emerald PUBLISHING

Supply Chain Management: an International J

Unlocking Resilience and Performance: The Dynamic Impact of Collaborative Social Media Integration in Operations, Marketing, and Sales

Journal:	*Supply Chain Management: an International Journal*
Manuscript ID	SCM-05-2024-0310.R2
Manuscript Type:	Original Manuscript
Keywords:	Collaboration, Resilience, Performance

Unlocking Resilience and Performance: The Dynamic Impact of Collaborative Social Media Integration in Operations, Marketing, and Sales

Abstract

Purpose: This study theoretically hypothesises and empirically explores the relationships between Operations and Supply Chain Management, and Marketing/Sales collaboration, social media usage, organisational resilience, and performance. We consider how collaboration through social media can enhance organisational resilience capability and performance.

Design/methodology/approach: A survey was conducted among 395 organisations in the UK. Structural equation modelling was applied to test the research hypotheses.

Findings: The empirical findings support the significant mediating role of Operations and Supply Chain Management-Marketing/Sales collaborative activities through internal and external social media for better organisational resilience, capability, cost efficiency, customer-focused and business performance. This also extends to exploring differences based on product versus service industries.

Originality/value: Through empirical research, the findings contribute to the theoretical development and managerial guidance on Operations and Supply Chain Management - Marketing/Sales collaboration and resilience capability by emphasising the strategic deployment of social media across functions through the lens of contingency theory and resource-based view.

Keywords Operations and Supply Chain Management-Marketing collaboration, Social media, Resilience capability, Organisational Performance

Paper type Research paper

1. Introduction

Companies face increasing complexity and volatility in global markets, leading to an enhanced need for inter-departmental collaboration in driving resilience and business performance. One of the emerging strategies for achieving collaboration is integrating social media (SM) across various business functions, particularly operations, marketing, and sales (Cao *et al*., 2018). Yet how the integration of SM supports inter-departmental collaboration; which is a continuous challenge between these functions (Tang, 2010), is largely un-researched. This gap is addressed in this paper as we develop insight into the potential of SM as an enabler of resilience and performance, through improved collaboration. By bridging the gap between theory and practice, we seek to offer a comprehensive understanding of how collaborative SM integration can drive organisational success in an increasingly interconnected and dynamic world.

Digital platforms and technologies have been acknowledged as a strategic imperative for Operations and Supply Chain Management (O&SCM), offering a range of opportunities such as efficiency, customer focus, business transformation, innovation, and competitive positioning (Roberts *et al*., 2016; Cao *et al*., 2018; Cheng *et al*., 2020). The proliferation of SM platforms has revolutionised how businesses interact with customers and suppliers, manage operations, and execute marketing strategies (Neuhaus *et al*., 2023). SM has profoundly transformed various business functions, contributing to organisations by providing better access to markets for promotional activities (Huang, 2020), supporting supplier selection processes and supplier attractiveness (Banerjee *et al*., 2020; Tóth *et al*., 2020), and enabling more direct engagement with stakeholders for gathering market intelligence (Ainin *et al*., 2014). SM channels enhance communication, engagement, and collaboration with supply chain partners (Guo *et al*., 2020; Cartwright *et al*., 2021), fostering communication and engagement within organisations, reducing costs and supporting better organisational knowledge management internally (Neeley and Leonardi, 2018; Nisar *et al*., 2019). Consequently, this facilitates organisational learning and innovation, improving performance and agility and timely responses to changes within the business environment (Wang *et al*., 2017; Zhan *et al*., 2020). However, most existing SM literature focuses on applying SM within organisational functions (Salo, 2017; Cartwright *et al*., 2021), and there is a clear gap in understanding its role *across* organisational functions (Huang *et al*., 2020).

One suggested benefit of SM is bridging organisational and functional gaps; integrating business processes within organisations and supply chains (Lam *et al*., 2016; Irani *et al*., 2017). This collaboration is pivotal in enhancing organisational resilience capabilities and

performance, as it enables firms to respond more effectively to market dynamics and operational disruptions. However, the SM literature has yet to address the traditional divide between organisational business functions (Huang *et al*., 2020). This paper aims to fill this gap by examining the impact of strategically integrating SM across O&SCM and Marketing/Sales (OMS) to enhance organisational resilience and performance. Hence, this paper aims to address the following research question: How does SM contribute towards improving collaboration between O&SCM and Marketing/Sales functions and thus improving organisational resilience and performance? In doing so, we explore the development of performance and resilience capabilities, viewing SM as a dynamic resource that enables collaboration and interaction between O&SCM and Marketing/Sales for mutual growth.

Organisational resilience is an essential dynamic capability for enterprises to survive, adapt, and grow in the face of turbulent change and unexpected events (Fiksel *et al*., 2015; Nikookar and Yanadori, 2022), and dynamic capabilities are a learned pattern of collective activity (e.g., functional collaborations) through which an organisation can generate new operating practices to achieve and sustain a competitive advantage (Teece, 2007). Thus, the organisational resilience capability to prepare, absorb and sustain unforeseen events (Golgeci and Ponomarov, 2013) and minimise the impact of disruptions (Verbano and Venturini, 2011) can lead to better organisational performance such as cost efficiency (i.e., cost leadership), customer focus (i.e., differentiation) and financial performance.

In answering our research question, we strengthen the extant knowledge about overcoming the strategic divide between O&SCM and Marketing/Sales functions, and the value of using SM to bridge this gap. Utilising a quantitative exploratory survey of UK organisations, we build on existing theories explaining the nature and function of SM, including information/communication, contingency theory (e.g., internal and external conditions), and the resource-based view (RBV). Our study provides three crucial contributions. First, it determines how OMS collaborates through SM, thus understanding its role across organisational functions. Second, it identifies how SM applications can facilitate a collaborative approach to reducing the gap between OMS functions and enhancing existing organisational capabilities and performance (i.e., organisational resilience capability, cost efficiency, and customer focus). Third, we present how internal and external SM contribute differently to organisational resilience capability and how OMS collaboration influences organisational performance differently depending on the industry's nature. By analysing views, approaches, and implications in this manner, we offer theoretical insights and managerial

guidance on strategic procedures required for organisations to apply SM to develop organisational resilience capability and improve organisational performance across functions.

We organise the rest of the paper as follows. Section 2 presents a literature review on key concepts, including OMS collaborations and SM to enhance organisational resilience and performance. In Section 3, we explain the research model and formulate the hypotheses. After discussing the methodology (i.e. section 4), in Sections 5 and 6, we analyse the data and discuss the research results, findings and their theoretical and managerial implications. Section 7 concludes the paper by discussing the study's limitations and suggesting topics for future research.

2. Literature review

2.1 Operations/supply-chain management and marketing/sales collaboration

Collaboration between marketing and O&SCM is often referred to as alignment (Weir *et al*., 2001), coordination (Narver and Slater, 1990), integration (Hausman *et al*., 2002), or the interface between functions (Parente, 1998). The critical marketing objectives include increasing revenue and customer-focused performance, such as customer satisfaction (Assen, 2018) and service quality (Torres, 2014). Conversely, the O&SCM function primarily focuses on reducing costs (Beamon, 1999; Zelbst *et al*., 2009; Aoki *et al*., 2014) and product flow (Bijmolt *et al*. 2021), while also enhancing customer satisfaction and service quality through speed, dependability, and flexibility (Assen, 2018; Patel *et al*., 2013). Better customer-focused service and cost efficiency improve business performance metrics like return on sales (ROS), sales, and market share growth (Huo *et al*., 2014; Fulleton *et al*., 2014; Okafor, 2021). Therefore, aligning marketing and O&SCM is crucial to achieving both cost-efficiency and customer-focused objectives, contributing significantly to organisational performance. Although aligning organisational functions and strategic approaches is vital for achieving organisational excellence, there are theoretical and pragmatic gaps in understanding the coordination between marketing and O&SCM that still need exploration (Piercy, 2007; Sombultawee and Boon-Itt, 2020).

Hausman *et al*. (2002) view alignment as an interface between both functions, which have "the ability to work together in strategy implementation" (p. 242). OMS encompass activities such as sales forecasting (Parente, 1998; Weir *et al*., 2001; Sombultawee and Boon-Itt, 2018), new

product introduction (Karmarkar, 1996; Swink and Song, 2007), order fulfilment (Sawhney and Piper, 2002), quality/quantity issues (Paiva, 2010), responding for the business environment (Jaworski and Kohli, 1993), operations schedules, delivery plans (Sombultawee and Boon-Itt, 2018), customer order coordination (Alex *et al*.,2014), returns (Bijmolt *et al*. 2021) and exploring new market entry (Kong *et al*., 2015; Goh and Eldridge, 2019). The alignment between O&SCM and Marketing/Sales is seen as a source of competitive advantage through these activities (Powell, 1992). However, research across both functions remains limited, as observed in studies by Dixon et al. (2014), Mollenkopf, Frankel and Russo (2011), and Weir *et al*. (2001).

What the extant literature does suggest is that the more collaborative marketing and O&SCM are, the greater the benefit derived from their resource planning systems (Gattiker, 2007). Moreover, greater cooperation between functions positively influences both effectiveness and efficiency (Brettel *et al*., 2011). Research emphasizes the need for careful communication and feedback systems for a successful interface at the operational, tactical, and strategic levels (see Parente, 1998; Thome, *et al*., 2012). Although authors' definitions of collaboration vary, there is a collective understanding that the collaborative cross-functional alignment of activities is crucial for organisational success. In light of this, we define OMS collaboration as the extent to which O&SCM and marketing functions work harmoniously (i.e., across functions) based on shared objectives and activities.

Empirical evidence on marketing-operations collaborations across both functions has only been extant since around 2000 (Sombultawee and Boon-itt, 2018), and there is a lack of research regarding actual activities and operational practices that facilitate effective collaboration between marketing and O&SCM functions (Marques *et al*., 2014). A further concern is the lack of understanding of collaboration's tangible benefits to the firm, such as organisational capability (e.g., resilience), cost-benefits, and customer service improvement, since marketing and O&SCM functions may often have different or conflicting operational and strategic goals (Erickson, 2012). In addition, the supporting strategies or tools for OMS collaboration have not been empirically investigated since marketing-O&SCM collaboration is often neglected as an organisational practice and may frequently be implemented inconsistently (Sombultawee and Boon-itt, 2020). Therefore, collaboration across both functions is the research gap we aim to address. For example, SM has been acknowledged as a resource contributing not only to external (with suppliers and customers) but also internal (with colleagues) relationship development and collaboration, leading to improved customer focus and financial performance

(Mitrega *et al*., 2017; Rajamma *et al*., 2011; Wang *et al*., 2016). Consequently, we turn to SM to investigate its role in enhancing OMS collaboration to manage the supply chain.

2.2 Social media research: O&SCM and marketing/sales perspective

SM refers to "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content" (Kaplan and Haenlein, 2010, p. 61). Through SM channels, organisations can reach, communicate, and engage with larger audiences on a global scale at a significantly lower cost than ever before (Craft *et al*., 2017; Drummond *et al*., 2020). From a marketing perspective, the benefits of utilising specific applications of SM have been identified in a number of marketing practice areas such as sales (Ancillai *et al*., 2019; Guesalaga, 2016), key account management (Lacoste, 2016), and content marketing (Leek *et al*., 2019; Swani *et al*.,2019) as enhancing performance. However, limited systematic theory development or extension exists on how these channels can benefit O&SCM (Cheng *et al*., 2020; Cui *et al*., 2019).

Existing research suggests that at the relational level, SM can be employed to enhance operational efficiency and innovativeness internally (Chen *et al*., 2020; Lam *et al*., 2016). Organisations utilise SM for effective knowledge-sharing among employees, resulting in improved job performance (Cartwright *et al*., 2021; Cui *et al*., 2019). For example, employees are formally interacting with company news, online blogs, CEO messages, and exchanging reports as well as sharing information or resources (e.g., financial means, personnel, work results), and informally through private communities and discussion platforms, such as WhatsApp, X, Yammer, Slack, Discord, LinkedIn and Facebook Workplace. Furthermore, SM is utilised for information diffusion (Yoo *et al*., 2016), sentiment manipulations (Lee *et al*., 2018), customer satisfaction through social interaction (Wang *et al*., 2016), and measurement of online responses (Gu and Ye, 2014; Ramanathan *et al*., 2017). At the organisational level, research demonstrates the role of SM in managing supplier attractiveness (Tóth *et al*., 2020), selecting suppliers (Banerjee *et al*., 2020), facilitating customer service and enhancing organisational reputation (Guo *et al*., 2020), deploying the value of SM data and information (Chan *et al*., 2016; Cui *et al*., 2019), and improving service recovery strategies (Fan and Niu, 2016). Thus, SM has the potential to create value through interactions between professionals within and beyond focal organisations by sharing intellectual capital within close networks (Cartwright *et al*., 2020; Mitrega *et al*., 2017).

SM offers opportunities for understanding the interplay between operations and marketing management (Cheng *et al*., 2020). There is an implied collaborative responsibility for reciprocity in sharing and posting content between operations and marketing (Tóth *et al*., 2020; Palmatier, 2008; Karampela *et al*., 2020; Chae *et al*., 2020). This reciprocity strengthens internal and external relationships (Eklinder-Frick *et al*., 2011; Lee *et al*., 2018). However, existing empirical SM research takes a siloed approach to looking at SM usage within functions rather than across functions (Huang *et al*., 2020), leading us to develop our research framework and hypotheses.

