

Social Media Strategic Capability and the Distribution on Innovation Performance for High-Tech SMEs

Niramarn NGAMMOH¹, Atthaphon MUMI², Sujinda POPAITOON³, Achariya ISSARAPAIBOOL⁴

Received: May 30, 2021. Revised: July 20, 2021. Accepted: August 05, 2021

Abstract

Purpose: This study aims at investigating how high-tech SMEs can enhance innovation performance through the application and distribution of social media strategic capability and whether entrepreneurial orientation moderates the relationship between social media strategic capability and innovation. **Research design, data, and methodology:** The study followed a deductive approach based on the quantitative design in investigating the proposed relationships. The data was collected using a questionnaire, and the proposed relationships were examined based on a sample of 221 high-tech SMEs through the application of structural equation modeling (SEM). By applying SEM, this study accounted for hidden and unobservable factors as well as reconciled the potential measurement errors. **Results:** As hypothesized, it was confirmed that social media strategic capability positively influences innovation performance. Besides, the findings supported the moderating effect of three dimensions of entrepreneurial orientation (innovativeness, proactiveness, and risk-taking) toward the relationship between social media strategic capability and innovation performance. **Conclusions:** According to the results, high-tech SMEs can enhance their innovation performance through social media by distributing and applying social media strategic capability along with entrepreneurial orientation. This study thereby enriches the literature of innovation on high-tech SMEs for implementing social media strategies as well as stimulating future social media research for entrepreneurship.

Keywords: Social Media Strategic Capability, Innovation Performance, Distribution of Innovation, Entrepreneurial Orientation, Information Communication Technology, High-tech SMEs

JEL Classification Code: L26, M15, O33, O34.

1. Introduction

1 First Author, Ph.D. candidate at Mahasarakham Business School, Mahasarakham University, Thailand. Email: nirapae@gmail.com

In the present day, highly connected global marketplace, disruptions, and competitive intensity are becoming challenges for the long-term success and survival of an organization, hindering the ability to perform effectively. In coping with such pressures, organizations tend to implement and enhance their innovation capability and performance in order to survive (Camisón & Villar-López, 2012, 2014). If organizations dominate the capability to innovate, they can respond to environmental challenges quicker (Brown & Eisenhardt, 1995; Love & Roper, 2015). Besides, the distribution of innovative products may create new demand and promote an organization's growth. Therefore, the continuous innovation activity seems to be the key source of competitive advantage in the future.

² Corresponding Author or Second Author, Assistant Dean at Mahasarakham Business School, Mahasarakham University, Thailand. Email: atthaphon.m@mbs.msu.ac.th

³ Co-Author, Associate Professor at Mahasarakham Business School, Mahasarakham University, Thailand. Email: sujinda.p@mbs.msu.ac.th

⁴ Co-Author, Assistant Professor at Mahasarakham Business School, Mahasarakham University, Thailand. Email: achariya.i@mbs.msu.ac.th

[©] Copyright: The Author(s)

This is an Open Access article distributed under the terms of the Creative Commons
Attribution Non-Commercial License (http://Creativecommons.org/licenses/by-nc/4.0/)
which permits unrestricted noncommercial use, distribution, and reproduction in any
medium, provided the original work is properly cited.

Moreover, the distribution and expansion of the open innovation paradigm coincide with the pervading of social media (Muninger, Hammedi, & Mahr, 2019), influencing the organization to seek new insights and acquire knowledge from internal and external sources as well as collaborate with various stakeholders (Kazadi, Lievens, & Mahr, 2016). The advancement of social media has transformed various practices regarding innovation and entrepreneurship activities (Fischer & Reuber, 2011; Mumi, Obal, & Yang, 2019). Particularly for SMEs, social media has become a crucial tool in identifying new opportunities (Mumi, 2020), enhancing the effective entrepreneurial process. Beyond simply opening new opportunities, social media has wider significance for value creation and value acquisition (Nambisan, Wright, & Feldman, 2019) and supports continuous innovation (Ye & Kankanhalli, 2018). This is the driving force for organizations to use social media as their innovation-related strategies, particularly for SMEs when adapting to the rapid growth.

Despite the importance of social media and innovation, the literature still lacks a better understanding regarding the link of innovation performance based on social media (e.g., Muninger et al., 2019; Nguyen, Yu, Melewar, & Chen, 2015; Olanrewaju, Hossain, Whiteside, & Mercieca, 2020). Particularly, the mechanisms regarding social media strategic capability that may impact innovation performance remain unexplored (Kastelle & Ohr, 2013). Therefore, the current study has the determination to fill this gap by providing the better understanding on how organizations could leverage social media strategic capability in enhancing innovation performance in the context of SMEs. The strategy for innovation is essential for SMEs as they are in a competitive market and a rapidly changing business environment (Archer-Brown Kietzmann, 2018).

Besides, the literature still lacks studies that provide additional insights regarding the factors that may influence the relationship of high-tech SMEs' social media and innovation performance. Thus, this study discusses and proposes the factors associated with increases in social media strategic capability that may consider as the combined contributions toward innovation. In particular, the three dimensions of entrepreneurial orientation (EO) may enable SMEs to be more effective in leveraging increases within their social media strategic capability, leading to innovation performance. This is because innovativeness, proactiveness, and risk-taking inherently indicate a proclivity for exploring with and exploiting new applications. Moreover, various dimensions of EO have been argued and manifested to enhance entrepreneurial activities, strategic decisions, and performance (Covin & Slevin, 1989; Wiklund & Shepherd, 2003, 2005).

