Social media adoption and its impact on firm performance: the case of the UAE

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Abstract

Purpose – Through social media technologies, small and medium-sized enterprises (SMEs) can communicate information and respond to competitors with minimal cost. The ability to share and access information can affect SMEs' performance, but there is little research on the link between SMEs' social media adoption and their performance. The purpose of this paper is to present a quantitative survey to explore factors that influenced social media adoption by SMEs in the United Arab Emirates (UAE), and its impact on performance.

Design/methodology/approach – The study used a multi-perspective framework combining technological, organizational and environmental elements affecting SMEs. Survey questionnaires were used to collect data from a random sample of SMEs operating in the UAE. Using partial least squares and structural equation modeling techniques, 144 responses were analyzed.

Findings – Social media adoption had no effect on SMEs' performance. These findings could help managers and decision makers in the SME sector to try to keep pace with research on social media innovations, and enable them to benefit from social commerce as it becomes more ubiquitous.

Research limitations/implications – This has implications for social media experts and anyone wishing to encourage social media use by SMEs.

Originality/value – The study developed a suitable multi-perspective framework covering various factors that may affect social media use. It also tested the framework empirically on a sample of SMEs from the UAE.

Keywords Business performance, Social media, Small and medium-sized enterprises (SMEs), Technology adoption, Innovation

Paper type Research paper

Introduction

For businesses that are already internet connected, social media can be adopted without any additional resources. Social media can even be deployed by small and medium-sized enterprises (SMEs) due to its low cost and minimal technical requirements (Ferrer *et al.*, 2013). As a result, social media use continues to grow exponentially among businesses (Mourtada and Alkhatib, 2014), and is rapidly becoming a crucial business management phenomenon (Trainor *et al.*, 2014). Organizations are therefore using more platforms (Kietzmann *et al.*, 2011). Social media is perhaps an increasingly popular choice for businesses because it allows communications to go beyond a private one-to-one conversation to become many-to-many (Siamagka *et al.*, 2015). Social media functions also provide relatively cheap options for analytics, automated publishing, content management, conversion tracking and customer targeting. Businesses can use social media to promote their products, services and brands.

Various studies have investigated the use of social media in businesses and have found that it has many benefits (Kenly and Poston, 2016; Pan and Crotts, 2012; Arora and Predmore, 2013; Siamagka *et al.*, 2015; Venkataraman and Das, 2013; Zolkepli and

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Kamarulzaman, 2015). For example, approximately 70 percent of United Arab Emirates (UAE) residents have reported taking advice from social media before making purchase decisions (YouGov, 2016). There is also evidence that social media provides increased reach through brand engagement (Hoffman and Fodor, 2010). Social networking sites are therefore perceived as an electronic marketplace, where business and customers interact (Gazal *et al.*, 2016). Social media use enables SMEs to access markets outside their immediate geographical area, without a physical presence being required (Bilbao-Osorio *et al.*, 2014). It appeals to SME owners because it can make geographic locations, distances and time irrelevant (Alarcon *et al.*, 2015). The impact of social media on SMEs has meant that it has become an important topic in the business and entrepreneurship literature (Edosomwan *et al.*, 2011). Durkin *et al.* (2013) found that SMEs can gain particular benefit from using alternative business management tools like social media, because they often lack the necessary resources for traditional forms of management.

Previous studies have tended to consider social media use in business-to-consumer contexts. Studies have, for example, examined the impact of social media on consumer purchase decisions (Pookulangara and Koesler, 2011), its use in boosting brand recognition or obtaining feedback from customers (Siamagka *et al.*, 2015) or how it can provide useful market research data (Rapp *et al.*, 2013) and generate word-of-mouth recommendations (Chang *et al.*, 2016). Despite its increasing relevance and perceived value for SMEs (Durkin *et al.*, 2013), there are still very few studies on the way in which SMEs use or decide on social media channels. Only a handful of studies have so far examined the use of social media to improve business management and particularly its impact on business performance (Ainin *et al.*, 2015). There have been some studies on usage levels, barriers and metrics for social media in SME contexts (Ainin *et al.*, 2015), but little is known about how social media adoption by SMEs affects their performance in the Middle East, especially the UAE.

The UAE is a developing country with a large SME sector covering 95 percent of private businesses and employing 86 percent of the workforce. Given the emphasis on SMEs in the UAE, it would be helpful to develop greater strategic insight into their use of technology specifically social media. Many UAE SMEs do not have the skills to promote their products or services efficiently, or to gather enough customers to grow and be sustainable. In addition, they do not have sufficient resources to employ external support for marketing. As such, effective use of social media may help, because it is an affordable innovation that was proven to help businesses to reach their customers more easily (Ahmad *et al.*, 2018). Although the use of social media has increased rapidly, online privacy concerns are highly sensitive issues in this region (Reyaee and Ahmed, 2015). Protective actions such as censorship and government regulations are quite common (Al-Jenabi, 2011; Reyaee and Ahmed, 2015). Considering the general shortage of literature and case studies that are specific to the Middle East and specifically to the UAE, this study seeks to understand the adoption and use of social media at the firm level. As such, this study uses the technology-organization-environmental framework (TOE) to investigate the impact of social media adoption on performance in SMEs in the UAE, a previously unexplored area of research.

The paper starts by reviewing the literature on social media and its effects on business performance. It then discusses the methodology and results of the quantitative study. The paper concludes with research limitations and avenues for future research.

Literature review

SMEs and social media adoption

There are a number of possible definitions of social media (Kietzmann *et al.*, 2011), because it is understood and used differently by different people. This study used the definition of Kaplan and Haenlein (2010), because it is simple but comprehensive. Kaplan and Haenlein (2010)

defined social media as "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." When used successfully, social media allows organizations to improve several business activities. These may include, for example, relationships with trading partners, sharing information and managing communications and logistics across supply chains (Humphrey *et al.*, 2003). Social media management tools supporting business processes include Qwaya, Agency Analytics, and Agora Pulse (Capterra, 2017). There have been a number of studies on social media adoption and its impact on SMEs' performance, in both developing and developed nations, although more in developed countries. It is important to note that generalizing the results of prior studies on social media usage in SMEs in developed countries to the developing countries context can be of some concern. This is due to several contextual differences such as organizational and environmental factors between SMEs in developed and developing countries (Dewan and Kraemer, 2000).

A summary of this literature is provided in Table I.