3. Research framework and hypothesis development

Several studies have explored the impact of SM practices on business and financial performance (see Paniagua and Sapena, 2014; Tajvidi and Karami, 2021; Ye *et al*., 2022; Corral de Zubielqui and Jones, 2022). However, there is a notable gap in research concerning SM's potential as a strategic tool for enhancing functional collaboration and resilience capabilities, ultimately leading to improved organisational performance across functions rather than within functions. To address this gap, we propose a conceptual framework illustrating the relationship between SM and OMS collaborative activities in enhancing organisational resilience capability, cost efficiency, customer focus, and overall business performance. For a structural representation of our research framework, refer to Figure 1.

Figure 1. Research framework

Our framework makes several significant contributions to the current literature. Firstly, it extends our understanding of SM beyond its siloed functional role in marketing, operations, sales or supply-chain management by emphasising its strategic importance in fostering cross-departmental collaboration and organisational resilience. This is crucial as existing studies primarily focus on SM's direct impact on performance metrics without considering its intermediary effects through collaboration and resilience capabilities. By identifying OMS collaboration and organisational resilience as mediating variables, our framework determines the pathways through which the utilisation of SM translates into performance outcomes across functions.

Additionally, the model contributes to the literature by differentiating between the impacts of SM in manufacturing/production-oriented and service/delivery-oriented environments. This distinction provides nuanced insights into how industry context influences the effectiveness of SM practices, a perspective that has been underexplored in previous research. Furthermore, our model investigates the differential effects of internal and external SM usage, adding another layer of depth to the analysis of SM's strategic role within organisations.

In the following sections, we delve into a detailed discussion of the relationships depicted in the framework and present the corresponding hypotheses. By clarifying these contributions, our study aims to bridge the existing gaps in the literature and offer a comprehensive understanding of the strategic value of SM in enhancing organisational resilience and performance through collaborative efforts.

3.1 SMs role in OMS collaboration and organisational resilience

Collaborations in demand forecasting, new product introduction, quality/quantity management, and responses to changing business environments between OMS functions are crucial at the tactical level (see Jaworski and Kohli, 1993; Malhotra and Sharma, 2002; Paiva, 2010). Also, collaborations in customer order coordination, operations schedule and delivery plan are key areas at an operational level. SM activities are suggested to play a significant role as collaborative tools from both the O&SCM and marketing perspective (Brettel *et al*., 2011). Inter-organisational collaboration supported by SM is predicted to enhance organisational and financial performance (Sanders and Premus, 2005; Wu *et al*., 2015), and to enhance network coordination and collaboration (Drummond *et al*., 2018). According to Järvinen and Taiminen (2016) creating SM content should also contribute towards organisational collaboration and performance.

Conflicting objectives between O&SCM and marketing (e.g. Cost-saving and customer-focus respectively) can induce problems for collaboration (Parente, 1998). However, SM can contribute to improving organisational resilience by achieving efficiency in interactions at a relatively low cost (Lam *et al*., 2016) and enabling collaborative project management (Ollus *et al*., 2011) as an integrated communications tool (Leek *et al*., 2019; Iankova *et al*., 2019). SM can also act as a tool to facilitate employee engagement (Barry and Gironda, 2019; Pitt *et al*., 2019). Employees can leverage SM channels to avoid the impact of unexpected change (Klibi *et al*., 2010), develop new business opportunities, and collaborate effectively with colleagues, optimising operational processes (Järvinen and Taiminen, 2016). Although improved

collaboration and a positive relational impact through SM could lead to enhanced operational performance (Auramo *et al*., 2005), there is limited research on how SM contributes to aligning activities between O&SCM and marketing departments.

The speed and dynamic nature of SM interactions have been suggested to enhance organisational resilience capability (Martín-Rojas *et al*., 2023) such as anticipation of disruptions, agile response to problems and reflection on the change (Chowdhury and Quaddus, 2017; Gölgeci and Kuivalainen, 2020). Since organisational resilience involves preparing for, absorbing, and sustaining unexpected events (Peck, 2005; Bhamra *et al*., 2011) and responding to disruptions (Kumar and Sosnoski, 2011) the literature categorises resilience broadly into readiness and preparedness, response and adaptation, and adjustment (Chowdhury and Quaddus, 2017). However, SM's role in enhancing organisational resilience is still underexplored (Cheng *et al*., 2020; Fan and Niu, 2016). Considering information flows, visual sharing, and relational aspects between operations and marketing through SM, we explore the following hypotheses:

H1: Organisations engaging more through SM exhibit superior OMS collaboration.

H2: Organisations engaging more through SM demonstrate enhanced organisational resilience capability.

SM is accessible to many individuals within an organisation, connecting them to information and providing access to an organisational database that supports sharing technical information and policies, establishing common goals collaboratively (Kong *et al.*, 2016). Research shows that the first step to engagement internally and externally is to interact with SM (Lacoste, 2016). SM accelerates the effective transfer of knowledge across various business functions, fostering higher collaborative innovation. Thus, SM is a resource that enables the development of intellectual capital (Cartwright *et al*., 2020). In turn, organisational collaboration and information sharing are critical for achieving a competitive advantage, enhancing adaptability to changing conditions and utilising resources effectively (Sombultawee and Boon, 2018), which leads to enhanced organisational resilience capability to survive, adapt and grow in the face of turbulent change in sourcing, manufacturing and delivery of product and service (Jain *et al*., 2017). Furthermore, sharing timely and valuable content also contributes to idea development, while enhancing innovation (Chen *et al*., 2020), raising high entry barriers to the market and strengthening organisational positioning. Thus, we consider SM usage as an

antecedent for OMS collaboration, enhancing organisational resilience, and propose the following exploratory hypothesis:

H3: OMS collaboration mediates relationships between SM and resilience capability.

The relationships among SM, OMS collaboration, resilience, and organisational performance can be explained by two grounded theories. The RBV suggests that organisations can achieve their objectives by accumulating and integrating the producing resources (Powell, 1992). Integrated resources are organisational assets that are the foundation for creating competitive advantage (Barney, 1991; Eisenhardt and Martin, 2000). Thus, we regarded SM as a technical resource (Bharadwaj, 2000) to support the OMS resource collaboration and an information exchange channel to improve cost efficiency and customer focus (Sombultawee and Boon-Itt, 2020). Operations management requires collaboration with marketing to enhance strategic planning and the utilisation of resources throughout the process to create a competitive advantage (Hitt *et al*., 2016). For example, sales and operations planning (S&OP) processes through the collaboration of two business functions facilitate master planning, demand planning, and the flow of information (Oliva and Watson, 2011). With increasing technological advances, such as SM channels and dynamism in the environment, organisations are forced to revisit their resource integration and develop strategic changes continuously (Quinn *et al*., 2016; Derfus *et al*., 2008).

Contingency theory emphasises that a proper alignment of endogenous design in the organisation (i.e., internal boundary conditions) influences the management of the resource (Grötsch *et al*., 2013) and results in competitive advantage and better business performance (Powell, 1992). For example, appropriate organisational structure and the degree of cooperative planning (e.g., collaboration between OMS) play a significant role in achieving efficient and effective organisational performance, so that organisations can manage resources effectively to develop an integrative capacity (Lawrence and Lorsch, 1967). Thus, we regarded OMS collaboration as an internal enabler and condition leading to better cost efficiency and customer-focused performance. Collaborative digital information sharing for the sales forecast increases the efficiency of fulfilment operations and customer service (Van Duin *et al*., 2016). Also, OMS collaboration facilitates customer-focus performance since customer orientation requires OMS departments to work closely together to discover and meet customer needs (Sombultawee and Boon-Itt, 2020). Thus, collaborative processes and structures facilitate

improvement in the ability of the organisation to meet customer needs and cost efficiency (Auramo *et al*., 2005; Feng *et al*., 2008).

Organisational resilience capability allows organisations to recover in less time (Wang *et al*., 2010), with less effort, and at a lower cost to shocks in the market (Vugrin *et al*., 2011) based on achieving both cost efficiency and a unique ability to absorb the shock (Holling, 1973). Resilience capability also reduces the impact of the disruption (Rose, 2004) or its inherent ability to return to its original position (Christopher and Peck, 2004). Furthermore, resilience improves customer satisfaction and relationships (Pettit *et al*., 2013), flexibility (Swafford *et al*., 2006), quick response (Sheffi and Rice, 2005), and quality of service and product (Epstein and Wisner, 2001). Finally, the enhanced corporate competitive status (i.e., cost efficiency and customer focus) acquired from a superior capability (e.g., resilience) and strategy has significant consequences for better business performance (Miles and Snow, 1978). As designed in this study cost efficiency and customer focus can be treated as intermediate organisational performance outcomes, while financial performance is viewed as the final business performance outcome (Vickery *et al*. 2003). Table 1 summarises the cross-referred structures that are used to build items, with supporting literature. Thus, considering the benefits and relationship of OMS collaboration, SM, and resilience capability elucidated on organisational performance, we propose the following hypothesis:

H4: OMS collaboration enhances (a) cost efficiency and (b) customer-focus performance.

H5: The use of SM improves (a) cost efficiency and (b) customer focus performance directly.

H6: Organisational resilience capability enhances (a) cost efficiency and (b) customer-focus performance.

H7: (a) Cost efficiency and (b) customer focus performance are positively related to better business performance.

OMS collaboration and communication frequently occur at the level of individual manager or employee, informally (e.g., internal SM) and without acknowledgement within the formal processes of the firm (Piercy, 2010). Communication with customers and suppliers (e.g., external SM) can be managed formally and informally. Although researchers demonstrated the benefits of SM on functional collaborations and organisational resilience (see Wu *et al*., 2015; Järvinen and Taiminen, 2016; Martín-Rojas *et al*., 2023), there is limited research investigating the respective impact of internal and external SM. Thus, to explore the potential difference in

the roles of internal and external SM in the relationships with OMS collaboration and resilience capability, as well as to compare the mediation effect of OMS collaboration relatively, we propose the following exploratory hypothesis:

H8: Both (a) internal and (b) external SM improve organisational resilience capability through OMS collaboration.

3.2 OMS collaboration in a different industrial environment

Contingency theory also suggests that organisations must adapt their business to the environmental conditions and changes (i.e., external boundary conditions) in which they exist (Donaldson, 2001), supporting the requisite organisational resilience capability under various industry environments. According to contingency theory, identifying the boundary conditions around the phenomenon under investigation can lead to richer theory development according to contingency theory (McMahon and Perritt, 1973). Thus, contingency theory serves as a valuable theoretical framework for understanding how organisations adjust to changes in competitive markets through SM deployment, contingent upon varying environmental conditions. For example, contingency external factors, such as industry types, national context and culture, organisation size, strategic context, and other organisational variables (e.g., structure and alignment) have been considered in the O&SCM literature (Sousa and Voss, 2008). Thus, this study delves into the contingency effects of OMS collaboration, comparing different industrial environments between production and service-oriented conditions.

Two key organisational performances, cost efficiency and customer focus encompassing quality, speed, dependability, and flexibility, are vital for both manufacturing and service industries (Bouranta and Psomas, 2016). Organisations strategically emphasise these aspects to gain a competitive edge over their rivals (Dabhilkar *et al*., 2016). Notably, a distinct focus exists between manufacturing and service industries, primarily rooted in their output and the level of customer involvement. For instance, service-oriented industries prioritize quality and delivery over cost, emphasising service differentiation (Phusavat and Kanchana, 2008; Naqshbandi and Idris, 2012). In contrast, manufacturing can be segmented into two stages: production and consumption, which might occur at different places and times. In service organisations, intangible service production and consumption often coincide with customer participation (Moeller, 2010). Unlike manufacturing organisations, the quality of services in service-oriented industries varies from day-to-day or customer-to-customer, making

standardisation challenging (Palmer, 2011). Service organisations offering high levels of customisation require robust alignment between marketing and operations to enhance customer focus, contrasting with manufacturing environments where the focus leans more towards cost efficiency (Kotler and Keller, 2012). Thus, we explore the different effects of SM and OMS collaboration on performance contingent on different industry environments and posit a contingency theory perspective (i.e., external boundary condition) as follows:

H9: In a production-oriented environment, SM through OMS collaboration significantly influences cost efficiency more than customer focus, while in a service-oriented environment, SM through OMS collaboration significantly influences customer focus more than cost efficiency.

Table 1. Structures and supporting literature

4. Methodology

4.1 Sample and data collection

The study used a survey methodology to gather data from the UK's manufacturing and service industries. To ensure the clarity and comprehensibility of the questions, a pilot test was conducted based on three interviews, involving manufacturing and service organisations. This preliminary data collection confirmed that the questions were easily understandable for the respondents, eliminating any uncertainty or confusion.