Drawing from a social capital perspective, this study

examines antecedents of innovation performance for SMEs. More specifically, we argue that social media strategic capability can be a predictor for innovation performance. Burt's (1997) view of social capital theory is used as the theoretical foundation in this study because the diversity of particular benefits from the knowledge and information flow connected within social networks can lead to innovation performance.

Hence, this investigation aims to identify the roles of social media strategic capability on innovation performance in the context of high-tech SMEs and examines the moderating role of three dimensions of EO. This study answers the following research questions: 'Does social media strategic capability influence innovation performance?' and 'To what extent do innovativeness, proactiveness, and risk-taking moderate the relationship between social media strategic capability and innovation performance?'

The findings of this study expand the theoretical contributions to the current understanding of social capital theory (e.g., Adler & Kwon, 2002; Burt, 1997) by providing empirical support for the relationship between social media strategic capability and innovation performance. More specifically, the results also extend the increasing body of literature on the determinants of innovation performance (Atuahene-Gima, 2005). Our findings complement to greater clarity of the moderator role three dimensions of EO. Moreover, the results of this study offer important managerial contribution by supporting social media for SMEs in fostering interactive communication and knowledge acquisition which thereby improve innovation performance.

2. Literature Review

2.1. Social Capital Theory

The concept of social capital theory proves to be a powerful determinant to illustrate actors' relative success (Adler & Kwon, 2002). A growing number of scholars have appealed the concept of social capital in searching for answers to a broadening extend of questions being encountered in their fields (Adler & Kwon, 2002; Andriani & Christoforou, 2016). The important evidence of social capital demonstrates that social networks have value; for example, social media gives rise to norms of reciprocity (Smith, Giraud-Carrier, & Purser, 2009). Hence, actors can benefit from their social capital (Burt, 1997). Particularly, the related social network actors may benefit from cooperation involving information exchange, which may increase the potential for innovation (Lundberg & Andresen, 2012).

2.2. Social Media Strategic Capability and Innovation Performance

Damanpour (1991) reports that innovation leads to new productivity, services, and procedure. Many scholars indicate that innovation has the authority to vary current markets and develop new markets as well as transform or offer completely novel technological (Abetti, 2000). Furthermore, it has been considered the capability to develop new products (Audretsch, Kuratko, & Link, 2016), which is an important choice for improving long-term competitiveness (Liu, Hu, & Kang, 2021). From these points of view, innovation can be seen as the essential element or new to the organization and create a competitive advantage.

In numerous studies, innovation patterns have been shown due to interactive relationships between stakeholders, from investors, managers to customers (Laursen & Salter, 2006; Miqdad & Oktaviani, 2021). Social media appear to be the comprehensive tools for creating or sharing the information offered by the large network in facilitating connections at any time (Linders, 2012). It also affords access to others' resources and ideas (Leonardi & Vaast, 2017) and enhances firm innovation (Lin, Li, & Wang, 2017). Hence, it is suggested that social media may contribute to innovation performance.

With the advancement of the internet, users' access to platforms is considerably improved (Kim, 2021). Likewise, the advent of social media is deployed to enable cocreation with external stakeholders more effectively. Previous studies found that social media platforms affect current and target customers (Hanna, Rohm, & Crittenden, 2011). Social media can be the influential and important platforms for enabling innovation success and decreasing risks of new product or service offerings (Parida, Westerberg, & Frishammar, 2012). Moreover, Braojos-Gomez, Benitez-Amado, and Llorens-Montes (2015) indicate that organizations should implement social media since their important competitors already do so.

A recent study demonstrates that social media positively impacts users (Yasa, Rahmayanti, Witarsana, Andika, Muna, Sugianingrat, & Martaleni, 2021). Furthermore, Naeem (2020) indicates that social media may enhance effective communication and foster knowledge sharing. Bhimani, Mention, and Barlatier (2019) concluded that social media is increasingly leveraged as the tools to deal with information from both internal and external organizations in the innovation process. In this respect, to respond to the rapidly changing market needs (Teece, 2018).

As aforementioned, social media seems to be the important tool enabling greater innovation performance and success, which is particularly advantageous for SMEs

as their limited size and greater nimbleness. Moreover, according to the social capital perspective, which emphasizes a diversity of specific benefits generated from the information flow, their proficiency in assembling extramural resources, and cooperation are involved with social networks. Social media may enhance innovation performance as a consequence of the value arising from social networks. High-tech SMEs can leverage social media to continuously develop relationships from search, explore, and gather information inside and outside to advance innovation performance. Therefore, we believe that social media strategic capabilities influence innovation performance as proposed in our first hypothesis.

Hypothesis 1. Social media strategic capability is positively related to innovation performance.

2.3. Moderating Role of Entrepreneurial Orientation

Entrepreneurial orientation (EO) has become one of the key concepts in entrepreneurship studies (Covin, Green, & Slevin, 2006) and has been extensively acknowledged as the way of promoting innovation and performance (Resnick, Cheng, Simpson, & Lourenço, 2016). According to Miller (1983), three main dimensions of EO is (1) innovativeness, (2) proactiveness, and (3) risk-taking. However, each dimension of EO may vary independently (Lumpkin & Dess, 1996) and have different moderating effects (Richard, Barnett, Dwyer, & Chadwick, 2004) as follows:

For the moderating effect of innovativeness, innovativeness reflects the predisposition of firms that promote new ideas, newness, experimentation, and new solutions to seek a competitive advantage (Lumpkin & Dess, 1996). Meanwhile, it represents a firm's readiness to encourage technological leadership and new product development (Miller, 1983). In this condition, social media may operate well in firms with an innovativeness orientation.