The list of studies in Table I is not exhaustive, but it gives some insights into studies investigating the impact of social media adoption on business performance. Out of the 14 papers listed in Table I, 11 papers focused on the SMEs and only 3 studies showed that

Authors	Model	Title	Relationship
Ahmad *et al.* (2018)	Word of mouth, viral marketing and social presence theory	Reflections of entrepreneurs of small and medium-sized enterprises concerning the adoption of social media and its impact on performance outcomes: evidence from the UAE	Positive
Bakri (2017)	Integrated model	The impact of social media adoption on competitive advantage in the small and medium enterprises	No impact
Ainin *et al.* (2015)	Diffusion of innovation (DOI)	Factors influencing the use of social media by SMEs and its performance outcomes	Positive
McCann and Barlow (2015)	Grounded	Use and measurement of social media for SMEs	Positive
Trainor *et al.* (2014)	RBV and CBP	Social media technology usage and customer relationship performance: a capabilities-based examination of social CRM	No impact
Parveen *et al.* (2014)	Grounded	Social media usage and organizational performance: reflections of Malaysian social media managers	Positive
He (2014)	Grounded	Is social media a fad? A study of the adoption and use of social media in SMEs	Positive
Abeysinghe and Alsobhi (2013)	TOE	Social media readiness in small businesses	Positive
Jagongo and Kinyua (2013)	Grounded	The social media and entrepreneurship growth	Positive
Durkin *et al.* (2013)	Grounded	Exploring social media adoption in small to medium-sized enterprises in Ireland	Positive
Malthouse *et al.* (2013)	Grounded	Managing customer relationships in the social media era: introducing the social CRM house	No impact
Kim and Ko (2012)	Grounded	Do social media marketing activities enhance customer equity? An empirical study of luxury fashion brand	Positive
Derham *et al.* (2011)	Grounded	Creating value: an SME and social media	Positive
Musteen *et al.* (2010)	Grounded	The influence of international networks on internationalization speed and performance: a study of Czech SMEs	Positive
Zhou *et al.* (2007)	Grounded	Internationalization and the performance of born-global SMEs: the mediating role of social networks	Positive

Table I.
Several empirical studies on social media adoption and business performance

social media had no impact on the firm's performance. In addition, two main points emerge: most studies have focused on social media adoption across multiple industry segments; and many have used one of the two main models: the TOE framework (Tornatzky and Fleischer, 1990) or the diffusion of innovation (DOI) theory (Rogers, 2003) as their primary theoretical lens. Both focus on the organization and the people involved, to explain how, why and how fast new ideas and technologies are adopted by different people and organizations (Rogers, 2003). They therefore take into account the environmental issues, such as industry characteristics. This links the adoption of new technologies to the technological, organizational and environmental characteristics of the company and the innovation itself, and therefore provides a broader picture of the factors affecting adoption.

This study used the TOE framework combined with a few characteristics from the DOI theory to investigate the impact of social media adoption on performance in SMEs. Since this study is also interested in the environment context of the SMEs, a component that is not available in DOI, the authors felt that TOE is the most appropriate model to be used here. The TOE framework is better able to explain intrafirm innovation diffusion as found in previous research (e.g. Hsu *et al.*, 2006; Zhu *et al.*, 2006; Wang *et al.*, 2010). As shown in Figure 1, the factors influencing social media adoption can be separated into three areas: technological (TC), organizational (OC) and environmental characteristics (EC). Each of these includes different constructs that may affect SMEs' decisions about the use of new technology (Parveen, 2012). Constructs from the DOI theory such as relative advantage, compatibility, complexity, observability and trialability were included among the technological characteristics. Organizational characteristics included top management support of social media adoption decisions. Environmental characteristics included competitive intensity, competitive pressure and bandwagon effect, all of which are from the TOE framework. The framework used in this research contains ten constructs across the three areas, building the four hypotheses of this research.

Technological (T)

Rogers (2003) described five technological characteristics of innovation. Relative advantage is defined as the degree to which potential adopters see an innovation as better than the alternatives. Compatibility is whether it is seen as consistent with other technology already in use in the organization. Complexity is whether an innovation is perceived as being difficult to use, and observability assesses whether the results of adopting an innovation are visible to others (i.e. whether other organizations and individuals can see that the technology has helped). Finally, trialability is the ease with which an innovation may be tested before adoption. The DOI theory literature has most often considered relative

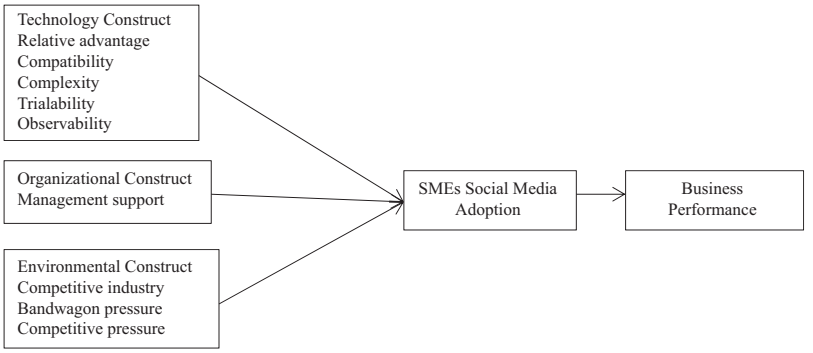


Figure 1.
The theoretical framework of the research

advantage, which is one of the most consistent predictors of adoption. Previous studies, however, including on service innovation in mobile technology (Teo and Pok, 2003) and electronic payment systems (Plouffe *et al.*, 2001), have found that trialability and observability did not have much effect on the adoption of technology. The decision to include these factors in this study was because social media use is highly observable, transferable via word of mouth and recommendations from friends (Haridakis and Hanson, 2009) and can be stopped without additional cost (Valenzuela *et al.*, 2009), so these factors may well be influential. The first hypothesis is therefore:

H1. Technological characteristics have a positive influence on social media adoption by SMEs.

Organizational (O)

The organizational context is the internal characteristics of the firm. These include its size, level of formalization and centralization and staffing and management issues such as networks and relationships among staff (Tornatzky and Fleischer, 1990). This study used owner/management support of social media as a proxy for the full organizational context. SME owners play a key role in explaining the role of social media within the SME's overall strategy, and rewarding innovation more generally. The support of top management is critical in constructing a supportive environment and providing sufficient resources for the adoption of new technology (Lin, 2014). Previous studies have confirmed that support from top management is usually a key criterion in organizational adoption of new technology (Ahmad *et al.*, 2015; Maduku *et al.*, 2016; Nguyen, 2009; Zhu *et al.*, 2003). The second hypothesis is therefore:

H2. Organizational characteristics have a positive influence on social media adoption by SMEs.

