"The role of supply chain management in improving performance of Jordanian small and medium enterprises"

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THE ROLE OF SUPPLY CHAIN MANAGEMENT IN IMPROVING PERFORMANCE OF JORDANIAN SMALL AND MEDIUM ENTERPRISES

Abstract

Supply chain management practices are always helpful for multinational enterprises in increasing their growth. However, there has always remained an open debate about which practices are helpful for small and medium enterprises (SMEs). Therefore, this study has examined the influence of supply chain management practices on the performance of SMEs. Moreover, it has examined how the moderation of supply chain ecocentricity and innovation capabilities strengthens or weakens the relationship between supply chain management practices and SMEs' performance. The quantitative study involved 352 SME managers as they can provide the relevant information and possess complete knowledge of management practices. The data were gathered via a questionnaire, and the responses were analyzed using IBM SPSS 28 and IBM AMOS. The results show that SMEs' performance is linked to supply chain management practices ($\beta = 0.544$; P < .001), and this linkage is further strengthened by supply chain ecocentricity (R2 change = 0. 082***, F-Statistics = 47.18) and innovation capabilities (R2 change = 0.061^{***} , F-Statistics = 39.74). SMEs can enhance their performance by efficiently incorporating supply chain management practices and developing innovation capabilities and supply chain ecocentricity.

Keywords

supply chain management practices, innovation capabilities, ecocentricity, SMEs, innovation, Jordan, dynamic capabilities, manufacturing enterprises

JEL Classification O31, L25

INTRODUCTION

Small businesses in many developing countries, including Jordan, are facing challenges and constraints, such as marketing and investment (Al-Weshah et al., 2011), lack of resources, skilled workforce, and information (Taylor et al., 2004; Kumar et al., 2016), technology adoption (Kumar & Ayedee, 2021) and poor knowledge of supply chain management (Kumar et al., 2014). Global competition has made it difficult for small and medium enterprises to achieve competitive advantage through effective utilization of supply chain management, which can lead to operational performance. However, without adequate knowledge of supply chain management and its practices, it is difficult to predict the effect of supply chain management on the performance of manufacturing SMEs (Bayraktar et al., 2009). The implementation of supply chain management is helpful for SMEs in achieving competitive advantage (Kumar et al., 2016) and high performance (Abdallah et al., 2014). Moreover, involvement in the supply chain is essential for small businesses in Jordan to get the perks of supply chain management adoption (Al-Nazer, 2022).

The performance of manufacturing companies is linked to the supply chain relationships as they play an integral role in developing process and product innovation capabilities (Adebanjo et al., 2018), which are critical for small businesses to compete with large competitors (Saunila, 2020). Innovation capability is an essential factor that can help SMEs attain competitiveness in the international or national market (Çakar & Ertürk, 2010). Moreover, to achieve sustainability goals, organizations are focusing on developing the capability of ecocentricity that helps them to engage and learn from external stakeholders (Cousins et al., 2019). The concept of ecocentricity has been studied by only a few researchers who highlighted it as a critical part of environment reserve logistics facing supply chain management practices. Still, organizations are focusing on this concept because of the emerging trend of environmental issues and their impact on the opinion of the public interested in them (Rao & Holt, 2015).

1. LITERATURE REVIEW AND HYPOTHESES

Jordanian SMEs can enhance their performance by focusing on all critical supply chain management practices. Customers are the members of the supply chain; thus, the successful implementation of supply chain management programs requires good relationships with them. Moreover, there are several benefits for organizations working closely with customers. These benefits include product differentiation from competitors, customer value extension, and sustainability of customer loyalty (Mwale, 2014). Ibrahim and Hamid (2014) indicated information sharing as an organizational ability to share knowledge with every supply chain partner efficiently and effectively.

