



Social Media Adoption by SMEs in Saudi Arabia: Organizational Perspective

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Abstract: Social media platforms are considered as effective innovations that offer significant advantages for small and medium enterprises (SMEs) such as reaching new markets and customers, promoting their products and brands, and improving the quality of communication. Currently, organizations have become aware of social media influence which will help them to develop long meaningful relationships and to improve the firms' performance. However, some risks can be highlighted such as firm culture, security and privacy issues. The increase in the use of social media has encouraged both individuals and businesses to take advantage of them. Many SMEs around the world have implemented new services using these tools to expand their existing marketing strategies, attract new customers, and improve their reputation. As more and more companies are using social media to improve their business activities, it is important for enterprises to highlight factors that influence corporate intentions to adopt social media. Therefore, the main objective of this research was to identify the factors that encourage SMEs to use social media as these can be useful tools for improving existing and future business functions. A model for exploring and predicting the use of social media has been presented in this research based on the TOE framework and IDT which help in achieving a better understanding of IT adoption. Drawing from the innovation adoption literature, a range of factors that might influence SMEs' intention to adopt social media were identified and tested. Saudi SMEs have recognized the importance of social media and have thus used them for several objectives. The findings of this study indicate that social media technology, organizational, and environmental contexts contribute to social media adoption and use, which can be used as a foundation of future work in terms of developing and implementing social media platforms. This research has contributed to the existing literature by providing a model that can be used to analyze an organization's behavior towards the use of social media for SMEs, which is quite different from other models such as TAM and UTAUT that focus on individuals' behavior. These models can also be used to study the role of social media adoption on the companies' performance.

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Introduction

Social media platforms are considered as effective innovations that offer significant advantages for small and medium enterprises (SMEs) such as reaching new markets and customers, promoting their products and brands, and improving the quality of communication. Currently, organizations have become aware of social media influence which will help them to develop long meaningful relationships and to improve the firms' performance. However, some risks can be highlighted such as firm culture, security and privacy issues.

On the other hand, SMEs continue to be important contributors to the economy. However, how these enterprises are using new technologies requires more analysis (Beier et al. 2016). Innovation adoption by SMEs is a growing area of interest in general and more specifically in developing countries. Several models have been built in order to investigate the use

of social media platforms and their impacts on business. Sigala (2011) focused on the application of SNSs on Greek tourism and discussed the factors that influenced the adoption of social media that empower CRM practices. He identified four issues that needed to be addressed: enhancement of the technological skills and competencies of their staff and/or outsourcing such skills to third parties; incorporation of social media responsibilities into e-marketers' job descriptions; identification and use of more appropriate CRM metrics that can be used for customer segmentation, targeting and reward strategies; and use of mechanisms to identify and eliminate the malicious usage of social media (Sigala 2011). However, there is a lack of investigation into the adoption and use of social media by SMEs (Cragg et al. 2011; Shang et al. 2011) and empirical research focusing on SMEs adoption of social media

tools (Meske et al. 2013; Parveen 2012; Wamba et al. 2016) even though “SMEs are the engine of the economies of many countries” (Bruque et al. 2007, p241).

Therefore, the aim of this research is to fill this gap by identifying and investigating the factors that influence the adoption of social media in business in Saudi Arabia focusing on SMEs. Based on existing literature and identified factors, a theoretical model that integrates identified factors with the established theories in the relevant areas will be developed and tested.

Literature Review

Web 2.0' and 'social media', both refer to highly interactive technologies that emphasize interaction, connection and collaboration between people (Burns 2008). Askool et al.(2011, p206)defined social media as “a second generation of web platforms and applications (services) that are created based on dynamic content for enhancing communication and collaboration activities and emphasizing social aspects.” Various social media are widely used including blogs, microblogging, wikis, podcasts, social networking services sites (SNSs), media sharing websites, and RSS feed platforms. Fewer distinctions between these platforms can be observed because they are incorporating more and more overlapping features. For example, blogs, wikis, and media sharing platforms offer social networking features even though this is not their main function. Facebook, Twitter and Instagram are examples of public social media platforms that attract billions of people who join these websites to keep in touch with each other, search for experts in a given subject and engage in business (Kleinberg 2008). On the other hand, it has also been argued that social media will empower the extensive diffusion of social commerce which refers to “a form of Internet-based social media that allows people to participate in the marketing, selling, comparing, and buying of products and services in online marketplaces and communities”(Stephen et al. 2010, p215)because it can provide a better customer shopping experience and a better channel for attracting and retaining online customers. It can also improve communication and collaboration between company and its stakeholders (Culnan et al. 2010; Kafai et al. 2010) in addition to offering an innovative way for companies to identify products or services with high selling potential(Liang et al. 2011).

A wide range of studies have investigated the adoption of social media including social media tools in SMEs(Al Rahbi 2017; Araujo et al. 2016; Beier et al. 2016; Wamba et al. 2016). Beier & Wagner (2016) found that 35% of Swiss SMEs have adopted social media for business purposes and their executives are influenced by the expectancy of low returns and high

perceived risks of not adopting social media applications. Another study by Araujo & Zilber(2016) confirmed that the main factors influencing the adoption of social media are relative advantage and observability. Roy et al.(2014) indicated that ease of use, affordability, and availability of time to implement it or the availability of technical support influence the use of social media in SMEs. They also indicated that Facebook is mainly used to reach their current customers and potential customers to implement their promotional programs. Sykes et al.(2009) reported that there is a strong relationship between connection and interaction with social networks and individuals' use of technology. Accordingly, the successful adoption of technological innovations can be achieved through high quality interaction between individuals, their peers, and organizations that create great synergies.