Environmental (E)

Environmental factors come from the climate in which the organization operates. Factors considered in previous studies include the industry structure, suppliers and regulatory systems (Tornatzky and Fleischer, 1990). Competitive intensity is the pressure arising from the threat of losing competitive advantage (Zhu *et al.*, 2003). Porter and Millar (1985) suggested that adopting innovations can enable firms to affect their industry structure. This, in turn, may change the way in which competition operates in the industry, giving the adopter a competitive advantage. Porter and Miller's analysis was based on adoption of information systems. It can, however, be extended to social media, because this technology can be used to implement new organizational strategies and respond to competitors. Kenly and Poston (2016) surveyed 90 manufacturing and service companies and found that companies using social media for product innovation reported business benefits from doing so. These included lower costs for products and product development, more innovative product ideas, shorter time to market and increased product adoption. These improvements, in turn, gave the companies increased market share and higher revenues.

Competitive pressure describes the degree of rivalry within an industry (Lertwongsatien and Wongpinunwatana, 2003). It may be affected by factors including globalization, technological development and rapid diffusion of new technology (Derham *et al.*, 2011). When there are more firms within an industry, organizations often innovate more. Zhu *et al.* (2003) investigated electronic business adoption by European firms, and found that adopters had often come under pressure from trading partners to maintain their technological status in line with their partners. For electronic trade to thrive, all trading

partners need to use compatible electronic systems. The same applies to social media: trading partners need to use compatible applications and platforms.

The bandwagon effect is a psychological phenomenon. It proposes that individuals or organizations may take certain actions such as, for example, using new technology, largely because their peers are doing so, and not because the innovation fits with their own strategy. As the number of organizations in an industry or sector adopting a particular technology increases, pressure is exerted on others to "keep up" (Abrahamson, 1991; Abrahamson and Rosenkopf, 1993; Acedo and Casillas, 2007). This "bandwagon effect" is often particularly important when the environment is very volatile (Abrahamson, 1991). The third study hypothesis is therefore:

H3. Environmental characteristics have a positive influence on social media adoption by SMEs.

Impact of social media on business performance

Various studies have shown that technology can improve business processes and performance (Gera and Gu, 2004; Paniagua and Sapena, 2014; Hakala and Kohtamäki, 2011). Some researchers have found that corporate adoption of social media provides benefits, and several have identified a positive relationship between social media adoption and corporate performance (Ainin *et al.*, 2015; Paniagua and Sapena, 2014; Parveen *et al.*, 2014; Rodriguez *et al.*, 2012). Rodriguez *et al.* (2015) found that social media use had a positive effect on customer-facing activities and therefore sales performance. Ferrer *et al.* (2013) noted that the adoption of social media positively affected organizational social capital, which in turn affected performance. Both Wong (2012) and Kwok and Yu (2013) found that Facebook adoption had a positive effect on SMEs' sales performance. Hassan *et al.* (2015) noted that social media can have a significant impact on business by significantly influence purchasing decisions. These studies are consistent with previous technology adoption literature that found that technology adoption had a positive impact on both financial and non-financial performance (Damanpour *et al.*, 1989; Scupola and Nicolajsen, 2013; Thong, 2001; Tushman and Nadler, 1986; Zhu *et al.*, 2003). The final study hypothesis is therefore:

H4. SMEs' social media adoption has a positive effect on their business performance.

Research methodology

Measurements

The exogenous variable investigated in this study was social media adoption by the firm and the endogenous variable was the firm's business performance. The observed variables representing the latent variables are shown in Table II. These constructs were measured across multiple items, using a five-point Likert-type scale with answers ranging from 1 ("strongly disagree") to 5 ("strongly agree"). The social media adoption items were taken from previously validated scales used in the technology adoption literature and adjusted if necessary for social media adoption.

The scale used for firm performance was developed for this study. The items assess perceptions rather than objective measurements, because of the difficulty in accessing financial data for small businesses. In many or most cases, this information is likely to be unavailable, unreliable or difficult to crosscheck (Woodcock *et al.*, 1994). Responses based on perceptions are generally considered to be reliable, and have been shown to produce results that are consistent with objective measures in previous studies (Ainin *et al.*, 2015; Dess and Robinson, 1984). A minimum of three items were used per construct to ensure adequate reliability (Nunnally, 1978).

Part	Name	Source of measurement items	Items
A	*Respondents characteristics*	Khushnir *et al.* (2010)	4
B	*Social media adoption*	Cesaroni and Consoli (2015)	5
C	*Technological context*		24
	Relative advantage	Grandon and Pearson (2004)	6
	Compatibility	Al-Qirim (2007)	6
	Complexity	Lorenzo-Romero *et al.* (2014)	5
	Trialability	Anderson (2007)	3
	Observability	Sin Tan *et al.* (2009)	4
C	*Organizational context*		3
	Top management support	Thong (2001)	3
C	*Environmental context*		9
	Competitive industry	Thong and Yap (1995)	3
	Bandwagon pressure	Sun (2013)	3
	Competitive pressure	Gutierrez *et al.* (2015)	3
D	*Firm performance*	Self-developed	6
	Total items		51

Table II. Constructs used in the study

Instrument validation

During the questionnaire development process, an assessment of the psychometric properties of the scale items was carried out by testing for face and content validity among academic faculty and the study's target population (Bagozzi and Yi, 1988). The respondents generally concurred that the questionnaire was clear and easy to complete, so no further modifications were made.

Sampling and data collection

The sample used in this study was randomly selected from the UAE directory of SMEs. This lists all the SMEs operating in the country, across the seven main districts. Given the fact that 95 percent of private businesses in the UAE are SMEs, it is therefore very likely for us to assemble a diverse sample and gather a reasonable number of responses. The key respondents targeted were owner-managers or CEOs, because they were considered likely to be the most knowledgeable about their firm's environment and performance (Bergeron *et al.*, 2001).

The survey was issued online to over 1,000 potential respondents, using a survey software tool from Survey Monkey (www.surveymonkey.com). E-mail invitations were sent to all potential participants with detailed explanation of the research and a hyperlink to the survey website. Online surveys are now considered essential tools for modern research (Manfreda *et al.*, 2008) not least because they are a fast, simple and cheap method of gathering data (Dutot and Bergeron, 2016), but also because this method shortens the collection period, and instructions can be added to provide help when necessary (Dillman, 2006). In total, 144 completed questionnaires were returned, despite efforts such as follow-up calls and e-mail to increase the response rate.

The low response rate was expected and assumed to provide an adequate sample based on studies conducted in the region (Lages *et al.*, 2015; Kalliny, and Benmamoun, 2014). "For organizational research, very few organizations [are] willing to allow research [and it is] difficult to obtain permission […]." when conducting research in the Middle East and Africa (Lages *et al.*, 2015).