Moreover, effective information sharing is a critical organizational ability related to the supply chain process. Thus, information sharing is an essential tool that helps achieve a coordinated supply chain. Utami et al. (2019) found that supply chain management practices, including customer relationships, strategic supplier partnerships, and information sharing, enhance SMEs' financial and sustainable performance. Besides, information sharing, lean practices, and postponement also enhance organizational performance (Ibrahim & Hamid, 2014). Many studies have focused on these practices while determining organizational performance, but there is a dearth of literature focusing particularly on Jordanian manufacturing SMEs (Al-Madi, 2017).

The success of any organization does not merely depend upon the efficiency of its internal operations, but it is also based on the extent to which the supply chain is managed effectively and efficiently. Supply chain management is critical in the industrial sector of Jordan (Al-Madi, 2017), particularly in manufacturing SMEs, as they have a huge market share (Al-Jobor et al., 2020) and contribute significantly to the GDP of Jordan (Hussein & Baharudin, 2017).

Supply chain management practices influence organizational performance and help organizations achieve competitive advantage through quality, time to market, and product innovation (Mwale, 2014). Radas and Božić (2009) highlighted that process and product innovation are significantly influenced by a firm's collaboration with other firms or organizations. In addition, Singhry and Abd Rahman (2019) explained that supply chain innovation capability significantly influences supply chain performance.

Siregar and Pinagara (2022), Bataineh (2021), Moreira et al. (2022), and Cousins et al. (2019) focused on examining the influence of supply chain ecocentricity as a moderator between green supply chain management practices and performance. Appiah et al. (2022) and Agyabeng-Mensah et al. (2021) considered it a mediator. However, there is a dearth of literature relating it to supply chain management practices instead of green supply chain management practices in the context of SMEs.

Small businesses competing with their large, resourceful competitors should emphasize innovation capability. Moreover, acknowledging different factors of innovation capability can help managers of SMEs improve their enterprises' capability (Saunila, 2020). Wang et al. (2020) argued that there is long research history of innovation capability, and this concept was developed from the RBV theory. However, it is now being studied in Industry 4.0, which essentially requires it and new technologies (Frank et al., 2019). Many studies have discussed innovation capability in the context of SMEs (Saunila, 2016; Ali et al., 2020) Problems and Perspectives in Management, Volume 22, Issue 1, 2024

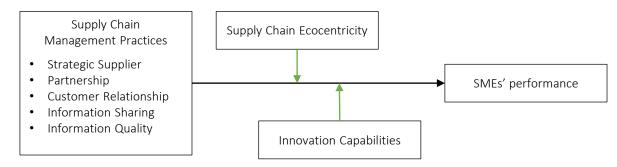


Figure 1. Research model

and linked it to SMEs' performance (Maldonado-Guzmán et al., 2018; Saunila, 2016), but there is insufficient literature relating it to supply chain management practices (Octavia et al., 2020).

Cousins et al. (2019) argued that according to the new RBV theory, the key resources should be in place to facilitate core managerial practices, and ecocentricity can be one of these resources as it is rare and nonimitable. Moreover, ecocentricity comprises cultural, relational, and collaborative organizational characteristics noted with the natural resource-based view theory as being difficult for other organizations to imitate easily. Many studies have examined ecocentricity or supply chain ecocentricity as a moderator between green supply chain practices and performance (Moreira et al., 2022; Siregar & Pinagara, 2022) and found different results, but there is a paucity of literature considering it as a moderator between supply chain management practices and SMEs' performance. Therefore, this study has proposed that ecocentricity can be linked with general/standard supply chain management practices instead of green supply chain management practices, and it can strengthen the relationship between supply chain management practices and SMEs' performance.