Furthermore, the firm's propensity to acquire, integrate, and exploit knowledge from social media to align with an organization's strategic directions, through shared perceptions and high-quality communication, may lead to innovation performance. Thus, this study expects the combination of an innovative strategic posture and high social media strategic capability levels to positively impact innovation performance.

When considering the moderating effects of proactiveness and risk-taking, proactiveness reflects the taking initiative by seeking new opportunities, forward-looking view of a firm by the launch of new products and services that hope to be ahead of the competition (Lumpkin

& Dess, 1996), and reflecting a firm's tendency to introduce new products and technologies before their competitors (Miller, 1983). Therefore, the proactiveness helps firm in taking the advantage regarding new opportunities (Chen, Wang, Nevo, Benitez-Amado, & Kou, 2015). On the other hand, risk-taking demonstrates a firm's willingness to take business-related changes in the face of uncertain environments (Covin & Slevin, 1989). Similarly, it is connected with a firm's propensity for bold, high-risk projects that increase its strategic potential of exploiting potential opportunities (Miller, 1983). Strategic emphasizing proactiveness and risk-taking indicates that management groups will need high levels of interpersonal communication, which make quick decisions and compete aggressively in the face of uncertain situations (Richard et al., 2004). In addition, social media can help companies regarding the urgent communication especially during the crisis (Lewis, Kaufman, Gonzalez, Wimmer, & Christakis, 2008).

The prior study highlighted innovativeness and proactiveness as the driver of social media strategic capability for leveraging innovative ideas, learning about the dynamic environment, increasing their agility, and managing organizational complexity (Bughin, Byers, & Chui, 2011). For example, in the rapidly changing environment, the innovativeness, and proactiveness of the organizations have led organizations both large and small to use social media to share knowledge that improved innovation performance. It reflects a predisposition regarding exploring and leverage new applications for innovation performance (Muninger et al., 2019). Besides, the contribution of social media to innovation performance can be regarded as crucial in high-tech SMEs.

Additionally, with higher levels of innovativeness, proactiveness, and risk-taking, SMEs improve performance by strengthening their information utilization efforts (Keh, Nguyen, & Ng, 2007). Thus, three dimensions of EO may enable SMEs to transform their social media strategic capability into greater influence toward innovation performance by stimulating the pursuit of new knowledge and opportunities from social media strategic capability and enhancing the ability of SMEs. Therefore, we believe that the relationship between social media strategic capability and innovation performance for SMEs can be strengthened by innovativeness, proactiveness, and risk-taking, as proposed in the next hypothesis.

Hypothesis 2a-2c. Three dimensions of EO (innovativeness, proactiveness, and risk-taking) positively moderate the relationship between social media strategic capability and innovation performance.

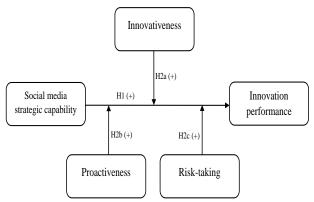


Figure 1: Conceptual Frameworks

3. Research Methods and Materials

3.1. Sample and Data Collection

This study used a quantitative approach. Data for the study is based on the data from 221 small and medium-sized enterprises in the sector of information and communication technology (ICT) from the Department of Business Development, Ministry of Commerce, Thailand. The features of this high-tech business have involved innovation technology and new creation, which requires knowledge development for work as well as new ways of working to drive greater productivity. The key informants are the chief executive officers (CEO), managing directors, IT managers, or the persons in charge of high levels.

The survey was managed and issued using online and mailed questionnaires to 1,220 potential respondents. Before the surveys were mailed, the informants were contacted by telephone in order to solicit their voluntary participation and assess whether participants possessed the requisite knowledge. Moreover, for the confidential consideration, the respondents were informed that all individual responses would be kept entirely confidential, and no information would be revealed to any outside party without permission from the respondent. Thus, the final sample in this study includes 221 SMEs. Anderson and Gerbing (1988) suggest that 150 sample size is sufficient for analysis using structural equation statistics, or larger would be preferable. Therefore, the 221 sample size of this study is accepted as the sample size for confirmatory factor analysis as well as the structural equation modelling.

3.2. Measurement

This study relies on the existing scales that have bee n used in prior studies to operationalize and investigate the relationships between constructs proposed in this study.

Innovation performance: the dependent variable of the study was measured via a five-item scale adapted from Oke, Walumbwa, and Myers (2012). These items reflect innovation performance, for example, developing new products, perceived innovation of customer, the effectiveness of business, and the number of innovations when comparing competitors and the duration it takes between the conception of innovation and into the marketplace when compared the industry average. The items were measured using a seven-point Likert scale (1 = strongly disagree to 7 = strongly agree).

Social media strategic capability: this study measured social media strategic capability using the four items according to the study of Nguyen et al. (2015). Social media strategic capability reflects an SME's strategic decisions as to the ability to use social media to future competitive, leverage social media to quickly, leaders have entrepreneurship characteristics on social media, and integrate employee knowledge via social media. All variables were measured on a six-point Likert scale, where 1 was determined for 'strongly disagree,' ranging to 6 for 'strongly agree.'

