

# Multichannel integration through innovation capability in manufacturing SMEs and its impact on performance

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## Abstract

**Purpose** – Using online channels is an opportunity for small and medium-sized enterprises (SMEs) in the manufacturing industry to reach new markets and reduce the dependency on distributors. The challenge remains that of integrating new online channels into existing networks effectively. This paper aims to identify to what extent multichannel integration is enhanced by the innovation capability of manufacturing SMEs and the subsequent influence on their performance.

**Design/methodology/approach** – Data were collected by means of a survey aimed at managers of small manufacturing firms in Mexico and were analysed through an advanced partial least squares (PLS) approach via SmartPLS.

**Findings** – Manufacturing SMEs with more advanced innovation capability achieve higher levels of multichannel integration. In turn, when multichannel integration is more advanced, manufacturing SMEs enjoy better results with respect to sales, fulfilling marketing objectives and improving relationships with customers.

**Research limitations/implications** – The model could be extended to accommodate other variables that may affect the effective integration of multiple channels.

**Practical implications** – Manufacturing SMEs can improve their results by integrating online channels with existing offline channels with a commitment to innovating in the market.

**Originality/value** – Analysing multichannel integration from the perspective of manufacturing firms, examining not only the positive consequences but also the underlying capabilities needed.

**Keywords** Performance, Innovation capability, Manufacturing SMEs, Multichannel integration

**Paper type** Research paper

## Introduction

With the increasing importance of digital channels and social media in sales and communication processes, the integration of online and offline channels, known as multichannel integration, has received growing attention in the literature (Ailawadi and Farris, 2017). Recent research has shown how the integration of communication channels can be helpful in the sales process of SMEs (Fraccastoro *et al.*, 2020). Manufacturing SMEs in particular could benefit from increased growth by integrating online channels into pre-existing channel systems (Brown and Dant, 2014). According to the United Nations' Sustainable Development Agenda 2030, implementing online channels can allow SMEs to reach new markets and improve their levels of productivity (UNCTAD, 2015; UN, 2018). However, there is a lack of studies on the impact of multichannel integration

within the specific context of manufacturing SMEs. Multichannel integration has been studied in the contexts of “business-to-consumer” (B2C) and “business-to-business” (B2B). While B2C enterprises have been using social media and digital marketing channels to exploit business opportunities, B2B enterprises continue to lag behind in their incorporation (Lawrence *et al.*, 2019; Bill *et al.*, 2020). Consequently, the effective integration of online and offline channels has predominantly become a priority for B2C companies (Verhoef *et al.*, 2015; Ailawadi and Farris, 2017). Because of the increasing number of customers who start their customer journey online, Homburg *et al.* (2020) highlight the need for extending research on the effectiveness of multichannel integration in a B2B context.

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The increase in the variety of channels and the evolution from independently managed multichannel marketing to an operation that delivers a seamless customer experience through all channels have made channel integration processes more complicated for suppliers and retailers (Ailawadi and Farris, 2017; Saghiri *et al.*, 2017, 2018). Effective channel integration can be a source of competitive advantage, as it can help to simultaneously and consistently implement online and offline channels, coordinate functions, reduce transaction costs, minimise cannibalisation effects between channels, create synergies and increase firm performance (Neslin *et al.*, 2006; Pentina and Hasty, 2009). Based on the dynamic capabilities view (Teece *et al.*, 1997; Teece, 2007, 2009), this paper suggests multichannel integration to be an operational marketing capability that builds on a firm's innovation capability. Innovation capability is conceptualised as a dynamic capability that allows the continuous improvement of a company's resources and capabilities needed to explore and exploit opportunities to meet market needs (Szeto, 2000). According to the dynamic capabilities view, they can help to develop new operational capabilities such as multichannel integration (Morgan *et al.*, 2018), which are required so as to enhance the digitalisation of SMEs (Hubschmid-Vierheilig *et al.*, 2019; Matarazzo *et al.*, 2021).

The literature review shows that research on channel integration has predominantly focussed on retailers (B2C) and has overlooked the specific features and challenges for manufacturers (B2B). However, as Berman and Thelen (2018) pointed out, omnichannel marketing is also applicable to manufacturers, as they use online and offline channels to communicate with and sell to customers. Empirical studies on multichannel integration that focus on manufacturing enterprises are scarce, presenting many research opportunities to investigate this topic (Wu and Wu, 2015; Saghiri *et al.*, 2017). A specific focus on manufacturing SMEs is needed because the challenges of channel coordination that manufacturers and SMEs face are different. Manufacturers usually manage both direct and indirect channels; therefore, they need to consider potential channel conflicts (Van Bruggen *et al.*, 2010; Homburg *et al.*, 2020). Furthermore, manufacturers mainly operate their business in a B2B context. Multichannel integration is of interest to manufacturing enterprises because they make extensive use of indirect channels to commercialise their products and implementing a multichannel system is an opportunity to reduce the dependence on distributors. In the manufacturing sector, the right channel strategy can improve the customer and value-chain experience by making interactions timelier, more relevant and more targeted (ATT, 2019). This paper takes into consideration the specific situation of manufacturing SMEs. SMEs traditionally face challenges such as limited financial resources, a lack of organisational and technological resources and informal decision-making processes (Merrilees *et al.*, 2011). SMEs are challenged to embrace an integrated multichannel distribution system as a way in which to adapt to a globalised and competitive environment with a sophisticated level of technology (Sinkovics *et al.*, 2013; Brown and Dant, 2014). Digital channels like social media represent strategic resources for SMEs to realise business networking efforts which allow them to increase their visibility and enter new markets

(Bocconcelli *et al.*, 2017). According to Fraccastoro *et al.* (2020), understanding how SMEs integrate their digital and traditional communication channels to enhance sales processes addresses the main aspect of current research.

Moreover, research in this area has focussed on analysing the benefits of multichannel integration (Gallino and Moreno, 2014; Herhausen *et al.*, 2015), but few studies analyse its antecedents. Consequently, there is a lack of empirical understanding of how manufacturing SMEs can enhance and benefit from multichannel integration. Addressing these research gaps, we attempt to better understand multichannel integration from the perspective of manufacturing SMEs by examining the effect of innovation capability on multichannel integration and the influence of multichannel integration on the performance of manufacturing SMEs. With our research, we attempt to provide a distinctive contribution to the literature on how multichannel integration can be effective within different customer, firm and industry contexts (Ou *et al.*, 2017; Gao *et al.*, 2019). More specifically, the present research provides evidence of how multichannel integration can be effective in a B2B context, given the relatively scarce research on this subject in comparison to the extensive research in B2C markets. This paper is divided into five sections, including the first introductory section. The second section outlines the research model and related hypotheses. The third section describes the research methodology. The fourth section provides information on the data analysis and results. Finally, this paper closes with a discussion of the findings, implications and future directions.

## Literature review

Manufacturing SMEs and manufacturing enterprises in general, face the challenge of combining direct and indirect channels (Van Bruggen *et al.*, 2010) and, therefore, are likely to fail to achieve potential synergies, as channels are independently managed and not integrated (Frasquet and Miquel, 2017). The performance of multichannel systems in manufacturing enterprises depends on the alignment of the different channels (Homburg *et al.*, 2020). Thus, the integration of channels can be important for manufacturing SMEs and their performance.

Multichannel integration is the degree to which different channels interact to provide mutual support and interchangeability for customers (Bendoly *et al.*, 2005; Herhausen *et al.*, 2015). It permits providing and managing an integrated system of different channels through the alignment of marketing functions, logistics and information management. The literature suggests that the main elements/dimensions of multichannel integration are as follows: communication, information access, order fulfilment, information management of products and prices, information and transaction management, customer service and reverse logistics (Bendoly *et al.*, 2005; Oh *et al.*, 2012; Jiang *et al.*, 2015; Saghiri *et al.*, 2017; Zhang *et al.*, 2010).

The concept of multichannel integration and its effect on firm performance has been analysed in previous research; however, to the best of our knowledge, there are no studies focussing on SMEs. Table 1 summarises the review of empirical studies.