The first objective of this study is to focus on the manufacturing SMEs of Jordan and examine how supply chain management practices influence their performance. The second objective is to investigate the moderation of innovation capability between the relationship above, as it is an ordinary capability leading to performance, and it is important for the manager of every SME to promote innovation capability (Çakar & Ertürk, 2010). The third objective is to highlight the moderating role of supply chain ecocentricity between supply chain management practices and SMEs' performance. It can play an important role in the relationship between sup-

ply chain management parties and different types of organizational performance, including environmental and operating cost performance (Cousins et al., 2019). Based on these objectives and the literature review, Figure 1 shows the conceptual model. Moreover, the hypotheses developed for the research are as follows:

- *H1:* Supply chain management practices positively influence SMEs' performance.
- H2: Innovation capabilities moderate the relationship between supply chain management practices and SMEs' performance.
- H3: Supply chain ecocentricity moderates the relationship between supply chain management practices and SMEs' performance.

2. METHOD

The data were gathered using a structured questionnaire. In the process of developing the questionnaire, significant consideration was paid to the instrument of every variable. All the instruments were based on prior studies. This study has considered supply chain management as a multidimensional concept and adopted the scale developed by Li et al. (2005). The scale was based on a 5-point Likert scale and highlighted the degree to which supply chain management practices are implemented in each respondent's organization. Supply chain ecocentricity was examined with a scale based on 5 five items adopted from Cousins et al. (2019). The five items-based scale of innovation capability was adopted from Odoom and Mensah (2019). Furthermore, SMEs' performance was measured with the five-item scale adapted from Adomako and Ahsan (2022).

Jordan Chamber of Industry (n.d.) reported more than 2,361 manufacturing SMEs in the country. They cover different industries (Yousuf et al., 2019), including engineering, electrical and information technology, therapeutic and medical supplies sector, food, catering, agricultural and animal industries, packaging, paper, cardboard and office supplies, chemical and cosmetics, plastic and rubber products, construction, wooden and furniture, mining, leather, and knitting industries. The data were gathered from these SMEs' managers using a convenience sampling technique. First, the questionnaire was developed online in Google Forms, and later, it was sent to managers of manufacturing SMEs. Secondly, the questionnaire was also printed, and researchers personally visited some SMEs to gather the data. The purpose of using offline and online approaches was to reach the maximum target population. The whole process of data collection took 1 month, in which 352 responses were gathered, but 8 were removed due to missing or repetitive responses. Therefore, the utilizable sample was 344, which is considered appropriate according to the standards of Sekaran and Bougie (2009) and Krejcie and Morgan (1970). Out of these 344 responses, 52 were female, and the remaining respondents were male. It shows that the majority of managers in manufacturing SMEs in Jordan are males.

The data analysis was done in three stages by using AMOS and SPSS. In the first stage, the demographics of respondents were examined. In the second stage, the reliability and validity were analyzed. In the third stage, the hypotheses were tested. The moderation was examined in SPSS by using process macro.

3. RESULTS

Kline (2015) recommended using kurtosis and skewness statistics to examine the normality of the data; thus, based on this recommendation, these

Table 1. Descriptive statistics and data normality test

statistics were used to determine the normality of the data gathered via questionnaire. The outcomes of these statistics are presented in Table 1. According to Kline (2015), to have normalized data, the kurtosis and skewness values must be lower than 10, and the skewness values must be lower than 3.0. The data results revealed that all values for skewness were within the range of -1.83 to 0.83, while the range of kurtosis values was within the range of -0.89 to 1.67, confirming the normality of the data. Moreover, Table 1 also shows that all mean values are over 3 on a five-point Likert scale, indicating a trend toward agreement.

The study's sampling adequacy was examined using the Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity. Hair et al. (1998) suggested that the KMO index value must be 0.80 or above for optimal sample adequacy. In Table 2, the KMO index value was 0.913, exceeding the standards for adequate sampling suggested by Hair et al. (1998). Furthermore, significant results of the Bartlett's Test of Sphericity ($X^2 = 10771.451$; df = 341; P < .001) support the appropriateness of factor analysis (Sarstedt, 2019).

