

The influence of internet marketing capabilities on international market performance

Influence of
internet
marketing

447

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Abstract

Purpose – The paper aims to explore the influential path of internet marketing capabilities impacting international market performance. The paper further investigates the mitigating roles of market- and entrepreneurial-oriented behaviors and knowledge internalization in this relationship. The effect of internet use for customer management on internet marketing capabilities is also examined.

Design/methodology/approach – A total of 618 firms with sales in international markets were approached to participate. Data were collected from a sample of 132 Taiwanese firms and analyzed using a structural equation model.

Findings – Use of internet for customer management positively influences internet marketing capabilities. The results also support the positive impacts of internet marketing capabilities on market- and entrepreneurial-oriented behaviors. Knowledge internalization mediates the relationships between market- and entrepreneurial-oriented behaviors and international market performance.

Research limitations/implications – This paper's investigation of the role of internet marketing capability in international market performance contributes to online internationalization, strategic orientations and organizational learning theory.

Practical implications – Managers should focus on developing internet marketing capabilities in management culture and fostering market- and entrepreneurial-oriented behaviors to facilitate knowledge internalization for better international performance.

Originality/value – This paper contributes to the construction of an alternative and comprehensive mechanism to understand the influences of internet marketing capabilities on the firm's international performance.

Keywords Internet marketing capabilities, Customer management, Market-oriented behavior, Entrepreneurial-oriented behavior, Knowledge internalization, International market performance

Paper type Research paper

1. Introduction

An increasing number of studies in different fields have recognized the important role of the internet in firms' international performance (Glavas *et al.*, 2017; Lyver and Lu, 2018). The utilization of the internet to enhance performance is often addressed as enabling firms to improve the exchange of information internally and externally, develop customer relationships on a global basis and reduce managerial and communication barriers for geographically dispersed firms (Bianchi *et al.*, 2017; Chen *et al.*, 2015). Consequently, firms may engage with their customers more efficiently through the use of the internet to achieve faster speed and increased scope in their internationalization efforts (Alarcón-del-Amo *et al.*, 2018; Mithas and Rust, 2016). In this research, we define this integration of the internet with international marketing activities to convert them into a new set of firm capabilities as internet marketing capabilities.

This research area is still in its infancy, with little understanding of the influences of the internet on a firm's international performance (Alarcón-del-Amo *et al.*, 2018; Bianchi and



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Mathews, 2016). Recent studies indicated that the internet itself does not lead to a firm's internationalization, as successful implementation of the internet in the internationalization process still relies on other forms of organizational capabilities (Chen *et al.*, 2015; Glavas *et al.*, 2017; Mithas and Rust, 2016). Plunging into using the internet without considering its strategic functionality may not enhance firms' performance. The extent to which the internet can influence the processes and outcomes of a firm's international market performance is not fully clear (Glavas *et al.*, 2017; Sinkovics *et al.*, 2013). The combination of the internet and marketing is commonly referred to as internet marketing, including a broad set of internet-enabling technologies that are used in customer relationship management, communication and sales management (Glavas *et al.*, 2017). Although researchers have provided empirical evidence of the link between internet marketing and firms' international performance, there is still a gap in our knowledge of how the internet and marketing activities are combined for developing new capabilities (Chen *et al.*, 2015; Nevo and Wade, 2010). This paper aims to examine the drivers of internet marketing capabilities and the mechanism of how these capabilities influence firm performance in international markets.

From the capability-based perspective, firms must continue to combine and reconfigure existing resources or capabilities to adapt to changing market conditions (Zhang *et al.*, 2013). Several studies suggested that marketing capabilities decide a firm's performance, and these capabilities rely on the firm's ability to understand customer needs and establish sustainable relationships (Trainor *et al.*, 2011). Some studies have demonstrated that the internet alone rarely enhances firm performance (Agnihotri *et al.*, 2016; Srinivasan and Moorman, 2005). The utilization of the internet is more efficient when integrated with other organizational capabilities (Trainor *et al.*, 2014). Based on the marketing and information technology (IT) capability literature, we argue that the use of the internet for customer management has a potential influence on the overall internet marketing capability.

The other aspect is the influences of internet marketing capabilities on various strategic orientations. This study focused on market orientation (MO) and entrepreneurial orientation (EO). We followed the behavioral approach of MO (Adhikari and Gill, 2011; Kohli and Jaworski, 1990) and viewed MO as related to the organization-wide generation, dissemination and responsiveness of market information (Hakala, 2011). In the marketing literature, MO has been considered a key driver that effectively creates the organization's behavior leading to greater learning and performance (Deutscher *et al.*, 2016; Hakala, 2011; He *et al.*, 2018). However, very limited research has looked into how a firm's capabilities influence MO (Adhikari and Gill, 2011). Therefore, we examined the influence of a firm's internet marketing capabilities on market-oriented behavior. EO reflects the firm's commitment to innovativeness, proactiveness and risk-taking (Alayo *et al.*, 2019; Miller, 1983). Several studies have highlighted the scarcity of literature analyzing the antecedents of EO (Covin and Lumpkin, 2011; García-Villaverde *et al.*, 2018). Certain studies have suggested that a firm's EO is conditioned by the firm's capabilities (Kyrgidou and Spyropoulou, 2013). The firm with better capabilities might be more willing to take a higher level of risk to compete in the international market (Ruiz-Ortega *et al.*, 2013). Thus, we examined the impacts of internet marketing capabilities on entrepreneurial-oriented behavior (Deutscher *et al.*, 2016).

Despite extensive research on strategic orientations in recent years, most studies examined the direct relationship between MO, EO and performance (Covin and Lumpkin, 2011; García-Villaverde *et al.*, 2018; He *et al.*, 2018). The mechanism of how strategic-oriented behaviors enhance international performance is still not clear (He *et al.*, 2018; Radulovich *et al.*, 2018). The role of knowledge in driving a firm's international performance has been well studied in the international business literature (Real *et al.*, 2014). Nevertheless, access to the internet *per se* does not guarantee that the competences in the form of knowledge resources are equal for each firm (Lichtenthaler, 2016; Nguyen and Barrett, 2006). To create competitive differentiation, a firm must incorporate external knowledge into its internal organizational

routines. Considering the significant dissimilarities between external knowledge and internal learning, the strategic orientations literature may offer different perspectives, because this stream of research has underscored the needs of MO and EO for a firm's internal innovation (Lichtenthaler, 2016; Wales *et al.*, 2013). Few studies have examined how firms internalize knowledge (the process of transforming information from the internet into higher-value knowledge) to enhance their international market performance. To address this gap, we argue that a firm's strategic-oriented behaviors are important antecedents of knowledge internalization, allowing the firm to enhance its performance in the international market.