The final questionnaire was distributed to manufacturing and service organisations in the UK (n = 773) through emails and an open online survey platform (i.e., Qualtrics panel) that provides high honesty and reliability in response quality (Peer *et al*., 2022), drawing from a database provided by an expert panel in the UK. The target sample size was set at more than 271, enabling the investigation of relationships, including minor effects, with a statistical power of 0.8 at a 0.05 significance level (see Forza, 2002), which is considered reasonable and realistic for social science research (Verma and Goodale, 1995). The survey yielded completed questionnaires from 395 organisations, comprising 188 from the manufacturing sector and 207 from the service sector, indicating a response rate of 51.1% and allowing for a thorough examination of even subtle relationships, including mediating effects.

The respondents are full-time experts in operations (92.4%) and supply chain management roles (7.6%), ensuring insights into OMS collaborations from O&SCM perspectives. The respondents included directors (9.6%), managers (68.4%), and staff (22%). Using stratified sampling for better generalisation, 44.8% were categorised as small and medium-sized enterprises (SMEs). In comparison, 55.2% were classified as large enterprises (LEs) based on the number of full-time employees ($n > 250$). Table 2 provides a detailed breakdown of the respondent organisations according to their product and service sectors based on UK Standard Industrial Classification (SIC) codes.

Table 2. Survey respondents

We followed the procedure recommended by Armstrong and Overton (1977) to assess the possibility of late response bias. T-test results indicated no significant differences at the 0.05 level between early and late respondents, suggesting a negligible risk of response bias. Additionally, Harman's one-factor test was conducted to examine common method bias. A principal component factor analysis was performed on all study items, revealing six factors with eigenvalues above 1, accounting for 61.4% of the total variance, with the most significant accounting for 14.0%. No single dominant factor emerged in the un-rotated factor structure, indicating that the common method bias issue is minor.

4.2 Measurement

We utilised multiple indicators for each construct, selecting items from prior literature to ensure high validity (see Table 1). For instance, to gauge organisations' social media (SM) usage for information sharing and relationship building, we developed four items for 'internal SM' based on Brettel *et al*. (2011) and three items for 'external SM' from Karampela *et al*. (2020) and Chae *et al*. (2020). A five-point Likert scale (1 – "strongly disagree," 5 – "strongly agree") measured SM deployment.

OMS collaborations were developed to explain collaborative activities for better operations performance using nine items that were adapted from several studies (e.g., Jaworski and Kohli, 1993; Karmarkar, 1996; Parente, 1998; Weir *et al*., 2001; Malhotra and Sharma, 2002; Sawhney and Piper, 2002; Swink and Song, 2007; Paiva, 2010; Alex *et al*., 2014; Kong *et al*.,

2015; Sombultawee and Boon-Itt, 2018). Based on Parente's (1998) levels of inter-functional alignment, we categorized and developed the items based on the operational and tactical levels (see Table 1). While the operational level is referred to as a direct collaboration between the actors within both departments where individuals are likely to engage with each other to fulfil routine operational tasks, the tactical level refers to departmental levels of alignment. Similarly, a five-point Likert scale (1 – "lowest," 5 – "highest") is employed to measure the level of collaboration.

Resilience capability, cost efficiency, customer-focused and business performance were measured by a five-point Likert scale (1 – "poor," 5 – "excellent"). Items for resilience capability were adapted from Ponomarov and Holcomb (2009), Gölgeci and Ponomarov (2015) and Chowdhury and Quaddus (2017). Business performance latent variables were derived from Huo *et al*. (2014) and Fulleton *et al*. (2014). Cost efficiency includes six items adapted from various sources including Beamon (1999), Sezen (2008), Bhasin (2008), Zelbst *et al*. (2009), Nawanir *et al*. (2013), Aoki *et al*. (2014), Um *et al*. (2017) and Alkhaldi and Abdallah (2019), to cover cost minimisation in O&SCM, and customer-focused performance was measured with eight items based on concepts from Assen (2018), Patel *et al*. (2013), and Torres (2014).

4.3 Measurement validation

Confirmatory factor analysis (CFA) was employed to assess measurement composite reliability (CR), convergent and discriminant validity. The study employed CFA instead of exploratory factor analysis (EFA) since it has an a priori theory on the links between the item measures and their structures, which enables the use of structural equation modelling (SEM) that facilitates the examination of not only the bivariate relationships between single interacting variables but also the overall causal fit of a holistic model including mediation effect (Worren *et al*., 2002).

Content validity was ensured by retaining items with loadings above 0.6 for dependent and independent variables. Table 3 presents factor loadings, composite reliability (CR), and average variance extracted (AVE) with the fit indices. The measurement model demonstrated an acceptable fit to the data (χ^2/df = 1067.04/608 = 1.76, SRMR = 0.036, RMSEA = 0.044, CFI = 0.941) suggested by West *et al*. (2012). CR showed acceptable internal consistency and reliability (CRs > 0.786), while convergent validity was assured since all the loadings were greater than 0.6, with acceptable AVE values (> 0.533). There was no case where the square of the correlation between a pair of constructs was greater than the AVE of the constructs (see

Table 4), which confirmed discriminant validity using the procedures suggested by Fornell and Larcker (1981).

Combining items representing distinct facets into a single first-order construct is conceptually and methodologically perilous due to discriminant validity and multicollinearity issues (Koufteros *et al*., 2009). A construct of SM as a second-order factor includes two first-order factors (i.e., internal and external SM) with corresponding observed variables. First-order factor loadings of internal SM (SMI) and external SM (SME) are .930 and .965, respectively, with good fit indices (i.e., SRMR = 0.050, Normed-fit index (NFI) = 0.950, CFI = 0.959). Factor loadings of the second-order structure show a solid relationship between first-order factors and the second-order factor, attesting to the convergent validity of the posited second-order model (Byrne, 1998). When comparing the model, the second-order structure indicates better model fits than one first-order uncorrelated factor (i.e., SRMR = 0.057, NFI = 0.932, CFI = 0.941).

Table 3. Confirmatory factor analysis

Table 4. Inter-construct correlation estimates and related AVEs

5. Results and Findings

5.1 SEM analysis and mediation effect

We employed AMOS 25 to conduct the path analysis and utilised a bootstrapping estimation SEM procedure to explore the significance of paths and mediation effects. Subsequently, SEM analyses were performed for different industries to compare the models. The model paths displayed high *t*-values (≥ 4.332) and acceptable *p*-values (< 0.05), except for the direct connection of SM with resilience capability, cost efficiency, and customer-focused performance. The fit indices, including Ch-sq/df (1.86), CFI (0.933), RMSEA (0.047), and SRMR (0.043) in the combined model (M1), indicated an acceptable fit. Consequently, the results presented in Table 5 provide support for hypotheses H1 (i.e., a direct impact of SM on OMS collaboration), H4 (i.e., a direct impact of OMS collaboration and organisational performance including cost efficiency and customer focus), H6 (i.e., a direct impact of resilience capability on organisational performance including cost efficiency and customer focus), and H7 (i.e., a direct impact of organisational performance on business performance).

However, H2 (i.e., a direct link between SM and resilience capability) and H5 (i.e., a direct link between SM and organisational performance including, cost efficiency and customer focus) were rejected. SEM results, including indirect and total impacts with significant levels, are presented in Table 5.

Secondly, concerning the mediation effects (bootstrapping 1,000 times), H3 (i.e., an indirect effect of SM on resilience capability through OMS collaboration) received significant support with a positive indirect effect (i.e., 0.214). Furthermore, Model 1 demonstrated indirect impacts of SM on cost efficiency (0. 292=0.458*0.306+0.458*0.468* 0.556+0.059*0.468) and customer focus (0.284=0.458*0.249+0.458*0.468*0.620+0.059*0.620) significantly through OMS collaboration and resilience capability. A higher direct impact (0.306) existed than an indirect impact between collaboration and cost efficiency (0.260). A higher indirect impact (0.290) was observed than a direct impact (0.249) between collaboration and customer focus through resilience capability. Figure 2 shows path analysis with a significant level.

The results obtained from the SEM shed light on the hierarchical relationship within the conceptual model. They reveal the structural procedure of how SM leads to enhanced cost efficiency and superior customer-focused performance through increased collaboration between OMS and bolstered resilience capabilities. Comparing the path values among these constructs indicates that OMS collaboration mediates the impacts of SM on resilience capabilities. These findings reinforce the notion that the synergistic collaboration between OMS departments supported by SM profoundly affects an organisation's resilience, aligning with Powell's (1992) resource-based view. Consequently, OMS collaboration regarding O&SCM activities is a precursor or enabler to achieving organisational resilience.

Furthermore, OMS collaboration and resilience positively, and directly, influence cost efficiency and customer-focused performance. Analysing item-level connections implies that collaborative efforts between O&SCM and marketing/sales in areas such as sales forecasting (Ovliva and Watson, 2011; Sombultawee and Boon-Itt, 2020), new product and service development (Kong *et al*., 2015; Goh and Eldridge, 2019), order fulfilment (Thome´ *et al*., 2012; Alex *et al*., 2014), quality management (Alex *et al*., 2014; Bijmolt *et al*., 2021), responses to market changes (Kong *et al*., 2015; Goh and Eldridge, 2019), operations planning (Malhotra and Sharma, 2002; Sombultawee and Boon-Itt, 2020), order coordination (Malhotra and Sharma, 2002; Alex *et al*., 2014), delivery planning (Alex *et al*., 2014; Bijmolt *et al*.,2021), and new market entrance (Kong *et al*., 2015; Goh and Eldridge, 2019) directly influence

resilience capability. This, in turn, supports customer-focused performance metrics (Patel *et al*., 2013; Assen, 2018) such as customer satisfaction, flexibility, and responsiveness, as well as cost-efficiency performance (Beamon, 1999; Sezen, 2008; Um *et al*., 2017; Gölgeci and Kuivalainen, 2020), including minimising manufacturing, resource, delivery, and failure costs. Given that SM does not directly impact efficiency and customer performance, resilience capability through OMS collaboration, as viewed through contingency theory (i.e., internal boundary) suggested by Grötsch *et al*. (2013) and the resource-based perspective (Bharadwaj, 2000), can offer a viable approach to enhancing competitiveness and organisational performance such as cost efficiency and high customer-focused outcomes in this study (see Wu *et al*., 2015; Sombultawee and Boon-Itt, 2020; Martín-Rojas *et al*., 2023).

Table 5. Structural equation modelling and mediation results

Figure 2. Path analysis of a combined model

5.2 SEM comparison between the Manufacturing (M2) and Service industry (M3)

We conducted a multi-group SEM analysis to compare the relationships and coefficients between the manufacturing and service industries (i.e., models 2 and 3). The imposition of the equality constraint significantly deteriorates the model fit ($p < 0.05$), indicating significant differences in path coefficients across groups (Byrne, 2001). Thus, the models across the different industry groups are considered comparable. In the production-oriented environment, the fit of the SEM was assessed using multiple fit indices (Ch-sq/ df =1.61; SRMR =0.053; RMSEA =0.055; CFI =0.901). For this exploratory study, we considered p-values close to the 0.05 level for Models 2, 3, 4, and 5 to capture all potential relationships among the constructs.

All paths showed significant impacts except for the relationships between SM-resilience capability, SM-cost efficiency, and SM-customer focus. Comparing the significant total direct and indirect impacts of SM on cost efficiency and customer focus, SM through OMS collaboration has a more significant influence on cost efficiency (0.196=0.362*0.233+0.362*0.458*0.675) than customer focus (0.174=0.362*0.178*+0.362*0.458*0.667) in a production-oriented environment. An intriguing point emerged, highlighting that resilience capability in the manufacturing

environment has a more substantial impact on cost efficiency (0.675 > 0.516) and customer focus (0.667 > 0.593) than those in the service environment. Additionally, OMS collaboration exhibited closer relationships with cost efficiency than customer focus in both manufacturing (0.233 > 0.178) and service industries (0.465 > 0.307).

In the service-oriented environment, the SEM fit indices were acceptable (Ch-sq/ df =1.60; SRMR =0.050; RMSEA =0.054; CFI =0.918), and all paths showed significant impacts except for the relationships of SM with resilience capability and cost efficiency. Similarly, comparing the total effects, including significant direct and indirect impacts of SM through OMS collaboration on cost efficiency (0.307=0.563*0.307+0.5563*0.465*0.516) and customer focus (0.426=0.563*0.252+0.563*0.465*0.593+0.129) in a service-oriented environment, we accepted H9 that SM through OMS collaboration significantly influences cost efficiency more than customer focus in a production-oriented environment, while SM through OMS collaboration significantly influences customer focus more than cost efficiency in a service-oriented environment. An interesting finding was that SM in the service environment has a significant direct impact on customer focus (β = 0.129) at a significance level close to 0.05 (p = 0.065).

SM enhances OMS collaboration in the production-oriented environment,, resulting in enhanced resilience capability, cost efficiency, and customer-focused performance. However, the total impact of SM on cost-efficiency performance is more robust than on customer-focused performance, aligning with the dominant cost leadership strategy in production-oriented environments that prioritise cost efficiency (Kotler and Keller, 2012) through streamlined operations processes, such as make-to-stock, assembly-to-order or mass customisation environments. Thus, the findings demonstrated the significance of OMS collaboration and resilience capability through SM for better cost efficiency in a manufacturing-oriented environment.