Table 2. KMO and Bartlett's test

| Kaiser-Meyer-Olkin Meas of Sampling Adequacy | .913 | |
|---|-----------------------|-----------|
| Bartlett's Test of Sphericity | Approx. Chi-Square | 10771.451 |
| | Df | 341 |
| | Sig. | .000 |

Note: N = 344.

AMOS was used to determine the reliability and validity of the measurement model, and the results of component factor analysis are presented in Table 3. Nunnally and Bernstein's (1994) criteria for data reliability were followed in the current study. The CR values showing composite reliability were above 0.70. The recommendations of Hair et al. (2010), who suggested testing convergent and discriminant validities, were followed to de-

| Variables | Min | Max | Mean | S. D | Skewness | Kurtosis |
|----------------------------|------|------|------|------|----------|----------|
| SCM Practices | 1.00 | 5.00 | 3.18 | 0.89 | -0.75 | -0.56 |
| Supply Chain Ecocentricity | 1.00 | 5.00 | 3.51 | 0.71 | -0.61 | -0.46 |
| Innovation Capabilities | 1.00 | 5.00 | 3.22 | 0.79 | 0.83 | -0.89 |
| SMEs' performance | 1.00 | 5.00 | 3.78 | 0.75 | -1.83 | 1.67 |

Note: N = 344.

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| Variables | CR | AVE | 1 | 2 | 3 | 4 |
|-------------------------------|------|------|----------|----------|--------|-------|
| SCM Practices | 0.87 | 0.51 | 0.714 | | | |
| Supply Chain Ecocentricity | 0.89 | 0.55 | 0.441*** | 0.741 | | |
| Innovation Capabilities | 0.92 | 0.54 | 0.121** | 0.351*** | 0.734 | |
| SMEs' performance | 0.81 | 0.61 | 0.343*** | 0.403*** | 0.142* | 0.781 |

Table 3. Confirmatory factor analysis

Note: N = 344. * P < 0.050; ** p < 0.01; *** p < 0.001.

Table 4. HTMT analysis

| Variables | 1 | 2 | 3 | 4 |
|----------------------------|-------|-------|-------|---|
| SCM Practices | - | | | |
| Supply Chain Ecocentricity | 0.431 | - | | |
| Innovation Capabilities | 0.091 | 0.121 | - | |
| SMEs' performance | 0.534 | 0.449 | 0.065 | - |

Note: N = 344.

termine the construct validity. The values of AVE (i.e., minimum 0.50 as suggested by Bagozzi and Yi (1988)) show convergent validity, and these values for all contracts were above 0.5. Heterotraitmonotrait ratio (HTMT) shows the discriminant validity, and its values should be below 0.90. Tables 3 and 4 provide evidence that convergent and discriminant validities exist. In addition, the total variance when all items were loaded into a single factor was 39.321, less than 50%, as Podsakoff et al. (2003) recommended for common method bias. The factor loadings for each item are presented in Table A1, Appendix A.

Anderson and Gerbing (1988) suggested evaluating the fitness of the measurement model before testing the hypotheses. The measurement model comprises 4 variables: supply chain management practices, supply chain ecocentricity, innovation capabilities, and SMEs' performance. The results of model fitness are given in Table 5. Following Hu and Bentler's (1999) model fit criteria, the fit indices of Chi-square (2/df), Tucker-Lewis index (TLI), Comparative Fit Index (CFI), Incremental Fit Index (IFI), and Root Mean Square Error of Approximation (RMSEA) were used. The confirmatory factor analysis measurement model in Table 5 shows that the four-factor initial measurement model fits the data well (χ^2 /df = 2.51, RMSEA = 0.06, IFI = 0.96, TLI = 0.95, and CFI = 0.96). AMOS output of the measurement model is shown in Figure 2.

Structural equation modeling was used to assess the direct effect, and the moderating effect was examined using the Slop test via the Hayes process macro. The result of the direct effect shown in Table 6 revealed a significant effect of supply chain management practices on SMEs' performance (β = 0.544; P < .001), which led to the acceptance of H₁.

