



Social media adoption through product diversification and market diversification: The dynamic capabilities perspective

 Atthaphon Mumi^{1*}
 Teeraporn
Leemanonwarachai²

^{1,2}Maharakham Business School, Maharakham University, Thailand.

*Email: atthaphon.m@mbs.msu.ac.th

²Email: teeraporn.k@mbs.msu.ac.th



(+ Corresponding author)

ABSTRACT

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The literature highlights social media as an effective communication platform for firms to connect with potential customers. Although scholars have investigated various benefits of social media, limited studies have explored the antecedences of social media adoption for firms. Particularly, we lack an understanding of which firm strategies could affect social media adoption and how. Drawing on the dynamic capabilities perspective, this study utilizes logistic regression to analyze data from 1,392 public firms to investigate how particular strategies could influence social media adoption. The results indicate that a firm's market diversification strategies are a significant determinant of social media adoption, while product diversification strategies play a relatively less important role. A diversification strategy involving social media may be more favorable when entering new markets as opposed to launching new products. The findings of this study contribute to the existing research on social media and shed light on strategic implementations that lead to social media usage by firms.

Contribution/Originality: The findings of this study contribute to the growing stream of social media research, especially as it pertains to firm strategy. By shedding light on a previously unexplored area of strategy and social media, this study extends the dynamic capabilities framework to argue that a firm's social media-related decisions are influenced by its strategy.

1. INTRODUCTION

The topic of social media has received increasing attention from managers and scholars due to these platforms' mechanisms for enhancing people's interactions and connectivity. Also, social media has become a crucial venue for information sharing and media diffusion. The use of social media has created new ways of communication that influence business practices (Arrigo, 2018; Hanna, Rohm, & Crittenden, 2011). Specifically, social media is defined as the online platforms built on the technology of Web 2.0 that encourage the creation and exchange of information by individual users (Kaplan & Haenlein, 2010). The communication between people, communities, and/or organizations has substantially changed due to the advancement of social media. People can easily create, share, and exchange information in online communities to express their opinions and knowledge on various topics of interest. Therefore, social media is regarded as a crucial phenomenon in enhancing user-generated content, which empowers social communication. On social media, people can also build reputations and find career opportunities, and/or even earn monetary revenue (Tang, Gu, & Whinston, 2012). Thus, it has become the consensus that nowadays people and organizations utilize social media for various purposes.

Particularly for organizations, social media has become a significant tool in supporting business processes and operations (Hanna et al., 2011). Prior literature has shown that social media helps firms perform marketing activities such as increasing sales (Dewan & Ramaprasad, 2014; Gopinath, Chintagunta, & Venkataraman, 2013; Rui, Liu, & Whinston, 2013), building customer relationships (Laroche, Habibi, & Richard, 2013), and improving their brand image (Naylor, Lamberton, & West, 2012). Scholars in various disciplines, especially in marketing, have also emphasized certain social media phenomena such as the effects of online word of mouth (eWOM) (Kimmel & Kitchen, 2014). It is believed that for a marketing approach to be effective, what really matters is the communication between customers. Moreover, social media appear in the information and finance literature due to its beneficial effects on a firm's value and stock performance (Jiang, Chen, Nunamaker, & Zimbra, 2014; Luo, Zhang, & Duan, 2013; Schniederjans, Cao, & Schniederjans, 2013), as well as the initial public offering (IPO) phenomena (Mumi, Obal, & Yang, 2019). These effects have led to an increasing number of business activities that depend on the unique communicative functions available on social media.