Studies on multichannel integration have dealt mainly with topics concerning customer reactions. However, there is little information regarding its antecedents and how firms can

Table 1 Empiric multichannel integration studies

Authors	Focus	Findings
<a href="#">Bendoly et al. (2005)</a>	Perceptions of multichannel integration on purchasing decisions in clothing, consumer electronics or music retail industries	Firms that simultaneously manage online and in-store channels should consider efforts that encourage the transparency of channel integration
<a href="#">Pentina and Hasty (2009)</a>	Effect of multichannel integration on online sales of multichannel retailers listed in the COMPUSTAT database	A higher degree of multichannel integration increases retailers' online sales
<a href="#">Lee and Kim (2010)</a>	Multichannel integration and effectiveness on consumers' utilitarian and hedonic shopping orientation and loyalty orientation	Freedom in channel selection, e-mail marketing effectiveness and appreciation of store-based customer services are predictors of consumers' loyalty intention towards the multichannel retailer
<a href="#">Oh et al. (2012)</a>	Effect of multichannel integration through information technologies in the efficiency and innovation of a retail firm based on survey data from 125 multichannel retailers in Singapore	Multichannel integration through the use of information technologies allows the firm to be efficient in delivering current and innovative in creating future offerings
<a href="#">Gallino and Moreno (2014)</a>	Effect of multichannel integration on online and offline sales and store traffic of leading retailers in the USA specialised in housewares, furniture and home accessories	The option of buying items online and picking them up in a physical store does not cause an increase in online sales
<a href="#">Herhausen et al. (2015)</a>	Online-offline integration on perceived service quality and perceived risk on the internet store for apparel and accessories retailers	Multichannel integration leads to competitive advantage and the creation of channel synergies
<a href="#">Jiang et al. (2015)</a>	Effect of multichannel integration in the reciprocal relationship between online and offline channels based on survey data from 552 Chinese customers	Multichannel integration leads to channel reciprocity and influences channel reciprocity indirectly through an online or offline trust
<a href="#">Wu and Wu (2015)</a>	Effective implementation of multichannel integration in the e-business of Taiwanese enterprises from the retailing and manufacturing sectors	Click-and-brick strategies have a different impact on multichannel integration in different purchase stages and different impact on synergy benefits
<a href="#">Frasquet and Miquel (2017)</a>	Multichannel integration on online and offline customer loyalty in the retail apparel sector of Spain and the UK	Multichannel integration affects positively offline and online loyalty directly and thorough satisfaction
<a href="#">Saghiri et al. (2017)</a>	Case studies from manufacturing and retail companies from the UK to define a conceptual framework for omnichannel systems	Definition of a three-dimensional framework for omnichannel systems, which can maintain connectivity and interaction, emergence and autonomy and control properties of complex adaptive systems
<a href="#">Zhang et al. (2018)</a>	Multichannel integration and its effects on consumer empowerment, trust, satisfaction and consumer patronage intention based on data collected from a major omnichannel retailer in China	Consumers show positive responses to multichannel integration

implement organisational changes so as to achieve more sophisticated channel integration. Some studies have analysed the effects of multichannel integration on purchasing decisions. [Bendoly et al. \(2005\)](#) suggested that firms in the clothing, consumer electronics and music retail industries should reassess the repercussions of availability failures and encourage the transparency of channel integration. [Jiang et al. \(2015\)](#) identified that integrated information, channel access and customer service improve the reciprocal relationship between online and offline channels.

Other empirical work has focussed on the effects of multichannel integration on customer loyalty. [Lee and Kim \(2010\)](#) identified the dimensions of freedom in channel selection, email marketing effectiveness and appreciation of store-based customer service as predictors of loyalty. [Frasquet and Miquel \(2017\)](#) found that the possibility of crossing channels while shopping and the alignment of offline and online offers can improve offline and online loyalty directly and indirectly through satisfaction. Some authors have focussed on other consumer responses to multichannel integration.

[Herhausen et al. \(2015\)](#) argued that multichannel integration improves perceived service quality and reduces the perceived risk of online stores for apparel and accessories retailers. According to [Zhang et al. \(2010\)](#), multichannel integration positively influences consumer empowerment, improving trust, satisfaction and patronage intention.

Another area of investigation has been the effect of multichannel integration on performance. Previous studies have mainly focussed their efforts on measuring the impact of multichannel integration on consumer responses; however, there is little knowledge on the effect on firm performance. A higher degree of multichannel integration is found to increase online sales ([Pentina and Hasty, 2009](#)) and improve the effectiveness of delivering current and future offerings ([Oh et al., 2012](#)). Channel integration can provide synergies that increase such effectiveness throughout different channels and purchase phases. However, multichannel integration functions are not always beneficial; [Gallino and Moreno \(2014\)](#) found that the option of buying items online and collecting them in a physical store does not cause an increase in online sales. There

remains no consensus on which situations or industries require multichannel integration to exploit market opportunities or on where integration is not such a priority due to the high investment in creating new business processes and structures.

Research on multichannel integration in manufacturing enterprises is scarce. Wu and Wu (2015) undertook an empirical study on channel coordination and its synergy benefits by means of a sample of Taiwanese retailing and manufacturing enterprises; however, this study does not provide additional information on the realised synergies, nor does it focus explicitly on manufacturers. The study conducted by Saghiri *et al.* (2017) contemplates the complexity of channel integration in a three-dimensional framework for omnichannel in which retailers and manufacturers are agents of the system. Building on case studies of retailers and manufacturers, Saghiri *et al.* (2017) argued that manufacturers should implement channel integration to coordinate their channels with those of other agents such as retailers. Interestingly, only these two studies have made an effort to identify the elements of channel integration during the purchase stages. Wu and Wu (2015) considered the three main stages in the customer purchase process (pre-purchase, purchase and post-purchase) and the activities involved in integrating the channels at each stage. Similarly, Saghiri *et al.* (2017) suggested that the integration of channel functions has to be analysed at each stage of the purchase process, as the connectivity and interaction between the company, customers and agents in channel systems can vary depending on the stage of the customer value-adding journey. With our investigation, we further develop the idea of manufacturing SMEs' multichannel integration throughout the different purchase stages.

As a conclusion of the information presented in Table 1, we observe that most studies examined multichannel integration by retail firms, while limited research exists on manufacturing enterprises (i.e. Wu and Wu, 2015; Saghiri *et al.*, 2017). To the best of our knowledge, none of the studies on multichannel integration analysed the peculiarities of manufacturing SMEs. Fraccastoro *et al.* (2020) offer a qualitative framework of

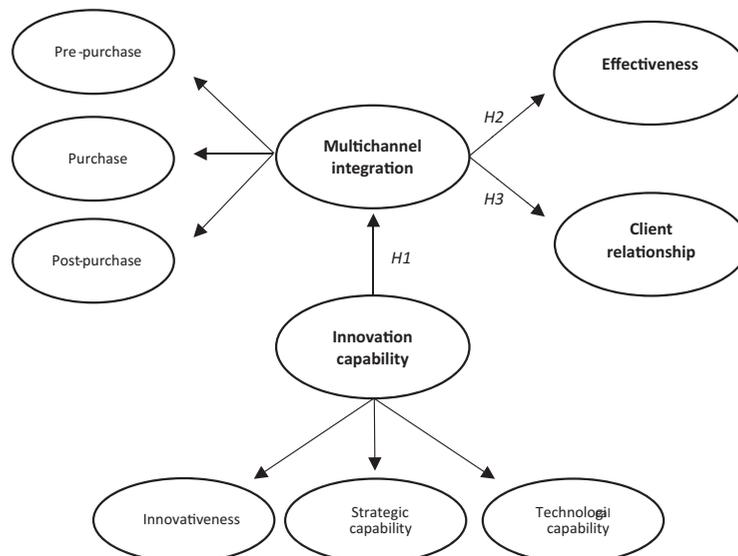
communication tools in the sales process of SMEs operating in a B2B context. However, quantitative research on multichannel integration in SMEs, more specifically in manufacturing SMEs, is scarce. In addition, most of the papers analyse the outcomes of multichannel integration, but the antecedents are widely neglected. Thus, the opportunity to investigate the antecedents and outcomes of manufacturing SMEs' multichannel integration becomes evident.