Theoretical Background and Research Model

Some efforts have been made in academia to study enterprise ICT/IS adoption and accordingly researchers have been able to draw several theories from different perspectives: economics, computer science, psychology, and management, to inform and deepen insights regarding enterprise system adoption issues (Kambil et al. 2000). Different studies have focused on understanding individual and enterprise adoption of ICT/IS, and in a review of the technological innovation literature it was noticed that Davis' (1989) Technology Acceptance Model (TAM) appears to be the most widely accepted model for investigation of individuals' usage and acceptance of such technology. In contrast, Rogers' (2003) Innovation Diffusion Theory (IDT) and Technological-Organizational-Environmental (TOE) framework are the most extensively used models by researchers identifying perceived critical characteristics of innovations in terms of enterprise adoption (Damanpour 1991; Sean et al. 2004; Zhu et al. 2003).

Innovation Diffusion Theory (IDT) was pioneered by Rogers(2003) to explain the innovation decision process, the determining factors of rate of adoption, and the different categories of adopters. Rogers(2003) argued that there are five important innovation factors which explain the different rates of adoption by users: relative advantage, compatibility, complexity, observability, and trialability. These five attributes have been broadly used by many researchers to explain the adoption and diffusion of ICT/IS innovations. However, among these elements, compatibility, relative advantage, and complexity were found to have consistent associations with innovation behaviors(Zhu et al. 2010). Conversely, several limitations have been identified of IDT. The first, IDT theory lacks innovation attributes and adoption behavior, which makes it difficult to recognize the

adoption behavior of complex organizational technologies (Lee et al. 2004). Second, influence from organizational and environmental elements is excluded from the IDT theory (Lee et al. 2004). IDT must also incorporate more factors, either as independent or control constructs because classical diffusion factors by themselves are unlikely to be strong interpreters of complex technology adoption (Perez et al. 2004). Furthermore, IDT does not propose methods for examining the associations between individual and organizational decision-making, and the social context, which is considered to be complex and where organizations make decisions (Parker et al. 2009).

Technological-Organizational-Environmental Framework (TOE):

Tornatzky and Fleischer (1990) created the TOE framework to understand the adoption of general technological innovations. This framework describes three important components: technological, organizational, and environmental, which facilitate any technology adoption and affect a firm's adoption decisions. While the technological context refers to both current technologies inside the firm and the available technologies in the market, the organizational context concerns the resources available to support the use of the technology such as organizational scope, firm size, and organizational structure. The environmental context represents both direct and indirect roles of industries, associations, competitors, and governments. However, the TOE framework supposes that there are no links among the three major contexts. This framework has been utilized comprehensively in Electronic Data Interchange (EDI) studies; Iacovou et al. (1995) developed and examined a model with three major drivers for EDI adoption, namely technological, organizational, and environmental factors using seven case studies. Then, Kuan and Chau (2001) tested the model produced by Iacovou et al. (1995) and confirmed the usefulness of the TOE framework for studying the adoption of complex IS innovations. Moreover, this framework has been empirically well established in the study of different types of technology and their adoption including e-business (Ismail 2013; Sean et al. 2004), mobile commerce (San Martin et al. 2012), ERP (Bradford et al. 2014; Zhu et al. 2010), cloud computing (Lian et al. 2014).

Thus, based on literature and empirical support for all models discussed earlier, the TOE framework and IDT theory have been used as groundwork theories to discover social media usage in SMEs in Saudi Arabia. Moreover, they have been used because TOE not only deals with technology acceptance but also with organization and environment factors while other models focus on the individual aspects.

Research Model

A conceptual model (Figure 1) of social media adoption was developed based on the TOE framework, using the thematic content analysis of the literature, illustrates the relationships between several factors which influence SMEs to use social media. Thematic Content Analysis refers to a qualitative research method for the subjective interpretation of text data by coding, identifying, and reporting patterns or themes using a systematic categorization process (Silverman 2006). The conceptual model (Figure 1) incorporates 11 factors which will be measured by a set of items that were identified from previous research.

Technological Context

The technological context focuses on the characteristics of considered technologies that are currently used by an organization and new technologies available in the market place. For this study, the following five factors were identified as important variables that influence social media usage.

Relative advantage: is defined as “the degree to which an innovation is perceived as being better than an existing one” (Rogers 2003, p229). Studies have confirmed that the perceived relative advantage of a new innovation is positively linked to its rate of adoption (Agarwal et al. 1997) and social media can offer advantages to SMEs in terms of marketing and customer engagement and can improve their financial performance (Saldanha et al. 2012). It is therefore suggested that:

H1: Perceived relative advantage of social media is positively related to the adoption of social media.

Complexity: refers to “the degree to which an innovation is perceived as relatively difficult to understand and use” (Rogers 2003, p257). Technological innovation is often regarded as a complex assignment and puzzling to the adopters (Grover 1993). Accordingly, technologies that have a higher ease of use are more likely to be adopted than those that require new skills. Therefore,

H2: Perceived simplicity of using social media is positively related to the adoption of social media.

Compatibility: refers to “the degree to which an innovation is perceived as consistent with the existing values, past experiences and needs of potential adopters” (Rogers 2003, p240) in addition to the compatibility of new technology with existing systems. Parveen (2012) reported that social media compatibility with existing technologies and an organization's values can influence the adoption of social media. It could be said that social media platforms are flexible enough to be compatible with both current technology infrastructure and a range of business activities such as promotion and marketing, sales, customer support and innovation.