The study tests the supply chain ecocentricity and innovation capabilities as potential moderators

Table 5. Confirmatory factor analysis measurement model

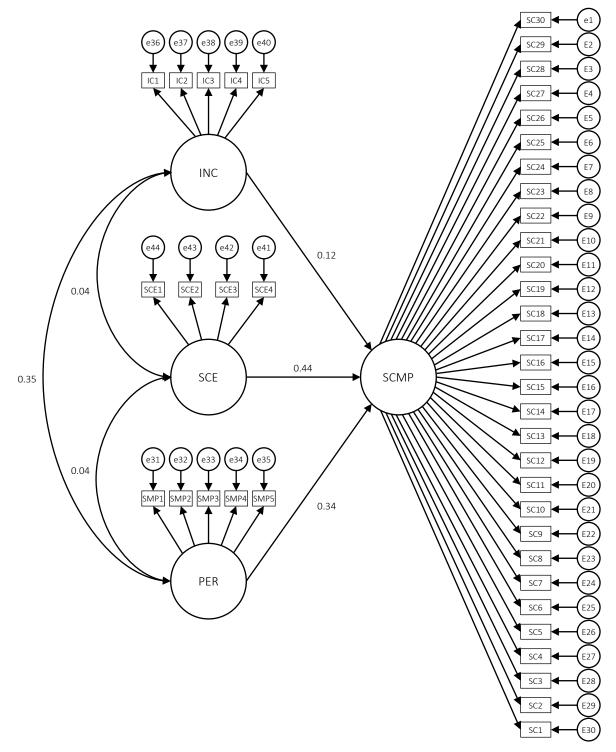
| Measurement Model | Х ² | DF | X²/df | RMSEA | IFI | TLI | CFI |
|---|----------------|-----|-------|-------|-----------------|--------------|-----------------|
| 4-Factor Measurement Model | 844.54 | 337 | 2.51 | 0.06 | 0.96 | 0.95 | 0.96 |
| Model Fit Criteria (Hu & Bentler, 1999) | | | <3.00 | <.08 | <u>></u> .90 | <u>≥</u> .90 | <u>></u> .90 |

Note: N = 344.

Table 6. Direct effect

| Relationships | Estimate | Р |
|---|----------|-----|
| H_1 : SCM Practices \rightarrow SMEs' performance | 0.544 | *** |

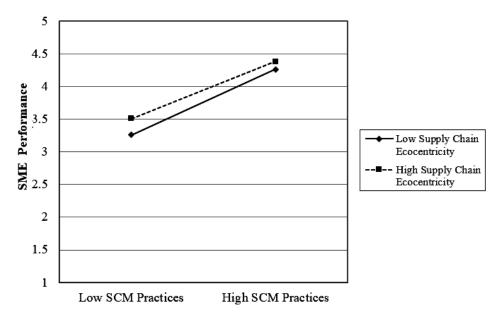
Note: *** p < .001, N – 344. SCM = supply chain management.



Note: SCMP = supply chain management practices; PER = SMEs' performance; SCE = supply chain ecocentricity; INC = innovation capabilities.

Figure 2. Measurement model

in the relationship between supply chain management practices and SMEs' performance. Thus, in the presence of high supply chain ecocentricity and innovation capabilities, the relationship between supply chain management practices and SMEs' performance may get stronger compared to low supply chain ecocentricity and innovation capabilities. The conditional effect of supply chain management practices on SMEs' performance in the presence of supply chain ecocentricity is shown



Note: SCM = supply chain management.