Despite the importance of social media in both individual and organizational contexts, the research in this domain is still fragmented and lacks consensus on how and when organizations should implement social media. In the scholarly community, we still have a limited, not yet holistic, understanding of the behaviors involving social media (Alalwan, Rana, Dwivedi, & Algharabat, 2017). Although prior studies have made certain efforts to consolidate the research on social media (Alalwan et al., 2017; Kimmel & Kitchen, 2014; Ngai, Tao, & Moon, 2015; Ngammoh, Mumi, Popaitoon, & Issarapaibool, 2023) and that on the related topic of online word-of-mouth phenomena (King, Racherla, & Bush, 2014), we still know little about the foundations and motivations of such behaviors on social media. Therefore, this study aims to explore the antecedence of a firm's social media adoption through the dynamic capabilities perspective (Eisenhardt & Martin, 2000; Teece, Pisano, & Shuen, 1997). The dynamic capabilities perspective manifests how firms apply various strategies to achieve sustainable competitive advantages (Eisenhardt & Martin, 2000; Ngammoh et al., 2023). A firm's strategies may influence various activities, including social media adoption. We, therefore, propose that a firm's strategy influences its decision to use social media.

Based on a sample of 1,392 public firms, we provide empirical evidence that a firm's strategy is the determinant of social media adoption. More specifically, we found that a firm's market diversification strategy acts as the crucial factor in explaining social media adoption, while no effect was found for the product diversification strategy. The results of our research contribute to the dynamic capabilities theory and provide a better understanding of firms' decisions to implement social media. Furthermore, this study also contributes to the limited discussion of social media research in the literature. Regarding the organization of this paper, the following section discusses the theory and hypotheses, after which our research methodology is described. Next, we provide an overview of the results before ending with a discussion and conclusion.

2. THEORY AND HYPOTHESES

2.1. Social Media Adoption

Regarding the unique functions of social media that can enhance public opinion on the Internet, the concept of social media may have its origins in 1979, when Usenet was created (Kaplan & Haenlein, 2010). Usenet was a worldwide discussion system on which people could post public messages and was similar to the social media currently in use. However, social media as we know it today probably started about 25 years ago, when Bruce and Susan Abelson established "Open Diary," the social networking site for online diary writers in 1997 (Kaplan & Haenlein, 2010). One of the founders described Open Diary as the first website to bring online diary writers together in a community (Martinväita, 2016). The rapid growth of high-speed Internet over the following years brought social media into extensive use and resulted in the emergence of many social media platforms, such as Myspace (in 2003), Facebook (in 2004), and Twitter (in 2006).

The topic of social media has been widely explored by various researchers; an article search in Google Scholar yields more than 4 million results and Thomson Reuters's Web of Science about 50,000 results. The article "Users of the world, united! The challenges and opportunities of social media" by Kaplan and Haenlein (2010) has had the biggest impact on the social media research community, as it has been cited more than 9,000 times in other articles on Google Scholar and more than 1,700 times in Web of Science. Kaplan and Haenlein (2010) did an excellent job of clarifying and classifying social media. Their article distinguished social media by drawing a line between Web 2.0 and user-generated content (Kaplan & Haenlein, 2010). In addition, Kaplan and Haenlein provided the most cited definition of social media:

"Social media is a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content" (Kaplan & Haenlein, 2010).

This definition presents social media as platforms built by the utilization of both Web 2.0 and user-generated content. In other studies, the definition of social media emphasizes interactive social information; for instance:

"Social media are internet platforms used to disseminate information through social interaction that provides decentralized user level content, social interaction and public membership" (Schniederjans et al., 2013).

Yet other studies focus on the impact of information technology for organizational uses, for example:

"Social media are fundamentally changing the way we communicate, collaborate, consume, and create. They represent one of the most transformative impacts of information technology on business, both within and outside firm boundaries" (Aral, Dellarocas, & Godes, 2013).

While some studies may integrate social media functions by referring to particular groups of the researcher's interest, for example, social networking sites are defined as being utilized by individual consumers as follows:

"Social networking sites have emerged as important communication channels used by individual consumers to create content, distribute materials, share ideas, express opinions, and use information and knowledge" (Heinrichs, Lim, & Lim, 2011).

These definitions of social media may provide a better understanding of what social media are and their importance in many business-related disciplines. Social media is a topic of interest among managers and research scholars because of these platforms' ability to enhance people's interactions and connectivity. Communication between people, communities, and organizations has substantially changed due to advances in social media. People can easily create, share, and exchange information in online communities to express their opinions and knowledge on various topics of interest. Thus, social media platforms have become crucial for sharing user-generated content, a very powerful part of modern social communication. On social media, people can also build reputations, find career opportunities, and even earn commercial revenue (Tang et al., 2012). Thus, social media affects people's behaviors as well as their communications.