Similarly, SM enhances OMS collaboration in the service-oriented environment, improving resilience capability, cost efficiency, and customer-focused performance. Here, SM directly impacts customer-focused performance, a vital objective in the service-oriented environment, influencing service quality, delivery speed, dependability, and flexibility (Martín-Rojas *et al.*, 2023). Notably, SM in a service-oriented environment is more significant in improving customer-focused performance in building service differentiation than cost efficiency (see Phusavat and Kanchana, 2008; Naqshbandi and Idris, 2012). This holds especially true

considering design-to-order and make-to-order or customised service environments. Therefore, as viewed through contingency theory (i.e., external boundary) suggested by Donaldson (2001), the results highlight the complementary role of SM to enhance customer focus in a service-oriented environment.

5.3 SEM comparison between the Internal (M4) and External Social Media (M5)

SEM analyses were conducted (i.e., models 4 and 5) to scrutinise further the relationships and coefficients between internal and external SM (i.e., H8). The SEM fit indices for internal SM demonstrated acceptability (Ch-sq/ df =1.89; SRMR =0.041; RMSEA =0.047; CFI =0.934). Similarly, the SEM fit indices of the external SM confirmed adequacy (Ch-sq/ df =1.87; SRMR =0.037; RMSEA =0.047; CFI =0.939). In both cases, all paths exhibited significant impacts, except for the relationship between SM and resilience capability, and between SM and organisational performance. Consequently, we accept H8 that internal and external SM improve organisational resilience capability through OMS collaboration.

The findings highlight the nuanced impact of internal and external SM on the intricate dynamics of organisational resilience, cost efficiency, and customer-focused performance. Comparing relationships based on internal and external SM, the SEM analyses reveal that external SM holds a more decisive indirect influence on enhancing resilience capability than internal SM (0.234>0.193). Thus, the finding indicated that interactions with suppliers and customers through external SM enhance OMS collaboration and achieve better resilience capabilities, compared to the formal and informal interactions and information exchanges between OMS functions facilitated by internal SM. However, it is prominent that both the internal and external SM statistically enable the development of robust business networks and communication channels and provide collaboration opportunities with internal and external stakeholders within the existing supply chain, supporting the fulfilment of product/service requirements across different markets and creating an organisational resilience potential and competitive edge. Therefore, appropriate deployment of both internal and external SM results in competitive advantage, as supported by RBV (Powell, 1992).

6. Discussion

The findings indicate that deploying internal and external SM enhances OMS collaboration, integrating critical operations and supply chain management activities between OMS that have shared objectives. While SM and OMS's collaborative O&SCM activities are not exclusive to any specific manufacturer or service provider, they are recognised as best practices. With joint decisions and management of relevant supply chain knowledge such as sales forecasting, new product development, order fulfilment, collaborative planning, market response and investment, they can lead to greater resilience and enhanced organisational performance in a competitive environment, which is aligned with RBV and contingency theory (i.e., internal boundary).

Thus, the study contributes significantly to the literature on OMS collaborative activities for managing the supply chain (see Table 1). Moreover, findings from path analysis offer empirical evidence that enriches our understanding of the structural and procedural relationships between SM, OMS collaboration, organisational resilience capabilities, and performance. Theoretically, the results extend the Resource-Based View (RBV) framework through the lens of SM to achieve competitive capability (i.e., organisational resilience capability) and explore the implications of contingency theory by investigating internal (i.e., collaboration from two different business functions) and external boundaries (i.e., different industry environments) conditions. Delineating such contingencies can enable better development of 'mid-range theories' that outline the internal boundary conditions related to the effectiveness of collaboration (Miller, 1992; Narayanan, 2015). Also, identifying the external boundary conditions (i.e., industry types) of contingency theory around the phenomenon (i.e., collaborative supply chain management) leads to richer theory development (McMahon and Perritt, 1973). From a practical standpoint, the findings support decision-making procedures for manufacturers and service providers by comparing the relative influences of separate models (e.g., internal versus external SM). Items developed for the OMS collaborations for better O&SCM and the path analyses employing SM deployment provide actionable insights into integrating OMS collaborations and improving resilience capabilities depending on the nature of the industry the company encountered. The theoretical contributions are discussed in more detail, followed by practical implications.

6.1 Theoretical implications and contributions

This study advances the theoretical understanding of the intersection between SM usage, cross-departmental collaboration, and organisational resilience and performance. Our findings have

several critical theoretical implications that contribute to the existing body of knowledge in Operations and Supply Chain Management (O&SCM). Firstly, the study provides empirical evidence that SM usage significantly enhances OMS collaboration and organisational resilience under uncertain supply chain environments. This finding confirms previous conceptual and qualitative research suggesting that digital platforms can facilitate information sharing and coordination across functional boundaries (Roberts *et al*., 2016; Cao *et al*., 2018) and enhance resilience capability (Martín-Rojas *et al*., 2023). By incorporating SM as a strategic tool supported by the RBV, our research extends these insights, demonstrating that SM platforms are effective in marketing contexts and crucial for operations and supply chain collaboration between OMS functions, thus bridging a gap in the literature.

Secondly, the study highlights the role of SM in enhancing organisational resilience through functional collaboration (i.e., internal boundary condition from contingency theory). Prior research has identified various factors contributing to resilience, including flexible operations, supply chain agility, risk evaluation, information sharing and adaptive leadership (Jain *et al*., 2017; Cheng *et al*., 2020; Guo *et al*., 2020). Our findings suggest a new dimension by showing that internal (i.e., between business functions) and external (i.e., with suppliers and customers) SM and OMS collaboration (i.e., mediating role) facilitates real-time communication and rapid joint decision-making, which is essential for responding to potential disruptions within the existing supply chain. This supports the notion that digital tools can enhance organisational agility and resilience (Neeley and Leonardi, 2018; Nisar *et al*., 2019), enrich innovation (Chen *et al*., 2020), and create intellectual capital (Cartwright *et al*., 2020) to cope with unforeseen events.

Thirdly, our research distinguishes between production-oriented and service-oriented environments (i.e., external boundary conditions from contingency theory), providing nuanced insights into how SM impacts cost efficiency and customer-focused performance. SM enhances cost efficiency more than customer focus in production-oriented environments by streamlining operations and supply chain processes and reducing communication barriers (Banerjee *et al*., 2020; Tóth *et al*., 2020). OMS collaborative activities such as management of demand, lead time, inventory, capacity, process change, product variety and distribution channel (Parente,1998; Weir *et al*., 2001; Sombultawee and Boon-Itt, 2020) support to mitigate operations and supply chain disruptions and lead to cost efficiency. Conversely, in service-oriented contexts, SM's role in fostering direct customer engagement (Ainin *et al*., 2014; Cartwright *et al*., 2021), as well as OMS collaborative activities such as management of return,

volume, customer needs, order fulfilment, quality, technology and delivery (Parente, 1998; Kong et al., 2015; Goh and Eldridge, 2019), leads to improved customer-focused performance. This dual perspective enriches the theoretical discourse on the context-specific applications of SM for O&SCM.

Moreover, the study contributes to the theoretical development of organisational learning and innovation for O&SCM. The positive relationship between SM usage and enhanced organisational knowledge management supports the idea that SM tools can facilitate continuous learning and innovation within organisations (Wang *et al*., 2017; Zhan *et al*., 2020). This underscores the strategic importance of SM as a facilitator of organisational learning processes to collaborate on shared objectives and supply chain activities between two business functions. Finally, by employing SEM to validate our hypotheses, this study reinforces the methodological robustness required for examining complex relationships and structural paths to testing and exploring theoretical research frameworks (i.e., M1-M5). In summary, this research enriches the theoretical landscape by elucidating the multifaceted role of SM in enhancing OMS collaboration to manage operations and supply chain activities, organisational resilience, and performance. It underscores the strategic value of SM and OMS collaboration in different business contexts. It provides a robust foundation for future research exploring the dynamic interplay between other digital tools and organisational capabilities.

6.2 Practical implications and contributions

The findings of this research offer several actionable insights for O&SCM practitioners aiming to enhance the OMS collaborative processes and achieve organisational resilience and business performance through the strategic use of SM. This section provides practical guidelines and strategies for managers to effectively implement SM integration across their operations, supply chain, marketing, and sales functions. Notably, improved organisational resilience is only guaranteed by improving OMS collaboration on operations supply chain management activities (i.e., mediating effect). Thus, this study guides companies on improving OMS collaboration effectively and efficiently to be resilient and adaptive by understanding the role of SM.

As a resource tool, SM contributes to the connectedness of the functions, resulting in relational engagement (Agnihotri, 2020). The platforms provide an invaluable real-time communication and information exchange channel, which contributes towards bridging the gap between OMS functions regarding O&SCM activities. Managers can leverage these external SM platforms to

monitor suppliers, material flows, market trends, customer feedback, and competitor activities. Sharing the knowledge gathered through SM also internally contributes to improved departmental collaboration, innovativeness, and the creation of a competitive advantage. Platforms like Yammer or internal social networks can help employees share insights, best practices, and innovative ideas. As a result, the tools enable functions to interact and engage with each other, thus strengthening relationships internally and externally while improving processes by sharing valuable information and know-how (Cartwright et al., 2021; Ancillai *et al*., 2019).

Furthermore, effective SM integration fosters better collaboration between operations, supply chain, marketing, and sales departments. SM allows collaboration and co-creation between all functionsm suppliers and customers (Zhang *et al*., 2020). OMS managers should encourage using collaborative tools, such as Slack, Microsoft Teams, or dedicated SM groups to facilitate seamless communication and information sharing regarding O&SCM activities that cover mutual interests and objectives. Regular cross-functional meetings and joint SM initiatives can break down silos, leading to more coordinated efforts in demand forecasting, inventory management, order fulfilment, delivery priority and customer engagement. This leads to reaching new markets and building resilience capability in competitive markets (Bocconcelli, Cioppi, & Pagano, 2017). However, training staff to effectively use these tools will be essential for maximising their benefits. Therefore, regular training and development programs will ensure that employees are proficient in using SM tools and understand their strategic importance in O&SCM. Thus, both managers must recognise the strategic value of SM and deploy it thoughtfully across OMS functions. They must ensure that clear objectives are set for SM usage, align strategies with overall business goals, and continuously assess the impact of SM activities on organisational performance and resilience.

The study underscores the importance of SM in enhancing organisational resilience under unpredictable supply chain environments. To build resilience capability, managers should integrate SM into their supply chain risk management frameworks (e.g., sourcing, manufacturing and delivery risks). SM can be an early warning system for potential disruptions and new trends, such as sourcing delays, material quality issues, operations breakdown, demand variation, new service trends or reputational threats in the supply chain. Also, collaborative operations and supply chain activities between OMS, such as sales forecasting, profit management, new product development, capacity management, quality assurance, customer specification, resource utilisation, and packing and delivery request management, are

communicated formally and informally through diverse SM tools. Organisations could go the extra mile by integrating SM channels, such as LinkedIn or Facebook Workforce messaging, to gather real-time information, share information with business functions to make joint decisions and solve customer complaints and needs. Developing a SM crisis management plan, including clear protocols for monitoring and responding to crises in the supply chain, can help organisations quickly mitigate risks, maintain operational continuity and develop adaptive capability through OMS collaboration.

7. Conclusion and limitations

This research delves into the imperative task of comprehending how manufacturers and service providers can fortify their resilience to navigate unpredictable markets and fierce competition. It emphasises the pivotal role of OMS collaboration supported by SM, aligning seamlessly with the perspectives of contingency theory (i.e., internal and external conditions) and the RBV (i.e., technical resource). The study, grounded in six key constructs, meticulously delineates the intricate relationships within this framework. Employing structural equation modelling to construct and scrutinise a comprehensive model, the empirical findings underscore the paramount importance of both internal and external SM deployment. These deployments significantly bolster OMS collaboration regarding O&SCM activities and resilience capabilities, which, in turn, foster both enhanced cost efficiency and customer-focused organisational performance. In addition, the significance of organisational resilience capability is demonstrated especially for customer-focused performance.

The impacts of SM and OMS collaboration on resilience and organisational performance are intricate, and influenced by a medley of internal and external contingency factors. In production-oriented environments, SM emerges as a linchpin for achieving robust cost efficiency, while in service-oriented conditions, it proves instrumental in cultivating customer-focused performance. Notably, SM directly influences customer-focused performance in service-oriented contexts. In addition, it is important to note that both internal and external SM deployments improve OMS collaboration. However, external SM exerts a more substantial influence on resilience capability compared to its internal counterpart.

This study's scope is delimited to the manufacturing and service industries within the UK, thus constraining the generalisability of its findings to broader populations. Recognising the nuanced disparities in competition, environment, and culture across various countries and

regions (Hughes and Morgan, 2008), future research should encompass a more diverse global landscape. Moreover, internal and external SM deployment often hinges on an organisation's strategic orientation and individual preferences. Extrapolating conclusions from the 395 responses gathered exclusively from UK-based organisations necessitates further exploration to discern the specific challenges these organisations encountered while utilising SM.