The online internationalization phenomenon challenges the traditional approach to internationalization and its underlying assumption (Gabrielsson and Gabrielsson, 2011). However, only a few studies have validated the internet as an effective channel for international marketing and its market performance, despite some progress (Caniëls *et al.*, 2015; Glavas *et al.*, 2017). Sinkovics *et al.* (2013) call for further studies to explore the relationship between the internet's contribution to global business and subsequent performance outcomes. A systematic integration of the internet, strategic orientations, knowledge and international performance literatures is still limited, leaving theoretical gaps for better understanding of the interrelations among different concepts. The present study presents and empirically tests a model of how internet marketing capabilities bridge customer management and strategic-oriented behaviors, leading to greater knowledge internalization that positively influences international market performance. By relating these critical concepts, this study contributes to the interdisciplinary understanding of this stream of research.

2. Literature and hypotheses development

With the rapid pace of internationalization, utilizing the internet strategically plays a critical role in speeding up the marketing and commercializing of goods around the world, transforming the international business environment and internationalization process and providing many new international market opportunities (Glavas *et al.*, 2017; Mathews *et al.*, 2012). To explore a comprehensive mechanism for understanding the influences of internet marketing capabilities on international market performance, we propose the following conceptual framework (Figure 1) to delineate the interrelationship between the key constructs in this research. In the following subsections, we further discuss the arguments and proposed hypotheses.

2.1 Use of internet for customer management and internet marketing capabilities

In the market-oriented business world, customers have been considered the principal stakeholder. In studies on the strategic functionality of the internet for performance, customer

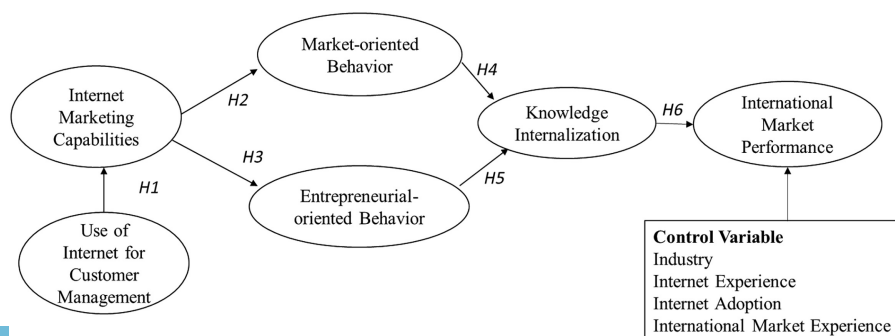


Figure 1. Conceptual model

management has often been the main concern (Agnihotri *et al.*, 2016; Jayakumar, 2016; Srinivasan and Moorman, 2005). IT-enabled customer management is crucial for customer satisfaction and online business sales success (Jayakumar, 2016). Since the start of public use of the internet in the early 1990s, this technology has been popularized and widely adopted as the core of globalization for firms to interact with their clients and other internal and external stakeholders, with the purpose of transforming social relations' resources into corporate sales (Agnihotri *et al.*, 2016; Zhao and Wu, 2014).

The advent of the internet may have provoked a paradigm shift in marketing and sales (Bansal *et al.*, 2014). The internet affected internal processes and external relationships. We are particularly interested in the external effects of the internet, given its closer ties with marketing activities. As a disruptive force, the internet may modify the existing business models and the way of managing customer relations (Bhattacharya and Mishra, 2015). Numerous industries, such as travel, real estate, retail sales, media, advertising and banking, migrated comprehensive information resources and transactions to the internet to improve the efficiency of customer management and customer satisfaction (Bhattacharya and Mishra, 2015).

Use of the internet for customer-related management can enhance enterprises' competitiveness and increase domestic and international sales (Trainor *et al.*, 2014; Zhao and Wu, 2014). Customer relationship and management are claimed to be an essential means for e-service quality to achieve business success (Bansal *et al.*, 2014). Although the relationship between customer management and marketing capability has been treated in the classical marketing context (Chang *et al.*, 2010), few studies have been carried out in the internet context. The integration of the internet with international marketing activities (e.g. advertisement, communication, promotion and sales) allows firms to develop internet marketing capabilities to respond more efficiently to the foreign market and reduce the liability of foreignness (Bianchi and Mathews, 2016). Therefore, we propose the following hypothesis:

- H1. Use of the internet for customer management is positively associated with internet marketing capabilities.

2.2 Internet marketing capabilities and market- and entrepreneurial-oriented behaviors

Albeit there is no consensus regarding the definition of strategic orientations, the term has attracted much attention from management, marketing and entrepreneurship scholars (Hakala, 2011; He *et al.*, 2018; Mu *et al.*, 2017). Strategic orientations are widely studied, constructed and measured to link with firm performance (Escribá-Esteve *et al.*, 2008). Among the literature on different orientations, MO is the most popularly studied, and it is considered a principal contributor to a firm's success (Cano *et al.*, 2004; Kirca *et al.*, 2005). EO has also received major attention for its positive relation to firm performance (Boso *et al.*, 2013). These two orientations are the focus of this study in terms of strategic orientations.

MO is the support for firms to stay close to their customers and put them at the top of the organizational relationship among different stakeholders (Caniëls *et al.*, 2015; Zhou *et al.*, 2005). As one of the foundations of marketing theory, MO is regarded "as the culture or activities of the organization" oriented to the market and customers "that effectively create the behaviors required for superior performance" (Hakala, 2011: p. 201). MO can be approached as the generation, dissemination and response to market information in the implementation of the marketing concept at the organizational level (He *et al.*, 2018; Matsuno *et al.*, 2000). Although studies have addressed the effects of MO on learning and innovation (Deutscher *et al.*, 2016; He *et al.*, 2018), limited research has examined the opposing effects of a firm's technology and capabilities on MO (Adhikari and Gill, 2011).

The internet, as an advanced IT, has great implications for information acquisition, sharing and dissemination, which are the processes essential to MO (Min *et al.*, 2002: p. 1),

especially for internationally focused firms (Etemad *et al.*, 2010). Digital sales revenue is so powerful that it can be illustrated by the 2018 Singles Day record of the e-commerce giant Alibaba Group: US\$30.8bn in sales in a single day (Kharpal, 2018). This is larger than the gross domestic product (GDP) of some countries like Cambodia, Iceland, Jamaica, Nepal, etc. Thus, we can argue that the utilization of the internet provides faster and cheaper information gathering and dissemination, flows and transaction (Gabrielsson and Gabrielsson, 2011; Mithas and Rust, 2016), especially for global sales, to produce e-market success.

