ((JEDCO, 2011), and according to the Amman Chamber of Industry (2018) more than 90% of SMEs in Jordan are directly or indirectly involved in manufacturing. Therefore, data for this study were gathered by using a structured questionnaire that was developed online on a google form. The link to the online questionnaire was shared with managers of SMEs in major cities of Jordan including Amman, Petra, Zarqa, Aqaba, and Sahab. The items of the questionnaire were based on items used by prior studies. The current study has used an 8-item scale of market orientation developed by Zhou et al., (2008), this scale has also been used by Mahrous and Genedy (2019). Supply Chain agility and innovation capability were examined with a scale based on 5 five items adopted from (Blome et al., 2013) and Odoom and Mensah, (2019) respectively. In addition, SMEs’ performance was examined with five items-based scale adapted from (Adomako & Ahsan, 2022).

The study has used convenient sampling techniques for collection of data. The data collection process took more than 1 month, and 382 responses were gathered. Most respondents were males having up to five years of experience. In 382 respondents, there were only 35 females. The validity of data, and hypothesis testing was done by using smart pls.

4. Results and Findings

The data for this research is analyzed with Smart pls, and first the measurement model was tested for determining the convergent validity. This model was examined by the factor loadings, Average Variance Extract, and composite reliability (Hair et al., 2006). The outer loading value or value of factor loading greater than 0.7 is considered a good indicator (Wijaya, 2023). The results highlighted that factor loadings of all indicators were more than 0.7 except for one indicator of market orientation. Its loading was 0.642, thus it was removed. The factor loadings of each indicator are presented in Table 1 and validity testing in the measurement model is shown below in Fig. 2.

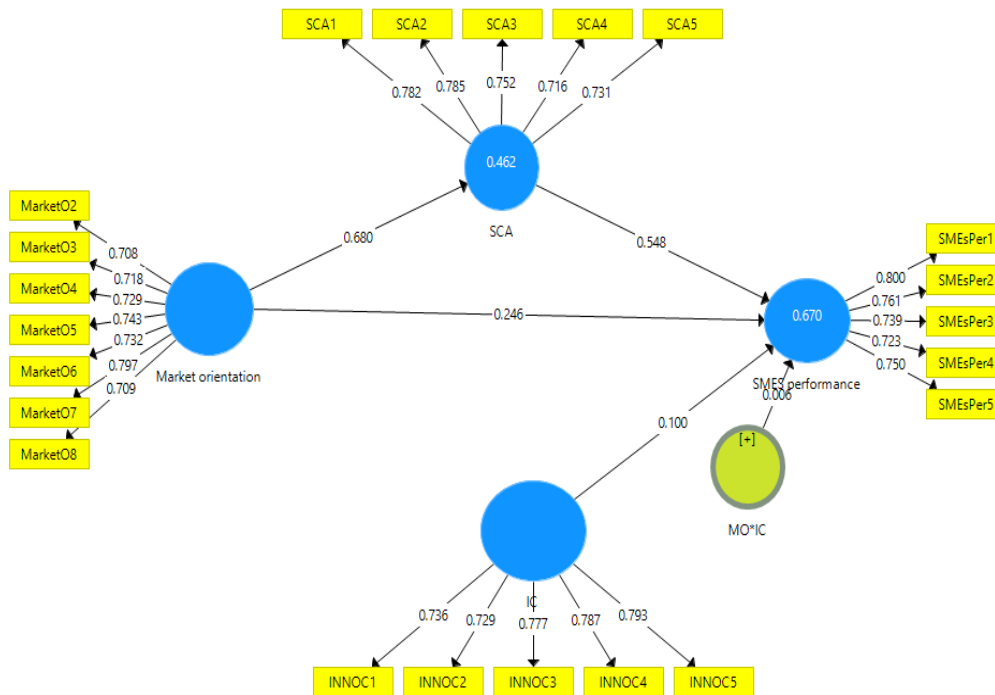


Fig. 2. Validity Testing

The values of composite reliability show the extent to which the indicators of constructs indicate the latent construct, exceeding the recommended value of 0.7 as recommended by Hair et al., (2006). Whereas AVE portrays the total variance in the indicators accounted for by the latent construct, its value should be at least 0.5 according to the recommendations of Hair

et al., (2006). The results of the pls algorithm show that values of CR and AVE are more than 0.7 and 0.5 respectively. The values of composite reliability and AVE for this study are given in Table 2.