## Hypotheses development

The present research model (Figure 1) is based on the perspective of the dynamic capabilities view. This paper argues that the phenomenon of multichannel integration could be better understood through the lens of dynamic capabilities, which are referred to as higher-order capabilities that can influence the creation and actualisation of operational capabilities (Morgan *et al.*, 2011; Morgan *et al.*, 2018). The focus of dynamic capabilities is upon identifying opportunities by scanning, searching and exploring technologies and markets to address rapidly changing environments and match market changes (Teece *et al.*, 1997; Teece, 2007, 2009). The perspective of dynamic capabilities offers a holistic model of organisational innovation resulting in new processes, systems and business models (Lawson and Samson, 2001).

According to the classification by Morgan and Slotegraaf (2012) and the contribution by Morgan *et al.* (2018), marketing capabilities can be classified into three levels: inferior, intermediate and superior. In line with the perspective of dynamic capabilities, not all marketing capabilities are dynamic capabilities. Inferior and intermediate marketing capabilities can help to achieve profits through satisfying current customers, exploiting existing products, distribution channels and promoting existing brands. Superior marketing capabilities are dynamic capabilities or more specifically dynamic marketing capabilities, that help companies to evolve by supporting the processes with which to explore and integrate new market knowledge (Bruni and Verona, 2009). Dynamic

Figure 1 Conceptual model



marketing capabilities (higher-order/superior marketing capabilities) act on marketing capabilities (intermediate or lower-level marketing capabilities) (Teece, 2007; Barrales *et al.*, 2013; Morgan *et al.*, 2018). Previous studies have conceptualised innovation capability as the dynamic capability to manage key resources and capabilities to stimulate innovation in companies (Lawson and Samson, 2001; Barrales *et al.*, 2013). The basis of the dynamic innovation capability is the acquisition of market and technological knowledge and its integration into new products and processes (Kyläheiko *et al.*, 2011). Matarazzo (2021) found that dynamic capabilities are essential for SMEs to develop channel integration capabilities. Furthermore, Quaye and Mensah (2019) confirmed that marketing capabilities are the main drivers in sustaining and improving the competitive advantage of manufacturing SMEs. Based on the aforementioned studies and following the classification by Morgan *et al.* (2018), our research model considers that the dynamic innovation capability can influence the lower-level capability of multichannel integration and impact firm performance positively.

Innovation capability is recognised as a construct that helps to develop innovations and adapt to the changing market environment (Slater *et al.*, 2010). Both theoretical and empirical research shows the complexity of the innovation capability concept by suggesting different dimensions and measures (Iddris, 2016). Wang and Ahmed (2004) empirically tested the dimensions of product, market and process innovativeness. According to Saunila *et al.* (2012), creativity, motivation, leadership, communication channels, new products and new procedures are the main dimensions of innovation capability. Meanwhile, Vicente *et al.* (2015) recognised technological capability, innovativeness, strategic capability and product development as dimensions. The technological capacity allows developing and introducing new products in the market that differ in respect of their characteristics, quality or price (Yam *et al.*, 2011). Innovativeness is understood as openness towards new ideas (Menguc and Auh, 2006) and contributes to the development of new processes and products (Hurley and Hult, 1998). Regarding the strategic dimension, Gloet and Samson (2016) identified that innovation capability is embedded within all strategies that support firm innovations. Jeansson *et al.* (2017) found that online channel expansion in SMEs requires not only technological and infrastructural changes but also changes in the strategy of value creation for customers. The dimension of new product innovation refers to the ability to differentiate products from those of competitors by providing customer benefits through technology, research and development (R&D) and customer understanding (Nijssen and Frambach, 2000; Vicente *et al.*, 2015).

In previous research, different dimensions of the proposed dynamic innovation capability (innovativeness, technological innovation and strategic innovation) have been related to specific marketing capabilities. Theodosiou *et al.* (2012) suggested that the dimension of innovativeness contributes to the development of marketing capabilities. The proactive adoption of new technologies by means of technological innovation can improve the efficiency of channel activities by increasing interfirm integration (Kim *et al.*, 2006). According to Grewal *et al.* (2017), enterprises have to adopt new and

emerging technologies to get customers involved through channels. In summary, multichannel integration requires the dynamic innovation capability dimensions of innovativeness (Theodosiou *et al.*, 2012), technological innovation (Kim *et al.*, 2006; Grewal *et al.*, 2017) and strategic innovation (Nijssen and Frambach, 2000) to address growing customer expectations. Research suggests that dynamic innovation capability will contribute to developing the capacity to integrate multiple channels by implementing innovations in different technological, commercial or logistical processes. Thus:

*H1.* Innovation capability positively influences the multichannel integration of a manufacturing SME.

Integrating multiple channels requires investing considerable resources and it is unclear as to whether it would be performance-enhancing or performance-destroying (Herhausen *et al.*, 2015). Multichannel integration influences information quality and service convenience (Lee and Kim, 2010; Oh and Teo, 2010). The value of multichannel integration lies in enhancing the customer experience (Cao and Li, 2015; Verhoef *et al.*, 2015).

Marketing capabilities and innovative marketing activities can help to manufacture SMEs to sustain and improve their competitive advantage in the market (Quaye and Mensah, 2019). Sulistyo (2020) found that marketing capabilities can enhance the performance of SMEs. Coordinating and integrating marketing channels can provide synergies that increase the effectiveness of each channel and contribute to enhancing performance (Wu and Wu, 2015; Frasquet and Miquel, 2017). There is some evidence that when customers are offered more channels, the total sales amount increases due to cross-selling opportunities (Gallino and Moreno, 2014).

Following the above, it is expected that multichannel integration can improve aspects such as competitiveness, strategic positioning and participation in the market and increase a firm's effectiveness. Therefore, we posit:

*H2.* Multichannel integration positively influences a manufacturing SME's effectiveness.

Customers face purchase uncertainties and strive to gather accurate and relevant branding- and promotion-related information (Russo *et al.*, 2008). The integration of branding and promotion across channels allows customers to perceive a positive brand image and gain a consistent expectation of a company (Gao *et al.*, 2019). The introduction of new channels like social media for communication and sales processes is found to have a positive impact on customer service and relationships in SMEs (Palmer *et al.*, 2011; Ainin *et al.*, 2015) and in B2B contexts (Andersson and Wikström, 2017). Multichannel integration can improve customer loyalty, satisfaction and trust (Herhausen *et al.*, 2015). Companies that integrate their channels successfully enjoy higher customer satisfaction, retention, loyalty and trust (Verhagen *et al.*, 2006; Neslin and Shankar, 2009; Frasquet and Miquel, 2017; Li *et al.*, 2018). Moreover, the integration of online and offline channels allows a deeper connection with a brand.

Performance should be evaluated in the context of a company's objectives, strategy and market structure (Morgan *et al.*, 2004). The integration of channels relies on the ability to

uphold high standards for each channel that define the perfect customer experience (Payne and Frow, 2005). Considering the aim of achieving a perfect customer experience, we follow the lead of Morgan *et al.* (2004) and measure the relationship with the main and most representative client. Therefore, we believe:

*H3.* Multichannel integration positively influences the client relationship of a manufacturing SME.

## Research methodology

### Data collection

To empirically test the proposed model, we conducted quantitative research by collecting data through an online survey aimed at manufacturing SMEs in Mexico. To be eligible, firms had to be manufacturing durable products and selling products through online and offline channels. We asked for the questionnaire to be answered by marketing, sales or general managers, as most of the manufacturing SMEs analysed in this study are operating in the B2B context. These individuals would be the people with the most significant capacity and knowledge with which to answer the questionnaire, which refers to marketing and strategic issues. This selection process is a common practice in B2B research, as marketing and general managers generally have access to information and knowledge on the overall operations of a company (Kotha and Vadlamani, 1995; Bianchi and Wickramasekera, 2016; Kachouie *et al.*, 2018).