H3: Compatibility of social media with current business activities and information systems is related to the adoption of social media.

Trialability: refers to “The degree to which an innovation may be experimented with on a limited basis” (Rogers, 2003, p. 258). Trialability is likely to be more significant in early stages than late stages of adoption. Al Rahbi(2017) reported that trialability is a significant factor that influences social media adoption in Omani SMEs. Thus, we suggest that:

H4: Perceived trialability of social media is positively related to adoption intention of social media.

Perceived Security: The degree of perceived risk of the technology could affect the rate of technology adoption; where risk is perceived to be high, adopters would be less willing to adopt the technology and its applications (Shoemaker et al. 1975). Loh and Ong (1998) concluded that users’ concerns about security challenges are one of the key factors for the widespread acceptance of new systems adoptions. Moreover, it was found that perceived security can negatively impact social media adoption(Sinclair et al. 2011) due to the fact that organizations cannot protect personal and published information on social media platforms(Yoon et al. 2013). Computer viruses and hacking have also been found to be very real and serious challenges among customers and organizations(To et al. 2008). Accordingly, we suggest that:

H5: The level of security is related to the adoption intention of social media.

Organizational Context

Top management support: refers to managerial beliefs and support that are required in initiatives and participation in the diffusion and adoption of IT innovation within an enterprise (Chatterjee et al. 2002). Decision makers’ input and support are often required to achieve the successful adoption of an innovation and IS (Chatterjee et al. 2002). A recent study by Al Rahbi(2017)found that in addition to the motivation of team members, management and technical support are the most successful factors for social media adoption in SMEs. Accordingly, the following hypothesis is proposed:

H6: Top management support is related to the adoption of social media.

Innovativeness: refers to the extent to which a member adopts innovations earlier than other members in the same social context. Although SMEs have more flexible systems in their business activities and less bureaucratic systems, several studies have argued that large organizations are more innovative(Rogers 2003). However Thong (1999) reported that SMEs are more likely to adopt IT/IS if they have members from top management who are more innovative and have a positive attitude towards IT/IS. Al Rahbi’s(2017) study concluded that the innovativeness of top management is an influential factor leading to social media adoption. Thus, the following hypothesis is proposed.

H7: Level of innovativeness of SMEs is related to the adoption of social media.

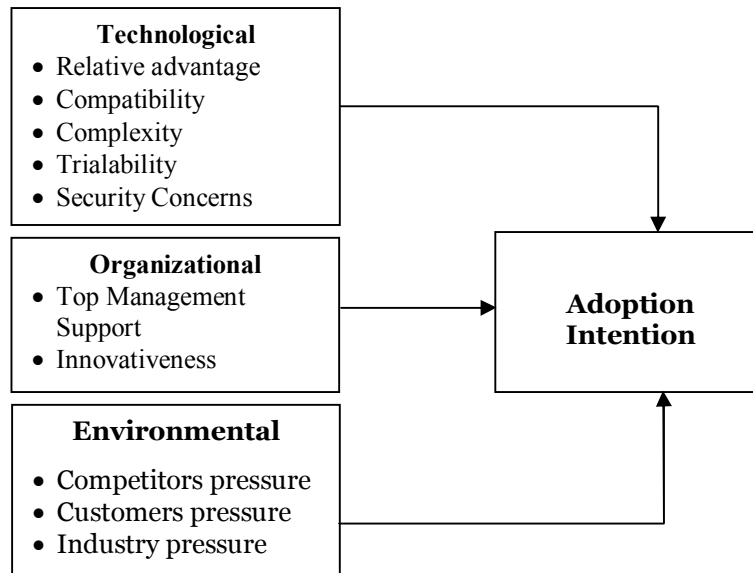


Figure 1 Proposed Model for social media adoption in SMEs

Environmental Context

The environmental context focuses on institutional pressure that has emanated from the

external environment such as consumer, competitive and industry pressures, which can influence firms’ behavior.

Competitor Pressure: refers to “the degree that the company is affected by competitors in the market” (Zhu et al. 2004, P24). The impact of competitor pressure on technology adoption was confirmed in several areas such as e-business adoption (Lin et al. 2008; Zhu et al. 2003) and social media (Yoon et al. 2013).

H8: Competitor pressure is positively associated with the adoption of social media.

Customer Pressure: Zhu and Kraemer (2002) argued that firms can increase operational efficiencies, improve service responsiveness, and information transaction and transparency when they adopt IT technologies. Conversely, the importance of customer pressure in driving enterprises to adopt social media was confirmed by Al-Rahbi(2017) and Sinclair et al. (2011). Therefore, we believe that customer expectations and needs have an effect on the adoption intention of a social media.

H9: Customer pressure is positively associated with the adoption of social media.

Industry Pressure: Refers to the degree of pressure felt by the firm from the entire trend and direction of operational practices(Lin et al. 2008). While some researchers highlighted that organizations in fast growing industries are likely to innovate more rapidly, some literature argued that a highly competitive industry can pressure organizations into adopting new technologies (Thong 1999; Zhu et al. 2003). Moreover, evidence showed the great influence of industry pressure on the adoption of social networking tools (Sinclair et al. 2011). Accordingly, we suggest:

H10: Industry pressure is positively associated with the adoption of social media.