Entrepreneurial orientation: we measured dimensions of EO via a nine-item scale adapted from Miller (1983) and Covin and Slevin (1989), which aims to assess three dimensions of firm-level EO. First, innovativeness has three items that reflect a firm's proclivity to support R&D, technological leadership and innovation, and new products or services. Second, proactiveness, three items refer to its proclivity to take the posture of anticipation when initiating with competitors, introduce new products or services before competitors, and adopt 'undo the competitors' posture. Third, there are three items in risk-taking which reflect a firm's proclivity for high-risk projects, bold, wide-ranging acts, and aggressive posture of exploiting potential opportunities. All of the items were measured on the sevenpoint Likert scale, ranging from 1 (strongly disagree) to 7 (strongly agree).

3.3. Control Variables

Firm age: the firm age was controlled because younger firms may seek more radical innovations than older firms (Rosen, 1991). Meanwhile, firm age may also contribute to inertia, which can stifle innovation (Kelly & Amburgey, 1991). Thus, this study measured firm age by organization's length of operation, which is defined as the period of time the organization had been in existence or operation.

Firm size: the firm's size was controlled in this study because some researchers suggest that larger firms will be more skillful and will have more strategic autonomy about innovation compared to smaller and newer firms (Duijsters & Hagedoorn, 2002), as well as to be more active in utilizing resources to achieve the firm's goals than smaller firms (Suwannarat, 2016). Hence, this study measured organization size by using the number of employees.

3.4. Common Method Bias

Because of the cross-sectional research design and self-reported data collection, this study could be susceptible to common methods bias (CMB). The researchers followed the recommendations suggested by Podsakoff, MacKenzie, Lee, and Podsakoff (2003) to reconcile with the common method bias issue. Specifically, measuring with different anchors and promised respondent anonymity was employed. Moreover, this study also assessed CMB using Harman's single-factor test (Podsakoff & Organ, 1986). The results exhibited that the first component was explained as 48 % of the total variance and this variance was less than 50%. Therefore, these findings show there was no clear evidence of CMB.

3.5. Demographic Profile and Business Profile

The participant's characteristics of 221 respondents were as follows. The majority (57.9%) of respondents were male. The ages ranged from 41 to 50 years old (40.7%), working experience was more than 10 years (61.5%). In addition, the time operated business ranged between 6 years to 10 years (23.1%). The majority of firm respondents had less than 10 employees (43.0%) with an operating capital of less than 159,500 US dollars (56.1%). Besides, average revenues per year, most respondents identified their revenues as less than 319,000 US dollars (51.6%).

3.6. Statistical Techniques

Structural equation model (SEM) analysis was used to test the relationships between the constructs and determine the model's predictive power. Using confirmatory factor analysis (CFA) to see the suitability of constructs in this study to the model fit test. Besides, the tests were also proceeding to evaluation the path on the theoretical framework proposed in this study.

4. Results and Discussion

4.1. Confirmatory Factor Analysis (CFA)

The criteria of CFA to be considered in reducing an item or construct consisted of insisting that the standardized factor loading should be higher than the 0.50

cut-off (Costello & Osborne, 2005). Thus, the result of CFA for all variables suggests that this measurement model fits the data. The results are as shown in Table 1.

Table 1: Comparison of Goodness-of-Fit Index of Proposed Model

MOGGI				
Goodness-of-Fit Indices	The Cut-Off Point	Proposed Model	Description	
CMIN/DF (χ2/df)	< 5.00	1.825	Good fit	
GFI	> 0.90	0.902	Acceptable	
NFI	> 0.90	0.918	Acceptable	
CFI	> 0.90	0.960	Good fit	
IFI	> 0.90	0.961	Good fit	
RMSEA	< 0.80	0.061	Acceptable	

Note: Cut-off criteria for CFA by Diamantopoulos, Siguaw, and Siguaw (2000)

4.2. Measurement Validation

First, before examining the hypothesized structural model, the data of this study were validated and passed the convergent and discriminant validity tests through various analyses. As a result, all the constructs reveal the adequate value of the average variance extracted (AVE) and pass the Fornell and Larcker (1981)'s method for discriminant validity. Besides, the construct validity of the data in the questionnaire was further examined using composite reliability (CR). CR and AVE were calculated after calculating the value of standardized regression weight. Thus, the value of standardized loading of all indicators ranged from 0.587 to 0.918, showing that all variables had factor loadings of higher than 0.5 (Costello & Osborne, 2005), and were highly significant (p < .001).

Table 2: Factor Loading, CR, AVE and Cronbach's Alpha

Items	Factor Loadings C.R.		AVE	Cronbach's Alpha (α)
Innovation Performance (INNP): INNP1 INNP2 INNP3 INNP4 INNP5	0.587 0.656 0.695 0.852 0.760	0.838	0.513	0.871
Social Media Strategic Capability (SMSC): SMSC1 SMSC2 SMSC3 SMSC4	0.875 0.831 0.872 0.792	0.908	0.712	0.895

Table 2: (Cont.)