As internet marketing capabilities help an organization access and process relevant marketing information faster and more extensively (Bianchi and Mathews, 2016; Hagen *et al.*, 2019), these capabilities strengthen and advance “the engagement of routines, prior and emergent knowledge and analytical processes to turn information technology into customer value” (Glavas *et al.*, 2017: p. 11). Thus, strategically speaking, internet marketing capabilities contribute to information sharing, exchange, relationship-building actions and other activities of MO (Caniëls *et al.*, 2015). Min *et al.* (2002) detail a comparison between a traditional MO and an internet-mediated MO; overall, the internet is considered “a transformer of the traditional MO process into a more efficient and effective (one)” (Min *et al.*, 2002: p. 2). Borges *et al.* (2009) also find that investment in inter-organizational systems, mainly internet-based IT, strongly supports the development of MO. That is, firms with better internet marketing capabilities are more market-oriented, and the capabilities enhance the firm’s market-oriented behavior. Therefore, we propose that:

H2. Internet marketing capabilities are positively associated with market-oriented behavior.

Different from MO, EO has often been more frequently addressed in the management literature, rather than in the marketing literature (Atuahene-Gima and Ko, 2001). EO emphasizes “aggressive product-market innovation, risky projects and a proactivity to pioneer innovations that pre-empt the competition” (Atuahene-Gima and Ko, 2001: p. 55; Miller, 1983). The firm with an EO tends to explore new market opportunities, manifested through the characteristics of innovativeness, risk-taking, proactiveness, competitive aggressiveness and autonomy (Engelen *et al.*, 2015). With the exploratory nature of EO, firms are highly capable of creating new organizational forms and industry configurations and shaping market arrangements to their advantages (Baker and Sinkula, 2009; García-Villaverde *et al.*, 2018).

Sinkovics and Bell (2006) suggest that studies on international entrepreneurship in an internet environment establish an important direction in ongoing debates. The research is still considered to be at a relatively early stage, with a number of main research questions left unanswered (Glavas and Mathews, 2014; Reuber and Fischer, 2011). There have been diverse focuses on the relationship between internet capabilities and EO. For instance, Abebe (2014) finds a moderation effect of EO in the relation between e-commerce adoption and firm’s sales growth rate. Glavas and Mathews (2014) and Zhang *et al.* (2013) take international EO as an independent variable and internet capabilities as a dependent variable. Bianchi *et al.* (2017) construct international EO and internet capabilities as a parallel relationship without any direct influence. Glavas *et al.* (2017) propose internet capability as an independent variable to affect international opportunity recognition, a key element of entrepreneurial activity.

Although in recent years extensive research has been conducted on EO, there is still a scarcity of literature addressing the antecedents of EO (Covin and Lumpkin, 2011; García-Villaverde *et al.*, 2018). Loane *et al.* (2004) state that internet capability not only is a tool for facilitating international marketing activities but also is regarded as a core capability laying the foundations for the overall international strategy, which pushes forward the firm’s EO. As EO is conditioned by the firm’s resources and capabilities (Kyrgidou and Spyropoulou, 2013), and internet marketing capabilities are now popularly utilized for the purpose of global sales

and exploration of overseas markets, we consider that higher internet marketing capabilities could positively affect a firm's EO, specifically the firm's entrepreneurial-oriented behavior. Therefore, we posit the following:

H3. Internet marketing capabilities are positively associated with entrepreneurial-oriented behavior.

2.3 Market-oriented behavior, entrepreneurial-oriented behavior, knowledge internalization and international market performance

Although knowledge management is now commonly agreed to be key for firms' international performance (Liu and Zhang, 2014; Naqshbandi; Jasimuddin, 2018; Real *et al.*, 2014), knowledge internalization as an analogy for learning (Chirico and Salvato, 2016) in an international business context is less studied. We argue that knowledge internalization plays a key role in the contribution of the strategic orientation of an internet-empowered firm to higher international market performance. Knowledge internalization as a process in which an individual absorbs knowledge held by others (Von Krogh and Roos, 1995) has been approached in different ways by scholars (e.g. Aranda *et al.*, 2017; Wipawayangkool; Teng, 2016). Zhang *et al.* (2013) argue for an organizational focus of internalization "to convert the explicit knowledge of an individual member to the organizational shared knowledge" (p. 183). Similarly, Liu and Zhang (2014) utilize the knowledge conversion model, including knowledge internalization, across levels within organizations. In the present study, we define knowledge internalization as the process of converting information from the internet into higher-value knowledge through learning, outlining the corporate capability to generate, spread and apply knowledge, to respond to internal and external stimuli.

Given the power of knowledge internalization to explain how firms obtain information from the internet and transform this information into knowledge (Nguyen and Barrett, 2006), especially in a dynamic and uncertain international business context, we posit that market- and entrepreneurial-oriented behaviors influence knowledge internalization for firms to achieve a superior international market performance. MO and EO have been widely researched and are considered to directly influence firm performance (e.g. Cano *et al.*, 2004). If a firm possesses a market-driven capability, the firm is highly oriented to responding to market information and adapting (Fang *et al.*, 2014; He *et al.*, 2018). If the firm possesses the capability of generative or exploratory learning and questions its previously held managerial and business assumptions, this capability may lead to more radically changed activities (Atuahene-Gima and Ko, 2001: p. 56). MO and EO strongly influence the learning process (Lichtenthaler, 2016), improve organizational processes and enhance internationalization (Ruokonen and Saarenketo, 2009).

In a dynamic international market environment, an organization has to improve its market-oriented activities constantly, internalizing market knowledge and updating and applying it to add value to customers (Deutscher *et al.*, 2016; Fang *et al.*, 2014). If an organization's MO is limited, the firm may fail to internalize the most valuable knowledge from the environment, which eventually may prevent the firm from transferring the market intelligence into a competitive advantage for better market performance (Lichtenthaler, 2016). That is, to make market-oriented behavior contribute to international market performance, effective internalization of knowledge is part of the key for success. Therefore, we propose the following hypothesis:

H4. Market-oriented behavior positively influences knowledge internalization.