Research Methodology

A quantitative approach was applied for collecting the data in order to test the hypotheses and validate the model. A questionnaire was developed and translated into Arabic. The Saudi Chamber of Commerce and Industry directory for private companies in Jeddah was used as the sampling frame. Only 1500 out of 3100 organizations were included due to some issues such as phones numbers or email addresses not being valid, or website links were not found or under construction. Among the 1500 companies, only 553 organizations from different sectors such as food and beverages, IT, health, education, and beauty and fashion had social media accounts and therefore, were selected as the domain of analysis. However, several companies were reluctant to answer the survey as they were extremely skeptical about confidentiality, which reduces the number of collected samples used in the research. These types of

challenges are common and have been reported when conducting survey in developing countries. This research is no exception to other studies carried out in Saudi Arabia in employing a purposeful sample. An online questionnaire was selected as opposed to using direct delivery or postal surveys, aiming to distribute it among a large group of companies. It is also considered a friendly and low-cost method. The questionnaire was pre-tested to confirm that it was clear and understandable which could improve the accuracy of data collected and lead to meaningful data analysis. Moreover, in order to confirm the validity of the questionnaire, two academics from the field of IS reviewed it and recommended some changes to the categorization of age and academic level to avoid any overlapping categories. Then, the questionnaire was sent to 20 SMEs located in Jeddah for pre-testing and to confirm that there were no unanticipated difficulties. The reliability of the pre-test survey achieved a Cronbach’s alpha value of 0.80 which was higher than the recommended value of 0.70(Hair et al. 2006). Then, the final survey was distributed to the business owner, CEO, general manager, IT/IS and marketing manager in addition to financial and administrative managers of each SME. Among the 543 questionnaires distributed, 267 questionnaires were returned with 177 being fully completed, representing a 33% response rate. Ten responses were excluded as they were insufficient to offer meaningful analysis. This left a total of 167 responses that were fully analyzed (response rate = 62.5% of the returned questionnaires).

The characteristics of the respondents showed that the overwhelming majority 73.7% were male and over 42.5% belonged to the 30 to 40 years old age group. They were also generally well educated with 75.4% having a university degree or above and 70.7% of them were business owners and CEOs. More than 40% of respondents (40.2%) have worked in their business profession for an average of 10 years. Table 1 presents the respondents’ characteristics.

In terms of companies’ profiles, the characteristics of the sample indicated that the majority (77.9%) were small companies with 50 employees or less, and were from construction and real estate, food and restaurant services, and education, which comprised 50.2% of the sample. In addition, more than 50% of the companies sampled (55.1%) were established less than 5 years previously and sales turnover was less than half a million SR for 49.1% of respondents. The largest proportion (75.4%) of the companies had developed a social media strategy which means they allowed business activities to be conducted through social media tools. Table2 presents the profile of respondents’ companies.

Table 1 Profile of Survey Respondents

Respondents Characteristics	Number of respondents (n=167)	Percentage (%)
Gender		
Male	123	73.7
Female	44	26.3
Age		
Under 30 years	38	22.8
From 30 to Less than 40 years	71	42.5
From 40 to less than 50 years	34	20.4
50 years and over	24	14.4
Education		
High School	24	14.4
Trade qualification	17	10.2
Bachelor's degree	74	44.3
Master's degree	45	26.9
Doctoral degree	7	4.2
Years in the business profession		
Less than 5 years	45	26.9
From 5 to less than 10 years	55	32.9
From 10 to less than 15 years	33	19.8
From 15 to less than 20 years	17	10.2
Over 20 years	17	10.2
Position		
Business Owner	88	52.7
President, CEO, director	30	18.0
Business Operation manager	11	6.6
IT/IS director, Manager, Planner	7	4.2
Administration/Finance Manager	8	4.8
Marketing Director/Manager	12	7.2
Digital Marketing Manager, Designer, Specialist	11	6.6

The use of social Media

Analysis of collected data was carried out to explore the usage of social media by Saudi SMEs. It was found that Instagram, Twitter and Facebook were the most popular choices with response rates of 66.5%, 64.7%, and 53.9% respectively. It was also noticed that a large number of companies (88.6%) never used Foursquare. This could be due the fact that it is mainly connected with restaurants, cafes, and shopping stores.

The data also showed that although LinkedIn is considered a professional social media platform for companies and employees, almost 66% of the companies participating in this study never used it. Overall, the findings from the participants' responses indicated that most of the companies are social media users. Therefore, it can be asserted that the samples were representative of the SMEs investigated.

Table 2 Profile of Companies

SMEs' Characteristics	Number of respondents (n=167)	Percentage (%)
Company size		
Less than 25 employees	97	58.1
25 –50 employees	33	19.8
51 –100 employees	16	9.6
101 - 150 employees	6	3.6
151 - 200 employees	3	1.8
201 –250 employees	4	2.4
251 –500 employees	8	4.8
Company sector		
Education	14	8.4
Medical care and pharmaceuticals	5	3.0
Computer and electronic accessories	10	6.0

Tourism and hospitality services	8	4.8
Marketing and advertising	7	4.2
Food and restaurant services	21	12.5
Printing and publishing	2	1.2
Insurance and financial services	5	3.0
Beauty and hair dressing	10	6.0
Clothing, accessories, and footwear	16	9.6
Interior design/furniture	9	5.4
Construction/real estate consultancy	49	29.3
Motor/auto services and maintenance	6	3.6
Financial/management consultancy	5	3.0
Company age		
Less than 5 years	92	55.1
5 to less than 10 years	41	24.6
10 to less than 20 years	20	12.0
20 to less than 30 years	11	6.6
30 to less than 50 years	2	1.2
More than 50 years	1	0.6
Annual sales in the last financial year		
Less than SR half million	82	49.1
From SR half million to less than 1 million	32	19.2
From 1 million to less than 5 million	29	17.4
From 5 million to less than 10 million	9	5.4
More than 10 million	15	9.0
Availability of social media strategy		
Yes	126	75.4
No	41	24.6