Items	Factor Loadings	C.R.	AVE	Cronbach's Alpha (α)
Entrepreneurial Orientation: Innovativeness (INNO) INNO1 INNO2 INNO3	0.686 0.918 0.865	0.867	0.687	0.859
Proactiveness (PROA) PROA1 PROA2 PROA3	0.827 0.847 0.727	0.844	0.644	0.808
Risk-Taking (RISK) RISK1 RISK2 RISK3	0.749 0.716 0.713	0.770	0.528	0.758

Second, CR ranged from 0.770 to 0.908, which was above the recommended cut-off value of 0.70 (Hair, Black, Babin, Anderson, & Tatham, 2010). The convergent validity was tested by inspecting AVE. The values of AVE ranged from 0.513 to 0.712, which exceeded the suggested 0.50 cut-off value and was consistent with the suggestion of Hair et al. (2010). Thus, all constructs had passed the acceptable threshold, as demonstrated in Table 2.

Finally, the Fornell and Larcker (1981) criteria were used to evaluate the discriminant validity of the measures, comparing whether the square root of AVE for each construct was higher than all correlations. The results satisfied this requirement. The highest correlation was between proactiveness and innovativeness (r=0.699), which was less than the square root of the AVE for proactiveness (0.802) and innovativeness (0.829). As displayed in Table 3.

Table 3: Descriptive Statistics, Correlations Matrix and Square Root of AVF

Variables	(1)	(2)	(3)	(4)	(5)
Mean	5.048	5.306	5.150	4.813	5.600
S.D.	0.957	0.972	1.231	1.283	0.982
(1) Social Media Strategic Capability	.844ª				
(2) Innovation Performance	.581**	.716ª			
(3) Innovativeness	.600**	.569**	.829ª		
(4) Proactiveness	.531**	.649**	.699**	.802ª	
(5) Risk-Taking	.499**	.517**	.591**	.653**	.726ª

Note: "Correlation is significant at the 0.01 level (2-tailed) a Italic diagonal values are the square root of AVE.

4.3. Multicollinearity

To confirm no multicollinearity problem, the variance inflation factors (VIFs) and tolerances were accessed. The results show that VIFs values of indicators ranged between 1.66 and 2.40, and tolerances values ranged between 0.42 and 0.60. Thus, all variables were under the acceptable threshold levels (VIF < 3.3, tolerance > 0.20) recommended by Hair, Ringle, and Sarstedt (2011), which revealed that multicollinearity is not a problem in this study.

4.4. Structural Model

Hypothesis 1 argues the relationship between social media strategic capability and innovation performance. The results show that social media strategic capability has a significant positive effect on innovation performance (β = 0.616; t = 7.583; p < 0.001; R2 = 0.423). Thus, hypothesis 1 is supported. Regarding control variables, the results show the nonsignificant effects of age (β = 0.007; t = 0.108; ns.) and size (β = 0.116; t = 1.762; ns.).

Table 4: Results from Structural Equation Modeling

Table II research from Strattara Equation Medeling					
Hypothesis	β	S.E.	t- value	p- value	Results
H1: Social Media Strategic Capability → Innovation Performance	0.616	0.070	7.583	0.000***	Supported
H2a:Innovativeness (x) Social Media Strategic Capability → Innovation Performance	0.163	0.048	2.843	0.004**	Supported
H2b:Proactiveness (x) Social Media Strategic Capability → Innovation Performance	0.138	0.030	2.572	0.010*	Supported
H2c: Risk-Taking (x) Social Media Strategic Capability → Innovation Performance	0.143	0.031	2.448	0.014*	Supported

Note: is significant level at 0.05, is significant level at 0.01, is significant level at 0.001.

Regarding the investigation of the moderation impact, the results manifest that innovativeness, proactiveness, and risk-taking positively moderate the influence of social media strategic capability on innovation performance (β = 0.163, p-value < 0.05; β = 0.138, p-value < 0.05; β = 0.143, p-value < 0.05) respectively. Therefore, hypothesis 2a, 2b, and 2c are supported. Thus, the results are shown in Table 4.

4.5. Discussion

The results show the positive magnitude of social media strategic capability that influences innovation performance for High-Tech SMEs. This is consistent with the findings of De Oliveira, Indulska, Steen, and Verreynne (2020), which revealed that social media positively relates to innovation performance. Furthermore, it is also a platform that favors innovation, decreases risks in new product offerings (Parida et al., 2012), and enhances firm innovation (Lin et al., 2017). Moreover, this study exhibits that three dimensions of entrepreneurial orientation significantly affect the relationship between social media strategic capability and innovation performance. This finding is consistent with previous research showing that entrepreneurial orientation drives firms to social media strategic capacities in order to increase their agility and deal with organizational complexity (Bughin et al., 2011). other words, the fast-changing environment, entrepreneurial orientation has led firms to use social media to share upcoming designs that lead to innovation performance. This is because innovativeness, proactiveness, and risk-taking inherently reflect a tendency to explore and use new applications like social media for innovation.

4.5.1. Theoretical Contributions

The study makes three important contributions to the literature as follows:

First, this study extends the understanding of social capital theory (Adler & Kwon, 2002) by demonstrating evident support for social media strategic capability as a type of valuable resource. Specifically, it's one of the most valuable resources for data-driven innovation (Bhimani et al., 2019) and facilitates connectivity (Linders, 2012). Since innovation is a high-risk and resource-consuming activity, improving information acquisition via social media networks allowing SMEs to access others' resources and concepts (Leonardi & Vaast, 2017). Moreover, these SMEs gain increased information from their reciprocal relationships arising from social networks and increase social capital, generating innovation performance.