To determine whether there was likely to be any non-response bias, responses in questionnaires returned earlier and later in the process were compared on particular variables (Armstrong and Overton, 1977). There were no significant differences between the

first 25 percent of respondents and the last 25 percent, or between three separate groups (33.33 percent or $n = 48$ in each group). The authors are therefore reasonably confident that non-response bias does not pose a major problem.

Results

Descriptive information

The descriptive information for the 144 respondents is shown in Table III.

The majority of respondents were owners, executives and managers, and 75 percent were male. This is unsurprising, given the typical demographics of business owners and managers in the Middle East, including the UAE (Ahmad and Muhammad Arif, 2015). Most of the respondents (78.1 percent) were under 40 years old, with a university or postgraduate degree (87 percent). This suggests that decision makers in SMEs using social media tend to be younger and better educated. They may also be more aware of business developments in their industry and beyond.

The sample firms were fairly representative of the overall population. The sample contained companies from a wide range of sectors, including business services, ICT, professional services, construction and contracting, restaurants and catering, travel agencies and transport and logistics. The percentages were also similar to the overall percentages of these businesses in the UAE (Kargwell, 2012). The sample companies were spread across all seven districts although the majority were from Abu Dhabi (52.1 percent), then Dubai (19.4 percent). This is similar to the study population, because far more companies operate out of Abu Dhabi or Dubai than elsewhere in the UAE. Most of the companies in the sample were either small to medium-sized (77 percent) or micro-companies (23 percent). The authors are therefore confident that the sample is representative of the SMEs in the UAE (see Table IV).

Table IV shows that the majority of the companies in the sample can be considered new adopters of social media. In total, 59.1 percent had started to use social media within the last two years, and 65.3 percent of them made minimal use of this technology. This fits with early research showing that the general intensity of use among a given population is likely to correspond closely to length of time since adoption (Rogers, 1962). Despite their admission that social media is applied minimally, 61.8 percent of respondents said that they used it extensively for marketing. This suggests that they tend to use social media to communicate with customers rather than as an administrative tool. The majority of respondents (45.1 percent) reported that they spent less than five hours each day on social media and 77.8 percent had allocated less than 20 percent of their budget to social media work.

Table III. Demographic characteristics of the respondents

Construct	Characteristics	Frequency	Percent
Gender	Male	108	75.0
	Female	36	25.0
Age	21-30	39	27.1
	31-40	74	51.4
	41-50	26	18.1
	Over 50	5	3.5
Education	Secondary or lower	4	2.8
	Diploma/certificate	15	10.4
	Bachelor degree/professional	80	55.6
	Postgraduate degree	45	31.3
Position	Owner	43	29.9
	Executive	38	26.4
	Manager	35	24.3
	Senior manager	10	6.9
	Top manager/director	18	12.5

Construct	Characteristics	Frequency	Percent
Employees	Below 9	33	22.9
	10-35	52	36.1
	36-75	59	41.0
Industry sector	Business services	31	21.5
	Professional services	31	21.5
	Construction and contracting	19	13.2
	ICT	43	29.9
	Transport and logistics	2	1.4
	Restaurants and catering	16	11.1
	Travel agencies and tour operators	2	1.4
Firm location	Abu Dhabi	75	52.1
	Dubai	28	19.4
	Ajman	16	11.1
	Sharjah	10	6.9
	Ras Al-Kaimah	10	6.9
	Um Quwain	3	2.1
	Fujairah	2	1.4
Firm's level of utilization of social media	Minimal	36	25.0
	Basic	58	40.3
	Moderate	34	23.6
	Extensive	16	11.1
Social media platforms used	LinkedIn	57	12.8
	Facebook	95	21.3
	Twitter	52	11.7
	Instagram	83	18.6
	YouTube	40	9
	Google+	28	6.3
	Pinterest	2	0.4
	iTunes or Podcast	1	0.2
	Blogs	8	1.8
	WhatsApp	80	17.9
Number of years since initial adoption	Less than a year	24	16.7
	1-2 years	61	42.4
	3-4 years	31	21.5
	More than 5 years	28	19.4
Use as marketing tool	Very little	5	3.5
	Little	26	18.1
	Quite a lot	24	16.7
	Extensive	89	61.8
Staff hours spent on social media per day	Less than 5 hours	65	45.1
	6-10 hours	49	34
	11-15 hours	13	9
	Above 16 hours	17	11.8
Budget allocated	0-20%	112	77.8
	21-30%	15	10.4
	31-40%	14	9.7
	More than 40%	3	2.1

Table IV. Organizational characteristics of the sample

The usage patterns and intensity found here reflect other findings on SMEs' social media adoption in the region from government and commercial market research (Arab Social Media Influencers Summit, 2015). The top six social media applications used were Facebook, Instagram, WhatsApp, LinkedIn, Twitter and YouTube.

The adoption curve for the study sample is similar to Rogers's (1962) adoption curve. This categorized the degree of innovativeness of adopters into innovators (the first 2.5 percent),

early adopters (the next 13.5 percent), the early majority (the next 34 percent), the late majority (the next 34 percent) and finally laggards (the final 16 percent). Using the time and percentage of adoption, the adoption curve for study respondents suggests that they are all either early adopters, or part of the early or late majority (see Figure 2).

The results indicate that on average, 45.1 percent of respondents spent less than 5 hours a day logged into their social media accounts. The remaining 34 percent spent between 6 and 10 hours per day. Figure 3 shows the intensity of social media usage among the respondents.

Finally, the respondents' adoption of social media applications reflects both national and regional user adoption patterns (see Figure 4). The adoption patterns highlight regional popularity and usage intensity.

Empirical analysis

The hypotheses in this research were examined and tested using two different types of analysis. The initial analysis used partial least squares structural equation modeling (PLS-SEM) with WarpPLS software version 5.0. This was chosen because many industry practitioners and researchers note that it can be challenging to find a suitable data set for covariance-based SEM (CB-SEM). This is demonstrated in this study where the sample size barely meets the requirements to run the CB-SEM (see Wolf *et al.* (2013) for more explanation on sample size requirements for SEM). The insufficient sample size would be problematic because it may lead to underestimated sample size requirements. Therefore, PLS is also more suitable for exploratory research objectives (Hair, Sarstedt, Hopkins and Kuppelwieser, 2013), and for non-normal data and small sample sizes (Beebe *et al.*, 1998; Cassel *et al.*, 1999), where it generally gives higher levels of statistical power and much better convergence behavior than CB-SEM (Henseler and Fassott, 2010; Reinartz *et al.*, 2009).