The type of activity on social media varied among the companies. Nearly 63% of respondents used both Twitter (62.9%) and Instagram (62.3%) to attract new customers and more than 50% used both Twitter and Instagram to cultivate relationships. Almost 56% used Twitter to increase customer awareness. In order to communicate the brand online and market new products and services, Instagram was the most used platform to accomplish these goals with percentages of almost 57%. It also had the largest percentage (63.5%) regarding marketing new products or services. Twitter had the largest percentages in terms of receiving feedback with almost 60% and enhancing customer care and interacting with suppliers with 65% and 42% respectively. Both Twitter and Instagram received around 48% when asked about whether they used these platforms to find about competitors' products reviews. Surprisingly, when asked about using social media to recruit new staff Facebook, Twitter and LinkedIn received approximately the same percentage of responses with an average of 33%. In summary, it was found that Twitter and Instagram were the most used tools by Saudi SMEs. Table 3 provides more information about the use of social media tools by SMEs.

Research Constructs and Testing the Measurement Model

Measurement items were created mainly based on a comprehensive literature review by adopting validated measures from previous studies in order to ensure the content validity and reliability. A five-point Likert scale from 1 representing "Strongly agree" to 5 representing "Strongly disagree" was used to measure each factor by asking participants to choose what they think best fits their company.

A logistic regression analysis and Structural equation modelling (SEM) was performed to test the overall fit of the model and evaluate the research hypotheses, the internal consistency reliability and validity of each construct used. AMOS software was used to execute SEM. It helps in constructing tests of the psychometric properties of the scales applied to determine the parameters of structural model. The data collected was screened for normality, outliers, and reliability to be sure that no undesirable conditions were evident that may have made the data inappropriate for analysis. Skewness, kurtosis, and the Kolmogorov-Smirnov tests were used to examine the normality of data. The results indicated that none of the variables were normally distributed; sig value for all items was less than 0.05. Consequently, the Generalized Least Squares (GLS) was used for estimation since it does not depend on normal distributions.

Table 3 Social Media Activity by SMEs

Type of activity	FB	Twitter	Instagram	Snapchat	LinkedIn	YouTube	Foursquare
To attract new customers	84 50.3%	105 62.9%	104 62.3%	56 33.5%	23 13.8%	36 21.6%	9 5.4%
Cultivate relationships	68 40.7%	97 58.1%	87 52.1%	41 24.6%	26 15.6%	27 16.2%	6 3.6%
Increase awareness	68 40.7%	93 55.7%	89 53.3%	53 31.7%	16 9.9%	41 24.6%	8 4.8%
Communicate the brand online	68 40.7%	89 53.3%	95 56.9%	52 31.1%	23 13.8%	39 23.4%	8 4.8%
To market new product/service	74 44.3%	100 59.9%	106 63.5%	59 35.3%	18 10.8%	38 22.8%	9 5.4%
To receive feedback	69 41.3%	98 58.7%	81 48.5%	39 23.4%	20 12.0%	27 16.2%	7 4.2%
Customer care	65 38.9%	94 56.3%	76 45.5%	39 23.4%	16 9.6%	25 15.0%	7 4.2%
Interact with suppliers	46 27.5%	71 42.5%	59 35.3%	35 21.0%	24 14.4%	19 11.4%	6 3.6%
Learn about competitors' products review	62 37.1%	80 47.9%	80 47.9%	43 25.8%	20 12.0%	22 13.2%	9 5.4%
To recruit new staff	57 34.1%	56 33.5%	37 22.2%	29 17.4%	54 32.3%	16 8.4%	0 0.0%

Construct Validity Results

In order to test the validity and reliability of the measures, a two phase approach suggested by Anderson and Gerbing(1988) was applied. This approach includes the test of the measurement model by performing confirmatory factor analysis followed by the evaluation of the structural relationships among latent constructs. According to Fornell(1982), it is important to estimate the internal consistency, reliability and the convergent and discriminate validity of the research instrument in the first step as they indicate strength measures used to examine the proposed model. Three types of measures were employed to assess scale reliability: internal reliability, composite reliability, and average variance extracted (AVE). In order to test the reliability of each item, Cronbach's alpha was calculated to which examine the inter-correlations between items of the same construct. The Cronbach's Alpha (α) value of all measures were above the acceptable level of 0.70 (Hair et al., 1998) except for three measures: Trialability (0.577), Security Concerns (0.525) and Industry Influence (0.539) as presented in Table 4. Therefore, these three constructs were excluded from the data analysis and the model under investigation. It is also noticeable that the factor loadings for remaining constructs were high; the lowest factor loading was 0.707. Overall, the results of statistical analysis showed an adequate reliability for each group of items. The final instrument includes 37 items presented in Table 4 with $\alpha = 0.926$. This instrument includes: 17 items for capturing

technological determinants with $\alpha = 0.845$; 8 items for measuring organizational determinants with $\alpha = 0.840$; and 7 items for environmental determinants with $\alpha = 0.907$. The constructs under investigation also obtained a composite reliability greater than the cut-off value of 0.60(Blunch 2012).