Table 1
Factor Loadings of Items/indicators

Constructs	Items/ Indicators	Loadings
Innovation Capability	There is a constant generation of new service ideas in this firm	0.735
	We are constantly searching for new ways of doing things	0.729
Market Orientation	There is creativity in our methods of operation	0.777
	This enterprise is usually a pioneer in the market	0.787
	This firm is able to introduce new products/services every five years	0.793
	We are fast to detect fundamental shifts in our industry (e.g., competition, technology, regulation).	0.708
	We periodically review the likely effect of changes in our business environment (e.g., regulation) on customers.	0.718
Supply Chain Agility	When something important happens to a major customer or market, the whole organization knows about it in a short period.	0.729
	Customer suggestions and comments are disseminated at all levels in the organization on a regular basis	0.743
	We pay close attention to the changes in our customers' needs.	0.732
	If a major competitor launched a campaign to our customers, we implement a response immediately	0.797
	We can effectively implement a marketing plan in a timely fashion.	0.709
	We are able to adapt our services and/or products sufficiently fast to new customer requirements.	0.782
	We are able to react sufficiently fast to new market developments.	0.785
SMEs Performance	We are able to react to significant increases and decreases in demand as fast as required by the market.	0.752
	We are always able to adjust our product portfolio as fast as required by the market.	0.716
	We are able to react adequately fast to supply-side changes, e.g., compensate for spontaneous supplier outages, delivery failures, market shortages	0.731
	The employee ratio in my enterprise is growing.	0.8
	The market share of my enterprise is growing.	0.761
SMEs Performance	The profitability of my enterprise is growing.	0.739
	The sale of my enterprise is growing.	0.723
	Overall performance of my enterprise is growing.	0.75

Table 2
Values of Composite Reliability (CR) & AVE

Constructs	Cronbach's Alpha	CR	AVE
Innovation Capabilities	0.822	0.876	0.585
Market Orientation	0.858	0.891	0.539
SMEs Performance	0.811	0.869	0.57
Supply Chain Agility	0.81	0.868	0.568

In the second step, the discriminant validity was examined which is explained by Ramayah et al. (2013, p.142) as “the extent to which the measures are not a reflection of some other variables”. According to Fornell and Larcker, (1981), the square root of AVE of every construct should be greater than its corresponding coefficients that point the adequate discriminant validity. The values of the Fornell-Larcker Criterion showing discriminant validity are given in Table 3.

Table 3
Discriminant Validity

	Innovation Capabilities	Market Orientation	Supply Chain Agility	SMEs Performance
Innovation Capabilities	0.765			
Market Orientation	0.745	0.734		
Supply Chain Agility	0.781	0.68	0.754	
SMEs Performance	0.707	0.689	0.79	0.755

In the third step, the R-square value is examined. To test the structural model, there is a need for a goodness fit model which is required to meet the R-square value. This value examines whether the independent latent variable substantially influences the dependent variable. The R-square value obtained by the results of this research is given in Table 4.

Table 4
R-Square Values

	R Square	R Square Adjusted
Supply Chain Agility	0.462	0.461
SMEs Performance	0.67	0.666

On the basis of the output shown in Table 4, it can be seen that the R square of Supply Chain agility is 0.462 which shows that 46.2 % of Supply Chain agility can be explained by the independent variable (i.e. market orientation), whereas, 53.8 % is explained by other factors outside the research variables under consideration. The R square of SMEs' performance is 0.67 which contends that 67% of SMEs' performance can be explained by an independent variable (i.e. market orientation and supply chain agility).