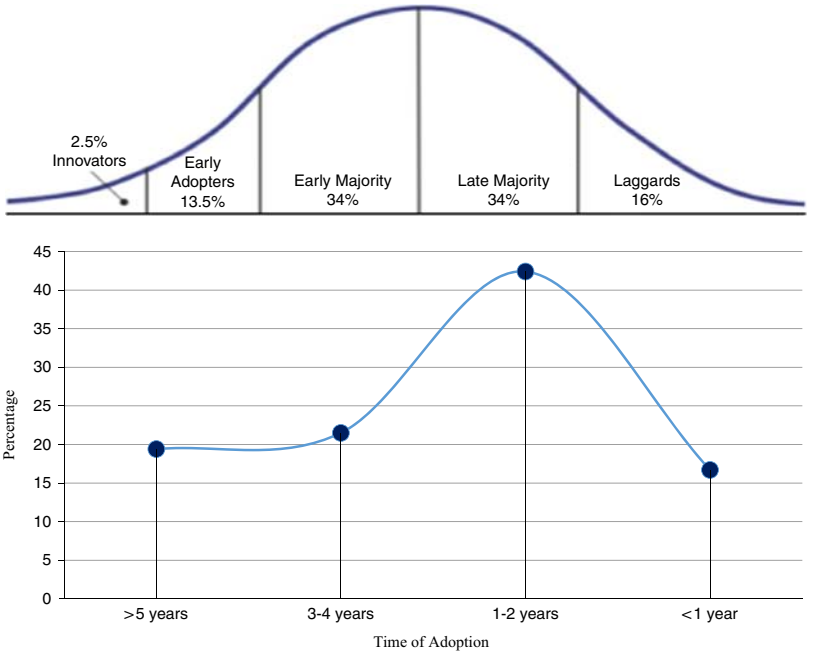


Figure 2.
Rogers' adoption curve vs adoption curve for the study respondents

Source: Rogers (1962)

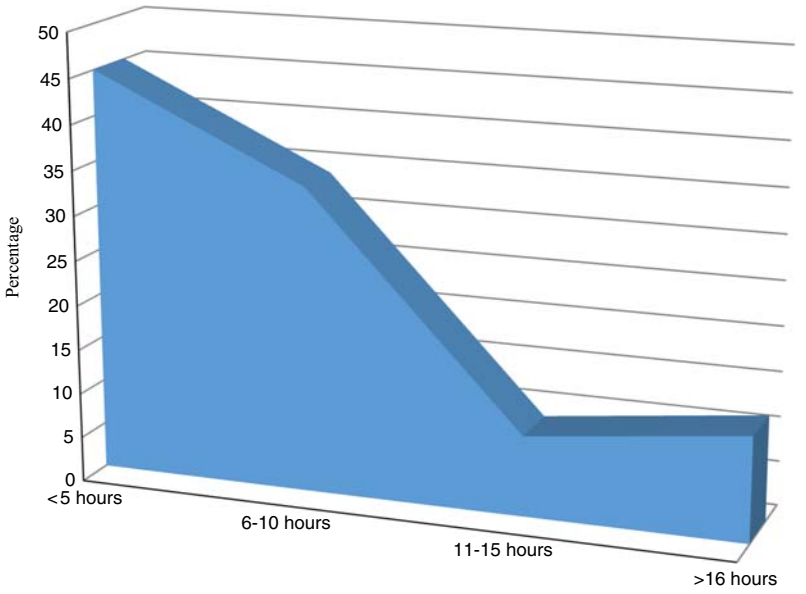
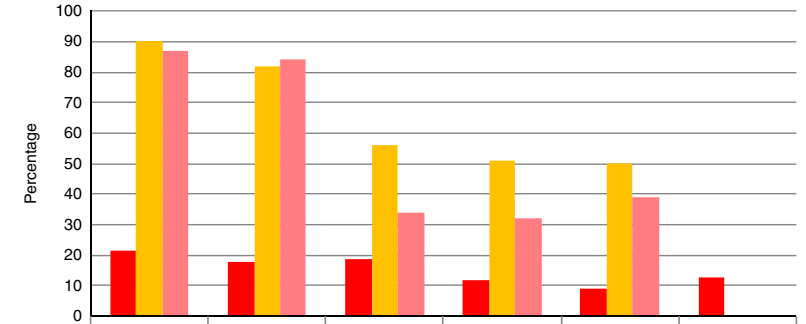


Figure 3.
Social media use intensity among study respondents



	Facebook	WhatsApp	Instagram	Twitter	Youtube	LinkedIn
SMEs	21.3	17.9	18.6	11.7	9	12.8
UAE	90	82	56	51	50	
Region	87	84	34	32	39	

Figure 4.
Use of social media applications by study respondents, compared with general use in the UAE and Middle East region

Previous researchers have used PLS for testing path models (Marcoulides *et al.*, 2009) and theory confirmation (Chin, 1998).

In the next step of the analysis, the hypotheses were tested again with multiple regression using SPSS Windows version 21.0. This dual analysis strategy (SEM and multiple regression) has been advocated by previous researchers (e.g. Cheng, 2001; Gefen *et al.*, 2000, 2002), to address several objectives. In this research, the reasons for doing so were:

- The limitations of the sample-size-parameter constraints in SEM meant that some of the constructs had to be collapsed into a single one, so some of the "finer" points of the hypotheses could not be tested using SEM. Multiple regression enabled these constructs to be tested with a smaller sample size.

- The theoretical model was quite complicated. Previous researchers provided the foundation for all the procedures in testing these relationships (Cortina *et al.*, 2001), but the procedure in its original form was not used, as it was too complicated, and required too deep an understanding of SEM and its assumptions, and too large a sample size.
- Using two types of analysis compensated for the limitations of each method. Ideally, the two should provide similar results, confirming each other's findings.

Data purification

Almost all the measures were adopted or adapted from established scales, but several of the measurement items required refinement and testing for various aspects of reliability before the data analysis (Churchill, 1979; Gerbing and Anderson 1988). The scale items were all purified and refined using scale generation and purification processes and techniques identified from previous studies (DeVellis, 2003; King *et al.*, 2012), particularly exploratory factor analysis (EFA) and confirmatory factor analysis. The full results of the EFA for all the constructs are illustrated in Tables AI-AV.