Fornell and Larcker (1981) mentioned that convergent validity is used to assess the reliability across multiple operationalization and achieving an average variance extracted (AVE) of a least 0.5 is recommended. Conversely, discriminant validity describes to what extent measurement scales differ from one another. The square root of AVE has to be greater than the correlation among any pair of latent variables in order to achieve acceptable discriminant validity (Fornell et al. 1981). Table 5 illustrates the discriminant validity of latent constructs including the square root of AVE on the diagonal. The statistical analysis results showed the convergent and discriminant validity and of this study constructs.

Results and Model Validation

In this research a logistic regression analysis (Table 6) was used to test the proposed model and regression coefficients of the independent variables was used to test the hypotheses formed. From the results of the logistic regression illustrated in Table 6, a strong relationship between the dependent variable and the independents variables was achieved with a likelihood ratio (=528.655). The Nagelkerke R square indicated that the model can explain approximately 70.2% of the variance in the dependents variables. The

Hosmer and Lemeshow Chi-square test (21.213, $p = 0.027$) is not significant ($p < 0.01$) thereby indicating

that the logistic regression model is not a perfect model.

Table 4 Constructs Reliability and Validity

Constructs	Items	Loading	Composite Reliability	Cronbach's Alpha	Average Variance Extracted (AVE)
Relative Advantage	RA1	0.848	0.936	0.908	0.623
	RA2	0.859			
	RA3	0.905			
	RA4	0.991			
	RA5	0.895			
	RA6	0.981			
	RA7	0.751			
Compatibility	CM1	0.760	0.877	0.744	0.654
	CM2	0.746			
	CM3	0.715			
	CM4	0.703			
	CM5	0.712			
Complexity	CX1	0.731	0.756	0.689	0.612
	CX2	0.786			
	CX3	0.822			
	CX4	0.798			
	CX5	0.888			
Trialability	TR1	0.505	0.643	0.577	0.489
	TR2	0.611			
	TR3	0.543			
Security Concerns	SC1	0.622	0.476	0.525	0.486
	SC2	0.369			
	SC3	0.499			
Top Management Support	TS1	0.899	0.846	0.911	0.580
	TS2	0.965			
	TS3	0.941			
	TS4	0.758			
Organization Innovativeness	OI1	0.775	0.777	0.727	0.641
	OI2	0.703			
	OI3	0.711			
	OI4	0.828			
Competitive pressure	CP1	0.849	0.838	0.819	0.651
	CP2	0.823			
	CP3	0.709			
	CP4	0.825			
Customer pressure	CUP1	0.891	0.825	0.876	0.727
	CUP2	0.847			
	CUP3	0.788			
Industry Pressure	IP1	0.433	0.641	0.539	0.623
	IP2	0.732			
	IP3	0.522			
	IP4	0.645			
Adoption Intention	AI1	0.785	0.847	0.920	0.763
	AI2	0.780			
	AI3	0.820			
	AI4	0.989			
	AI5	0.953			

Table 5 Discriminant validity of construct

Correlation Matrix SQUARED	RA	CM	CX	TM	OI	CP	CUP	AI
RA	0.79							
CM	0.35	0.77						
CX	0.21	0.51	0.76					
TM	0.27	0.49	0.51	0.80				
OI	0.15	0.39	0.48	0.46	0.81			
CP	0.27	0.53	0.50	0.63	0.54	0.81		
CUP	0.19	0.29	0.33	0.38	0.35	0.43	0.85	
AI	0.19	0.36	0.37	0.42	0.42	0.45	0.34	0.86

Source: Extracted from SPSS statistical analysis results

Note: Diagonal elements (in bold) are the square root of average variance extracted (AVE) and off-diagonal elements are the correlations among constructs.

Table 6 Results of the logistic regression analysis

Variables	B	S.E.	Wald
H1: Relative Advantages (RA)	0.713***	0.176	47.699
H2: Complexity (CX)	0.508 **	0.192	6.981
H3: Compatibility (CM)	0.016	0.012	6.798
H4: Trialability (TR)	0.330	0.187	3.182
H5: Security Concerns (SC)	0.222	0.161	1.915
H6: Top Management (TM)	0.448***	0.126	12.371
H7: Organizational Innovativeness	0.652	0.171	63.526
H8: Competitor Pressure	0.231***	0.324	21.985
H9: Customer Pressure	0.576	0.169	31.888
H10: Industry Pressure	0.056	0.178	0.078
-2 Log Likelihood	=528.655		
Cox & Snell R Square	=0.498		
Nagelkerke R Square	=0.702	(*) p< 0.05	
Hosmer and Lemeshow Chi-square Test	=21.213	(**) p<0.01	
Significance	=0,027	(***) p< 0.001	

The regression model supports seven hypotheses related to relative advantages, complexity, compatibility, top management, innovativeness, competitors and customers pressures and accordingly, we suggest that these factors support social media adoption in Saudi SMEs. On the other hand the coefficients for three variables, trialability, security concerns, and industry pressure were not statistically significant.