Second, this study provided additional evidence about the links between social media strategic capability as a new set of antecedents for innovation performance (Olanrewaju et al., 2020). It is a new phenomenon for SME activities beyond marketing (Benitez, Castillo, Llorens, & Braojos, 2018). Besides, this finding extends the social media research in entrepreneurship (Fischer & Reuber, 2011).

Finally, although prior studies have provided evidence that EO positively impacts innovation or the view that other variables moderate the relationship between EO and innovation (Arzubiaga, Kotlar, De Massis, Maseda, &

Iturralde, 2018), to date, few studies have explored dimensions of EO as a moderating influence on firm outcomes. Yet, this study provides empirical evidence supporting that the three dimensions of EO can also moderate the relationship between social media strategic capability and innovation performance, especially for SMEs. This is because innovativeness is featured by technological leadership and the creation of new things. On the other hand, proactiveness is concerned with anticipation and creating future demand to introduce new products before competitors, and risk-taking reflects the tendency to engage in bold and high-risk (Miller, 1983). Therefore, when it increases, seeking to absorb relevant knowledge will increase promptly (Kreiser, 2011; Tseng, 2013). Moreover, it may also assist SMEs in overcoming geographic and time difficulties because most social media platforms are worldwide (Lewis et al., 2008). Accordingly, the findings of this study contribute to greater clarity of moderator role three dimensions of EO.

4.5.2. Managerial Contributions

The findings offer important managerial contributions to inform managers that should strengthen the social media strategic capability of SMEs because it may increase SMEs' potentiality to identify opportunities that lead to enhancing innovation performance. Besides, it may help SMEs to acquire, integrate, communicate, share, and apply current knowledge and new knowledge that will lead to innovation performance. Particularly, it helps sort, filter, and choose which knowledge is important or redundant.

Furthermore, to achieve innovation performance, managers should be aware of innovativeness, proactiveness, and risk-taking, as SMEs need to be successful in extremely competitive business environments (Monteiro, Soares, & Rua, 2017). In other words, managers should emphasize innovativeness to pursue creativity and experimentation, which could drive the effects of social media strategic capability as a combining source of ideas to developing new products and services. Likewise, proactiveness allows managers to anticipate and act in advance to identify and assemble new knowledge when dealing with social media-related decisions. Moreover, risk-taking can generate synergies and leverage social media capability for making quick decisions and aggressively implementing bold and risky strategies (Richard et al., 2004) that can improve innovation performance. Thus, managers should realize three dimensions of EO in combining with social media strategic capability to improve innovation performance.

4.5.3. Limitations and Future Research

First, this study used a quantitative approach, which may overlook questions such as 'how' and 'why.' Thus,

qualitative studies on the same topic can be a great addition in this regard. Besides, qualitative research methods such as in-depth interviews, focus groups, or case studies along with quantitative methods can be used to confirm the results and attain a clearer picture of social media strategic capability in this sector.

Second, this study focused on a sample of 221 high-tech SMEs, while the proposed theory may be varied from business to business. Future studies should attempt to test this conceptual model in other businesses or in other contexts. The role of social media strategic capability may be different for entrepreneurial SMEs and should be looking to moderating or mediating variables on this relationship in SME setting.

Finally, the survey data are self-reported, leading to common method variance (CMV) (Podsakoff et al., 2003). Thus, future studies should prevent potential CMV by collecting data from multiple sources at different time points (Popaitoon & Popaitoon, 2016). For example, using archival data, multiple respondents and can gather additional information afterward.

5. Conclusions

This study demonstrates an attempt to investigate seldom researched aspects, for instance, the role of social media strategic capability and the distribution on innovation performance in the context of high-tech SMEs. Moreover, this study provides evidence that three dimensions of entrepreneurial orientation play crucial roles as a moderating factor. Drawing from the results, it is highly suggestive that entrepreneurial SMEs can also enhance their innovation performance through social media distribution contingent on entrepreneurial orientation. Finally, this study is among the limited research in examining the effects of social media on innovation, especially in the context of high-tech SMEs. The results can stimulate further discussion regarding this domain of study.

References

Abetti, P. A. (2000). Critical success factors for radical technological innovation: A five case study. *Creativity and Innovation Management*, 9(4), 208-221.

Adler, P. S., & Kwon, S. W. (2002). Social capital: Prospects for a new concept. *Academy of Management Review*, 27(1), 17-40.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411-423.

Andriani, L., & Christoforou, A. (2016). Social capital: A roadmap of theoretical and empirical contributions and limitations. *Journal of Economic Issues*, 50(1), 4-22.