Some studies indicate that learning mediates the link between EO and performance (Alegre and Chiva, 2013; Real *et al.*, 2014; Wang, 2008). Ruokonen and Saarenketo's (2009) study of rapidly internationalizing software companies shows that the essentials of EO and learning

orientation are very similar in small rapidly internationalizing companies: Both aim “to be active in searching for new product and market-related innovations, and to remain flexible towards changes in markets and customer preferences” (p. 33). [Fernández-Mesa and Alegre \(2015\)](#) stress that an entrepreneurship culture encourages learning values. Knowledge internalization as an analogy for learning follows this same logic to influence the effects of entrepreneurial-oriented behavior on performance. Therefore, we propose the following hypothesis:

H5. Entrepreneurial-oriented behavior positively influences knowledge internalization.

Knowledge internalization, considered a critical component of knowledge management (a process to uncodify explicit knowledge to tacit knowledge that is difficult to copy), helps firms organize and translate market and entrepreneurial outputs into competitive advantages ([Chirico and Salvato, 2016](#)) and market performance ([Chang et al., 2016](#); [Morgan and Turnell, 2003](#)). It is not only the focus for capability and the source for a firm’s sustainable competitiveness ([Liu et al., 2010](#)), but also allows evolution of the dynamic capability to transcend knowledge embedded in people within the organization ([Teece, 2007](#)) and contribute to a people-centric innovation strategy ([Zhang et al., 2013](#)). In addition, [Nguyen and Barrett \(2006\)](#) report a positive relationship between knowledge internalization and foreign sales intensity. Therefore, we suggest that:

H6. Knowledge internalization positively influences international market performance.

3. Methodology

3.1 Sample

The sample population was collected from a variety of data sources, such as the Taiwan Electronics and Appliance Manufacturers Associates (TEEMA), Taiwan Junior Chamber (TJC) and Taiwan Computer Association (TCA). We identified 1,237 firms from these databases based on two criteria: the selected companies had to be involved in foreign sales and they used the internet and websites for their international businesses. We further verified these firms with secondary data or phone calls to confirm that each firm had sales in global markets. The next step was to examine whether the websites of the selected companies were still functioning for global sale activities. Overall, we obtained a list of 618 firms.

All the scales in the questionnaire were developed based on a thorough review of previous literature. We also conducted pre-tests through 13 on-site interviews with managers with experience in foreign operations. Measurement items that were inappropriate or confusing were deleted according to the managers’ suggestions. The key informants in this study were managing directors, marketing, sales managers or supervisors who were familiar with international operations.

We then mailed out cover letters and questionnaires to the target firms. One month after the first mail-out, we sent follow-up letters and questionnaires to remind the non-respondents. In total, 139 questionnaires were returned, and seven responses were excluded due to excessive missing values. Thus, 132 useable questionnaires with complete data were used for data analysis, resulting in an effective response rate of 21.4 percent.

[Table 1](#) shows the details of the sample characteristics. In total, more than 80 percent of the sample firms had fewer than 250 employees. More than 78 percent of the firms reported that their firm age was more than ten years, and only 1.5 percent had been established less than one year. More than 10 percent of the responding firms had paid-in capital of more than US\$1bn. The average global market experience of the sample firms was 14 years. More than 20 percent of the firms had more than 20 years of experience in international markets. The average export ratio for the selected companies was higher than 50 percent.

Table 1.
Sample characteristics
of the respondent
firms ($n = 132$)

		%		%	
<i>Firm age</i>	Less than 1 year	1.5	<i>Firm size</i>	Less than 50 employees	59.8
	1–2 years	1.5		51–100 employees	12.1
	3–5 years	7.6		101–150 employees	3.8
	6–10 years	10.6		151–200 employees	5.3
	More than 10 years	78.8		201–250 employees	0.0
<i>Industry</i>		%	More than 250 employees	18.9	
	Automobile	3.6	<i>Paid-in capital (NT\$)</i>	%	
	Biotechnology	0.9		Less than 50 million	28.9
	Chemistry	6.4		50–100 million	37.5
	Communications	0.9		100 million–5 billion	13.3
	Electronics and engineering	43.6		5–10 billion	3.1
	Manufacturing	5.5	10–30 billion	7.0	
	Others	39.1	More than 30 billion	10.2	
	<i>Internet experience</i>		%	<i>International market experience</i>	%
		1–5 years	7.3		1–5 years
6–10 years		11.3	6–10 years		30.0
11–15 years		14.6	11–15 years		11.8
16–20 years		14.6	16–20 years		15.5
>20 years	52.2	>20 years	23.6		
<i>Export ratio (%)</i>		%			
	1–10	21.0			
	11–20	7.6			
	21–40	11.4			
	41–60	15.2			
61–80	15.2				
81–100	29.5				

We followed the procedure suggested by [Armstrong and Overton \(1977\)](#) to test non-response bias with a comparison of early and late-replying respondents. ANOVA was used to compare the means of the six constructs in the two groups, and no significant differences were found. To get feedback from the non-respondents, we identified 20 non-respondents and called them to understand the reasons for their lack of response (c.f. [Jean et al., 2010](#)). The main reasons for non-response were related to a lack of time to reply to the questionnaire and concerns about the firm's confidentiality policy. Therefore, non-response bias did not seem to be a serious problem for further data analysis in this study.

3.2 Measures

We relied on previous research to develop measurement items for key constructs. All multiple items were formatted by using seven-point Likert scales. *Use of internet for customer management* referred to the firm's use of internet to enhance customer satisfaction. The items adapted from [Borges et al. \(2009\)](#) for this research included the firm's use of internet to improve exchange relationships with customers, create value-added activities and strengthen customers' loyalty. *Internet marketing capability* referred to the firm's utilization of the internet in combination with international marketing activities to pursue foreign sales. The four-item measure was based on studies by [Mathews et al. \(2016\)](#) and [Sinkovics et al. \(2013\)](#) but adapted to our study's context. The items assessed use of internet in relation to international marketing activities, including product sales, promotion, awareness and product orders in foreign markets. Drawing from studies by [Jaworski and Kohli \(1993\)](#) and [Caniëls et al. \(2015\)](#), we conceptualized MO from a behavioral perspective with three main dimensions: market intelligence generation, market intelligence dissemination and market intelligence responsiveness. The three-item measures of each dimension of *market-oriented*

behavior were adapted from the scales used by Morgan and Berthon (2008) and Kirca *et al.* (2005). Following the research on strategic orientations by Deutscher *et al.* (2016) and Zhou *et al.* (2005), EO involved the extent to which a firm tended to be innovative, risk-taking and proactive. In this study, four measurement items of *entrepreneurial-oriented behavior* were adapted from Lumpkin and Dess' (1996) and Boso *et al.*'s (2013) studies. *Knowledge internalization* was operationalized as the extent to which an organization internalized knowledge about foreign markets to improve international performance. Three measurement items were taken from the scales used by Bierly III *et al.* (2009) and Nguyen and Barrett (2006) and adapted to the present context.