Following the structure of the North American Industrial Classification System, we defined durable products as all manufacturing industry codes except for 311 (food industry) and 312 (beverage and tobacco industry) (INEGI, 2018). We created a census with information obtained by the online platform Hecho en México B2B Marketplace, the online database Directory of Exporters (DIEX) and the entity ProMéxico. We sent a mail questionnaire to 396 manufacturing SMEs with marketing activities in online and offline channels. To increase the response rate, different collection methods (i.e. personal, phone and online) were used. As a result, we obtained valid responses from a total of 155 SMEs, representing a response rate of 39.14%. This can be considered a sufficient sample size, similar to other empirical studies (e.g. Villar *et al.*, 2014). The sample comprises manufacturing SMEs from different sectors: 47.74% pertain to fashion, 23.87% sell furniture, decorations and lighting, 10.97% sell electronic devices, 10.32% sell books and stationery, 6.45% sell household appliances and 7.10% sell other manufactured products.

### Measurement development

To ensure content validity, all of the measures are based on previous studies (Appendix 1). We measured innovation capability as a second-order reflective-reflective construct through the dimensions of technological, strategic and innovativeness capabilities proposed by Vicente *et al.* (2015). The innovation capability dimension of new product development is not an object of analysis, as the study focusses on the channel integration process rather than on opportunities to create new value-creating offerings. Furthermore, to measure multichannel integration in the different purchase stages, we modelled the construct proposed by Wu and Wu

(2015) as a second-order formative-reflective construct. In this way, we further develop the scale by Wu and Wu (2015), as the application of PLS path modelling to a hierarchical construct model can extend the theoretical contributions of the original study (Wetzels *et al.*, 2009). We measured performance through two variables: perceived effectiveness and client relationship. Perceived effectiveness, which captures satisfaction with the achievement of short- and long-term objectives, was adapted from Balabanis *et al.* (1997) to the multichannel context. In line with previous studies, to assess client relationships, we asked respondents to think about the main customer, as this would be the most representative relationship. We measured the construct of client relationships through a scale by Morgan *et al.* (2004). Based on existing literature, we measured performance and the relationship with the principal client as reflective, unidimensional constructs. Our questionnaire used five-point Likert scales ranging from strongly disagree to strongly agree. Despite controversial research on how a scaled format affects the scale reliability and validity, the question as to the optimal number of categories for Likert scales remains undetermined (Preston and Colman, 2000; Leung, 2011). Dawes (2008) tested five-point, seven-point and 10-point scales and did not find appreciable differences in standard variation, skewness or kurtosis.

## Data analysis and results

This study applies the PLS-SEM approach using SmartPLS. This approach allows using a small sample to examine complex models with reflective and formative constructs (Hair *et al.*, 2017). A two-step analytical approach recommended by Sarstedt *et al.* (2017) was first used to assess the measurement model and then to estimate the structural model.

### Validation of the measurement model

The measurement model for all the multi-item constructs was assessed by testing convergent validity, discriminant validity and reliability. As the research model includes reflective and formative measures, different procedures had to be applied. Firstly, the reliability and validity of the first-order reflective measurement variables were analysed (Table 2). Convergent validity is assessed through item loading and average variance extracted (AVE) for each construct. After deleting one item measuring the relationship with the principal client (END3), all loadings show values above 0.7. The measures have internal consistency reliability as all the values of composite reliability and Cronbach's Alpha are above 0.7. Discriminant validity is established using the Fornell-Larcker criterion, cross-loadings and the heterotrait-monotrait ratio (HTMT) (Henseler *et al.*, 2015; Franke and Sarstedt, 2019).

Secondly, the assessment of the formative variables requires an evaluation of the levels of collinearity and significance and relevance of the parameters (Hair *et al.*, 2017). The levels of collinearity (VIF) in the formative measurement variables are below the threshold value of 5. The values of the indicator weights are significantly different from zero, which means that the indicators contribute to forming the construct (Hair *et al.*, 2017). The absolute contribution is given by the formative indicator's outer loading, when outer loadings are above 0.5,

Table 2 Evaluation of the first-order reflective measurement constructs

Reflective first order	Indicators	Convergent validity		Internal consistency reliability		Discriminant validity		
		Loadings	AVE	Composite reliability	Cronbach's alpha	Fornell-Larcker	Cross loadings	HTMT
>0.70	>0.50	>0.70	>0.70					
Effectiveness	PR1	0.712	0.595	0.880	0.831	Yes	Yes	Yes
	PR 2	0.743						
	PR 3	0.820						
	PR 4	0.790						
	PR 5	0.788						
Client relationship	END1	0.877	0.765	0.907	0.847	Yes	Yes	Yes
	END2	0.865						
	END4	0.876						
Innovativeness	IC_INNOV1	0.854	0.731	0.891	0.816	Yes	Yes	Yes
	IC_INNOV2	0.850						
	IC_INNOV3	0.861						
Strategic capability	IC_SC1	0.859	0.667	0.857	0.750	Yes	Yes	Yes
	IC_SC2	0.774						
	IC_SC3	0.816						
Technological capability	IC_TC1	0.832	0.761	0.905	0.842	Yes	Yes	Yes
	IC_TC2	0.905						
	IC_TC3	0.878						

formative indicators should be maintained (Hair *et al.*, 2017) (Table 3).

Thirdly, the second-order reflective constructs are evaluated. The results confirm that the values for reliability and validity are within the desirable limits (Table 4). Therefore, we can affirm that the constructs of innovation capability and multichannel integration are correctly defined and measured.

### Structural model results

The key criteria for assessing the structural model in PLS-SEM are the level of the  $R^2$  values,  $f^2$  effect size and predictive relevance  $Q^2$ .  $R^2$  values of 0.75, 0.50 or 0.25 for endogenous latent variables can be, respectively, described as substantial, moderate or weak (Hair *et al.*, 2011). As Table 5 presents, our endogenous latent variables show values between 0.11 and

Table 3 Evaluation of the first-order formative measurement constructs

Formative first order	Indicators	VIF < 5	Outer weight	Confidence intervals		t-value	p-value	Outer loading > 0.5
				2.5%	97.5%			
Pre-purchase phase	MCC_PR1	1.864	0.246	-0.136	0.534	1.369	0.171	0.794
	MCC_PR2	2.014	0.259	-0.162	0.519	1.046	0.296	0.817
	MCC_PR3	1.718	0.253	0.073	0.619	2.427	0.015	0.780
	MCC_PR4	2.128	0.272	0.045	0.751	2.184	0.029	0.840
	MCC_PR5	1.677	0.224	-0.222	0.347	0.580	0.562	0.749
Purchase phase	MCC_C1	1.290	0.386	0.080	0.637	2.387	0.017	0.736
	MCC_C2	1.695	0.385	-0.067	0.571	1.658	0.097	0.812
	MCC_C3	1.902	0.457	0.261	0.855	3.977	0.000	0.883
	MCC_PO1	1.550	0.454	0.121	0.831	2.717	0.007	0.829
	MCC_PO2	1.669	0.414	-0.101	0.670	1.385	0.166	0.843
Post-purchase phase	MCC_PO3	1.242	0.384	0.149	0.783	3.061	0.002	0.716

Table 4 Evaluation of the second-order reflective measurement constructs

Construct	Reflective second order	Path	Error variance	Composite reliability	AVE
Innovation capability	Innovativeness	0.864	0.254	0.811	0.763
	Strategic capability	0.791	0.374		
	Technological capability	0.635	0.597		
Multichannel integration	Pre-purchase phase	0.819	0.329	0.947	0.810
	Purchase phase	0.797	0.365		
	Post-purchase phase	0.815	0.336		

Table 5 Key criteria for assessing the structural model

Variable	$R^2$	$Q^2$	$f^2$	
			Multichannel integration	Innovation capability
Effectiveness	0.231	0.104	0.320	
Client relationship	0.111	0.056	0.138	
Multichannel integration	0.311	0.111		0.483

0.31. Multichannel integration ( $R^2 = 0.31$ ) shows a moderate value, while performance ( $R^2 = 0.23$ ) and client relationship ( $R^2 = 0.11$ ) show weak  $R^2$  values. The effect size  $\frac{3}{4}^2$  is assessed through the values of 0.02, 0.15 and 0.35, which, respectively, represent small, medium and large effects of the exogenous latent variable (Cohen, 1988). The effect sizes of this study show a medium effect of the exogenous variable of client relationship ( $f^2 = 0.14$ ) and large effects of the exogenous variable of performance ( $f^2 = 0.32$ ) and multichannel integration capability ( $f^2 = 0.48$ ). In the structural model,  $Q^2$  values above zero for a specific reflective endogenous latent variable indicate the path model's predictive relevance for a particular dependent construct. The present results indicate predictive relevance for the dependent variable of performance ( $Q^2 = 0.10$ ), client relationship ( $Q^2 = 0.06$ ) and multichannel integration capability ( $Q^2 = 0.11$ ).