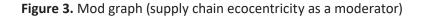


Table 7. Conditional effects of the focal predictor (supply chain management practices) at values of the moderator (supply chain ecocentricity)

| DV: SMEs' performance Test(s) of highest order unconditional interaction: (X*W) | | | | | | | |
|--|-------|-------|--------|-------|--|--|--|
| | | | | | | | |
| F Statistics = 47.18 | | | | | | | |
| Moderator: Supply Chain Ecocentricity | | р | 95% CI | | | | |
| -1 SD | 0.194 | <.05 | 0.098 | 0.395 | | | |
| Mean | 0.539 | <.001 | 0.231 | 0.694 | | | |
| +1 SD | 0 771 | < 001 | 0 439 | 0.945 | | | |

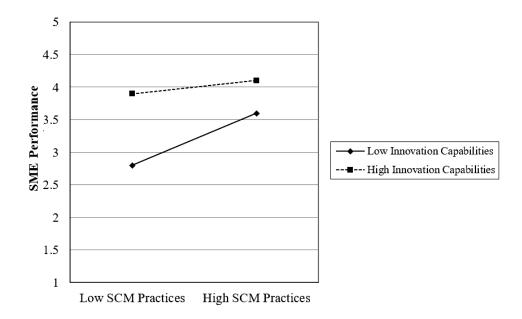
Note: *** *p* < .001, *CI* – confidence interval.

in Table 7 and the moderation graph in Figure 3. The conditional effect of supply chain management practices on SMEs' performance in the presence of innovation capabilities is shown in Table 8 and the moderation graph in Figure 4. The results revealed significant moderation in both cases as there is significant R^2 change and F statistics. Moreover, the slopes of relationships, as presented in mod graphs, indicated that in the presence of high supply chain ecocentricity and high innovation capa-

Table 8. Conditional effects of the focal predictor (supply chain management practices) at values of the moderator (innovation capabilities)

| DV: SMEs' performance | | | | |
|------------------------------------|-----------------|---------------------|------------|-------|
| Test(s) of hi | ghest order unc | onditional interact | ion: (X*W) | |
| R ² -change = .061*** | | | | |
| F Statistics = 39.74 | | | | |
| Moderator: Innovation Capabilities | | р | 95% CI | |
| -1 SD | 0.091 | 0.12 | -0.034 | 0.287 |
| Mean | 0.348 | <.001 | 0.211 | 0.489 |
| +1 SD | 0.631 | <.001 | 0.428 | 0.819 |

Note: *** *p* < .001, *CI* – confidence interval.



Note: SCM = supply chain management.

Figure 4. Mod graph (innovation capabilities as a moderator)

bilities, SMEs' performance is high even with low supply chain management practices. On the other hand, in the presence of high supply chain ecocentricity, innovation capabilities, and high supply chain management practices, SMEs' performance will be the highest. As a result, H_2 and H_3 are accepted.

4. DISCUSSION

Market globalization is creating a lot of challenges for SMEs in improving their entire supply chain management or upgrading their technology to compete with global market players. The competency can be achieved by delivering on time, maintaining product quality, and developing agility. All these factors are only possible with the effective implementation of supply chain management (Singh & Kumar, 2020) in manufacturing SMEs in Jordan. In today's competitive world, SMEs are playing an important role in the development of economies around the globe, particularly for the economies of developing countries (Al-Mahrouq, 2010). Similarly, SMEs have significantly contributed to the economic growth of Jordan by supporting market growth and reducing the unemployment ratio. The SME sector of Jordan is diverse; it comprises agriculture, retail, service, and other SMEs, but there is a considerable share of manufacturing SMEs (i.e., 90% of the manufacturing firms are considered small and medium-sized enterprises) that are privately owned and have 69% of employees. The manufacturing sector in Jordan contributes 24% to the GDP of the country. Thus, the manufacturing SMEs in Jordan are considered critical contributors to the economic growth of Jordan (Hussein & Baharudin, 2017).