Additionally, this study categorises industrial environments into broad clusters (i.e., production and service-oriented industries), warranting a deeper exploration of the intricacies of OMS collaboration challenges (e.g., the size of the organisations). Qualitative methodologies, such as in-depth interviews, can shed light on the subtle nuances of these challenges and illuminate how SM seamlessly integrates OMS functions. Encouraging a shift toward contingency theory as a theoretical framework can provide a more nuanced understanding of how SM underpins superior operations performance within varied environmental contexts. These avenues of inquiry stand as vital future research directions, offering opportunities for a deeper comprehension of the intricate interplay between SM, OMS collaboration, and organisational resilience.

References

Agnihotri, R. (2020), "Social media, customer engagement, and sales organisations: A research agenda", *Industrial Marketing Management*, Vol. 90, pp. 291-299.

Ainin, S., Parveen, F., Moghavvemi, S., Jaafar, N.I. and Shuib, N.L.M. (2014), "Factors influencing the use of social media by SMEs and its performance outcomes", *Industrial Management and Data Systems*, Vol. 115 No. 3, pp. 570-588.

Alex, M., Daniel, P. L., Luis, F., Riehs, C. and Rafael, T. (2014), "Exploring the relationship between marketing and operations: Neural network analysis of marketing decision impacts on delivery performance", *International Journal of Production Economics*, Vol. 153, pp. 178-190.

Alkhaldi, R.Z. and Abdallah, A.B. (2019), "Lean management and operational performance in health care: Implications for business performance in private hospitals", *International Journal of Production Performance Management*, Vol. 69, pp. 1–21.

Allaoui H., Guo, Y. and Sarkis, J. (2019), "Decision support for collaboration planning in sustainable supply chains", *Journal of Cleaner Production*, Vol. 229 No. 20, pp 761-774.

Ancillai, C., Terho, H., Cardinali, S., and Pascucci, F. (2019), "Advancing social media driven sales research: Establishing conceptual foundations for B-to-B social selling", *Industrial Marketing Management*, Vol. 82, pp. 293-308.

Aoki K., Staeblein T. and Tomino T. (2014), "Monozukuri capability to address product variety: a comparison between Japanese and German automotive makers", *International Journal of Production Economics*, Vol. 147, pp. 373–384.

Armstrong, J.S. and Overton, T.S. (1977), "Estimating Nonresponse Bias in Mail Surveys", *Journal of Marketing Research*, Vol. 14 No. 3, pp. 396–402.

Assen, M.F. (2018). "The Moderating Effect of Management Behavior for Lean and Process Improvement", *Operations Management Research*, Vol. 11, pp. 1–13.

Auramo, J., Kauremaa, J. and Tanskanen, K. (2005), "Benefits of IT in supply chain management: An explorative study of progressive companies", *International Journal of Physical Distribution & Logistics Management*, Vol. 35 No. 2, pp. 82–100.

Banerjee, A., Ries, J. M. and Wiertz, C. (2020), "The impact of social media signals on supplier selection: insights from two experiments", *International Journal of Operations and Production Management*, Vol. 40 No. 5, pp. 531-552.

Barney, J. (1991), "Firm resources and sustained competitive advantage", *Journal of Management*, Vol. 17 No. 1, pp. 99–120.

Barry, J. M., and Gironda, J. T. (2019) "Operationalizing thought leadership for online B2B marketing", *Industrial Marketing Management*, Vol. 81, pp. 138–159.

Beamon, B.M. (1999), "Measuring supply chain performance", *International Journal of Operations and Production Management*, Vol. 19, pp. 275–292.

Bhamra, R., Dani, S. and Burnard, K. (2011), "Resilience: the concept, a literature review and future directions", *International Journal of Production Research*, Vol. 49 No. 18, pp. 5375-5393.

Bharadwaj, A. (2000), "A resource-based perspective on information technology and firm performance: an empirical investigation", *MIS Quarterly*, Vol. 24 No. 1, pp. 169–196.

Bhasin, S. and Burcher, P. (2006), "Lean viewed as a philosophy", *Journal of Manufacturing Technology Management*, Vol. 17 No. 1, pp. 56-72.

Bijmolt, T.H.A., Broekhuis, M., de Leeuw, S., Hirche, C., Rooderkerk, R.P., Sousa, R. and Zhu, S.X. (2021), "Challenges at the marketing–operations interface in omni-channel retail environments", *Journal of Business Research*, Vol. 122, pp. 864–874.

Bocconcelli, R., Cioppi, M., and Pagano, A. (2017), "Social media as a resource in SMEs' sales process", *Journal of Business & Industrial Marketing*, Vol. 32, No. 5, pp. 693-709.

Bouranta, N., Psomas, E. and Pantouvakis, A. (2017), "Identifying the critical determinants of TQM and their impact on company performance: evidence from the hotel industry of Greece", *The TQM Journal*, Vol. 29 No. 1, pp. 147-166.

Brettel, M., Heinemann, F., Engelen, A., and Neubauer, S. (2011), "Cross-functional integration of R&D, marketing, and manufacturing in radical and incremental product innovations and its effects on project effectiveness and efficiency", *Journal of Product Innovation Management*, Vol. 28, pp. 251-269.

Cao, Y, Ajjan, H, Hong, P. and Le, T. (2018), "Using social media for competitive business outcomes: An empirical study of companies in China", *Journal of Advances in Management Research*, Vol. 15 No. 2, pp. 211-235.

Cartwright, S., Davies, I. and Archer-Brown, C. (2021), "Managing relationships on social media in business-to-business organisations", *Journal of Business Research*, Vol. 125, pp. 120-134.

Chae, B., McHaney, R. and Sheu, C. (2020), "Exploring social media use in B2B supply chain operations", *Business Horizons*, Vol. 63 No. 1, pp. 73-84.

Chan, H.K., Wang, X., Lacka, E. and Zhang, M., (2016), "A mixed-method approach to extracting the value of social media data", *Production and Operations Management*, Vol. 25 No. 3, pp.568-583.

Cheng, T.C.E., Lam, H.K.S., Lyons, A. and Yeung, A. (2020), "Researching the use of social media in operations and supply chain management: What can we learn from other business disciplines?", *International Journal of Operations and Production Management*, Vol. 40 No. 5, pp. 509–530.

Chowdhury, M.M.H. and Quaddus, M. (2017), "Supply chain resilience: Conceptualization and scale development using dynamic capability theory", *International Journal of Production Economics*, Vol. 188, pp. 185–204.

Christopher, M. and Peck, H. (2004), "Building the resilient supply chain", *The International Journal of Logistics Management*, Vol. 15 No. 2, pp. 1-14.

Corral de Zubielqui, G. and Jones, J. (2022), "How and when does internal and external social media use for marketing impact B2B SME performance?", *Journal of Business & Industrial Marketing*, Vol. 38 No. 8, pp. 1607-1622.

Craft, S., Ashley, S. and Maksl, A. (2017), "News media literacy and conspiracy theory endorsement", *Communication and the Public*, Vol. 2, pp. 388–401.

Cui, X., Huo, B., Lei, Y. and Zhou, Q. (2019), "The influence of team social media usage on individual knowledge sharing and job performance from a cross-level perspective", *International Journal of Operations and Production Management*, Vol. 40 No. 5, pp. 553-573.

Dabhilkar, M., Bengtsson, L. and Lakemond, N. (2016), "Sustainable supply management as a purchasing capability", *International Journal of Operations and Production Management*, Vol. 36 No. 1, pp. 2-22.

Derfus, P.J., Maggitti, P.G., Grimm, C.M. and Smith, K.G. (2008), "The red queen effect: Competitive actions and firm performance". *Academy of Management Journal*, Vol. 51, pp. 61–80.

Dixon, M., Karniouchina, E.V., van der Rhee, B., Verma, R. and Victorino, L. (2014), "The role of coordinated marketing-operations strategy in services: Implications for managerial decisions and execution", *Journal of Service Management*, Vol. 25 No. 2, pp. 275–94.

Donaldson, L. (2001), *The Contingency Theory of Organizations*, Sage Publications, Thousand Oaks, CA

Drummond, C., O'Toole, T., and McGrath, H. (2020), "Digital engagement strategies and tactics in social media marketing". *European Journal of Marketing*, Vol. 54, No. 6, pp. 1247-1280.

Eisenhardt, K. M. and Martin, J. A. (2000), "Dynamic capabilities: What are they?", *Strategic Management Journal*, Vol. 21 No. 10/11, pp. 1105–1121.

Eklinder-Frick, J., Eriksson, L.T. and Hallen, L. (2012), "Effects of social capital on processes in a regional strategic network", *Industrial Marketing Management*, Vol. 41, pp. 800–806.

Epstein, M.J. and Wisner, P.S. (2001), "Using a balanced scorecard to implement sustainability", *Environmental Quality Management*, Vol. 11 No. 2, pp. 1–10.

Erickson G.M. (2012), "Transfer pricing in a dynamic marketing operations interface", *European Journal of Operational Research*, Vol. 216 No. 2, pp. 326–333.

Fan, Y, and Niu. R.H. (2016), "To Tweet or Not to Tweet? Exploring the Effectiveness of Service Recovery Strategies Using Social Media", *International Journal of Operations and Production Management*, Vol. 36 No. 9, pp. 1014–1036.

Feng, Y., D'Amours, S. and Beauregard, R. (2008), "The value of sales and operations planning in oriented strand board industry with make-to-order manufacturing system: cross functional integration under deterministic demand and spot market recourse", *International Journal of Production Economics*, Vol. 115, pp. 189-209.

Fiksel, J., Polyviou, M., Croxton, K.L. and Pettit, T.J. (2015), "From risk to resilience: learning to deal with disruption", *MIT Sloan Management Review*, Vol. 56 No. 2, pp. 79-86.

Fornell, C. and Larcker, D.F. (1981), "Structural equation models with unobservable variables and measurement error: Algebra and statistics", *Journal of Marketing Research*, Vo. 18 No. 1, pp. 39–50.

Forza, C. (2002), "Survey Research in Operations Management: A Process-Based Perspective", *International Journal of Operations and Production Management*, Vol. 22 No. 2, pp. 152–194.

Fulleton, R.R., Kennedy F.A. and Widener, S.K. (2014), "Lean manufacturing and firm performance: The incremental contribution of lean management accounting practices", *Journal of Operations Management*, Vol. 32, pp. 414-428.

Gattiker, T.F. (2007), "Enterprise resource planning (ERP) systems and the manufacturing–marketing interface: An information-processing theory view", *International Journal of Production Research*, Vol. 45, pp. 2895–2917.

Goh, S.H. and Eldridge, S. (2019), "Sales and Operations Planning: The effect of coordination mechanisms on supply chain performance", *International Journal of Production Economics*, Vol. 214, pp. 80-94.

Gölgeci, I. and Kuivalainen, O. (2020), "Does social capital matter for supply chain resilience? The role of absorptive capacity and marketing-supply chain management alignment", *Industrial Marketing Management*, Vol. 84, pp. 63-74.

Golgeci, I. and Ponomarov, SY. (2013), "Does firm innovativeness enable effective responses to supply chain disruptions? An empirical study", *Supply Chain Management: An International Journal*, Vol. 18 No. 6, pp. 604-617.

Grötsch, V. M., Blome, C. and Schleper, M. C. (2013) "Antecedents of proactive supply chain risk management: A contingency theory perspective", *International Journal of Production Research*, Vol. 51 No. 10, pp. 2842–2867.

Gu, B. and Ye, Q. (2014), "First Step in Social Media: Measuring the Influence of Online Management Responses on Customer Satisfaction", *Production and Operations Management*, Vol. 23 No. 4, pp. 570–82.

Guesalaga, R. (2016), "The use of social media in sales: Individual and organizational antecedents, and the role of customer engagement in social media", *Industrial Marketing Management*, Vol. 54, pp. 71–79.

Guo, Y., Fan, D. and Zhang, X. (2020). "Social media–based customer service and firm reputation", *International Journal of Operations and Production Management*, Vol. 40 No. 5, pp.575-601.

Hausman, W.H., Montgomery, D.B. and Roth A.V (2002), "Why should marketing and manufacturing work together? Some exploratory empirical results", *Journal of Operations Management*, Vol. 20, pp. 241–57.

Hayes, R.H. (2002), "Challenges posed to Operations Management by the new economy", *Production and Operations Management*, Vol. 11 No. 1, pp. 21–32.

Hisham, M., Sharif, M., Troshani, I. and Davison, R. (2015), "Public sector adoption of social media", *Journal of Computer Information Systems*, Vol. 55 No. 4, pp. 53-61.

Hitt, M. A., Carnes, C. M. and Xu, K. (2016), "A current view of resource-based theory in operations management: A response to Bromiley and Rau", *Journal of Operations Management*, Vol. 41 No. 10, pp. 107–109.

Holling, C.S., (1973), "Resilience and stability of ecological systems", *Annual Review of Ecology and Systematics*, Vol. 4, pp. 1–23.

Huang, S., Potter, A. and Eyers, D. (2020), "Social media in operations and supply chain management: State-of-the-Art and research directions", *International Journal of Production Research*, Vol. 58 No. 6, pp. 1893-1925.

Hughes, P. and Morgan, R.E. (2008), "Fitting strategic resources with product-market strategy: Performance implications", *Journal of Business Research Policy*, Vol. 61 No. 4, pp. 323-331.