Once the predictive validity of the structural model was established, we tested our hypotheses (Table 6). The structural model sought to test the role of innovation capability in multichannel integration capability and the influence of multichannel integration capability on effectiveness and the relationship with the principal client. We found empirical support for the effect of innovation capability on the multichannel integration of manufacturing SMEs ( $\beta = 0.551$ ,  $p = 0.000$ ), as hypothesised by H1. The dimensions of innovativeness, innovation strategy and technological innovation of the dynamic innovation capability help manufacturing SMEs to further develop the multichannel integration of manufacturing SMEs. Furthermore, the effect of multichannel integration on the performance of manufacturing SMEs is positive and significant ( $\beta = 0.460$ ,  $p = 0.000$ ), which is in line with H2. Multichannel integration during the different purchase stages has been found to have a positive effect on the evolution of online and offline sales, the achievement of objectives and the satisfaction with activities. Finally, H3 is accepted because multichannel integration has a positive and significant effect on an SME's relationship with the principal client ( $\beta = 0.307$ ,  $p = 0.001$ ). The integration of online and offline channels in manufacturing SMEs can have positive effects on the quality of relationships, the reputation of a company, as well as loyalty and satisfaction.

## Discussion of results

This study has sought to contribute to the literature in three ways. Firstly, multichannel integration is examined from the perspective of manufacturing SMEs because the limited findings on multichannel integration in manufacturing companies are mainly conceptual (Ailawadi and Farris, 2017) or based on case studies (Saghiri *et al.*, 2017). We provide an answer to the calls of Ou *et al.* (2017) and Gao *et al.* (2019) on how multichannel integration can be effective within different customer, firm and industry contexts. This study provides empirical evidence that multichannel integration increases a firm's performance. The literature providing empirical evidence on the effects of multichannel integration on the performance of manufacturing SMEs is scarce. In the context of manufacturing SMEs, the implementation of online channels, especially social media, can enhance the communication and cooperation of SMEs. With our study, we support the finding of Quaye and Mensah (2019) that marketing capabilities are the main drivers in sustaining and improving the competitive advantage of manufacturing SMEs. We further contribute knowledge to the existing literature by specifying that multichannel integration capability is a marketing capability that influences effectiveness and the client relationship.

Secondly, the present study offers useful information on multichannel integration in a B2B context, while previous studies have mostly adopted a B2C perspective (Ailawadi and Farris, 2017). Our results confirm the significant role of multichannel integration in the effectiveness of manufacturing SMEs. Consequently, our findings extend the positive effects of multichannel integration on a performance that has been reported for retailing companies (Lee and Kim, 2010; Oh *et al.*, 2012) to a B2B context. Furthermore, our findings imply that multichannel integration strengthens the client relationships of manufacturing SMEs. Extending the results of Herhausen *et al.* (2015) and Gao *et al.* (2019), our results provide evidence for manufacturing SMEs by confirming the positive effects of multichannel integration on the quality of a customer-company relationship, the reputation of a company and the loyalty and satisfaction of clients.

Thirdly, the study conceptualises and empirically tests multichannel integration, its antecedents and its effects on performance. The relevance of our results is enhanced by the conceptualisation and measurement of the constructs of multichannel integration and innovation capability as

Table 6 Result of hypotheses testing

Hypothesis	Relationship	Path	$t$ -values	$p$ -values	Significance	
					( $p < 0.05$ )	Decision
H1	Innovation capability $\rightarrow$ Multichannel integration	0.551	7.393	0.000	***	Accepted
H2	Multichannel integration $\rightarrow$ Effectiveness	0.460	6.149	0.000	***	Accepted
H3	Multichannel integration $\rightarrow$ Client relationship	0.307	3.289	0.001	***	Accepted

multidimensional higher-order constructs. The central construct of our model, i.e. multichannel integration, is understood as an inter-functional marketing capability that operates in different stages of the purchase process. In this way, we follow the conceptual framework by [Saghiri et al. \(2017\)](#), which suggests that various activities are needed in each stage to accomplish channel integration. Most empirical research on multichannel integration has neglected the role of the purchase process and measured the construct as unidimensional ([Gallino and Moreno, 2014](#); [Herhausen et al., 2015](#)) or multidimensional ([Lee and Kim, 2010](#); [Frasquet and Miquel, 2017](#)), albeit always as a compilation of indicators of integration (irrespective of the moment or purchase stage in which they are needed for channel integration). We developed the scale of multichannel integration by [Wu and Wu \(2015\)](#), which considers the purchase stages, from a first-order construct to a second-order formative-reflective construct. Our study demonstrates that multichannel integration is composed of specific marketing, information systems and logistical activities in the pre-purchase, purchase and post-purchase stages of the purchase process. Our results show that integration activities in each of the purchase stages are significant to obtain a high level of multichannel integration. Innovation capability is conceptualised as a dynamic capability integrated by the dimensions of innovativeness, strategic capability and technological capability suggested by [Vicente et al. \(2015\)](#). The second-order model of innovation capability demonstrates that all three dimensions strongly contribute to the construct of multichannel integration, with innovativeness being the most influential factor of innovation. With our investigation, we amplify the results of [Karjaluo et al. \(2015\)](#), who state that the successful use of online marketing communications requires open-minded and innovative marketers. Accordingly, we propose that companies should strengthen their innovativeness so as to achieve better channel integration. Thus, the ability of a company to try new ideas and new ways in which to do things defines the concept of innovation capability. By analysing the relationship of the construct in a nomological network with other related constructs, we increase the validity of the construct proposed by [Vicente et al. \(2015\)](#). In this way, we contribute to understanding the antecedents of multichannel integration, which have seldom been investigated in the literature.

## Conclusion

Multichannel integration brings about new challenges and opportunities for enterprises and customers. Nevertheless, the prevailing focus of research on multichannel integration has been upon analysing the perceptions and responses of customers in a B2C context. Multichannel integration in manufacturing SMEs and mostly in the B2B context has received scarce attention. This lack of research is surprising, given the opportunities and potential benefits of digitalisation and multichannel integration for SMEs ([Bocconcelli et al., 2017](#); [Fraccastoro et al., 2020](#); [Matarazzo et al., 2021](#)). The study extends the existing literature on the multichannel integration of SMEs in a B2B context ([Fraccastoro et al., 2020](#)), as it provides empirical evidence by means of a quantitative approach. Moreover, this study helps to amplify

the literature on digital transformation for SMEs ([Matarazzo et al., 2021](#)) by providing further understanding from the perspective of dynamic capabilities. Furthermore, the present research contributes to the literature on integrated marketing and multichannel marketing for manufacturing enterprises ([Homburg et al., 2020](#)) by focussing on the specific case of manufacturing SMEs.

The study offers some managerial implications with regard to manufacturing SMEs expanding digital business activities through the integration of online and offline channels. The proposed research model and future avenues have the potential to serve as practical guidance on capability-building and multichannel integration activities for manufacturing SMEs. Innovation capability has been identified as a driver of multichannel integration. Employee commitment and training can improve R&D activities to implement technological innovations and continuously adapt multichannel integration. Innovativeness has been identified as the strongest dimension of the innovation capability construct and has the most substantial effect on multichannel integration. Thus, SMEs should enhance the advocacy of organisations' innovation culture and innovation concept through, for example, employee training, promotion, authorisation of workplace creativity or goal orientation. In multichannel integration, employees can create an advantage through the development of creative, customer-oriented solutions such as the synchronised launch of new products across different channels.

SMEs need to explore and exploit market opportunities to develop new capabilities that help to integrate channels. Integration across channels can be promoted by enhancing consistency, connectivity, flexibility and personalisation throughout the different channels. SMEs could optimise their channel integration by offering consistent information across all channels. What is more, they could emphasise the role of the store to provide greater value to customers and improve the shopping experience.