The first objective of the study was to highlight the effect of supply chain management practices on the performance of manufacturing SMEs in Jordan. The results demonstrated the relevance of studying supply chain management practices from the manufacturing SMEs' perspective in Jordan to enhance their performance. The study used the multidimensional concept of supply chain management practices for analysis, but each dimension was not hypothesized separately. However, all the dimensions reported by Li et al. (2005) were used in the analysis, and each dimension was considered as a practice. The findings highlighted that supply chain management practices significantly influence the performance of manufacturing SMEs in Jordan. These findings are supported by Utami et al. (2019), who revealed that effective supply chain management practices can significantly and positively influence the financial, economic, and sustainable performance of SMEs. Similarly, many studies have highlighted that SMEs must

implement or adopt proper supply chain management practices to enhance performance (Khalil et al., 2019; Singh & Kumar, 2020). Manufacturing SMEs in Jordan eager to increase their performance should focus on strategic supplier partnerships, customer relationships, level of information sharing, quality of information sharing, internal lean practices, and postponement, as these are effective supply chain management practices.

The second hypothesis was developed to examine the moderating role of innovation capability between supply chain management practices and the performance of manufacturing SMEs in Jordan. The empirical testing of this hypothesis found an important role that innovation capability can play in strengthening the relationship between supply chain management practices and SMEs' performance. The third hypothesis indicated the moderation of supply chain ecocentricity between supply chain management practices and SMEs' performance. The results highlighted that supply chain ecocentricity strengthens the relationship between supply chain management practices and SMEs' performance. The presence of supply chain ecocentricity will enhance the effect of supply chain management practices on the performance of SMEs in Jordan. SMEs in Jordan with innovation capabilities and supply chain ecocentricity can enhance their performance by effectively implementing supply chain management practices. These findings are supported by Cousins et al. (2019), who highlighted that supply chain ecocentricity significantly moderates the relationship between green supply chain management practices and the performance of manufacturing companies.

CONCLUSION

The study has investigated the relationship between supply chain management practices and the performance of manufacturing SMEs in Jordan. Moreover, it has examined the moderation of innovation capabilities and supply chain ecocentricity. The questionnaire was used to gather the data from managers of manufacturing SMEs in Jordan, and the data were analyzed with AMOS. The results showed that supply chain management practices can boost the performance of manufacturing SMEs, and this relationship can be strengthened with innovation capabilities and supply chain ecocentricity.

This study has broadened the limited understanding of supply chain management practices in the context of manufacturing SMEs and linked it with SMEs' performance. Moreover, it is vital to highlight the effective supply chain management practices and capabilities that can actually enhance SMEs' performance. Therefore, the study has directed attention toward supply chain management practices, innovation capability, and supply chain ecocentricity. Many previous studies considering SMEs have not focused on all dimensions of supply chain management practices, but the current study has used all the dimensions while analyzing the moderation or direct relationship with performance. At the same time, some studies examined every dimension separately with performance or other variables. The current study has added abundant evidence on supply chain management practices, innovation capability, and supply chain ecocentricity. In particular, this study extended the knowledge in the existing literature on the performance of manufacturing SMEs concerning effective organizational strategies and management practices.

AUTHOR CONTRIBUTIONS

Conceptualization: Ahmad Almohtaseb, Jehad Aldehayyat, Adel Al Khattab. Data curation: Ahmad Almohtaseb, Jehad Aldehayyat, Adel Al Khattab, Zaid Alabaddi. Formal analysis: Jehad Aldehayyat, Zaid Alabaddi. Investigation: Ahmad Almohtaseb, Adel Al Khattab, Zaid Alabaddi. Methodology: Ahmad Almohtaseb, Jehad Aldehayyat, Adel Al Khattab, Zaid Alabaddi. Project administration: Ahmad Almohtaseb, Jehad Aldehayyat. Resources: Ahmad Almohtaseb, Zaid Alabaddi. Software: Adel Al Khattab, Zaid Alabaddi. Supervision: Ahmad Almohtaseb, Jehad Aldehayyat. Validation: Ahmad Almohtaseb, Jehad Aldehayyat, Adel Al Khattab. Visualization: Adel Al Khattab, Zaid Alabaddi. Writing – original draft: Ahmad Almohtaseb, Jehad Aldehayyat, Adel Al Khattab, Zaid Alabaddi. Writing – review & editing: Ahmad Almohtaseb, Jehad Aldehayyat, Adel Al Khattab, Zaid Alabaddi.