Huo, B., Qi, Y., Wang, Z. and Zhao, X. (2014), "The impact of supply chain integration on firm performance: The moderating role of competitive strategy", *Supply Chain Management*, Vol. 19 No. 4, pp. 369-384.

Iankova, S., Davies, I., Archer-Brown, C., Marder, B., and Yau, A. (2019), "A comparison of social media marketing between B2B, B2C and mixed business models". *Industrial Marketing Management*, Vol. 81, pp. 169-179.

Irani, Z., Sharif, A.M., Papadopoulos, T. and Love, P.E. (2017), "Social Media and Web 2.0 for Knowledge Sharing in Product Design", *Production Planning and Control*, Vol. 28 No. 13, pp. 1047–1065.

Jain, V., Kumar, S., Soni, U. and Chandra, C. (2017), "Supply chain resilience: model development and empirical analysis", *International Journal of Production Research*, Vol. 55 No. 22, pp. 6779-6800.

Järvinen, J. and Taiminen, H. (2016), "Harnessing marketing automation for B2B content marketing", *Industrial Marketing Management*, Vol. 54 No. 4, pp. 164–175.

Jaworski, B.J. and Kohli, A.K. (1993), "Market orientation: antecedents and consequences", *Journal of Marketing*, Vol. 57, pp. 53–70.

Kaplan, A.M. and Haenlein, M. (2010), "Users of the world, unite! The challenges and opportunities of Social Media", *Business Horizons*, Vol. 53, No. 1, pp. 59–68.

Karampela, M., Lacka, E. and McLean, G. (2020) "Just be there: Social media presence, interactivity, and responsiveness, and their impact on B2B relationships", *European Journal of Marketing*, Vol. 54 No. 6, pp. 1281-1303.

Karmarkar, U.S. (1996), "Integrative research in marketing and operations management", *Journal of Marketing Research*, Vol. 33, pp. 125–133.

Klibi, W., Martel, A. and Guitouni, A. (2010), "The design of robust value-creating supply chain networks: a critical review", *European Journal of Operational Research*, Vol. 203 No. 2, pp. 283-293.

Kong, T., Li, G., Feng, T. and Sun, L. (2015), "Effects of marketing–manufacturing integration across stages of new product development on performance", *International Journal of Production Research*, Vol. 53 No. 8, pp. 2269–2284.

Kong, T., Feng, T. and Ye, C. (2016), "Advanced manufacturing technologies and green innovation: The role of internal environmental collaboration", *Sustainability*, Vol. 8, pp. 1056.

Kotler P. and Keller, K.L. (2012), *Marketing management*. 14th ed., Prentice-Hall, London.

Koufteros, X., Babbar, S. and Kaighobadi, M. (2009), "A paradigm for examining second-order factor models employing structural equation modelling", *International Journal of Production Economics*, Vol. 120 No. 2, pp. 633–652.

Kumar, S. and Sosnoski, M. (2011), "Decision framework for the analysis and selection of appropriate transfer pricing for a resilient global SME manufacturing operation – a business case", *International Journal of Production Research*, Vol. 49, pp. 5431-5448.

Lacoste, S. (2016), "Perspectives on social media and its use by key account managers", *Industrial Marketing Management*, Vol. 54, pp. 33-43.

Lam, H.K.S., Yeung, A.C.L. and Cheng, T.C.E. (2016), "The Impact of Firms' Social Media Initiatives on Operational Efficiency and Innovativeness", *Journal of Operations Management*, Vol. 47, pp. 28–43.

Lawrence P.R. and Lorsch J.W. (1967), "Differentiation and integration in complex organizations", *Administrative Science Quarterly*. Vol. 12 No. 1, pp. 1–47.

Lee, S. Y., Qiu, L. and Whinston, A. (2018), "Sentiment manipulation in online platforms: An analysis of movie tweets", *Production and Operations Management*, Vol. 27 No. 3, pp. 393–416.

Leek, S., Houghton, D. and Canning, L. (2019), "Twitter and behavioural engagement in the healthcare sector: An examination of product and service companies", *Industrial Marketing Management*, Vol. 81, pp. 115–129.

Malhotra, M.K. and Sharma, S. (2002), "Spanning the continuum between marketing and operations", *Journal of Operations Management*, Vol. 20 No. 3, pp. 221–240.

Marques, A., Lacerda D.P., Camargo, L.F.R., and Teixeira, R. (2014), "Exploring the relationship between marketing and operations: neural network analysis of marketing decision impacts on delivery performance", *International Journal of Production Economics*, Vol. 153, pp. 178–90.

Martín-Rojas, R., Garrido-Moreno, A. and García-Morales, V.J. (2023) "Social media use, corporate entrepreneurship and organizational resilience: A recipe for SMEs success in a post-Covid scenario", *Technological Forecasting and Social Change*, Vol. 190, pp. 1-19.

Miles, R.E. and Snow, C.C. (1978), "Organizational strategy, structure, and process", McGraw-Hill, New York.

Miller, D. (1992), "Environmental fit versus internal fit", *Organisation Science*, Vol. 3 No. 2, pp. 159–178.

Mitrega, M., Forkmann, S., Zaefarian, G. and Henneberg, S.C. (2017), "Networking capability in supplier relationships and its impact on product innovation and firm performance", *International Journal of Operations & Production Management*, Vol. 37 No. 5, pp. 577–606.

Moeller, S. (2010), "Characteristics of services – a new approach uncovers their value", *Journal of Services Marketing*, Vol. 24 No. 5, pp. 359-368.

Mollenkopf, D.A., Frankel, R. and Russo, I. (2011), "Creating value through returns management: Exploring the marketing–operations interface", *Journal of Operations Management*, Vol. 29 No. 5, pp. 391–403.

Naqshbandi, M.M. and Idris, F. (2012), "Competitive priorities in Malaysian service industry", *Business Strategy Series*, Vol. 13 No. 6, pp. 263-273.

Narayanan, S., Narasimhan, R. and Schoenherr, T. (2015), "Assessing the contingent effects of collaboration on agility performance in buyer-supplier relationships, *Journal of Operations Management*, Vol. 33/34, pp. 140-154.

Narver, J.C. and Slater, S.F. (1990), "The effect of a market orientation on business profitability", *Journal of Marketing*, Vol. 54 No. 4, pp. 20-35.

Nawanir, G., Teong, L.K. and Othman, S.N. (2013). "Impact of Lean Practices on Operations Performance and Business Performance", *Journal of Manufacturing Technology Management*, Vol. 24 No. 7, pp. 1019–1050.

Neeley, T. and Leonardi, P. (2018), "Enacting knowledge strategy through social media: Passable trust and the paradox of nonwork interactions", *Strategic Management Journal*, Vol. 39 No. 3, pp. 922–946.

Nikookar, E. and Yanadori, Y. (2022), "Preparing supply chain for the next disruption beyond COVID-19: Managerial antecedents of supply chain resilience", *International Journal of Operations and Production Management*, Vol. 42 No. 1, pp. 59–90.

Nisar, T.M., Prabhakar, G. and Strakova, L. (2019), "Social media information benefits, knowledge management and smart organizations", *Journal of Business Research*, Vol. 94, pp. 264-272.

Okafor, A., Adusei, M. and Adeleye, B.N. (2021), "Corporate social responsibility and financial performance: Evidence from U.S tech firms", *Journal of Cleaner Production*, Vol. 292, 126078.

Ollus, M., Jansson, K., Karvonen, I., Uoti, M. and Riikonen, H. (2011), "Supporting Collaborative Project Management", *Production Planning and Control*, Vol. 22 No. 5–6, pp. 538–553.

Olivia, R. and Watson, N. (2011), "Cross-functional alignment in supply chain planning: A case study of sales and operations planning", *Journal of Operations Management*, Vol. 29, pp. 434-448.

Paiva, E.L. (2010), "Manufacturing and marketing integration from a cumulative capabilities perspective", *International Journal of Production Economics*, Vol. 126, pp. 379–86.

Palmatier, R.W. (2008), "Interfirm Relational Drivers of Customer Value", *Journal of Marketing*, Vol. 72 No. 3, pp. 76–89.

Palmer, A. (2011), *Principles of Services Marketing*, McGraw-Hill Education, Maidenhead.

Paniagua, J. and Sapena, J. (2014), "Business performance and social media: Love or hate?", *Business Horizons*, Vol. 57, pp. 719–728.

Parente, D.H. (1998), "Across the manufacturing-marketing interface", *International Journal of Operations and Production Management*, Vol. 18 No 12, pp. 1205-1222.

Patel, P.C., Azadegan, A. and Ellram, L.M. (2013), "The effects of strategic and structural supply chain orientation on operational and customer-focused performance". *Decision Science*, Vol. 44 No. 4, pp. 713–753.

Peck, H. (2005), "Drivers of supply chain vulnerability: an integrated framework", *International Journal of Physical Distribution & Logistics Management*, Vol. 35 No. 4, pp. 210-232.

Peer, E., Rothschild, D., Gordon, A., Evernden, Z. and Damer, E. (2022), "Data quality of platforms and panels for online behavioral research", *Behavior Research Methods*, Vol. 54, pp. 1643-1662.

Pettit, T.J., Croxton, K.L. and Fiksel, J. (2013), "Ensuring supply chain resilience: development and implementation of an assessment tool", *Journal of Business Logistics*, Vol. 34 No. 1, pp. 46–76.

Phusavat, K. and Kanchana, R. (2008), "Competitive priorities for service providers: perspectives from Thailand", *Industrial Management and Data Systems*, Vol. 108 No. 1, pp. 5-21.

Piercy, N. (2007), "Framing the Problematic Relationship between the Marketing and Operations Functions", *Journal of Strategic Marketing*, Vol. 15 No. 2, pp. 185 – 207.

Piercy, N. (2010), "Improving marketing-operations cross-functional relationships", *Journal of Strategic Marketing*, Vol. 18 No. 4, pp. 337-356.

Pitt, C., Plangger, K., Botha, E., Kietzmann, J., and Pitt, L. (2019), "How employees engage with B2B brands on social media: Word choice and verbal tone". *Industrial Marketing Management,* Vol. 81, pp. 130–137.

Ponomarov, S.Y. and Holcomb, M.C., (2009), "Understanding the concept of supply chain resilience", *International Journal of Logistics Management*, Vol. 20 No. 1, pp. 124–143.

Powell, T.C. (1992), "Organizational alignment as a competitive advantage", *Strategic Management Journal*, Vol. 13, pp. 551-558.

Quinn, R.W. and Quinn, R.E. (2016), "Change management and leadership development have to mesh", *Harvard Business Review*, Vol. 1 No. 7, pp. 2-4.

Rajamma, R.K., Zolfagharian, M.A. and Pelton, L.E. (2011), "Dimensions and outcomes of B2B relational exchange: A meta-analysis", *Journal of Business and Industrial Marketing*, Vol. 26 No. 2, pp. 104–114.

Ramanathan, U., Subramanian, N. and Parrott, G. (2017), "Role of social media in retail network operations and marketing to enhance customer satisfaction", *International Journal of Operations and Production Management*, Vol. 37 No. 1, pp. 105-123.

Rhee, M. and Mehra, S. (2006), "Aligning operations, marketing, and competitive strategies to enhance performance: An empirical test in the retail banking industry", *Omega*, Vol. 34 No. 5, pp. 505-515.

Roberts, D.L., Piller, F.T. and Luttgens, D. (2016), "Mapping the Impact of Social Media for Innovation: The Role of Social Media in Explaining Innovation Performance in the PDMA Comparative Performance Assessment Study", *Journal of Product Innovation Management*, Vol. 33 No. 1, pp. 117-135.

Rose, A. (2004), "Defining and measuring economic resilience to disaster", *Disaster Prevention and Management,* Vol. 13 No. 4, pp. 307–314.

Salo, J. (2017), "Social media research in the industrial marketing field: Review of literature and future research directions", *Industrial Marketing Management,* Vol. 66, pp. 115–129.

Sanders, N.R. and Premus, R. (2005), "Modeling the relationship between firm IT capability, collaboration, and performance", *Journal of Business Logistics*, Vol. 26 No. 1, pp. 1–23

Sawhney, R. and Piper, C. (2002), "Value creation through enriched marketing-operations interface: an empirical study in the printed circuit board industry", *Journal of Operations Management*, Vol. 20 No. 3, pp. 259–72.

Sezen, B. (2008), "Relative effects of design, integration and information sharing on supply chain performance", *Supply Chain Management: An International Journal*, Vol. 13 No. 3, pp. 233–240.

Sheffi, Y. and Rice, J.B. (2005), "The resilient enterprise: overcoming vulnerability for competitive advantage", *The MIT Press*, Cambridge.

Sombultawee, K. and Boon-Itt, S. (2018), "Marketing-operations alignment: A review of the literature and theoretical background", *Operations Research Perspectives*, Vol. 5, pp. 1–12.

Sombultawee, K. and Boon-Itt, S. (2020), "Marketing-Operations Alignment: Scale Development and Validation", *Journal of Business & Industrial Marketing*, Vol. 35 No. 12, pp. 2079-2095.

Sousa, R. and Voss, C.A. (2008), "Contingency research in operations management practices", *Journal of Operations Management*, Vol. 26 No. 6, pp. 697–713.