We suggest that managers take special care of the purchase stages because they influence channel integration. SMEs have to integrate their activities by standardising brand names, advertising and promotion, product selection, prices and product information. During the purchase stage, the different processes involved in a successful sale help to achieve the most integrated form of multichannel marketing. Furthermore, SMEs should emphasise the post-purchase phase by means of personalised marketing and marketing research activities and the offering of after-sale services.

Consequently, we encourage managers to verify their business models and continue the efforts of online channel implementation and systematic channel integration. Implementing multichannel integration can lead to better performance by improving effectiveness and the client relationship.

While the results of this study provide insightful implications, they have certain limitations. Firstly, this study uses a heterogeneous sample, as the firms have different sizes and pertain to different sectors. Moreover, the sample has been sourced from a population of Mexican firms. Therefore, a replica of the study in other countries and a larger and more representative sample would be advantageous. Secondly, we have considered only one dynamic marketing capability

(innovation capability) as a driver of multichannel integration, whereas future research could improve the model by including additional dynamic marketing capabilities. Thirdly, multichannel integration might have other positive effects on firm results that have not been considered; therefore, future studies could consider the effects of additional factors that define a firm's results.

## References

- Ailawadi, K.L. and Farris, P.W. (2017), "Managing multi-and omni-channel distribution: metrics and research directions", *Journal of Retailing*, Vol. 93 No. 1, pp. 120-135.
- Ainin, S., Parveen, F., Moghavvemi, S., Jaafar, N.I. and Mohd Shuib, N.L. (2015), "Factors influencing the use of social media by SMEs and its performance outcomes", *Industrial Management & Data Systems*, Vol. 115 No. 3, pp. 570-588.
- Andersson, S. and Wikström, N. (2017), "Why and how are social media used in a B2B context, and which stakeholders are involved?", *Journal of Business & Industrial Marketing*, Vol. 32 No. 8, pp. 1098-1108.
- ATT (2019), "Transforming the manufacturing contact center", available at: [www.business.att.com/content/dam/attbusiness/briefs/contact-center-manufacturing-brief.pdf](http://www.business.att.com/content/dam/attbusiness/briefs/contact-center-manufacturing-brief.pdf) (accessed 29 March 2020).
- Balabanis, G., Stables, R.E. and Phillips, H.C. (1997), "Market orientation in the top 200 British charity organizations and its impact on their performance", *European Journal of Marketing*, Vol. 31 No. 8, pp. 583-603.
- Barrales, V., Martínez, F.J. and Gázquez, J.C. (2013), "Dynamic marketing capabilities: toward an integrative framework", *International Journal of Management Reviews*, Vol. 16 No. 4, pp. 397-416.
- Bendoly, E., Blocher, J.D., Bretthauer, K.M., Krishnan, S. and Venkataramanan, M.A. (2005), "Online/in-store integration and customer retention", *Journal of Service Research*, Vol. 7 No. 4, pp. 313-327.
- Berman, B. and Thelen, S. (2018), "Planning and implementing an effective omnichannel marketing program", *International Journal of Retail & Distribution Management*, Vol. 46 No. 7, pp. 598-614.
- Bianchi, C. and Wickramasekera, R. (2016), "Antecedents of SME export intensity in a Latin American market", *Journal of Business Research*, Vol. 69 No. 10, pp. 4368-4376.
- Bill, F., Feurer, S. and Klarmann, M. (2020), "Salesperson social media use in business-to-business relationships: an empirical test of an integrative framework linking antecedents and consequences", *Journal of the Academy of Marketing Science*, Vol. 48 No. 4, pp. 1-19.
- 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.
- Brown, J.R. and Dant, R.P. (2014), "The role of e-commerce in multi-channel marketing strategy", in Martínez-López, F. J. (Ed.), *Handbook of Strategic e-Business Management*, Springer, Heidelberg, pp. 467-487.
- Bruni, D.S. and Verona, G. (2009), "Dynamic marketing capabilities in science-based firms: an exploratory investigation of the pharmaceutical industry", *British Journal of Management*, Vol. 20 No. 1, pp. 101-117.
- Cao, L. and Li, L. (2015), "The impact of cross-channel integration on retailers' sales growth", *Journal of Retailing*, Vol. 91 No. 2, pp. 198-216.
- Cohen, J. (1988), *Statistical Power Analysis for the Behavioral Science*, 2nd ed., Lawrence Erlbaum Associates, Hillsdale, NJ.
- Dawes, J. (2008), "Do data characteristics change according to the number of scale points used? An experiment using 5-point, 7-point and 10-point scales", *International Journal of Market Research*, Vol. 50 No. 1, pp. 61-104.
- Fraccastoro, S., Gabrielsson, M. and Pullins, E.B. (2020), "The integrated use of social media, digital, and traditional communication tools in the B2B sales process of international SMEs", *International Business Review*.
- Franke, G. and Sarstedt, M. (2019), "Heuristics versus statistics in discriminant validity testing: a comparison of four procedures", *Internet Research*, Vol. 29 No. 3, pp. 430-447.
- Frasquet, M. and Miquel, M.J. (2017), "Do channel integration efforts pay-off in terms of online and offline customer loyalty?", *International Journal of Retail & Distribution Management*, Vol. 45 Nos 7/8, pp. 859-873.
- Gallino, S. and Moreno, A. (2014), "Integration of online and offline channels in retail: the impact of sharing reliable inventory availability information", *Management Science*, Vol. 60 No. 6, pp. 1434-1451.
- Gao, L., Melero, I. and Sese, F.J. (2019), "Multichannel integration along the customer journey: a systematic review and research agenda", *The Service Industries Journal*, Vol. 40 No. 15-16, pp. 1-32.
- Gloet, M. and Samson, D. (2016), "Knowledge and innovation management: developing dynamic capabilities to capture value from innovation", in *2016 49th HI International Conference on System Sciences (HICSS) in Koloa, United States, 2016*, IEEE, pp. 4282-4291.
- Grewal, D., Roggeveen, A.L. and Nordfält, J. (2017), "The future of retailing", *Journal of Retailing*, Vol. 93 No. 1, pp. 1-6.
- Hair, J.F., Sarstedt, M., Ringle, C.M. and Gudergan, S.P. (2017), *Advanced Issues in Partial Least Squares Structural Equation Modeling*, Sage Publications, Los Angeles.
- Hair, J.F., Ringle, C.M. and Sarstedt, M. (2011), "PLS-SEM: indeed a silver bullet", *Journal of Marketing Theory and Practice*, Vol. 19 No. 2, pp. 139-152.
- Henseler, J., Ringle, C.M. and Sarstedt, M. (2015), "A new criterion for assessing discriminant validity in variance-based structural equation modeling", *Journal of the Academy of Marketing Science*, Vol. 43 No. 1, pp. 115-135.
- Herhausen, D., Binder, J., Schoegel, M. and Herrmann, A. (2015), "Integrating bricks with clicks: retailer-level and channel-level outcomes of online-offline channel integration", *Journal of Retailing*, Vol. 91 No. 2, pp. 309-325.
- Homburg, C., Vomberg, A. and Muehlhaeuser, S. (2020), "design and governance of multichannel sales systems: financial performance consequences in business-to-business markets", *Journal of Marketing Research*, Vol. 57 No. 6, pp. 1113-1134.
- Hubschmid-Vierheilig, E., Rohrer, M. and Mitsakis, F.V. (2019), "Digital competence and SMEs: review of the relevant literature", *20th International Conference on Human Resource Development Research and Practice across Europe (UFHRD)*, Nottingham Business School, Nottingham Trent University, Nottingham, pp. 24-26.