The items were also tested for convergent validity, item reliability and internal consistency. Table V shows the item loadings, weights, reliabilities and *p*-values used to determine individual item reliability. All the indicator weights were significant, supporting use of them all (Hair, Ringle and Sarstedt, 2013). Internal consistency of multiple indicators was examined using Cronbach's standardized α. Composite reliability was above the

Variable	Loadings	Weights	*p*-Values
Technological context			
Composite reliability = 0.869			
AVE = 0.579			
Relative advantage	0.714	0.246	< 0.001
Compatibility	0.476	0.164	< 0.001
Complexity	0.788	0.272	< 0.001
Trialability	0.897	0.310	< 0.001
Observability	0.857	0.296	< 0.001
Organizational context			
Composite reliability = 1.000			
AVE = 1.000			
Top management support	1.000	1.000	< 0.001
Environmental context			
Composite reliability = 0.796			
AVE = 0.569			
Competitive industry	0.796	0.466	< 0.001
Bandwagon pressure	0.615	0.361	< 0.001
Customer pressure	0.834	0.489	< 0.001
Social media adoption	1.000	1.000	< 0.001
Composite reliability = 1.000			
AVE = 1.000			
Firm business performance			
Composite reliability = 0.920			
AVE = 0.793			
Sales	0.849	0.357	< 0.001
Customer service	0.923	0.388	< 0.001
Brand equity	0.899	0.378	< 0.001

Table V. Loadings, weights, reliabilities and *p*-values

recommended value of 0.70 (Hair, Ringle and Sarstedt, 2013). The average variance extracted was also above 0.50 (Hair, Ringle and Sarstedt, 2013), providing support for convergent validity. Table VI demonstrates that all the constructs also fulfilled the Fornell-Larcker criterion for discriminant validity (Fornell and Larcker, 1981).

Structural model

A structural model was used to capture the linear regression effects of the endogenous constructs on one another (Hair, Ringle and Sarstedt, 2013). These models are able to identify patterns of relationships among constructs. The PLS assessment of the model used: path coefficients (β); path significance (p-value); and variance explained (R^2). Based on these criteria, the results showed that only organizational and environmental constructs were significant in influencing SMEs' social media adoption, explaining 12 percent of variance. Both organizational and environmental constructs were significant at $p < 0.01$. Figure 5 shows the path model of the endogenous variables against SMEs' social media adoption. Table VII shows the results of

Construct	Technology context	Organizational context	Environmental context	Social media adoption
Technology context	0.761			
Organizational context	0.409	1.000		
Environmental context	0.512	0.173	0.754	
Social media adoption	0.162	0.206	0.152	1.000
Business performance	0.260	0.268	0.180	0.028

Notes: The diagonal is the square root of AVE and non-diagonal is from later correlations above. For discriminant validity for construct (i); sqrt(avei) > max(correl(yi,yj)) applying Fornell-Larcker criterion

Table VI. Discriminant validities

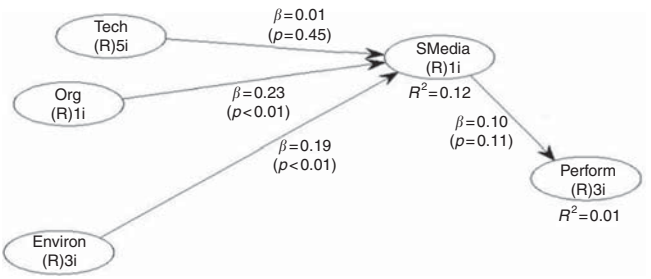


Figure 5. Resulting path coefficients with loadings, significance and R^2

Variable	Hypothesis	Path coefficient	t-Stats	Result
Technological context	*H1*: technological characteristics have a positive influence on social media adoption by SMEs	0.010	0.120	Not supported
Organizational context	*H2*: organizational characteristics have a positive influence on social media adoption by SMEs	0.233	2.950	Supported
Environmental context	*H3*: environmental characteristics have a positive influence on social media adoption by SMEs	0.193	2.412	Supported
Business performance	*H4*: SMEs' social media adoption has a positive effect on their business performance	0.100	N.A.	Not supported

Notes: R^2 for social media adoption = 0.12. Significant at $p \leqslant 0.01$

Table VII. Results of hypothesis testing

the hypothesis testing. The criteria used to confirm the hypotheses were the *t*-values for each path loading. The cut-off criterion was a *t*-value greater or equal to 1.645 for an α level of 0.05 (Hair, Ringle and Sarstedt, 2013).

Regression analysis

Multiple regression analysis was used to corroborate and identify the specific individual factors in each broad area affecting the adoption of social media by SMEs. The technology context was found not to be significant in the SEM analysis. This finding was confirmed by the second-stage analysis, which found that none of the individual factors in the technological context were significant in influencing social media adoption. Of the factors in the environmental context, only bandwagon pressure was significant. Finally, management support, representing the organizational context, was again significant in influencing social media adoption. As expected, the relationship between social media adoption and firm performance was insignificant, validating the findings of the SEM analysis. Table VIII shows the significant factors from the multiple regression analysis.

Discussion

This study is one of the few of which the authors are aware to conduct a comprehensive quantitative investigation into the effects of social media adoption on SME performance in the Middle East, and particularly in the UAE. The findings are particularly interesting because social media is a customer-facing technology. Many technologies adopted by organizations and examined in previous studies have supported organizational efficiency or internal processes, such as e-commerce, or the use of cloud technologies. The impact of social media use on organizations is therefore quite unpredictable.

The technology construct was not relevant in SMEs' decision to use social media. The literature is inconclusive about which factors (internal or external) are most influential in SMEs' adoption of technology. Buonanno *et al.* (2005) suggested that the decision to adopt specific technology, for example, ERP systems in SMEs, was more affected by internal than business-related factors. Social media is unlikely to follow this rule, however, because it is consumer oriented, unlike many other technologies previously studied. The primary reason why businesses are expected to adopt new technologies is their anticipated benefits (Iyanda and Ojo, 2008; Rogers, 2003; Vishwanath, 2009). These are largely perceived rather than actual, and therefore depend on knowledge and understanding within the firm (Beatty *et al.*, 2001; Vishwanath, 2009). McCann and Barlow (2015) showed that although SMEs believed that social media could be used to benefit their business, they did not have evidence of this and were not fully aware of the likely extent of the benefit.

Looking at technological characteristics individually, the results showed no significant relationship between relative advantage and social media adoption. This finding is inconsistent with that of Ainin *et al.* (2015), who noted a significant positive relationship between relative advantage and social media adoption intention among Malaysian SMEs.

Table VIII. Regression coefficients for the predictors of social media adoption

Model	Unstandardized coefficients *B*	SE	Standardized coefficients β	*T*	Sig.
(Constant)	1.380	0.337		4.099	0.000
Management support	0.116	0.046	0.208	2.506	0.013
Competitive intensity	−0.051	0.063	−0.077	−0.810	0.419
Bandwagon pressure	0.109	0.046	0.204	2.385	0.018
Competitive pressure	0.052	0.082	0.062	0.634	0.527

Notes: Dependent variable: social media adoption. Significant at 0.01

A possible reason for the insignificant relationship in this study may be that the respondents were young (see Table III) and therefore probably relatively familiar with social media. This may have increased their ability to use it effectively, eliminating the importance of relative advantage in determining behavioral intention.