Organizations have also recognized social media as an opportunity for new business processes and operations (Hanna et al., 2011). Social media helps firms achieve marketing objectives such as sales (Dewan & Ramaprasad, 2014; Gopinath et al., 2013; Rui et al., 2013), building customer relationships (Laroche et al., 2013), and brand recognition (Naylor et al., 2012). Scholars in the marketing domain have emphasized the role of social media in the phenomenon of online word-of-mouth (eWOM) (Kimmel & Kitchen, 2014) when analyzing communication between customers. Social media also appears in the information systems and finance literature because of the advantages it offers when building a firm's value and stock performance (Jiang et al., 2014; Luo et al., 2013; Schniederjans et al., 2013). According to a recent review that explored the social media phenomenon in organizations (Leonardi & Vaast, 2017), social media has joined the crucial communication technologies used in the workplace.

2.2. The Dynamic Capabilities of a Firm

The dynamic capabilities (DC) perspective has emerged as both an extension of and a reaction against the inability of the resource-based view (RBV) to interpret the development and redevelopment of resources and capabilities to address rapidly changing environments. DC may be considered a source of competitive advantage (Teece et al., 1997). DC are processes that enable an organization to reconfigure its strategy and resources to achieve sustainable competitive advantages and superior performance in a rapidly changing environment (Eisenhardt & Martin, 2000; Ngammoh, Mumi, Popaitoon, & Issarapaibool, 2021). Therefore, firms that mostly operate in uncertain environments should embed DC in their decision-making, such as through social media adoption. Prior studies have emphasized the antecedents of decisions related to the DC of firms (Eriksson, 2014; Piening & Salge, 2015) as well as the decision to stimulate DC through social media performance (Marchand, Hennig-Thurau, & Flemming, 2021). Therefore, in this study, we focus on a firm's strategy, which is crucial to the decision-making process, especially regarding the firm's competitiveness and especially through social media adoption. More specifically, this study focuses on DC through the signal of diversification strategy and how this influences social media adoption.

2.3. Diversification Strategy

A diversification strategy is a firm-level strategic approach to enhance the competitive advantage in a highly competitive environment by applying the DC approach. Although the prior literature has discussed various diversification strategies, the two most common diversification strategies that are being explored in this study are product diversification and market diversification (Lee & Habte-Giorgis, 2004). A firm's product diversification strategy aims to leverage competitiveness by diversifying resources across product lines (Geringer, Tallman, & Olsen, 2000) in response to various and unique demands from potential customers. Firms with a product diversification strategy offer products or services in more than one industry or market; such diversification can be either related or unrelated (Palepu, 1985).

Prior studies have argued that a product diversification strategy within an industry is correlated with sales growth (Nobeoka & Cusumano, 1997) and an increase in market share (Kekre & Srinivasan, 1990). Accordingly, Lee and Habte-Giorgis (2004) provided evidence of a positive relationship between product diversification and firm performance. To be highly adaptive in the social media era, firms that focus on product diversification may emphasize social media as one of the tools for retrieving information regarding customer demand. Therefore, we hypothesize that a product diversification strategy may influence social media adoption as follows:

Hypothesis 1: A product diversification strategy is positively related to social media adoption.

Furthermore, to achieve diversification, a firm may also market its product in different geographic locations through a market diversification strategy (Dundas & Richardson, 1980). A market diversification strategy benefits a firm through economies of scale and scope for sustainability purposes (Hitt, Hoskisson, & Kim, 1997), such as the scale of production, marketing, research and development (R&D), and overall operations (Amit & Livnat, 1988). In addition, the market diversification strategy is argued to be one of the most important strategies for risk reduction and long-term achievement (Lee & Jang, 2007). Accordingly, previous studies support the positive effect of a firm's market diversification strategy on its performance (Geringer et al., 2000; Lee & Habte-Giorgis, 2004). Therefore, we believe that social media could enhance the success of market diversification, as it provides an effective way to reach potential customers in different markets. Put differently, firms with a market diversification strategy may be likely to use social media as it is perceived to be beneficial for firms.