Further Test: SEM

Further test was performed using SEM because it can provide a more holistic picture of social media adoption. It is a useful method for studying a set of dependent relationships at the same time, in particular, when direct and indirect effects are expected among the constructs (Hair et al. 2006). AMOS software (Version 17.0) was used to execute the evaluation of the research model. In the SEM, the sample size plays a major role in the reliability of the test. A minimum sample size of 200 is recommended by Anderson and Gerbing(1988), while Hair et al. (2006) argues that 150 can be an adequate sample size if a study includes

five or fewer factors with more than three items each and high item communality of 0.60 or above. Accordingly, the sample size (167) of this research is satisfactory for this purpose. A set of indices were created to measure the model fit and to examine if the data supported the proposed model (Blunch 2012). While the value of some of these indices is usually between 0.00-1.00, Minimum discrepancy (CMIN) is the only statistical measure of goodness-of-fit that tries to estimate whether any discrepancy exists between observed and estimated covariance matrices. It is represented by chi-square (χ^2) and has no threshold or acknowledged. However, CMIN divided by the degree of freedom with a value less than 5 indicates acceptable fit. Other indices were also recommended: Goodness of Fit (GFI), Adjusted Goodness of Fit (AGFI), Root Mean Square Error of Approximation (RMSEA), the Comparative Fit Index (CFI), and Parsimony Ratio (PRATIO) (Blunch 2012). Table 7 demonstrates that each value of these indices satisfied the recommended level of acceptable value, which means a good fit of the model was accomplished.

Table 7 Goodness-of-fit indices for original and modified model

Measure Type	Fit Index	Recommended Level of Fit	Original Model	Modified Model	Acceptable?	
Absolute Measures	Fit	CMIN (χ^2)	-	1918.654	1767.955	-
		DF	-	1084	714	-
		χ^2 / df	< 5.00	2.163	2.476	Acceptable
		GFI	1.000 = Perfect	0.898	0.913	Acceptable
		AGFI	>0.800	0.723	0.856	Acceptable
Incremental Measures	Fit	RMSEA	0.050 – 0.080	0.049	0.055	Acceptable
		CFI	>0.800	0.899	0.941	Acceptable
Parsimony Measures	Fit	TLI	>=0.80	0.811	0.891	Acceptable
		PRATIO	>0.600	0.899	0.964	Acceptable
		PCFI	>0.500	0.487	0.502	Acceptable

Examination of Research Hypotheses

The important criterion to evaluate the proposed model and the hypotheses formed is the estimates of path coefficients and R^2 . The path coefficients beta weight (β) is used to evaluate the structural model, which represents the level of strength of the relationships between dependent and independent variables, and the amount of variance explained by independent variables, which is referred to by R^2

value. The path coefficients and R^2 value show how the model is performing. The predictive power of the model can be tested by R^2 which will be analyzed in the same way as normal regression analysis. It is recommended that the standardized level of path coefficients (around 0.20 and ideally above 0.30) has to be obtained in order to be considered as meaningful (Blunch 2012).

Table 8 Parameter estimates for original and modified models

Hypothesis Path	Original Model				Modified Model				Supported?
	Path Coefficient (β)	Standard Error (S.E)	C.R (t-value)	R^2	Path Coefficient (β)	Standard Error (S.E)	C.R (t-value)	R^2	
RA → AI	0.292	0.08	6.025	0.526**	0.352	0.08	6.0252	0.568**	Yes
CM → AI	0.410	0.11	7.348	0.434**	0.440	0.11	7.3480	0.464**	Yes
CX → AI	0.585	0.10	12.411	0.501**	0.545	0.09	12.4115	0.522**	Yes
TR → AI	0.112	.044	2.520	0.122	-	-	-	-	No
SC → AI	0.150	.044	2.967	.153	-	-	-	-	No
TM → AI	0.816	0.05	17.114	0.614**	0.816	0.05	17.1142	0.647**	Yes
OI → AI	0.788	0.75	2.319	0.417**	0.788	0.77	2.31910	0.432**	Yes
CP → AI	0.367	0.83	13.674	0.458**	0.467	0.81	13.6743	0.481**	Yes
CUP → AI	0.778	0.70	17.492	0.281**	0.691	0.74	17.4927	0.292**	Yes
IP → AI	-0.035	.073	-0.475	0.564	-	-	-	-	No

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

The results found that all variables had significant statistical support except (TR → AI), (SC → AI), and (IP → AI), which have values of 0.112, 0.150, and -0.035 respectively. These relationships are the only relationships that were not statistically significant at the 0.01 level. Therefore, the relationships were considered insignificant and dropped from the final model. Table 8 outlines the assessment of the research hypotheses and parameter estimates for the original and modified model. Figure 2 illustrates the results of the statistical analysis of the research model including path coefficients, their significance, and the amount of variance explained (R^2).

The statistical analysis indicated that while relative advantage, compatibility, and complexity had positive effects on adoption intention with positive coefficient paths of 0.292, 0.410 and 0.585 respectively, trialability and security concerns had negative effects on adoption intention with a positive coefficient path of 0.112 and 0.150 respectively. Therefore, hypotheses from H1 to H3 were supported, which means that technological factors affect SMEs intention to adopt social media.

In terms of organizational context, we suggested that top management support and innovativeness may have a positive influence on adoption intention. The result showed strong support with positive coefficient

paths of 0.816 and 0.788 respectively. Hypothesis H6 and H7 were confirmed to show that top management support and organizational innovativeness are essential for using social media in SMEs.

It was also found that customer pressure and competitive pressure have a positive influence on SMEs' intention towards using social media with coefficient paths of 0.367 and 0.778 respectively, which means that H8 and H9 were supported.

However, industry pressure had negative effects on adoption intention with a negative coefficient path of -0.035. Overall, all hypotheses were supported except H4, H5, and H10 as presented in Table 8. The empirical results associated with good model fit indicate that the TOE framework (Figure 2) is suitable for explaining factors influence the social media adoption.