Swafford, P.M., Ghosh, S. and Murthy, N. (2006), "The antecedents of supply chain agility of a firm: scale development and model testing", *Journal of Operations Management*, Vol. 24 No. 2, pp. 170–188.

Swani, K., Milne, G.R. and Miller, E.G. (2021), "Social media services branding: The use of corporate brand names", *Journal of Business Research*, Vol. 125, pp. 785–797.

Swink, M. and Song, M. (2007). "Effects of marketing-manufacturing integration on new product development time and competitive advantage", *Journal of Operations Management*, Vol. 25, pp. 203–217.

Tajvidi, R. and Karami, A. (2017), "The effect of social media on firm performance", *Computers in Human Behavior*, Vol. 115, pp. 1–10.

Tang, C.S. (2010), "A review of marketing-operations interface models: from coexistence to coordination and collaboration", *International Journal of Production Economics*, Vol. 125 No. 1, pp. 22-40.

Tang, G., Ren, S., Chadee, D. and Yuan, S. (2020), "The dark side of social media connectivity influence on turnover intentions of supply chain professionals", *International Journal of Operations and Production Management*, Vol. 40 No. 5, pp. 603–623.

Teece, D.J. (2007), "Explicating dynamic capabilities: the nature and micro-foundations of enterprise performance", *Strategic Management Journal*, Vol. 28 No. 13, pp. 1319-1350.

Thome´, A.M.T., Scavarda, L.F., Fernandez, N.S., and Scavarda, A.J. (2012), "Sales and operations planning: A research synthesis", *International Journal of Production Economics*, Vol. 138, pp. 1-13.

Torres, E.N. (2014) "Deconstructing service quality and customer satisfaction: Challenges and directions for future research", *Journal of Hospitality Marketing & Management*, Vol. 23 No. 6, pp. 652–677.

Tóth, Z., Liu, M., Luo, J. and Braziotis, C. (2020), "The role of social media in managing supplier attractiveness", *International Journal of Operations and Production Management*, Vol. 40 No. 5, pp.625-646.

Um, J., Lyons, A., Lam, H.K.S., Cheng, T.C.E. and Dominguez-Pery, C. (2017), "Product variety management and supply chain performance: a capability perspective on their relationships and competitiveness implications", *International Journal of Production Economics*, Vol. 187, pp. 15-26.

Van Duin, J., De Goffau, W., Wiegmans, B., Tavasszy, L. and Saes, M. (2016), "Improving home delivery efficiency by using principles of address intelligence for B2C deliveries", *Transportation Research Procedia*, Vol. 12, pp. 14-25.

Verma, R. and Goodale, J.C. (1995), "Statistical power in operations management research", *Journal of Operations Management*, Vol. 13 No. 2, pp. 139–152.

Verbano, C. and Venturini, K. (2011), "Development paths of risk management: approaches, methods and fields of application", *Journal of Risk Research*, Vol. 14 No. 5, pp. 519-550.

Vickery, S.K., Calantone R. and Dröge, C. (1999), "Supply chain flexibility: an empirical study", *Journal of Supply Chain Management*, Vol. 35 No. 3, pp. 16–24.

Vickery, S.K., Jayaram, J., Droge, C., Calantone, R. (2003), "The effects of an integrative supply chain strategy on customer service and financial performance: an analysis of direct versus indirect relationships", *Journal of Operations Management*, Vol. 21 No. 5, pp. 523–539.

Vugrin, E.D., Warren, D.E. and Ehlen, M.A. (2011), "A resilience assessment framework for infrastructure and economic systems: quantitative and qualitative resilience analysis of petrochemical supply chains to a hurricane", *Process Safety Progress*, Vol. 30 No. 3, pp. 280–290.

Wang, J.W., Gao, F. and Ip, W.H., (2010), "Measurement of resilience and its application to enterprise information systems", *Enterprise Information System*, Vol. 4 No. 2, pp. 215–223.

Wang, W.Y., Pauleen, D.J. and Zhang, T. (2016), "How social media applications affect B2B communication and improve business performance in SMEs", *Industrial Marketing Management*, Vol. 54, pp. 4–14

Wang, Y., Rod, M., Ji, S. and Deng, Q. (2017), "Social media capability in B2B marketing: toward a definition and a research model", *Journal of Business and Industrial Marketing*, Vol. 32 No. 8, pp. 1125-1135.

Weir, K., Kochhar, A., LeBeau, S. and Edgeley, D. (2001), "An Empirical Study of the Alignment Between Manufacturing and Marketing Strategies", *Long Range Planning*, Vol. 33 No. 6, pp. 831-848.

West, S.G., Taylor, A.B. and Wu, W. (2012), "Model fit and model selection in structural equation modeling", Hoyle, R.H. (Ed.), *Handbook of structural equation modelling*, Guilford Press, New York, NY.

Worren, N., Moore, K. and Cardona, P. (2002), "Modularity, strategic flexibility and firm performance: A study of the home appliance industry", *Strategic Management Journal*, Vol. 23 No. 12, pp. 1123–1140.

Wu S.J., Straub D.W. and Liang T.P. (2015), "How information technology governance mechanisms and strategic alignment influence organizational performance: insights from a matched survey of business and IT managers", *MIS Q*, Vol. 39 No. 2, pp. 497–518.

Ye, Y., Yu, Q., Zheng, Y. and Zheng, Y. (2022), "Investigating the effect of social media application on firm capabilities and performance: the perspective of dynamic capability view", *Journal of Business Research*, Vol. 139, pp. 510-519.

Yoo, E., Rand, W., Eftekhar, M. and Rabinovich, E. (2016), "Evaluating information diffusion speed and its determinants in social media networks during humanitarian crises", *Journal of Operations Management*, Vol. 45, pp. 123–133.

Zelbst, P.J., Green, K.W., Sower, V.E. and Reyes, P. (2009), "Impact of supply chain linkages on supply chain performance", *Industrial Management and Data Systems*, Vol. 109 No. 5, pp. 665-682.

Zhan, Y., Tan, K. H., Chung, L., Chen, L. and Xing, X. (2020), "Leveraging social media in new product development: Organisational learning processes, mechanisms and evidence from China", *International Journal of Operations & Production Management,* Vol. 40 No. 5, pp.671-695.

Figure 1. Research framework

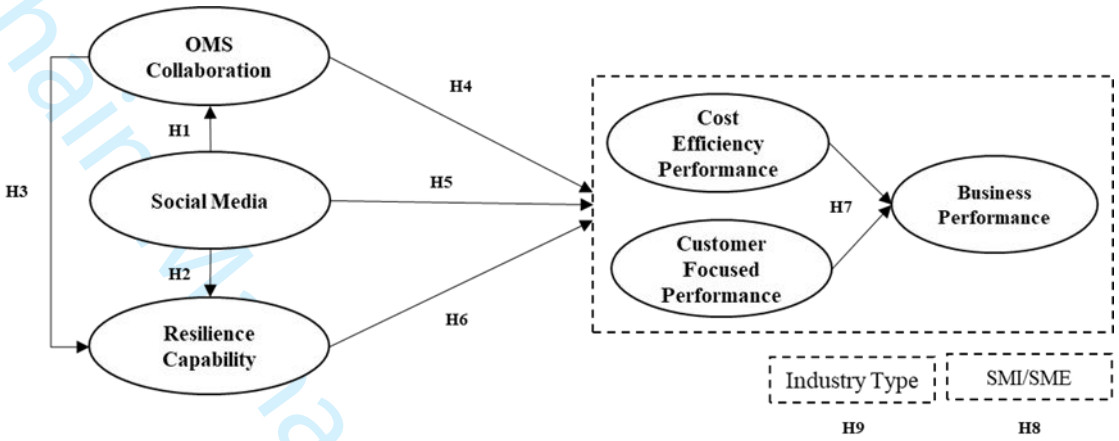

Figure 2. Path analysis of a combined model

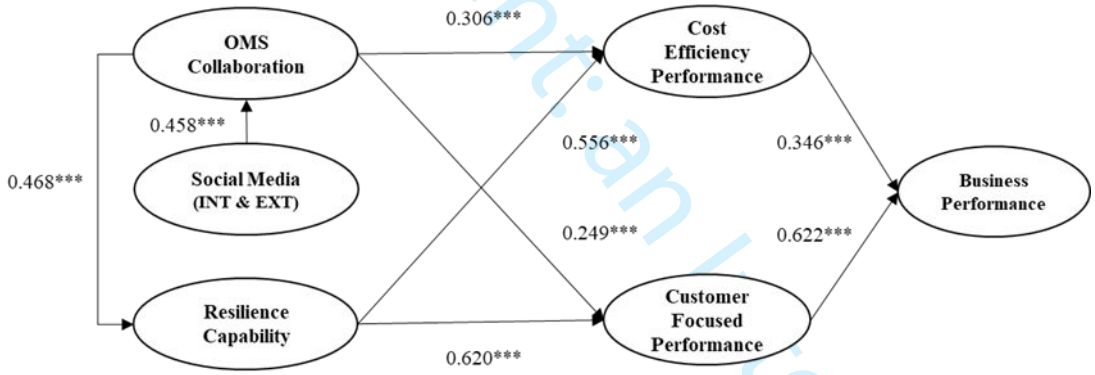

Table 1. Structures and supporting literature

Structure	Items	Literature Review
Internal Social Media	The company interacts formally with SM channels between business functions	Culnan *et al*. (2010); Brettel *et al*. (2011); Mitrega *et al*. (2017)
	The company interacts informally through SM channels between business functions	Culnan *et al*. (2010); Brettel *et al*. (2011); Mitrega *et al*. (2017)
	The company exchanges information through SM channels between business functions	Culnan *et al*. (2010); Brettel *et al*. (2011); Mitrega *et al*. (2017)
	The company exchanges resources through SM channels between business functions	Culnan *et al*. (2010); Brettel *et al*. (2011); Mitrega *et al*. (2017)
External Social Media	The company's SM activities are linked to suppliers' social media activities	Palmatier (2008); Mitrega *et al*. (2017); Karampela *et al*. (2020)
	The company uses SM for estimating future customer demands and needs	Palmatier (2008); Mitrega *et al*. (2017); Chae *et al*. (2020)
	The company uses SM to ask for customer feedback on existing products and services	Palmatier (2008); Mitrega *et al*. (2017); Chae *et al*. (2020)
OMS Collaboration	Level of collaboration between Operations and Marketing/Sales for sales forecasts (e.g., demand, profit management)	Karmarkar (1996); Parente (1998); Weir *et al*. (2001); Malhotra and Sharma (2002); Ovliva and Watson (2011); Sombultawee and Boon-Itt (2018, 2020)
	Level of collaboration between Operations and Marketing/Sales for new product/service development (e.g., frequency, timing, pricing/costing)	Weir *et al*. (2001); Malhotra and Sharma (2002); Swink and Song (2007); Paiva (2010); Kong *et al*. (2015); Goh and Eldridge (2019);
	Level of collaboration between Operations and Marketing/Sales for order fulfilment (e.g., lead time, stock levels and capacity)	Karmarkar (1996); Parente (1998); Weir *et al*. (2001); Sawhney and Piper (2002); Thome´ *et al*., (2012); Alex *et al*. (2014)
	Level of collaboration between Operations and Marketing/Sales for quality/quantity issues (e.g., return, volume)	Parente (1998); Weir *et al*. (2001); Malhotra and Sharma (2002); Paiva (2010); Thome´ *et al*., (2012); Alex *et al*. (2014); Bijmolt *et al*. (2021)
	Level of collaboration between Operations and Marketing/Sales to plan responses to changes taking place in our business environment (e.g., new product/service trend, process change, customer needs management)	Jaworski and Kohli (1993); Sawhney and Piper (2002); Hausman *et al*; (2002); Ovliva and Watson (2011); Kong *et al*. (2015); Goh and Eldridge (2019)
	Level of collaboration between Operations and Marketing/Sales for operations plan/schedule in product/service area (e.g., collaborative planning for purchasing, resource utilisation, staffing, changeover reduction and customer contact management)	Parente (1998); Weir *et al*. (2001); Malhotra and Sharma (2002); Sombultawee and Boon-Itt (2018, 2020)
	Level of collaboration between Operations and Marketing/Sales for customer order coordination (e.g., specification, order promise date and order management)	Parente (1998); Weir *et al*. (2001); Sawhney and Piper (2002); Malhotra and Sharma (2002): Alex *et al*. (2014)
	Level of collaboration between Operations and Marketing/Sales for delivery request and plan (e.g., shipping priority/packing and delivery request/time management)	Parente (1998); Weir *et al*. (2001); Sawhney and Piper (2002); Malhotra and Sharma (2002): Alex *et al*. (2014); Bijmolt *et al*. (2021)
	Level of collaboration between Operations and Marketing/Sales for new market entrance (e.g., build a new plant, vertical integration, product/service variety, distribution channel/location, technology choice)	Parente (1998); Kong *et al*. (2015); Goh and Eldridge (2019)
Customer-focused performance	Customer satisfaction	Patel *et al*. (2013); Assen (2018)
	Product/Service Quality	Patel *et al*. (2013); Torres, (2014)
	Delivery speed	Patel *et al*. (2013)
	Delivery dependability	Patel *et al*. (2013); Assen (2018)
	Order flexibility	Patel et al. (2013)
	Delivery flexibility (e.g., quantity, time, return)	Patel et al. (2013)
	Responsiveness (e.g., market, technology)	Patel *et al*. (2013); Assen (2018)
	New product/service introduction (i.e., speed and frequency)	Patel et al. (2013)
Cost efficiency	Ability to minimise the total cost of resources used	Sezen, (2008); Beamon, (1999); Um *et al*. (2017)