This study focused on *international market performance* as the major dependent variable. Previous research commonly used international growth as an alternate measure for evaluating the effectiveness of international market performance. We adapted scales from Zhou *et al.* (2012) and Glavas *et al.* (2017). The measurement items reflected the extent to which the firm had improved its international growth in the international market sales ratio, international market share and international market penetration.

3.3 Control variables

A firm's international market performance may be conditional on several variables such as industry type, internet experience, internet adoption and international market experience (Cheema and Papatla, 2010; Glavas *et al.*, 2017; Panayiotou and Katimertzoglou, 2015). For industry type, we created a set of dummy variables to control for the differences of industry sectors. Firms in different industries may face various challenges from different competitive dynamics, which may impact the firms' international performance (Mathews *et al.*, 2016; Wang, 2008). A firm's internet experience is essential for them to establish goals to allocate resources for the implementation of the internet in international business (Sinkovics *et al.*, 2013). Thus, we controlled the effect of internet experience, and it was measured by the total number of years since the firm had started to use the internet. Firms may have different capabilities for internet adoption ranging from basic to very complicated. Internet adoption was measured with a three-item scale that captured whether the firm had full internet access for information-based activities, websites and commercial transactions (Kannabiran and Dharmalingam, 2012). International market experience may have an important influence in a firm's internationalization when the firm uses the internet (Mathews *et al.*, 2016). International market experience was measured by the number of years since the firm first entered foreign markets.

4. Data analysis and results

4.1 Assessment of the measurement model

We used the structural equation model (SEM) with EQS 6.1 program to test the proposed hypotheses shown in Figure 1. In the first step of the SEM analysis, we estimated the convergent and discriminant validity of individual items in the first-order measurement model through confirmatory factor analysis (CFA). The results of the measurement model are provided in Table 2. We used composite reliability to evaluate the internal consistency of the measures. The values of all constructs exceeded the threshold level of 0.70, showing acceptable reliability. We followed Fornell and Larcker's (1981) suggestion to compute the factor loadings and shared variance to estimate convergent validity. The factor loadings of the measures ranged from 0.56 to 0.97 ($p < 0.01$), and the average variance extracted (AVE) ranged from 0.50 to 0.86 (Table 2). Therefore, all measures indicated satisfactory convergent validity.

Discriminant validity was further checked by the comparison of the AVE of each construct and intercorrelations in the correlation matrix (Fornell and Larcker, 1981).

Items	λ	t -value	ρ	AVE
<i>Use of internet for customer management</i>				
The internet helps to create and facilitate exchange relationships with customers	0.87	12.05	0.90	0.75
The internet helps creating customer value-adding activities	0.91	12.89		
The internet improves customer satisfaction, loyalty and brand	0.82	11.11		
<i>Internet marketing capabilities</i>				
The internet helps the firm to sell anywhere in the world, no matter how remote the country	0.89	12.95	0.95	0.84
The internet enhances the promotion and the diffusion of new products around the world	0.97	14.97		
The internet generates international awareness of the business	0.96	14.72		
The internet makes it easier for foreign customers to order goods	0.85	12.01		
<i>Market-oriented behavior – intelligence generation</i>				
We meet with customers frequently to find out what products or services they will need in the future	0.67	7.83	0.78	0.54
We do a lot of in-house market research	0.81	10.03		
We poll end users at least once a year to assess the quality of our products and services	0.71	8.46		
<i>Market-oriented behavior – intelligence dissemination</i>				
Our business unit periodically circulates documents (e.g. reports, newsletters) that provide information on our customers	0.56	6.56	0.78	0.55
Marketing personnel in our business unit spend time discussing customers' future needs with other functional departments	0.83	10.88		
Data on customer satisfaction are disseminated at all levels in this business unit on a regular basis	0.80	10.26		
<i>Market-oriented behavior – responsiveness</i>				
We are quick to react to the significant changes in our business environment	0.66	7.32	0.74	0.50
We are quick to react to important changes in our competitors' activities	0.63	6.94		
Even if we develop a great marketing plan, we probably would not be able to implement it in a timely fashion	0.81	8.92		
<i>Entrepreneurial-oriented behavior</i>				
In general, the top managers of my firm have a strong tendency to be ahead of others in introducing novel ideas or products	0.77	10.17	0.91	0.71
In general, the top managers of my firm favor a strong emphasis on R&D, technological leadership and innovations	0.86	12.10		
Our company has a lot of new lines of products/services marketed in the past 5 years	0.94	14.03		
Changes in product or service lines have usually been quite dramatic in our industry	0.79	10.52		
<i>Knowledge internalization</i>				
My organization has processes for using knowledge of foreign markets obtained from the internet in developing new products/services	0.90	13.05	0.93	0.81
My organization uses knowledge of foreign markets obtained from the internet to improve efficiency	0.95	14.42		
My organization quickly applies knowledge of foreign markets obtained from the internet to capture critical competitive needs in the markets	0.84	11.69		
<i>International market performance</i>				
International market sales ratio	0.86	12.20	0.95	0.86
International market share	0.97	14.96		
International market penetration	0.96	14.68		

Note(s): λ = factor-loading lambda; ρ = Joreskog's rho; AVE = average variance extracted; measurement fit: Satorra-Bentler-scaled- χ^2 = 442.017; degrees of freedom = 271; $p < 0.001$; comparative fit index (CFI) = 0.936; non-normed fit index (NNFI) = 0.923; Bollen (IFI) fit index = 0.937; root mean-square error of approximation (RMSEA) = 0.070; $n = 132$

Table 2.
Measurement model
and CFA

For acceptable discriminant validity, the square roots of the AVE for each construct should be greater than the correlations in the related rows and columns (c.f. [Dhanaraj et al., 2004](#)). The results in [Table 3](#) indicate that all constructs achieved a sufficient level of discriminant validity. All indices in the measurement model showed a good fit with the data: $\chi^2 = 442.017$; degrees of freedom = 271; comparative fit index (CFI) = 0.936; non-normed fit index (NNFI) = 0.923; Bollen (IFI) fit index = 0.937; root mean-square error of approximation (RMSEA) = 0.070.