Hypothesis 2: A market diversification strategy is positively related to social media adoption.

Figure 1 illustrates the research framework proposed in this study.

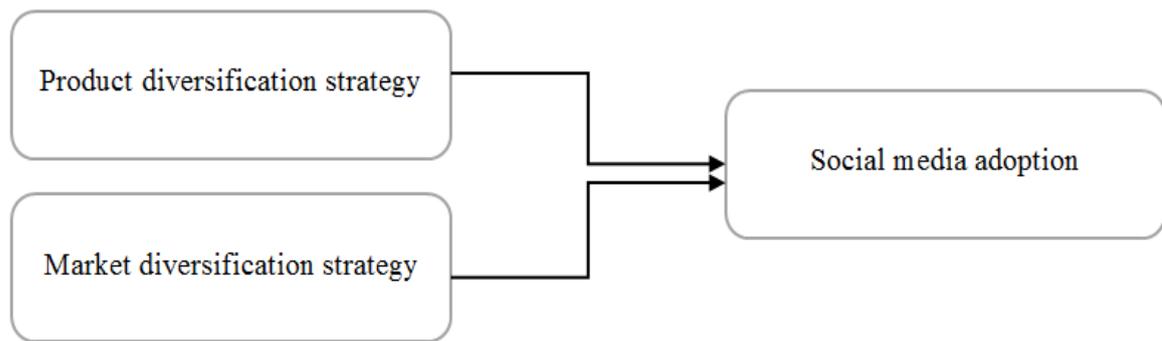


Figure 1. The framework proposed in this study.

3. METHODS

Based on data from the COMPUSTAT database, the observations used in this study comprised 1,392 public firms. Logistic regression was used as the primary analysis technique to test the hypothesized relationships. Social media adoption was operationalized following a prior study that collected binary data on whether or not a firm was active on social media (Miller & Tucker, 2013). In addition, social media data were manually retrieved from firms' official websites listed in the S&P COMPUSTAT database using the data-crawling technique. We created programming codes using Python to access each company's website and find out whether any social media accounts were listed. Relying on the parsimony approach, we focused in particular on the four most popular social media platforms for networking (Facebook and LinkedIn), microblogging (Twitter), and video sharing (YouTube) (Culnan, McHugh, & Zubillaga, 2010). Moreover, product and market diversification were computed using the entropy measure (Jacquemin & Berry, 1979). Regarding the confounding factors, we controlled for potential confounders by including firm age, size, industry (service or otherwise), U.S.-based, and the firm's total debt as our control variables in the analyses.

Regarding the analyses, logistic regression is appropriate for a dependent variable that is dichotomous – in this study, social media adoption (yes or no). According to Hilbe (2009), logistic regression is one of the dominant methods used to analyze binary data. It examines whether the independent variables predict the classification of cases into the two categories of the dependent variable – Yes or No (Menard, 2010). More specifically, it defines the probability of a specific outcome as a case divided by the probability of an outcome that is a non-case (Kleinbaum, Dietz, Gail, Klein, & Klein, 2002). In employing logistic regression, the independent variables can be continuous, categorical, or binary. In this study, our main independent variables (product diversification strategy and market diversification strategy) are continuous, as well as some of our control variables such as age, size, and total debt, while the U.S.-based and industry variables are binary.

4. RESULTS

Drawing on data from 1,392 public firms, Table 1 reveals the descriptive statistics for each variable included in this study. To highlight the crucial information, we discuss some of the data from Table 1 here to demonstrate its key descriptive statistics. Concerning social media adoption, the binary dependent variable, 56% of the 1,392 firms utilized at least one of the most popular social media platforms for business – Facebook, LinkedIn, Twitter, and YouTube.

The average age of the public firms included in these analyses was 13.5 years. Regarding the industry as a control variable, we controlled for the service sector versus other sectors as a binary variable. According to the descriptive results, 22.8% of the firms were categorized as in the service sector. In addition, 88.6% of the firms had their headquarters in the U.S. These results provide an overview of the characteristics of the dataset used in this study and serve as a guide to further interpretation.