- Hurley, R.F. and Hult, G.T.M. (1998), "Innovation, market orientation, and organizational learning: an integration and empirical examination", *Journal of Marketing*, Vol. 62 No. 3, pp. 42-54.
- Iddris, F. (2016), "Innovation capability: a systematic review and research agenda", *Interdisciplinary Journal of Information, Knowledge, and Management*, Vol. 11 No. 19, pp. 235-260.
- Instituto Nacional de Estadística y Geografía (INEGI) (2018), "Estructura del sistema del sistema de clasificación industrial de América del norte", available at: [www.beta.inegi.org.mx/contenidos/app/scian/estructura2018.pdf](http://www.beta.inegi.org.mx/contenidos/app/scian/estructura2018.pdf) (accessed 30 March 2019).
- Jeansson, J., Nikou, S., Lundqvist, S., Marcusson, L., Sell, A. and Walden, P. (2017), "SMEs' online channel expansion: value creating activities", *Electronic Markets*, Vol. 27 No. 1, pp. 49-66.
- Jiang, K., Xu, L. and Bao, X. (2015), "The impact of channel integration on channel reciprocity in the multi-channel retailing context", in *2015 IEEE International Conference on Industrial Engineering and Engineering Management (IEEM)*, Singapore, Singapore, IEEE, pp. 1840-1844.
- Kachouie, R., Mavondo, F. and Sands, S. (2018), "Dynamic marketing capabilities view on creating market change", *European Journal of Marketing*, Vol. 52 Nos 5/6, pp. 1007-1036.
- Karjaluoto, H., Ulkuniemi, P. and Mustonen, N. (2015), "The role of digital channels in industrial marketing communications", *Journal of Business & Industrial Marketing*, Vol. 30 No. 6, pp. 703-710.
- Kim, D., Cavusgil, S.T. and Calantone, R.J. (2006), "Information system innovations and supply chain management: channel relationships and firm performance", *Journal of the Academy of Marketing Science*, Vol. 34 No. 1, pp. 40-54.
- Kotha, S. and Vadlamani, B.L. (1995), "Assessing generic strategies: an empirical investigation of two competing typologies in discrete manufacturing industries", *Strategic Management Journal*, Vol. 16 No. 1, pp. 75-83.
- Kyläheiko, K., Jantunen, A., Puumalainen, K., Saarenketo, S. and Tuppurä, A. (2011), "Innovation and internationalization as growth strategies: the role of technological capabilities and appropriability", *International Business Review*, Vol. 20 No. 5, pp. 508-520.
- Lawrence, J.M., Crecelius, A.T., Scheer, L.K. and Patil, A. (2019), "Multichannel strategies for managing the profitability of business-to-business customers", *Journal of Marketing Research*, Vol. 56 No. 3, pp. 479-497.
- Lawson, B. and Samson, D. (2001), "Developing innovation capability in organisations: a dynamic capabilities approach", *International Journal of Innovation Management*, Vol. 05 No. 3, pp. 377-400.
- Lee, S. and Kim, M.S. (2010), "Inter-technology networks to support innovation strategy: an analysis of Korea's new growth engines", *Innovation*, Vol. 12 No. 1, pp. 88-104.
- Leung, S.O. (2011), "A comparison of psychometric properties and normality in 4-, 5-, 6-, and 11-point likert scales", *Journal of Social Service Research*, Vol. 37 No. 4, pp. 412-421.
- Li, Y., Liu, H., Lim, E.T., Goh, J.M., Yang, F. and Lee, M. K. (2018), "Customer's reaction to cross-channel integration in omnichannel retailing: the mediating roles of retailer uncertainty, identity attractiveness, and switching costs", *Decision Support Systems*, Vol. 109 No. 5, pp. 50-60.
- Matarazzo, M., Penco, L., Profumo, G. and Quaglia, R. (2021), "Digital transformation and customer value creation in made in Italy SMEs: a dynamic capabilities perspective", *Journal of Business Research*, Vol. 123 No. 2, pp. 642-656.
- Menguc, B. and Auh, S. (2006), "Creating a firm-level dynamic capability through capitalizing on market orientation and innovativeness", *Journal of the Academy of Marketing Science*, Vol. 34 No. 1, pp. 63-73.
- Merrilees, B., Rundle-Thiele, S. and Lye, A. (2011), "Marketing capabilities: antecedents and implications for B2B SME performance", *Industrial Marketing Management*, Vol. 40 No. 3, pp. 368-375.
- Morgan, N.A., Feng, H. and Whitler, K.A. (2018), "Marketing capabilities in international marketing", *Journal of International Marketing*, Vol. 26 No. 1, pp. 61-95.
- Morgan, N.A., Kaleka, A. and Katsikeas, C.S. (2004), "Antecedents of export venture performance: a theoretical model and empirical assessment", *Journal of Marketing*, Vol. 68 No. 1, pp. 90-108.
- Morgan, N.A., Katsikeas, C.S. and Vorhies, D.W. (2011), "Export marketing strategy implementation, export marketing capabilities, and export venture performance", *Journal of the Academy of Marketing Science*, Vol. 40 No. 2, pp. 271-289.
- Morgan, N.A. and Slotegraaf, R.J. (2012), "Marketing capabilities for B2B firms", in Lilien, G. and Grewal, R. (Eds), *Handbook of Business-to-Business Marketing*, Edward Elgar Publishing, Cheltenham, pp. 90-108.
- Neslin, S.A., Grewal, D., Leghorn, R., Shankar, V., Teerling, M.L., Thomas, J.S. and Verhoef, P.C. (2006), "Challenges and opportunities in multichannel customer management", *Journal of Service Research*, Vol. 9 No. 2, pp. 95-112.
- Neslin, S.A. and Shankar, V. (2009), "Key issues in multichannel customer management: current knowledge and future directions", *Journal of Interactive Marketing*, Vol. 23 No. 1, pp. 70-81.
- Nijssen, E.J. and Frambach, R.T. (2000), "Determinants of the adoption of new product development tools by industrial firms", *Industrial Marketing Management*, Vol. 29 No. 2, pp. 121-131.
- Oh, L.B. and Teo, H.H. (2010), "Consumer value co-creation in a hybrid commerce service-delivery system", *International Journal of Electronic Commerce*, Vol. 14 No. 3, pp. 35-62.
- Oh, L.B., Teo, H.H. and Sambamurthy, V. (2012), "The effects of retail channel integration through the use of information technologies on firm performance", *Journal of Operations Management*, Vol. 30 No. 5, pp. 368-381.
- Ou, Y.C., Verhoef, P.C. and Wiesel, T. (2017), "The effects of customer equity drivers on loyalty across services industries and firms", *Journal of the Academy of Marketing Science*, Vol. 45 No. 3, pp. 336-356.
- Palmer, D.W., Ellinger, A.E., Allaway, A. and D'Souza, G. (2011), "A longitudinal examination of internet-based customer service system usage in small companies", *Journal of Business & Industrial Marketing*, Vol. 27 No. 1, pp. 29-40.
- Payne, A. and Frow, P. (2005), "A strategic framework for customer relationship management", *Journal of Marketing*, Vol. 69 No. 4, pp. 167-176.
- Pentina, I. and Hasty, R.W. (2009), "Effects of multichannel coordination and E-Commerce outsourcing on online retail performance", *Journal of Marketing Channels*, Vol. 16 No. 4, pp. 359-374.