There was also no significant relationship between compatibility and social media adoption. This finding is also inconsistent with earlier findings, in this case of Zhu *et al.* (2003), who found a significant positive relationship between compatibility and technology adoption intention. This lack of relationship in this study may be because social media is compatible with most existing organizational infrastructure. Its ease of use could therefore have negated the impact of compatibility on behavioral intention.

There was, however, a significant positive relationship between complexity and social media adoption intention, which is consistent with the study by Tsai *et al.* (2013). That study found a significant positive relationship between perceived complexity and RFID adoption intention among Taiwanese retail chains. This relationship may perhaps be attributed in this study to the respondents' non-familiarity with some of the individual social media applications and tools.

Neither trialability nor observability appeared to have any effect on social media adoption. Previous studies found significant positive relationships between trialability and e-commerce adoption intention (Chong, 2004) and observability and cloud technologies adoption intention (Lin and Chen, 2012). The lack of relationship with trialability in this study may be because social media can be adopted without any significant expenditure, which may reduce the risk of its use. Social media use is very popular among UAE-based SMEs, which may have increased the visibility of its use among other SMEs, and removed the effect of observability (Muhammad Siddique, 2012).

Top management involvement has previously been suggested as important in organizational adoption of technology, and was a significant factor in this study. This is consistent with previous studies in SMEs (Ahmad *et al.*, 2015; Ramdani *et al.*, 2013). This study's findings suggest that the adoption of social media technology in SMEs is mandated by top management, requiring staff to use it in tactical or marketing operations. The authors speculate that the relative youth and high level of education among respondents may mean that they are personal users of social media, and that this has driven their interest in its use for business purposes.

Apart from that, Hoffmann *et al.* (2014) argued that employees in the organization need the support of their top managers to successfully realize a social media project. This support can include investment on IT infrastructure (Khoumbati and Thermistocleous, 2006) as well as providing the necessary IT skills (through training) to undertake social media implementations in the firm. Thus, financial resource allocation by top management is a critical element of a successful social media adoption.

Competitive intensity had no significant effect on intention to adopt social media, unlike in previous studies. For example, Lertwongsatien and Wongpinunwatana (2003) identified a positive association between competitive intensity and firm-level e-commerce adoption among Thai SMEs. Competitive pressure, however, had a significant impact on social media adoption intention. This implies that SMEs are compelled by the competitive pressure in their business environment to develop a positive intention toward social media adoption, and is consistent with previous studies (Chwelos *et al.*, 2001; Lin, 2014; Wang and Cheung, 2004). It seems likely that there may be an overall positive association between competitive pressure and firm-level innovation adoption.

This study's findings also showed that the main environmental factor influencing SMEs' use of social media was bandwagon pressure. This is consistent with Naslund and Newby's assertion that many businesses adopt new technology simply because everybody else in the market is doing so. When it is difficult to assess whether a new technology could

improve business performance, doing the same thing as others avoids any significant performance lag. This may be the case for social media: many SMEs may be unsure of its benefits, but have adopted it because of its popularity or fear of falling behind competitors (Rogers, 2010).

The main objective of this study was to determine the effects of SMEs' adoption of social media on firm performance. The results showed, however, that there was no significant effect, suggesting that firms were not benefiting from their investments in this area. Nair (2011) argued, however, that social media use is an experimental process, and the results should not be measured immediately. He suggested that more companies of all sizes needed to report on both the benefits realized from their social media investments and how they measured these benefits. Until this happens, organizations will have to be content with experimenting with the technology. There is no measurement standard for social media adoption and/or the effect on performance, making it impossible for organizations to prove that investment in social media technologies has resulted in a direct profit or loss (Divol *et al.*, 2012; Mangiuc, 2009). Any measurements are highly subjective and often uniquely interpreted by the entity doing the measuring (Owyang and Toll, 2007).

It has been argued that for measurement of success to be meaningful, it must relate back to the original objectives of the initiative, in this case, social media adoption (McCann and Barlow, 2015). Hoffman and Fodor (2010, p. 47) argued that "the question is not whether to blog or tweet, but what objectives need to be achieved and which set of tools with their corresponding metrics can best achieve them." To use social media effectively, businesses must therefore have a strategy for its use and consider why they are using it, as well as how it can support business objectives (Stockdale *et al.*, 2012). This argument resonates with work by Blanchard (2011). The author emphasized that social media adoption can only provide value if adopters use it as a tool to support existing strategies and business objectives, and not as an end in itself.

Theoretical contributions

This study makes several contributions to the literature on social media and enterprise information management among SMEs. It provides results from an emerging economy in the Middle East, specifically the UAE. There is very little literature on this area that considers the nuances and implications of social media adoption, especially at the firm level, even though the UAE shows many of the characteristics of a developed country. It has high levels of competencies and sophistication compared with many developed economies (Sheth, 2011), and these results show similar findings to those from other developed economies.

This study progresses theory by extending the TOE model and linking it to factors from the DOI theory, then using it to examine the expanding phenomenon of social media use in firms. This study offers a modest contribution by providing empirical support from a social media perspective for a conceptual framework with good explanatory power. Unlike previous studies identifying factors influencing the adoption of a specific type of technology, the application of the integrated TOE framework with the DOI theory to determine the factors that influence different types or platforms of social media technology adoption has demonstrated the robustness and relevance of the TOE model. This is significant because future technologies may be similar, with firms adopting different platforms for the same purpose. There are few studies on social media that integrate and examine the relationships among the constructs used in this study, particularly from an SME perspective. Previous studies have either studied the constructs in isolation or in different settings (Low *et al.*, 2011; Porter, 2001; Ramdani *et al.*, 2009) calling into question the need for further empirical examination for validation and theory building. This research therefore helps to determine the relevancy and the parsimonious approach of the TOE model for emergent research phenomenon.

One reason for the lack of contribution of social media adoption to performance may be the factors affecting adoption. Previous studies also found that one of the main influences on social media adoption in SMEs was bandwagon pressure (Drury, 2008; Rasiah, 2014). This suggests that adoption decisions, and therefore commitment of effort and resources, may be made without careful consideration of the firm's strategy or the influence of the technology on firm performance. Adopting a technology simply to "keep up with the Joneses" may explain why firms do not seem to be gaining any performance benefits from the technology adoption. This highlights Porter's (2001) arguments about the need to view technology as a tool to meet strategic goals rather than an end in itself. Future studies should investigate the interrelationship of all three of these constructs (firm strategy, social media adoption and business performance).