In the fourth step, hypotheses testing is done. The results of hypothesis testing are shown in table 5 and the t-count results for every latent variable's parameters are given in Fig. 3.

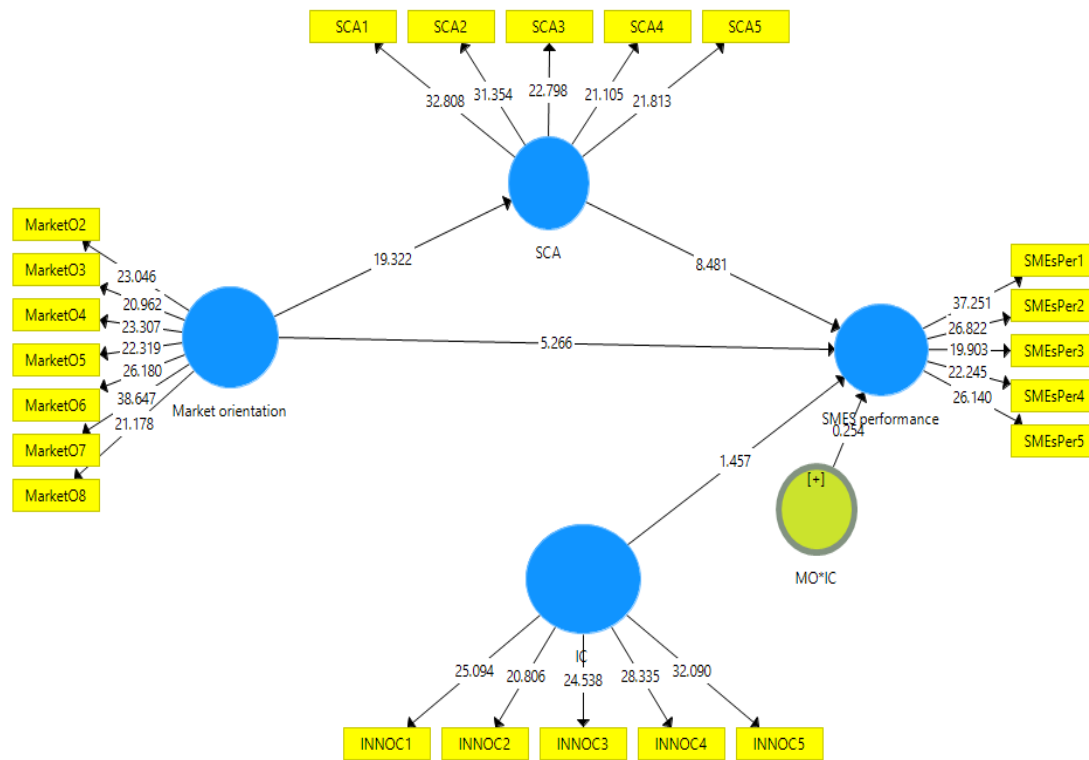


Fig. 3. Hypotheses Testing

Table 5
Results of Hypotheses testing

Hypothesis	Indication	T-Statistics	P-Values	Results
Market orientation → SMEs Performance	H1	11.264	0.000	Accepted
Market orientation → Supply Chain Agility	H2	18.673	0.000	Accepted
Supply Chain Agility → SMEs Performance	H3	8.402	0.000	Accepted
Market orientation → Supply Chain Agility → SMEs Performance	H4	7.916	0.000	Accepted
Market orientation*Innovation Capability → SMEs Performance	H5	0.259	0.796	Rejected

The testing of hypotheses revealed that H1, H2, H3, and H4 are accepted but the H5 showing the moderation of innovation capability between the relationship of market orientation and SMEs' performance is rejected.