In our framework, MO is a second-order construct composed of intelligence generation, intelligence dissemination and responsiveness. After conducting a first-order CFA of the measurement model, we then conducted a second-order CFA. As can be seen from [Table 4](#), the model fit the data well. Factor loadings from the three dimensions to the respective higher-order construct (MO) ranged from 0.56 to 0.87 and were all statistically significant at $p < 0.01$. The fit statistics were satisfactory ($\chi^2 = 47.491$; degrees of freedom = 25; CFI = 0.932; NNFI = 0.901; RMSEA = 0.08), supporting the second-order factorial structure. Consequently, we used the second-order factor model to represent a composite marketing orientation. For further hypothesis testing, we aggregated the scale of marketing orientation to have three indicators (i.e. intelligence generation, intelligence dissemination and responsiveness) by summing the items at the first-order construct level.

4.2 Analysis of common method bias

We evaluated the probability of common method bias by applying two statistical approaches. In the first step, we conducted Harman's one-factor test ([Krishnan et al., 2006](#); [Podsakoff and Organ, 1986](#)). The principal components factor analysis extracted seven factors with eigenvalues greater than 1.0, representing 78.55 percent of the total variance. The first factor captured only 32.3 percent of the variance. We concluded that common method bias was not a major concern in this study, because there was no dominant factor.

We then applied [Cote and Buckley's \(1987\)](#) approach to conduct a more rigorous statistical approach to evaluate common method bias by using hierarchically nested covariance structure models. We estimated three models accordingly: a trait-only model (M2), a method-only model (M3) and a trait-and-method model (M4). [Table 5](#) shows the results. We compared these three models. The results indicated that M2 and M4 were superior to M3, and that M4 was not substantially better than M2 (c.f. [Boso et al., 2013](#)). This signified that common method bias was not a serious problem in this study.

4.3 Assessment of the structural model

We used the full sample to test the hypotheses. [Table 6](#) displays the results of the structural model. We proposed the positive effect of use of internet for customer management on internet marketing capabilities in [H1](#). The result was positive and statistically significant ($\gamma = 0.80$, $t = 7.999$, $p < 0.01$); [H1](#) was supported. The results showed that the links between internet marketing capabilities and market- and entrepreneurial-oriented behavior were positive and statistically significant, respectively ($\beta = 0.249$, $t = 3.758$, $p < 0.01$; $\beta = 0.200$, $t = 2.631$, $p < 0.05$). Thus, [H2](#) and [H3](#) were supported. In [H4](#) and [H5](#), we argued that market- and entrepreneurial-oriented behavior positively influence knowledge internalization. The results supported these two hypotheses ($\beta = 0.930$, $t = 5.458$, $p < 0.01$; $\beta = 0.303$, $t = 3.826$, $p < 0.01$). Therefore, we found support for the view that market- and entrepreneurial-oriented behaviors positively influence internalization of knowledge. The coefficient for the relationship between knowledge internalization and the firm's international market performance showed a statistically significant and positive effect ($\beta = 0.274$, $t = 2.592$, $p < 0.05$); [H6](#) was supported. The results indicated the adequately low ratio of the chi-square to degrees of freedom (1.91, less than 3), which represented a reasonable fit. All fit statistics revealed an acceptable model fit for

Table 3.
Descriptive statistics
and correlations of the
constructs

	1	2	3	4	5	6	7	8	9	10	11	12
(1) Use of internet for customer management	0.92											
(2) Internet marketing capabilities	0.66	0.87										
(3) Generation	0.29	0.32	0.73									
(4) Dissemination	0.30	0.28	0.49	0.74								
(5) Responsiveness	0.18	0.19	0.04	0.02	0.70							
(6) Entrepreneurial -oriented behavior	0.26	0.23	0.52	0.65	-0.17	0.84						
(7) Knowledge internalization	0.31	0.28	0.50	0.66	-0.01	0.61	0.90					
(8) International market performance	0.10	0.12	0.33	0.16	0.12	0.23	0.18	0.93				
(9) Industry	-0.07	-0.06	-0.06	-0.08	-0.02	-0.10	-0.003	-0.01	NA			
(10) Internet experience	0.04	0.002	0.15	0.20	0.03	-0.04	-0.16	0.02	-0.27	NA		
(11) Internet adoption	0.39	0.43	0.19	0.18	0.25	0.03	-0.02	0.31	-0.02	-0.02	NA	
(12) International market experience	0.16	0.11	0.08	-0.01	-0.09	0.034	-0.03	-0.04	0.31	0.33	0.08	NA
Mean	5.41	5.54	4.88	4.73	3.33	4.78	4.92	3.79	7.55	4.64	5.06	13.26
SD	1.31	1.49	1.35	1.37	1.45	1.47	1.33	1.60	3.62	0.813	1.98	8.33

Note(s): Diagonal terms (in italic) are the square roots of the AVE. Off-diagonal terms are the correlations of the constructs. The discriminant validity of the constructs is estimated according to the suggestions by Fornell and Larcker (1981). The diagonal term must be greater than any of the correlations in the row or column corresponding to it.

Items	λ	<i>t</i> -value
<i>Market intelligence generation</i>		
We meet with customers frequently to find out what products or services they will need in the future	0.66 ^a	
We do a lot of in-house market research	0.87	6.14
We poll end users at least once a year to assess the quality of our product and services	0.66	5.67
<i>Market intelligence dissemination</i>		
Our business unit periodically circulates documents (e.g. reports, newsletters) that provide information on our customers	0.56 ^a	
Marketing personnel in our business unit spend time discussing customers' future needs with other functional departments	0.86	5.49
Data on customer satisfaction are disseminated at all levels in this business unit on a regular basis	0.78	5.45
<i>Market responsiveness</i>		
We are quick to react to the significant changes in our business environment	0.70 ^a	
We are quick to react to important changes in our competitors' activities	0.70	5.42
Even if we develop a great marketing plan, we probably would not be able to implement it in a timely fashion	0.75	5.44
Note(s): Model fit indices $\chi^2(25) = 47.491, p\text{-value} < 0.001, n = 132, CFI = 0.932; NNFI = 0.901; RMSEA = 0.08$ ^a indicates fixed parameter		

Table 4.
Second-order measurement model of market-oriented behavior (standardized first-order loadings and *t*-value)

Model	χ^2	df	<i>p</i>	CFI	NNFI	SRMR
M1: Null model	2,996.167	325	0.000	n/a	n/a	n/a
M2: Trait only model	442.017	271	0.000	0.936	0.923	0.059
M3: Method only model	2,019.653	299	0.000	0.356	0.300	0.457
M4: Trait and method model	374.021	245	0.000	0.952	0.936	0.139
Model comparison	$\Delta\chi^2$	Δ df	<i>P</i>	Conclusion		
<i>Testing for the presence of trait factors</i>						
M1-M2	2,554.15	54	<0.01	M1 > M2		
M3-M4	1,645.632	54	<0.01	M3 > M4		
<i>Testing for the presence of a method factor</i>						
M1-M3	976.514	26	<0.01	M1 > M3		
M2-M4	67.996	26	>0.05	M2 > M4		

Table 5.
Assessment of common method bias

the structural model ($\chi^2 = 450.377$; degrees of freedom = 236; CFI = 0.909; NNFI = 0.900; IFI = 0.911; RMSEA = 0.08).