Practical implications

This study has two main practical implications for SMEs considering using social media technology. First, the most widely used social media applications were social networking services. The applications adopted corresponded closely with the most popular social media tools used by citizens locally and regionally. This implies that the SMEs in this study were using these applications for external communication purposes, which also corresponds with a study by Batikas *et al.* (2012) on social media use by European SMEs. Therefore, SMEs that wishes to use social media as part of their organization's strategy should adopt applications that are popular in their respective domains or context (geography or target market profiles). As at the current moment, most of these applications should only be for external communications purposes since the consumers are not ready for "transactional" social media applications.

Other studies have suggested that some firms have adopted social media simply because everyone else in the industry was doing so, and they did not want to be left behind. However, these firms may not consider how the technology will be used to support firm strategy or objectives. As a result, social media may not be used effectively, and may not generate business performance, explaining the lack of link found between social media use and improved performance in this study. The authors suggest, therefore, that businesses should have a clear plan of how they will use social media and why (McCann and Barlow, 2015), before making a decision about adoption. The changing and complex social media environment makes this planning even more important (Noone *et al.*, 2011). Enterprises must understand the area of business which they want to address, and formulate measurable goals, objectives and corresponding metrics before deciding which social media platforms are most suitable for their purposes (Stockdale *et al.*, 2012). This study is one of the first to develop an empirical theory of social media technology adoption and its impact on performance by SMEs in the UAE. As such, this study provides a good starting point for firms considering adopting social media in the Middle East region.

In conclusion, there is little evidence of the benefits of social media adoption on organizational performance. Despite the possible advantages of using social networks, few studies have examined this (Öztamur and Karakadılar, 2014; Vásquez and Escamilla, 2014), and most results, like ours, are inconclusive (Hassan *et al.*, 2015; Lovejoy and Saxton, 2012).

Limitations and future research

One of the main limitations of the study was the sample size and reach. The majority of the firms involved were in the business services, professional services, construction and contracting and ICT sectors. It would be interesting to examine the situation among companies that may be more active on social media, including entertainment venues, restaurants, fashion retailers and travel agencies. There might also be disparities between product-focused and service-focused SMEs, but the sample was too small to examine this.

The study did not examine links between social media adoption and firm strategy. It would be interesting to know whether firms whose strategy influenced the adoption of social media applications saw stronger effects on business performance. In addition, the hypotheses in the study were tested using SMEs from a single country and cross-sectional data. The results therefore represent a snapshot in time, but the effects of social media adoption may not be static. Future research should consider a longitudinal study to examine effects over time, perhaps as expertise develops.

Conclusion

This research examines the effects of SMEs' adoption of social media technology on business performance in the UAE. The results suggest that social media adoption had little effect on business performance in the study organizations. This may be because many enterprises had adopted social media as a result of bandwagon pressure. Adoption is therefore relatively unplanned, and not linked to organizational strategy or goals. Many enterprises may therefore not have been fully aware of the possible benefits (Meske and Stieglitz, 2013; Wamba and Carter, 2014). It is hoped that the work in this study will provide a suitable background for further work on social media adoption.

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Appendix

Measurement items LABEL	Organization Management support MGTSPT	Environmental factor Competitive industry CMPIND	 Bandwagon pressure BWGPRE	 Competitive pressure CTPRES
It is easy for our customers to switch to another company for similar services/products without much difficulty		0.853		
Our customers are able to easily access to several existing products/services in the market which are different from ours but perform the same functions		0.846		
Social media is a popular application; therefore our firm would like to use it as well			0.753	
We follow others in adopting social media			0.805	
We choose to adopt social media because many other firms are already using it			0.883	
Social media would allow the firm stronger competitive advantage				0.634
Social media would increase firm ability to outperform competition				0.575
Social media would allow the firm to generate higher profits				0.879
Top management in my organization is interested in adopting social media	0.920			
Top management in my organization considers social media adoption important	0.934			
Top management in my organization has shown support for social media adoption	0.913			
Reliability scores	0.927	0.774	0.777	0.706

Table AI. Factor loadings for the organization and environmental factors

Note: Factor loadings < 0.5 are suppressed

Measurement items	Business strategy		
	Market penetration	Market development	Customer service
LABEL	MKTPET	MKTDEV	CUSERV
Increase sales	0.784		
Reach more potential customers	0.791		
Enhance positive feedback of our product	0.813		
Promote the quality service of the products to customers	0.745		
Increase awareness of our product/brand online	0.732		
Develop new markets		0.623	
Interact with customers much more quickly		0.836	
Improve our customer relationship management			0.675
Improve customer services			0.864
Reliability scores	0.705	0.635	0.902

Table AII. Factor loadings for business strategy

Measurement items	Sales	Performance customer service	Brand equity
LABEL	SALES	CUSERVQ	CUBRAND
Sales transactions	0.904		
Sales volume	0.904		
Customer satisfaction		0.863	
Service quality		0.826	
Customer engagement			0.625
Brand equity			0.921
Reliability scores	0.959	0.934	0.864

Table AIII. Factor loadings of business performance

Measurement items LABEL	Technology construct: Relative advantage RELADV	Compatibility CBTILITY	Complexity COMPLEX	Trialability TRIAL	Observability OBSERVE
Social media provides new opportunities	0.609				
Social media allows us to accomplish specific tasks more quickly	0.687				
Social media allows us to enhance our productivity	0.654				
Social media allows us to learn more about our competitors	0.597				
Social media allows for better advertising and marketing	0.621				
Social media enhances the company's image	0.663				
Social media is compatible with our culture and values		0.745			
Social media is compatible with our preferred work practices		0.700			
Social media security is compatible with us		0.803			
Social media legal issues are compatible with us		0.680			
It would not affect the firm if it decided not to adopt social media after all		0.522			
I find it easy to get social media to do what I want to do			0.670		
It is easy to become skillful at using social media			0.843		
I find social media easy to use			0.824		
Interaction with social media is clear and understandable			0.754		
Social media is flexible to interact with			0.839		
Social media-created changes are compatible with our business				0.651	
Social media is compatible with our customers				0.796	
Being able to try out social media was important for the firm to use it				0.617	
Being relatively cheap/free, it was good that the firm could pilot use of social media				0.425	
We can see our customers like social media when we use it					0.734
We have no difficulty telling our customers and partners what our social media program is					0.768
Our customers know about our firm when we use social media					0.685
We can see the results of our social media program					0.741
Reliability scores	0.744	0.751	0.861	0.562	0.760

Table AIV. Factor loadings for the technological construct

Measurement items	Social media adoption (SMA)
Firm's level of utilization with social media	0.770
Years organization has been using social media	0.643
Extent social media is used as a marketing tool in organization	0.676
Hours per week company uses social media	0.714
Total marketing budget allocated to social media	0.606
Reliability scores	0.719

Table AV. Factor loadings for social media adoption

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