- Archer-Brown, C., & Kietzmann, J. (2018). Strategic knowledge management and enterprise social media. *Journal of Knowledge Management*, 22(6), 1288-1309.
- Arzubiaga, U., Kotlar, J., De Massis, A., Maseda, A., & Iturralde, T. (2018). Entrepreneurial orientation and innovation in family SMEs: Unveiling the (actual) impact of the Board of Directors. *Journal of Business Venturing*, 33(4), 455–469.
- Atuahene-Gima, K. (2005). Resolving the capability–rigidity paradox in new product innovation. *Journal of Marketing*, 69(4), 61-83.
- Audretsch, D. B., Kuratko, D. F., & Link, A. N. (2016). Dynamic entrepreneurship and technology-based innovation. *Journal of Evolutionary Economics*, 26(3), 603-620.
- Benitez, J., Castillo, A. Llorens, J., & Braojos, J. (2018). IT-enabled knowledge ambidexterity and innovation performance in small US firms: The moderator role of social media capability. *Information and Management*, 55(1), 131-143.
- Bhimani, H., Mention, A. L., & Barlatier, P. J. (2019). Social media and innovation: A systematic literature review and future research directions. *Technological Forecasting and Social Change*, 144, 251-269.
- Braojos-Gomez, J., Benitez-Amado, J., & Llorens-Montes, F. J. (2015). How do small firms learn to develop a social media competence?. *International Journal of Information Management*, 35(4), 443-458.
- Brown, S. L., & Eisenhardt, K. M. (1995). Product development: Past research, present findings, and future directions. *Academy of Management Review*, 20(2), 343-378.
- Bughin, J., Byers, A. H., & Chui, M. (2011). How social technologies are extending the organization. *McKinsey Quarterly*, 20(11), 1-10.
- Burt, R. S. (1997). The contingent value of social capital. *Administrative Science Quarterly*, 42(2), 339-365.
- Camisón, C., & Villar-López, A. (2012). On how firms located in an industrial district profit from knowledge spillovers: Adoption of an organic structure and innovation capabilities. *British Journal of Management*, 23(3), 361-382.
- Camisón, C., & Villar-López, A. (2014). Organizational innovation as an enabler of technological innovation capabilities and firm performance. *Journal of Business Research*, 67(1), 2891-2902.
- Chen, Y., Wang, Y., Nevo, S., Benitez-Amado, J., & Kou, G. (2015). IT capabilities and product innovation performance: The roles of corporate entrepreneurship and competitive intensity. *Information and Management*, 52(6), 643-657.
- Costello, A. B., & Osborne, J. (2005). Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis. *Practical Assessment, Research, and Evaluation*, 10(1), 1-9.
- Covin, J. G., & Slevin, D. P. (1989). Strategic management of small firms in hostile and benign environments. *Strategic Management Journal*, 10(1), 75-87.
- Covin, J. G., Green, K. M., & Slevin, D. P. (2006). Strategic process effects on the entrepreneurial orientation-sales growth rate relationship. *Entrepreneurship Theory and Practice*, 30, 57-81.
- Damanpour, F. (1991). Organizational innovation: A metaanalysis of effects of determinants and moderators. Academy of Management Journal, 34(3), 555-590.

- De Oliveira, R. T., Indulska, M., Steen, J., & Verreynne, M. L. (2020). Towards a framework for innovation in retailing through social media. *Journal of Retailing and Consumer Services*, 54, 101772.
- Diamantopoulos, A., Siguaw, J. A., & Siguaw, J. A. (2000). Introducing LISREL: A guide for the uninitiated. London: SAGE Publications, Inc.
- Duijsters, G. M., & Hagedoorn, J. (2002). External appropriation of innovative capabilities: The choice between strategic partnering and mergers and acquisitions. *Journal of Management Studies*, 39(2), 167-188.
- Fischer, E., & Reuber, A. R. (2011). Social interaction via new social media: (How) can interactions on Twitter affect effectual thinking and behavior? *Journal of Business Venturing*, 26(1), 1-18.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39-50
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2010). *Multivariate data analysis*. New Jersey: Prentice Hall.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139-152.
- Hanna, R., Rohm, A., & Crittenden, V. L. (2011). We're all connected: The power of the social media ecosystem. *Business Horizons*, 54(3), 265-273.
- Kastelle, T., & Ohr, R. (2013). The role of social media for innovation. In N. Pfeffermann, T. Minshall & L. Mortara (Eds.), Strategy and Communication for Innovation (pp. 427-436), Berlin: Springer.
- Kazadi, K., Lievens, A., & Mahr, D. (2016). Stakeholder cocreation during the innovation process: Identifying capabilities for knowledge creation among multiple stakeholders. *Journal of Business Research*, 69(2), 525-540.
- Keh, H. T., Nguyen, T. T. M., & Ng, H. P. (2007). The effects of entrepreneurial orientation and marketing information on the performance of SMEs. *Journal of Business Venturing*, 22(4), 592-611.
- Kelly, D., & Amburgey, T. L. (1991). Organizational inertia and momentum: A dynamic model of strategic change. Academy of Management Journal, 34(3), 591-612.
- Kim, S. H. (2021). A study on the distribution platform business based on Shinsegae group. *Journal of Distribution Science*, 19(4), 15-24.
- Kreiser, P. M. (2011). Entrepreneurial orientation and organizational learning: The impact of network range and network closure. *Entrepreneurship Theory and Practice*, 35(5), 1025-1050.
- Laursen, K., & Salter, A. (2006). Open for innovation: The role of openness in explaining innovation performance among UK manufacturing firms. *Strategic Management Journal*, 27(2), 131-150.
- Leonardi, P. M., & Vaast, E. (2017). Social media and their affordances for organizing: A review and agenda for research. *Academy of Management Annals*, 11(1), 150-188.
- Lewis, K., Kaufman, J., Gonzalez, M., Wimmer, A., & Christakis, N. (2008). Tastes, ties, and time: A new social network dataset using facebook.com. *Social Networks*, 30(4), 330-342.