We conducted *post hoc* analysis to test an alternative model that included direct effects of use of internet for customer management on international market performance. The chi-square difference between the alternative model and the proposed model was not statistically significant (χ^2 difference = 4.527; df = 2; *p* = 0.10). According to Hair *et al.* (2006), the more parsimonious model, the better. Additionally, the direct effect of use of internet for customer management on international marketing performance was not supported.

4.4 Mediating effects

Regarding the mediating effects of market- and entrepreneurial-oriented behavior on the link between internet marketing capabilities and knowledge internalization, we followed Barrick

Paths	Hypothesis (expected direction)	Standardized coefficient	t-value
Use of internet for customer management → Internet marketing capabilities	H1	0.80	7.999**
Internet marketing capabilities → Market-oriented behavior	H2	0.249	3.758**
Internet marketing capabilities → Entrepreneurial-oriented behavior	H3	0.200	2.631**
Market-oriented behavior → Knowledge internalization	H4	0.930	5.458**
Entrepreneurial-oriented behavior → Knowledge internalization	H5	0.303	3.826**
Knowledge internalization → International market performance	H6	0.274	2.592**
<i>Control variables</i>			
Industry → International market performance		0.031	0.884
Internet experience → International market performance		0.163	1.029
Internet adoption → International market performance		0.244	3.875**
International market experience → International market performance		0.016	1.071

Note(s): Model fit indices $\chi^2 = 450.377$, DF = 236; CFI = 0.909; NNFI = 0.900; IFI = 0.911; RMSEA = 0.080
* = $p < 0.05$, ** = $p < 0.01$, *** = $p < 0.001$

Table 6.
Structural parameter
estimates and model fit
indices

et al.'s (2002) approach to compare three models: Model 1: the model including all hypotheses and direct links from internet marketing capability to knowledge internalization ($\chi^2 = 450.084$, $df = 235$, $p < 0.01$; CFI = 0.909; BBNNFI = 0.893; IFI = 0.910; RMSEA = 0.08), Model 2: a direct effect of Internet marketing capabilities on knowledge internalization only while constraining the link to market- and entrepreneurial-oriented behavior ($\chi^2 = 473.884$, $df = 237$, $p < 0.01$; CFI = 0.900; BBNNFI = 0.883; IFI = 0.901; RMSEA = 0.088) and Model 3 (indirect effect only): full mediation by market- and entrepreneurial-oriented behavior ($\chi^2 = 450.377$, $df = 236$, $p < 0.01$; CFI = 0.909; BBNNFI = 0.829; IFI = 0.911; RMSEA = 0.080). The comparison of Model 1 and Model 2 showed a statistically significant result (χ^2 difference = 23.80; $df = 2$; $p < 0.01$), indicating Model 1 outperformed Model 2 with the direct effect only. We further compared Model 1 and Model 3 (the hypothesized model). The chi-square difference between the alternative and the proposed model was not statistically significant (χ^2 difference = 0.293; $df = 1$; $p = 0.588$). The direct link between internet marketing capabilities and knowledge internalization was also not supported. According to Hair *et al.* (2006), the more parsimonious model, the better. Therefore, the mediating effects of market- and entrepreneurial-oriented behavior were supported.

We followed the same procedure to further test the mediating effects of knowledge internalization and test alternative models, including Model 4, with all hypotheses and direct links of market- and entrepreneurial-oriented behavior to international market performance and Model 5 with direct effects only. The comparison of these two models showed a statistically significant result (χ^2 difference = 86.412; $df = 2$; $p < 0.01$), indicating Model 4 was better than Model 5. We further compared Model 4 and the hypothesized model. The chi-square difference between the alternative and the proposed model was not statistically significant (χ^2 difference = 2.629; $df = 2$; $p = 0.269$). The direct effects between market- and

entrepreneurial-oriented behavior on international market performance were also not supported. The results showed that the links between market- and entrepreneurial-oriented behavior and international performance were mediated via knowledge internalization.

5. Discussion and conclusion

Implementing the internet allows firms to extend their capabilities of market information processing and strengthen their global connections (Alarcón-del-Amo *et al.*, 2018; Sinkovics *et al.*, 2013). Although studies about the influences of the internet are increasing, the evidence of links between the internet, strategic orientations and international market performance is still fragmented. Drawing from the previous literature, we investigated the interplay among online internationalization, market- and entrepreneurial-oriented behaviors, knowledge internalization and international market performance, a research topic that has been less studied and was unclear in previous research (Mathews *et al.*, 2016; Wales *et al.*, 2013).

Previous studies showing the conflicting results of the direct effect of technology use for customer management on performance (Chang *et al.*, 2010; Jayachandran *et al.*, 2005) indicate the need for further research to examine contingent variables. We proposed that internet marketing capabilities provide the link between use of internet for customer management and market- and entrepreneurial-oriented behaviors. The empirical results showed that use of internet for customer management allows a firm to develop better internet marketing capabilities to execute international marketing activities more efficiently. The results showed that internet marketing capabilities are positively related to market-oriented behavior. This finding is in line with previous studies that indicate the positive influences of internet on stimulating activities related to market information generation and dissemination in today's digital economy (Bianchi and Mathews, 2016; Mathews *et al.*, 2016). These results demonstrated a positive and statistically significant effect of internet marketing capabilities on entrepreneurial-oriented behavior. This result was also consistent with the notion that internet capabilities influence performance outcomes indirectly via EO (Chen *et al.*, 2015). These results indicated that market- and entrepreneurial-oriented behaviors are vital intermediaries through which firms can strengthen their internet marketing capabilities to improve international market performance.