- Preston, C.C. and Colman, A.M. (2000), "Optimal number of response categories in rating scales: reliability, validity, discriminating power, and respondent preferences", *Acta Psychologica*, Vol. 104 No. 1, pp. 1-15.
- Quaye, D. and Mensah, I. (2019), "Marketing innovation and sustainable competitive advantage of manufacturing SMEs in Ghana", *Management Decision*, Vol. 57 No. 7, pp. 1535-1553.
- Russo, J.E., Carlson, K.A., Meloy, M.G. and Yong, K. (2008), "The goal of consistency as a cause of information distortion", *Journal of Experimental Psychology: General*, Vol. 137 No. 3, pp. 456-470.
- Saghiri, S.S., Bernon, M., Bourlakis, M. and Wilding, R. (2018), "Omni-channel logistics special issue", *International Journal of Physical Distribution & Logistics Management*, Vol. 48 No. 4, pp. 362-364.
- Saghiri, S., Wilding, R., Mena, C. and Bourlakis, M. (2017), "Toward a three-dimensional framework for omni-channel", *Journal of Business Research*, Vol. 77 No. 8, pp. 53-67.
- Sarstedt, M., Ringle, C.M. and Hair, J.F. (2017), "Treating unobserved heterogeneity in PLS-SEM: a multi-method approach", in Latan, H. and Noonan, R. (Eds), *Partial Least Squares Path Modeling*, Springer, Cham, pp. 197-217.
- Saunila, M., Ukko, J. and Rantanen, H. (2012), "Innovation capability and its measurement in Finnish SMEs", in Melkas, H. and Harmaakorpi, V. (Eds), *Practice-Based Innovation: Insights, Applications and Policy Implications*, Springer, Berlin, Heidelberg, pp. 417-435.
- Sinkovics, N., Sinkovics, R.R. and Bryan, J.R. (2013), "The internet as an alternative path to internationalization?", *International Marketing Review*, Vol. 30 No. 2, pp. 130-155.
- Slater, S.F., Hult, G.T.M. and Olson, E.M. (2010), "Factors influencing the relative importance of marketing strategy creativity and marketing strategy implementation effectiveness", *Industrial Marketing Management*, Vol. 39 No. 4, pp. 551-559.
- Sulistyo, H. (2020), "Enhancing the innovation capability through knowledge management capability and networking", In 17th International Symposium on Management (INSYMA 2020), Atlantis Press, pp. 137-142.
- Szeto, E. (2000), "Innovation capacity: working towards a mechanism for improving innovation within an inter-organizational network", *The TQM Magazine*, Vol. 12 No. 2, pp. 149-158.
- Tece, D.J. (2007), "Explicating dynamic capabilities: the nature and microfoundations of (sustainable) enterprise performance", *Strategic Management Journal*, Vol. 28 No. 13, pp. 1319-1350.
- Tece, D.J. (2009), *Dynamic Capabilities and Strategic Management: Organizing for Innovation and Growth*, Oxford University Press on Demand.
- Tece, D.J., Pisano, G. and Shuen, A. (1997), "Dynamic capabilities and strategic management", *Strategic Management Journal*, Vol. 18 No. 7, pp. 509-533.
- Theodosiou, M., Kehagias, J. and Katsikea, E. (2012), "Strategic orientations, marketing capabilities and firm performance: an empirical investigation in the context of frontline managers in service organizations", *Industrial Marketing Management*, Vol. 41 No. 7, pp. 1058-1070.
- United Nations Conference on Trade and Development (UNCTAD) (2015), "Information economy report 2015. Unlocking the potential of E-commerce for developing countries", available at: <http://unctad.org/en/pages/PublicationWebflyer.aspx?publicationid=1146> (accessed 29 March 2020).
- United Nations (UN) (2018), "The sustainable development goals report 2018", available at: <https://unstats.un.org/sdgs/files/report/2018/TheSustainableDevelopmentGoalsReport2018.pdf> (accessed 29 March 2020).
- Van Bruggen, G.H., Antia, K.D., Jap, S.D., Reinartz, W.J. and Pallas, F. (2010), "Managing marketing channel multiplicity", *Journal of Service Research*, Vol. 13 No. 3, pp. 331-340.
- Verhagen, T., Meents, S. and Tan, Y.H. (2006), "Perceived risk and trust associated with purchasing at electronic marketplaces", *European Journal of Information Systems*, Vol. 15 No. 6, pp. 542-555.
- Verhoef, P.C., Kannan, P.K. and Inman, J.J. (2015), "From multi-channel retailing to omni-channel retailing", *Journal of Retailing*, Vol. 91 No. 2, pp. 174-181.
- Vicente, M., Abrantes, J.L. and Teixeira, M.S. (2015), "Measuring innovation capability in exporting firms: the innovscale", *International Marketing Review*, Vol. 32 No. 1, pp. 29-51.
- Villar, C., Alegre, J. and Pla-Barber, J. (2014), "Exploring the role of knowledge management practices on exports: a dynamic capabilities view", *International Business Review*, Vol. 23 No. 1, pp. 38-44.
- Wang, C.L. and Ahmed, P.K. (2004), "The development and validation of the organisational innovativeness construct using confirmatory factor analysis", *European Journal of Innovation Management*, Vol. 7 No. 4, pp. 303-313.
- Wetzels, M., Odekerken-Schröder, G. and Van Oppen, C. (2009), "Using PLS path modeling for assessing hierarchical construct models: guidelines and empirical illustration", *MIS Quarterly*, Vol. 33 No. 1, pp. 177-195.
- Wu, I.L. and Wu, S.M. (2015), "A strategy-based model for implementing channel integration in e-commerce: an empirical examination", *Internet Research*, Vol. 25 No. 2, pp. 239-261.
- Yam, R.C.M., Lo, W., Tang, E.P.Y. and Lau, A.K.W. (2011), "Analysis of sources of innovation, technological innovation capabilities, and performance: an empirical study of Hong Kong manufacturing industries", *Research Policy*, Vol. 40 No. 3, pp. 391-402.
- Zhang, J., Farris, P.W., Irvin, J.W., Kushwaha, T., Steenburgh, T.J. and Weitz, B.A. (2010), "Crafting integrated multichannel retailing strategies", *Journal of Interactive Marketing*, Vol. 24 No. 2, pp. 168-180.
- Zhang, J., Xu, Q. and He, Y. (2018), "Omnichannel retail operations with consumer returns and order cancellation", *Transportation Research Part E: Logistics and Transportation Review*, Vol. 118 No. 10, pp. 308-324.

## Further reading

- Cooper, M.J., Wakefield, K.L. and Tanner, J.F. (2006), "Industrial buyers' risk aversion and channel selection", *Journal of Business Research*, Vol. 59 No. 6, pp. 653-661.
- Lemon, K.N. and Verhoef, P.C. (2016), "Understanding customer experience throughout the customer journey", *Journal of Marketing*, Vol. 80 No. 6, pp. 69-96.
- Li, X. and Zheng, Y. (2014), "The influential factors of employees' innovative behavior and the management advices", *Journal of Service Science and Management*, Vol. 07 No. 6, pp. 446-450.

Shi, S., Wang, Y., Chen, X. and Zhang, Q. (2020), "Conceptualization of omnichannel customer experience and its impact on shopping intention: a mixed-method approach", *International Journal of Information Management*, Vol. 50 No. 1, pp. 325-336.

## Appendix 1. Measurement scales

### Construct/items

Innovation capability (Vicente *et al.*, 2015)

- Innovativeness
  - Our company frequently tries out new ideas.
  - Our company seeks out new ways to do things.
  - Our company is creative in its methods of operation.
- Innovation strategy
  - Internal cooperation is an important part of innovation strategy implementation.
  - Formulating an innovation strategy increases employee skills.
  - Improving employee commitment, morale or both is part of our innovation.
- Technological innovation
  - Our technological capabilities are top class.
  - The success of our R&D activities is based on long-term know-how.
  - We have invested heavily in certain R&D projects.

Multichannel integration (Wu and Wu, 2015)

- Pre-purchase phase
  - Your firm uses the same or similar brand names in online and physical channels.
  - Your firm uses cross-advertisement or promotion in online and physical channels.
  - Your firm provides identical products and prices in online and physical channels.
  - Your firm provides online information services in physical stores to facilitate access to a wider product range.

- Your firm provides rich product information and a pre-purchase evaluation process online.
- Purchase phase
  - Your firm orders products at online stores and picks up them at physical stores.
  - Your firm provides negotiation and order tracking services online.
  - Your firm provides greater choices of payment methods from online and physical stores.
- Post-purchase phase
  - Your firm orders products at online stores and returns them for repair or additional services at physical stores.
  - Your firm offers online help or technical support for products purchased at physical stores.
  - Your firm collects consumer information at both channels for personalised marketing and marketing research.

Effectiveness (Balabanis *et al.*, 1997)

- Evolution of online sales.
  - Evolution of offline sales.
  - Achievement of short-term objectives.
  - Achievement of long-term objectives.
  - Global satisfaction with your activity.
- Relationship with the principal client (Morgan *et al.*, 2004)  
 "Much worse" and "Much better" compared with main competitors over the past 12 months are scale anchors.
- Quality of your company's end-user customer relationships.
  - Reputation of your company.
  - End-user customer loyalty to your firm.
  - End-user customer satisfaction.

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