5. Discussion

COVID-19 pandemic affected every business, even the economy of Jordan was at risk during the pandemic era (Trawnih et al., 2023) because manufacturing SMEs were facing a lot of challenges (Al-Hyari, 2020) but after pandemic when whole world is facing shortage of good, it is an opportunity for SMEs to produce the better products and build the customer trust by doing revolutionary changes in their supply chain (Zairis, 2021) or developing supply chain agility. The organizations, particularly the SMEs always require different orientations and capabilities for enhancing the performance. Therefore, this research has examined the influence of market orientation on SMEs performance with mediating role of supply chain agility and moderation of innovation capabilities.

The first and foremost important objective of this study is to examine the influence of market orientation on SMEs' performance. In order to highlight aforementioned the relationship, first hypothesis of this study (i.e. H1) was developed. The results highlighted that market orientation is positively related to SMEs' performance. Many studies focusing on SMEs performance have linked the performance with market orientation (e.g. Udriyah et al., 2019; Khamaludin et al., 2022). The SMEs aiming to enhance their performance should focus on developing market orientation which is indicated by Ferraresi et al., (2012) as an important part of strategic orientation. The second hypothesis (i.e. H2) was formulated to evaluate the influence of market orientation on supply chain agility. The results demonstrated the relevance of studying market orientation which is an important factor leading to supply chain agility. The findings of the study showed that market orientation not only influences the performance of SMEs but it helps them in developing supply chain agility. The results are in line with a prior

study by Sheel et al., (2020) who indicated it as an important dynamic capability. Moreover, they explained the positive relationship between market orientation and supply chain agility. The results of the research are important for manufacturing SMEs of Jordan that are aiming to develop supply chain agility. They can focus on market orientation, as it not only helps SMEs to develop supply chain agility but also increase their performance.

The third hypothesis of the study was developed to highlight the relationship between supply chain agility and SMEs' performance. This hypothesis was accepted and results revealed that SMEs' performance is also linked with supply chain agility. These results are in line with several prior studies which found the performance outputs of supply chain agility including export performance (Khan et al., 2023) or supply chain performance (Cadden et al., 2022). The fourth hypothesis was designed to investigate the mediating role of supply chain agility in the relationship between market orientation and SMEs' performance. The findings showed that supply chain agility significantly mediates the relationship between market orientation and SMEs' performance. These results are supported by Kurniawan et al., (2021) who concluded that the relationship between market orientation and firm performance is mediated by business process agility. The fifth hypothesis was designed to analyze the moderating role of innovation capabilities on the relationship between market orientation and SMEs' performance. The results rejected the hypothesis. This rejection can be because many studies considered innovation or innovation capabilities as a mediator while examination relating orientation or dynamic capabilities with performance (Agarwal et al., 2003; Ferreira et al., 2020). Furthermore, the other reason behind rejection could be the logic that orientations are generated by capabilities. Overall the results revealed that SMEs' performance is linked to market orientation and supply chain agility. Therefore, the SMEs of Jordan aiming to increase their performance should focus on developing dynamic capabilities such as market orientation and supply chain agility.

6. Implications

The relationship of orientation and capabilities with performance always remained a hot debate among researchers. Similarly, this research developed the model based on market orientation and supply chain agility influencing SMEs' performance. In terms of theoretical implications, this research has significantly contributed to literature on market orientation, supply chain agility, innovation capabilities and SMEs' performance. This study is different from prior studies in the context of population, as it focused only on the manufacturing SMEs of Jordan which are not much discussed in literature (Al-Madi, 2017). Practically the findings of this research can act as a guideline for managers of SMEs in Jordan. They can focus on market orientation and develop the ability like supply chain agility for enhancing performance.

7. Limitations and Recommendations

The study has some limitations that can be considered by future researchers. First, it has focused only on the SMEs of Jordan involved in manufacturing, and in future the studies can use the proposed model to determine the performance of service-oriented SMEs. Moreover, the research can be conducted in the context of any other country. Secondly, the study examined the influence of supply chain agility on performance but according to Um (2017) this agility does not directly influence the performance, and the improved customer service can mediate relationship between supply chain agility and business performance. Therefore, future studies can extend the model of this research by investigating the mediating role of service quality or customer service in the relation of supply chain agility and SMEs performance.

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