	Ability to minimise the total cost of product distribution/service delivery	Beamon, (1999); Sezen, (2008); Um *et al*. (2017)
	Ability to minimise the total cost of manufacturing/service provision	Beamon, (1999); Sezen, (2008); Zelbst *et al*. (2009); Nawanir *et al*. (2013); Aoki *et al*. (2014)
	Ability to minimise internal failure costs (i.e., defect, re-work, process failure, price reduction, and downtime)	Bhasin (2008); Nawanir *et al*. (2013); Alkhaldi and Abdallah (2019)
	Ability to minimise external failure costs (i.e., complaints, returns, warranty claims, liability, and lost sales)	Bhasin (2008); Nawanir *et al*. (2013); Alkhaldi and Abdallah (2019)
Organisational Resilience Capability	Ability to anticipate disruption/problems (i.e., observation, identification, and preparation)	Ponomarov and Holcomb (2009); Golgeci and Ponomarov (2013)
	Ability to quickly cope with disruption/problems (i.e., agility, sensemaking and problem-solving)	Ponomarov and Holcomb (2009); Golgeci and Ponomarov (2013); Chowdhury and Quaddus (2017); Gölgeci and Kuivalainen (2020)
	Ability to adjust following disruption/problems and develop adaptive capability (i.e., reflection, learning and readiness)	Ponomarov and Holcomb (2009); Golgeci and Ponomarov (2013); Chowdhury and Quaddus (2017); Gölgeci and Kuivalainen (2020)
Business Performance	Return on sales (ROS)	Vickery *et al*. (1999); Huo *et al*. (2014)
	Return on Asset (ROA)	Vickery *et al*. (1999); Fulleton *et al*. (2014); Okafor *et al*. (2021)
	Sales growth	Vickery *et al*. (1999); Huo *et al*. (2014); Okafor *et al*. (2021)
	Market share	Vickery *et al*. (1999); Fulleton *et al*. (2014)
	Market share growth	Vickery *et al*. (1999); Huo *et al*. (2014)

Table 2. Survey respondents

Industry type	Total	Valid %
Food, beverage, tobacco	28	7.1
Chemical materials and products	12	3.0
Fabricated metal products	13	3.3
Computer and communication products	11	2.8
Electric parts and components	14	3.5
Machinery and equipment	16	4.1
Transport equipment	15	3.8
Paper, wood, and furniture	11	2.8
Textiles and clothing	14	3.6
Non-metal mineral products	8	2.0
Energy and water	15	3.8
Construction	31	7.8
Business service (e.g., computing, engineering)	11	2.8
Health service	34	8.6
Education service	17	4.3
Insurance/Financial service	15	3.8
Personal service (e.g., beauty, cleaning)	16	4.1
Professional service (e.g., legal)	17	4.3
Social service	26	6.6
Logistic service (e.g., courier, warehouse)	34	8.6
Retail/wholesale service	27	6.8
Accommodation and Travel service	8	2.0
Other	2	0.5
Total	395	100 %

Table 3. Confirmatory factor analysis

Structure	Code	Abbreviated item statement	Factor loading	CR	AVE
Social Media (SMI/SME)	SMI1	Our company interacts formally on social media between business functions	.685+	0.820	0.533
	SMI 2	Our company interacts informally through social media channels between business functions	.731+		
	SMI 3	Our company exchanges information through social media channels between business functions	.785+		
	SMI 4	Our company exchanges resources through social media between business functions	.780+		
	SME 1	Our company's social media activities are linked to suppliers' social media activities	.750+	0.786	0.551
	SME 2	Our company uses social media to estimate future customer demands and needs	.846+		
	SME 3	Our company uses social media to ask for customer feedback on existing products and services	.772+		
Operations Marketing/Sales Collaboration (CO)	CO 1	Level of collaboration between Operations and Marketing/Sales for sales forecasts	.731	0.915	0.546
	CO 2	Level of collaboration between Operations and Marketing/Sales for new product/service development	.726		
	CO 3	Level of collaboration between Operations and Marketing/Sales for order fulfilment	.711		
	CO 4	Level of collaboration between Operations and Marketing/Sales for quality/quantity issues	.690		
	CO 5	Level of collaboration between Operations and Marketing/Sales to plan responses to changes taking place in our business environment	.661		
	CO 6	Level of collaboration between Operations and Marketing/Sales for operations plan/schedule by product/service/area	.765		
	CO 7	Level of collaboration between Operations and Marketing/Sales for customer order coordination	.734		
	CO 8	Level of collaboration between Operations and Marketing/Sales for delivery request and plan	.697		
	CO 9	Level of collaboration between Operations and Marketing/Sales for new market entrance	.697		
Resilience Capability (RC)	RC 1	Ability to anticipate disruption/problems	.772	0.869	0.688
	RC 2	Ability to quickly cope with disruption/problems	.820		
	RC 3	Ability to adjust following disruption/problems and develop adaptive capability	.831		
Cost Efficiency (CE)	CE 1	Ability to minimise the total cost of resources used	.695	0.880	0.595
	CE 2	Ability to minimise the total cost of product distribution/service delivery	.765		
	CE 3	Ability to minimise the total cost of manufacturing/service provision	.739		
	CE 4	Ability to minimise internal failure costs	.705		
	CE 5	Ability to minimise external failure costs	.708		
Customer Focus (CF)	CF 1	Customer satisfaction	.704	0.913	0.567
	CF 2	Product/Service quality	.671		
	CF 3	Delivery speed	.646		
	CF 4	Delivery dependability	.679		
	CF 5	Order flexibility	.682		
	CF 6	Delivery flexibility	.664		
	CF 7	Responsiveness	.718		
	CF 8	New product/service introduction	.709		
Business Performance (BP)	BP 1	Return on sales	.698	0.862	0.556
	BP 2	Return on asset	.686		
	BP 3	Sales growth	.719		
	BP 4	Market share	.647		
	BP 5	Market share growth	.666		

+ represents two first-order factors' (ISM and ESM) loadings

Composite Reliability (CR) $= (\sum \text{standardised loading})^2 / \{(\sum \text{standardised loading})^2 + \sum \varepsilon_i\}$

Average variance extracted (AVE) $= \sum (\text{standardised loading})^2 / (\sum (\text{standardised loading})^2 + \sum \varepsilon_i)$

Note: Fit indices: χ^2/df (chi square) = 1067.04/608 = 1.76, SRMR (standardized root mean square residual) = 0.036, RMSEA (root mean squared error of approximation) = 0.044, Normed-fit index (NFI)= 0.932, CFI (comparative fit index) = 0.941

Table 4. Inter-construct correlation estimates and related AVEs

	SMI	SME	CO	RC	CE	CF	BP
SMI	0.533+						
SME	0.729**	0.551+					
CO	0.388**	0.417**	0.564+				
RC	0.262**	0.207**	0.432**	0.688+			
CE	0.244**	0.293**	0.517**	0.564**	0.595+		
CF	0.254**	0.261**	0.493**	0.592**	0.691**	0.568+	
BP	0.295**	0.3294**	0.415**	0.587**	0.644**	0.683**	0.556+
Mean	3.20	3.20	3.49	3.70	3.65	3.87	3.68
SD	0.823	0.924	0.695	0.808	0.676	0.610	0.650

+ =Average variance extracted, * represents significant at the 0.05 level and ** 0.01 level.

Table 5. Structural equation modelling and mediation results

Construct (Models)	Path Coefficient	t-value	Significance	Indirect Impact	Total Impact
Model 1: Combined data					
Social media - Collaboration	0.458***	7.279	0.000	-	0.458
Social media – Resilience capability	0.059	0.979	0.246	0.214**	0.273
Collaboration - Resilience capability	0.468***	6.934	0.000	-	0.468
Collaboration – Cost efficiency	0.306***	5.015	0.000	0.260**	0.566
Collaboration – Customer focus	0.249***	4.332	0.000	0.290**	0.539
Resilience capability – Cost efficiency	0.556***	8.551	0.000	-	0.556
Resilience capability – Customer focus	0.620***	9.547	0.000	-	0.620
Social media – Cost efficiency	0.027	0.898	0.369	0.292**	0.319
Social media – Customer focus	0.043	0.540	0.589	0.284**	0.327
Cost efficiency – Business performance	0.346***	5.418	0.000	-	0.346
Customer focus – Business performance	0.622***	8.468	0.000	-	0.622
Model 2: Manufacturing					
Social media - Collaboration	0.362***	4.194	0.000	-	0.362
Social media – Resilience capability	0.067	0.804	0.421	0.166**	0.223
Collaboration - Resilience capability	0.458***	4.828	0.000	-	0.458
Collaboration – Cost efficiency	0.233**	2.815	0.005	0.309**	0.542
Collaboration – Customer focus	0.178*	2.154	0.031	0.305**	0.483
Resilience capability – Cost efficiency	0.675***	6.373	0.000	-	0.675
Resilience capability – Customer focus	0.667***	6.068	0.000	-	0.667
Social media – Cost efficiency	0.013	0.186	0.853	0.241**	0.254
Social media – Customer focus	-0.021	-0.304	0.761	0.220**	0.198
Cost efficiency – Business performance	0.363***	3.433	0.000	-	0.363
Customer focus – Business performance	0.589***	4.787	0.000	-	0.589
Model 3: Service					
Social media - Collaboration	0.563***	6.236	0.000	-	0.563
Social media – Resilience capability	0.063	0.693	0.488	0.262**	0.325
Collaboration - Resilience capability	0.465***	4.788	0.000	-	0.465
Collaboration – Cost efficiency	0.307***	3.511	0.000	0.240**	0.547
Collaboration – Customer focus	0.252**	3.221	0.001	0.276**	0.527
Resilience capability – Cost efficiency	0.516***	6.114	0.000	-	0.516

Resilience capability – Customer focus	0.593***	7.528	0.000	-	0.593
Social media – Cost efficiency	0.095	1.244	0.213	0.340**	0.435
Social media – Customer focus	0.129+	1.845	0.065	0.334**	0.463
Cost efficiency – Business performance	0.379***	4.431	0.000	-	0.379
Customer focus – Business performance	0.595***	6.552	0.000	-	0.595
Model 4: Internal Social Media					
Social media - Collaboration	0.427***	6.597	0.000	-	0.427
Social media – Resilience capability	0.103+	1.671	0.095	0.193**	0.296
Collaboration - Resilience capability	0.451***	6.834	0.000	-	0.451
Collaboration – Cost efficiency	0.327***	5.387	0.000	0.253**	0.580
Collaboration – Customer focus	0.263***	4.644	0.000	0.280**	0.543
Resilience capability – Cost efficiency	0.560***	8.537	0.000	-	0.560
Resilience capability – Customer focus	0.621***	9.532	0.000	-	0.621
Social media – Cost efficiency	-0.022	-0.427	0.669	0.305**	0.283
Social media – Customer focus	0.013	0.267	0.789	0.296**	0.309
Cost efficiency – Business performance	0.344***	5.398	0.000	-	0.344
Customer focus – Business performance	0.699***	8.494	0.000	-	0.699
Model 5: External Social Media					
Social media - Collaboration	0.477***	7.600	0.000	-	0.477
Social media – Resilience capability	0.009	0.136	0.892	0.234**	0.243
Collaboration - Resilience capability	0.491***	7.079	0.000	-	0.491
Collaboration – Cost efficiency	0.278***	4.502	0.000	0.274**	0.552
Collaboration – Customer focus	0.233**	3.977	0.000	0.306**	0.539
Resilience capability – Cost efficiency	0.557***	8.565	0.000	-	0.557
Resilience capability – Customer focus	0.622***	9.579	0.000	-	0.622
Social media – Cost efficiency	0.083	1.603	0.109	0.268**	0.351
Social media – Customer focus	0.070	1.395	0.163	0.263**	0.333
Cost efficiency – Business performance	0.347***	5.431	0.000	-	0.347
Customer focus – Business performance	0.622***	8.470	0.000	-	0.622

M1: Ch-sq/df = 1133.81/ 608= 1.86, SRMR = 0.043, RMSEA = 0.047, CFI = 0.933
M2: Ch-sq/df = 976.96 / 608 = 1.61, SRMR = 0.053, RMSEA = 0.055, CFI = 0.901
M3: Ch-sq/df = 973.61 / 608 = 1.60, SRMR = 0.050, RMSEA = 0.054, CFI = 0.918
M4: Ch-sq/df = 964.66 / 511 = 1.89, SRMR = 0.041, RMSEA = 0.047, CFI = 0.934
M5: Ch-sq/df = 893.694 / 478 = 1.87, SRMR = 0.037, RMSEA = 0.047, CFI = 0.939
+ represents significant at the 0.1 level, * 0.05 level, ** 0.01 level, and *** 0.001 level
Note. Bootstrapping 1,000 times in SEM