Table 1. Descriptive statistics.

Variables	Mean	S.D.
SM_adoption	0.560	0.497
Age	13.569	9.381
Size	-0.416	2.387
Service	0.228	0.419
U.S.-based	0.886	0.317
Total debt	744.585	173.057
Product_divers	0.343	0.481
Market_divers	0.607	0.657

Note: S.D. = Standard deviation; SM_adoption = Social media adoption; Product_divers = Product diversification strategy; Market_divers = Market diversification strategy.

The correlations between each pair of variables are exhibited in Table 2. It reveals that there is a significant correlation between the independent variables and the dependent variable. Specifically, the correlation between product diversification strategy and social media adoption is statistically significant ($r = 0.054$, p -value < 0.05). Market diversification strategy and social media adoption are also significantly correlated ($r = 0.123$, p -value < 0.001). The results also indicate a larger effect of market diversification strategy than of product diversification strategy in influencing a firm's decision to implement social media in its business practices. As a consequence, these results initially support the arguments proposed within this study, highlighting the importance of different strategies in social media adoption. Regarding the control variables, the size, service, and U.S.-based variables are also significantly correlated with social media adoption (p -value < 0.05), indicating that when firms make the strategic decision to employ social media, these factors may be crucial determinants.

Table 2. Pearson's correlation matrix.

Variables	Sm_adoption	Age	Size	Service	U.S.-based	Total debt	Pro_diver	Mar_diver
SM_adoption	1							
Age	0.002	1						
Size	0.221***	0.213***	1					
Service	0.159***	-0.086**	0.129***	1				
U.S.-based	0.057*	0.012	-0.001	-0.016	1			
Total debt	-0.031	0.171***	0.278***	-0.030	-0.029	1		
Product_divers	0.054*	0.304***	0.381***	-0.026	-0.001	0.110***	1	
Market_divers	0.123***	0.293***	0.374***	0.019	-0.153***	0.089***	0.450***	1

Note: * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

SM_adoption = Social media adoption; Product_divers = Product diversification strategy; Market_divers = Market diversification strategy.

Table 3 displays the empirical results of the logistic regression to test the hypotheses. We regressed the binary variable of social media adoption on the control variables (Model 1) and our hypothesized independent variables (Model 2). Referring to the results of Model 1, it was found that firms in the U.S. used social media more than those outside the U.S., indicating that cultural as well as geographical factors may influence a firm's decision to use social media in their business activities. Moreover, the results also reveal that total debt negatively influences social media adoption, while firm size shows a positive result. These results support the resource-based view (Barney, 2001; Zahra, 2021) of how firms make strategic decisions based on their available resources. Firms in the service industry are also significantly more likely to apply social media in their organization than their counterparts, indicating that social media may be perceived as more beneficial for certain industries. The relationships between the independent variables and the dependent variable are exhibited in Model 2. The analyses show that a firm's market diversification strategy has a positive relationship with social media adoption ($\beta = 0.279$, p -value < 0.01), supporting hypothesis 2. The results provide empirical evidence that firms aiming to expand into different markets consider utilizing social media since it can be a marketing tool for reaching out to new customers quickly and maybe more efficiently. However, counter to our expectations, a firm's product diversification strategy has no

relationship with its social media adoption. We cannot find evidence to support hypothesis 1. The results of our analysis may indicate that when firms are focusing on product development, resources may be allocated to functions other than social media advertising.

Table 3. The results of logistic regression analysis of social media adoption.

Variables	(1)	(2)
	Model 1	Model 2
U.S.-based	0.379** (0.176)	0.472*** (0.181)
Total debt	-0.000*** (0.000)	-0.000*** (0.000)
Age	-0.005 (0.006)	-0.007 (0.007)
Service	0.652*** (0.142)	0.646*** (0.142)
Size	0.215*** (0.027)	0.203*** (0.029)
Product_divers	- -	-0.217 (0.139)
Market_divers	- -	0.279*** (0.103)
Constant	-0.012 (0.191)	-0.169 (0.206)
Observations	1,392	1,392

Note: ** $p < 0.01$, *** $p < 0.001$.