Market-oriented behavior had positive and significant effects on knowledge internalization, which is consistent with the work by Jian and Zhou (2015), who indicate that a higher level of MO leads to a higher level of organizational learning, and with the work by Lichtenthaler (2016), who proposes the link between proactive MO and knowledge exploitation. The result also reveals that entrepreneurial-oriented behavior positively affects knowledge internalization. This result supports Fernández-Mesa and Alegre's (2015) argument for the role of organization learning in the relationship between EO and export intensity. However, most strategic orientation literature emphasizes the direct relationships between orientations and performance and ignores the underlying process (Fang *et al.*, 2014; Frank *et al.*, 2016). We conducted *post hoc* analysis to discover the mediating effects of knowledge internalization. The results show that market- and entrepreneurial-oriented behaviors do not result in better international performance spontaneously. The results reveal that internalization of knowledge obtained from the internet plays a mediating role. These results contribute to the recent research stream focusing on indirect links between strategic orientations and firm performance (Fernández-Mesa and Alegre, 2015; Real *et al.*, 2014).

We found that the impact of knowledge internalization on international market performance is positive and significant. The result is consistent with the organizational learning theory (Argote and Miron-Spektor, 2011), which indicates that knowledge internalization can play a key role in linking global market information generated from the internet and foreign sales (Dada and Fogg, 2016). Enhanced performance requires a firm with

higher strategic-oriented behaviors to exploit knowledge about changing customer needs in international markets. This research contributes to the limited empirical research showing the influences of the alignment of market- and entrepreneurial-oriented behaviors and knowledge internalization on international performance outcomes.

Although several studies examined the impact of the internet on firm performance and internationalization, these studies did not go in depth to explain whether the internet or the integration of the internet with other capabilities influences a firm's international market performance. We aim to make several contributions. First, we focus on the development of internet marketing capabilities beyond a simple perspective of internet use. From the capabilities-based perspective, a firm's competitive advantages are attained not only with utilization of the internet, because such resources are also available to other competitors (Riviere *et al.*, 2018; Trainor *et al.*, 2011; Zhang *et al.*, 2013). Much of the work on internet capabilities has mainly focused on the direct influences of these capabilities on firm performance, and less on the important resources for creating them. The present results highlight the link between use of internet for customer management in firm–customer interactions and relationships with internet marketing capabilities. Second, due to the conflicting results for internet and international performance in previous studies, this study aimed to develop an integrative framework that depicts how internet marketing capabilities translate into international performance to make the overall mechanism and the conditions clear. Many previous studies consider MO and EO as a part of resources or capabilities and examine the influences of MO and EO on a firm's international performance (Deutscher *et al.*, 2016; He *et al.*, 2018). However, few studies have investigated how a firm's capabilities affect MO and EO in a different direction (Adhikari and Gill, 2011). In this study, we viewed MO and EO differently from the firm's resources and capabilities and investigated the extent to which a firm's internet marketing capabilities influence market- and entrepreneurial-oriented behaviors. To this end, the empirical results demonstrate that internet marketing capabilities facilitate market- and entrepreneurial-oriented behaviors. Third, instead of examining the direct impacts of MO and EO on a firm's success that have been discussed in much of the research, we propose the mediating role of knowledge internalization between market- and entrepreneurial-oriented behavior and international performance. The important implication of the present results is that the firm must transform the information obtained from the internet into a higher level of knowledge and adapt such knowledge for international business activities. Finally, this research contributes to the integration of different streams of theories from previous research and enriches the literature in online internationalization literature, strategic orientations and organizational learning theory by providing empirical evidence based on Taiwanese firms with international operations.

5.1 Managerial implications

This research provides several critical implications for managers. First, a firm should highly value the role of internet utilization in international marketing. Investing in internet-based technologies for customer management allows the firm to develop a more personalized customer relationship and leads to better global sales. The better the firm manages their worldwide customers, the better the firm can enhance their internet marketing capabilities for international business activities. Second, our findings show that internet marketing capabilities contribute to a firm's international market performance in an indirect path. Instead of seeking direct impacts of the internet on international performance, managers might need to shift their attention to develop internet marketing capabilities in enabling market- and entrepreneurial-oriented behaviors. Third, enhanced internet capabilities allow firms to benefit from better alignment between entrepreneurial activities and business strategy. Finally, the *post hoc* analysis indicated that knowledge internalization plays a

mediating role between market- and entrepreneurial-oriented behavior and international market performance. Strategy-oriented behaviors do not result in better international performance automatically. Firms must develop a better mechanism to facilitate knowledge internalization to transform foreign market information obtained from the internet to a more advanced level of knowledge to enhance international market performance.

5.2 Limitations and directions for future research

The empirical results of this research should be interpreted with several limitations. First, this study focused on the use of internet for customer management and international marketing giving the focal interest in internet use in managing external relations with customers to delimit the complexity level of the modeling. The internet has been widely used internally and externally, but the integration of the internet with international business activities is still under development with accelerated IT development. Future research may look into the impacts of different types of internet-based applications, such as inter-organizational support, data mining and big data, logistic management, social media and business-to-business (B2B) enterprise solutions on global business activities, to explore their relations and interrelations (Panayiotou and Katimertzoglou, 2015; Parveen *et al.*, 2016).

Second, this research was conducted in Taiwan, a single and small newly industrialized country (NIC). This setting might raise concerns about the generalization of the findings. The developed and developing economies may have specific and unique contexts for further theory development and insights. Research is limited on how national cultural factors, such as risk aversion and future orientation, impact the links between online internalization, strategic orientations and a firm's international performance (Boso *et al.*, 2013; García-Villaverde *et al.*, 2018). Therefore, future research could explore additional cultural variables and extend this study to other contexts of developing and developed nations.

Third, the influences of market- and entrepreneurial-oriented behaviors on an internet environment might be conditional on external environmental factors, such as environmental munificence (Boso *et al.*, 2013), market turbulence (Sinkovics *et al.*, 2013) and technology dynamism (García-Villaverde *et al.*, 2018). Therefore, future research may consider incorporating more contingent factors for comparative studies to map the relationships between internet capabilities and international performance.

Finally, the data on all variables in this study were mostly cross-sectional. The time horizon for evaluating the complicated interplay between online internationalization, strategic orientations and knowledge internalization on a firm's international performance might be very long and dynamic. Therefore, future studies could employ longitudinal data and in-depth case interviews to generate more qualitative insights to investigate the evolutionary developments of online internationalization.

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469

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