- Lin, X., Li, Y., & Wang, X. (2017). Social commerce research: Definition, research themes and the trends. *International Journal of Information Management*, *37*(3), 190-201.
- Linders, D. (2012). From e-government to we-government: Defining a typology for citizen coproduction in the age of social media. Government Information Quarterly, 29(4), 446-454.
- Liu, S. M., Hu, R., & Kang, T. W. (2021). The effects of absorptive capability and innovative culture on innovation performance: Evidence from Chinese high-tech firms. *The Journal of Asian Finance, Economics and Business*, 8(3), 1153-1162.
- Love, J. H., & Roper, S. (2015). SME innovation, exporting and growth: A review of existing evidence. *International Small Business Journal*, 33(1), 28-48.
- Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. Academy of Management Review, 21(1), 135-172.
- Lundberg, H., & Andresen, E. (2012). Cooperation among companies, universities and local government in a Swedish context. *Industrial Marketing Management*, 41(3), 429-437.
- Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science*, 29(7), 770-791.
- Miqdad, M., & Oktaviani, S. A. (2021). The contribution of social media value to company's financial performance: Empirical evidence from Indonesiaric. The Journal of Asian Finance, Economics, and Business, 8(1), 305-315.
- Monteiro, A. P., Soares, A. M., & Rua, O. L. (2017). Linking intangible resources and export performance: The role of entrepreneurial orientation and dynamic capabilities. *Baltic Journal of Management*, 12(3), 329-347.
- Mumi, A. (2020). Effectual entrepreneur and the use of social media for opportunity recognition. In L. Schjoedt, M. E. Brännback, & A. L. Carsrud (Eds.), *Understanding Social Media and Entrepreneurship* (pp. 49-67), New York, NY: Springer International Publishing.
- Mumi, A., Obal, M., & Yang, Y. (2019). Investigating social media as a firm's signaling strategy through an IPO. Small Business Economics, 53(3), 631-645.
- Muninger, M. I., Hammedi, W., & Mahr, D. (2019). The value of social media for innovation: A capability perspective. *Journal* of Business Research, 95, 116-127.
- Naeem, M. (2020). Understanding the role of social media in organizational change implementation. *Management Research Review*, 43(9), 1097-1116.
- Nambisan, S., Wright, M., & Feldman, M. (2019). The digital transformation of innovation and entrepreneurship: Progress, challenges and key themes. *Research Policy*, 48(8), 103773.
- Nguyen, B., Yu, X., Melewar, T. C., & Chen, J. (2015). Brand innovation and social media: Knowledge acquisition from social media, market orientation, and the moderating role of social media strategic capability. *Industrial Marketing Management*, 51, 11-25.
- Oke, A., Walumbwa, F. O., & Myers, A. (2012). Innovation strategy, human resource policy, and firms' revenue growth: The roles of environmental uncertainty and innovation performance. *Decision Sciences*, 43(2), 273-302.
- Olanrewaju, A. S. T., Hossain, M. A., Whiteside, N., & Mercieca,

- P. (2020). Social media and entrepreneurship research: A literature review. *International Journal of Information Management*, 50, 90-110.
- Parida, V., Westerberg, M., & Frishammar, J. (2012). Inbound open innovation activities in high-tech SMEs: The impact on innovation performance. *Journal of Small Business Management*, 50(2), 283-309.
- Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of Management*, 12(4), 531-544.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879-903.
- Popaitoon, S., & Popaitoon, P. (2016). Motivation synergy, knowledge absorptive capacity and NPD project performance in multinational automobiles in Thailand. *The Journal of High Technology Management Research*, 27(2), 129-139.
- Resnick, S. M., Cheng, R., Simpson, M., & Lourenço, F. (2016). Marketing in SMEs: A 4Ps self-branding model. *International Journal of Entrepreneurial Behavior and Research*, 22(1), 155-174.
- Richard, O. C., Barnett, T., Dwyer, S., & Chadwick, K. (2004). Cultural diversity in management, firm performance, and the moderating role of entrepreneurial orientation dimensions. Academy of Management Journal, 47(2), 255-266.
- Rosen, R. (1991). Research and development with asymmetric company sizes. The Rand Journal of Economics, 22(3), 411-429.
- Smith, M., Giraud-Carrier, C., & Purser, N. (2009). Implicit affinity networks and social capital. *Information Technology* and Management, 10(2-3), 123-134.
- Suwannarat, P. (2016). The study of export intermediary performance determinants. *Multinational Business Review*, 24(2), 123-143.
- Teece, D. J. (2018). Profiting from innovation in the digital economy: Enabling technologies, standards, and licensing models in the wireless world. *Research Policy*, 47(8), 1367-1387.
- Tseng, C. C. (2013). Connecting self-directed learning with entrepreneurial learning to entrepreneurial performance. *International Journal of Entrepreneurial Behavior and Research*, 19(4), 425-446.
- Wiklund, J., & Shepherd, D. (2003). Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium - sized businesses. *Strategic Management Journal*, 24(13), 1307-1314.
- Wiklund, J., & Shepherd, D. (2005). Entrepreneurial orientation and small business performance: A configurational approach. *Journal of Business Venturing*, 20(1), 71-91.
- Yasa, N. N. K., Rahmayanti, P. L. D., Witarsana, I., Andika, A. W., Muna, N., Sugianingrat, I. A. P. W., & Martaleni, M. (2021). Continuous usage intention of social media as an online information distribution channel. *Journal of Distribution Science*, 19(5), 49-60.
- Ye, H., & Kankanhalli, A. (2018). User service innovation on mobile phone platforms: Investigating impacts of lead userness, toolkit support, and design autonomy. MIS Quarterly, 42(1), 195-198.