Product_divers = Product diversification strategy; Market_divers = Market diversification strategy.

5. DISCUSSION

The current study investigated the determinants of a firm's decision to use social media based on the dynamic capabilities perspective. Specifically, we hypothesized that a firm's diversification strategy – product diversification and market diversification – plays a crucial role in a firm's decision to adopt social media. Regarding the results, we found that a firm's market diversification strategy significantly influences its social media adoption. Firms with a strategy of targeting different markets see the importance of information diffusion through social media. They also see social media as a marketing technique that can reach potential customers more effectively (Alalwan et al., 2017; Appel, Grewal, Hadi, & Stephen, 2020). Therefore, firms that are oriented toward different markets prioritize the use of social media in their organizations. Furthermore, social media platforms provide a venue for customers, as well as current employees, to give feedback (Leonardi & Vaast, 2017) and engage with the firm's activities. This could be an effective strategic move when a firm is trying to familiarize itself with new markets.

However, the data did not support hypothesis 1, meaning that the product diversification strategy has no significant effect on social media adoption. One possible reason for this is that firms with many products and services may focus on strengthening their R&D activities rather than their marketing activities. Referring to the dynamic capabilities perspective, firms may choose to allocate their resources to cope with external factors and try to become more agile in response to various changes (Eisenhardt & Martin, 2000; Mumi, Joseph, & Quayes, 2020; Ngammoh et al., 2023). Therefore, social media, which emphasizes enhanced communication, may be deemed unnecessary at this stage. Firms may instead try to diffuse their products through social media when invading new markets or targeting different groups of potential customers. Besides, firms with product diversification strategies may be more involved in a business-to-business approach where social media may be less effective (Mumi et al., 2019).

This study contributes to both the theoretical and managerial domains of the literature. Regarding its theoretical contributions, the results of this study extend the limited evidence of social media research. Despite the

dominant use of social media for business activities, more academic insights are needed to guide the utilization of this Web 2.0 interactive platform (Mumi, 2020; Schjoedt, Brännback, & Carsrud, 2020), especially when contingent on various theoretical perspectives. By investigating the social media decision in light of a firm's strategy, this study provides a better understanding of a firm's behavior through a dynamic capabilities perspective. Therefore, this study also extends the dynamic capabilities framework to argue that a firm's social media-related decisions are influenced by its strategies and directions. Concerning its managerial contributions, this study can help assist chief executive officers (CEOs) or top managers in making strategic decisions about social media based on the firm's strategies, as well as understanding the behaviors of their competitors. Firms that focus on expanding their markets consider social media as one of their communication platforms, which influences their performance (Ngammoh et al., 2021). On the other hand, top managers may consider putting less effort into social media activities when their current strategy is focused on new product development or product proliferation.

Despite the relatively large dataset of more than one thousand public firms included in these analyses, this study also exhibits various limitations. First, the data for this study is solely that of U.S. public firms and obtained through the S&P COMPUSTAT dataset. Therefore, the interpretation of the results may be limited to a single culture or geographical location. Future studies may consider exploring the determinants of social media adoption within different contexts and countries. Second, the binary operationalization of our dependent variable – social media adoption – could limit the potential to better understand a firm's decision to use various platforms. Different social media platforms could serve different purposes for a firm's activities (Smith, Fischer, & Yongjian, 2012). Future studies may consider investigating the determinants of social media decisions for different platforms, which could further extend the literature regarding social media.

6. CONCLUSION

The findings of this study contribute to the growing stream of social media research, especially concerning firms' strategies. We extend the research in this area by providing a better understanding of an unexplored area of strategy and social media. We show that firms employ social media differently based on their business strategies. More particularly, a diversification strategy is more likely to prompt a business to use social media when entering different markets than when launching new products. Future studies may use our results as initial evidence for further investigation and provide a better understanding of other strategies that may influence a firm's decision to use social media.

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