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APPENDIX A

Table A1. Loadings of items

| Variables | Items | Loading |
|---------------------------------|--|---------|
| | Moderators | |
| | We incorporate external feedback to help improve the sustainability of our supply chain | 0.77 |
| Supply Chain | We partner with NGOs and not-for-profit organizations to learn about potential solutions to environmental problems | 0.87 |
| Ecocentricity | We actively engage external parties (e.g., customers, suppliers) in seeking to improve environmental performance | 0.82 |
| | We incorporate input from regulators into our supply chain policy and practices | 0.81 |
| | There is a constant generation of new service ideas in this firm | 0.75 |
| | We are constantly searching for new ways of doing things | 0.81 |
| Innovation | There is creativity in our methods of operation | 0.74 |
| Capability | This enterprise is usually a pioneer in the market | 0.78 |
| | This firm is able to introduce new products/services every five years | 0.81 |
| | SCM Dimensions | ÷ |
| | We consider quality as our number one criterion in the selection of suppliers | 0.81 |
| | We regularly solve problems jointly with our suppliers | 0.74 |
| CM- Strategic | We have helped our suppliers to improve their product quality | 0.79 |
| supplier | We have included appliers to improve their product quality We have continuous improvement programs that include our key suppliers | 0.73 |
| partnership | We induce our key suppliers in our planning and goal-setting activities | 0.75 |
| | We include our key suppliers in our plaining and goal-secting activities | 0.73 |
| | We actively involve our key suppliers in new product development processes We frequently interact with customers to set reliability, responsiveness, and other standards for us | 0.70 |
| | We frequently measure and evaluate customer satisfaction | 0.77 |
| CM- Customer | We frequently determine future customer expectations | 0.75 |
| Relations | | + |
| | We facilitate customers' ability to seek assistance from us | 0.63 |
| | We periodically evaluate the importance of our relationship with our customers | 0.74 |
| | We inform trading partners in advance of changing needs | 0.71 |
| | Our trading partners share proprietary information with us | 0.76 |
| SCM- Information Sharing | Our trading partners keep us fully informed about issues that affect our business | 0.78 |
| | Our trading partners share business knowledge of core business processes with us | 0.81 |
| | We and our trading partners exchange information that helps establishment of business planning | 0.63 |
| | We and our trading partners keep each other informed about events or changes that may affect the other partners | 0.76 |
| | Information exchange between our trading partners and us is timely | 0.79 |
| SCM- | Information exchange between our trading partners and us is accurate | 0.82 |
| Information | Information exchange between our trading partners and us is complete | 0.79 |
| Quality | Information exchange between our trading partners and us is adequate | 0.74 |
| | Information exchange between our trading partners and us is reliable | 0.81 |
| | Our products are designed for modular assembly | 0.77 |
| SCM- Postponement | We delay final product assembly activities until customer orders have actually been received We delay final product assembly activities until the last possible position (or nearest to customers) in | 0.83 |
| | the supply chain | 0.80 |
| | Our firm reduces set-up time | 0.82 |
| | Our firm has continuous quality improvement program | 0.84 |
| SCM- Internal Lean Practices | Our firm uses a "pull" production system | 0.69 |
| ean Flactices | Our firm pushes suppliers for shorter lead times | 0.71 |
| | Our firm streamlines ordering, receiving and other paperwork from suppliers | 0.63 |
| | Outcome | |
| | The employee ratio in my enterprise is growing | 0.69 |
| | The market share of my enterprise is growing | 0.73 |
| SMEs' | The profitability of my enterprise is growing | 0.80 |
| performance | The sale of my enterprise is growing | 0.75 |
| | Overall performance of my enterprise is growing | 0.83 |

Note: SCM = supply chain management.