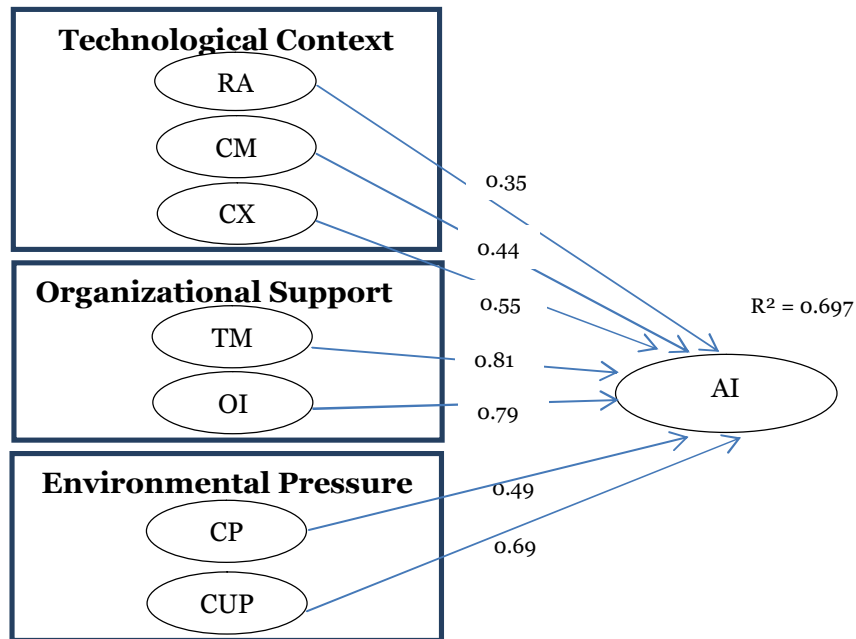


Figure 2 Structural model of SMEs social media adoption extracted from SEM Results

Discussion

The use of social media by SMEs is increasing because it offers platforms for users to interact and share information. This research investigated Saudi SMEs' intention to use social media and achieved a significant explanatory power (R^2) which explained approximately 70% ($R^2 = 0.697$) of the variance in adoption intention (AI). This study provides an insight into the state of the use of social media among Saudi's SMEs. It was found that social media tools are used in several business functions by SMEs. The finding also revealed that SMEs need to continue to explore and monitor social media tools, determine their advantages and benefits and then use them in order to remain competitive as the impact of these tools are observed in the range of advantages, for example, cost reduction in promotion and marketing, and customer services as well as enhanced branding image and reputation. This finding is similar to the results from other studies that confirmed that companies are taking into account their need for social media in order to differentiate themselves (Araujo et al. 2016; Tajudeen et al. 2016).

Moreover, three factors, relative advantage, compatibility, and complexity, were used to measure the influence of technology context on social media adoption by Saudi SMEs. The study confirms that SMEs are well aware of the advantages of using social media such as for interaction with customers, marketing, promotion, recruitment and more, which shows the capability of SMEs to adopt social media. Similar to other studies (Al Rahbi 2017; Araujo et al. 2016; Nicoletta 2010) respondents confirmed that the relative advantage factor has a positive influence on both current and future usage of the technology including social media tools. Social media tools are different from previous Internet technologies because they allow users to create and manipulate the content and carry out more activities with applications than before. The finding of this research in terms of the complexity factor is different from the findings in previous studies, as most respondents argued that social media are less complex and require little knowledge to use them, which will reduce the difficulties faced when adopting them. This finding is similar to Nicoletta's (2010) and Al-Rahbi(2017)

results that revealed that ease of use has a positive impact on the intensity of the use of social media. In terms of compatibility, respondents place a great importance upon the compatibility of social media tools regarding both technical features and SMEs' experiences and needs. This result is in line with previous studies that highlight the importance of the three factors for encouraging the adoption of social media by SMEs (Alshamaila et al. 2013; Angeles 2013; Arpaci et al. 2012). Therefore, the respondents' experience of using social media and its low complexity and good compatibility with current systems and their firms' activities are instrumental in influencing how social media will be used in the future.

In order to examine the influence of organizational context on adoption of social media among SMEs in Saudi Arabia, two factors, top management support and organizational innovativeness were tested and both factors confirm a significant relationship between organizational attributes and adoption. Similarly, prior studies (Alshamaila et al. 2013; Ndekwa et al. 2016) have claimed the importance of top management support and commitment to the successful adoption of new innovations and social media within an enterprise. Our findings, in contrast, illustrate that it is not only top management support and commitment that play a main role but organizational innovativeness within the SMEs also has a considerable impact on the decision to use social media. This result is in line with the findings of a prior study (Al Rahbi 2017).

On the other hand, the influence of environmental context was also investigated focusing on two attributes, competitive pressure, and customer pressure. Although some previous studies found that competitive pressure had no influence on social media adoption because small businesses usually focus on the customer and do not have direct competitors (Schaupp et al. 2013), this research confirms that both environmental attributes have a positive significant impact on social media adoption, which is consistent with findings from other prior studies (Alshamaila et al. 2013; Tajudeen et al. 2016). This due to the fact that customers and competitors are very active on social media, which put pressure on organizations to use social media efficiently to connect and interact with them. It could also suggest that customers have enough power to request SMEs to use social media.

Several implications can be derived from these findings. Firstly, the findings suggest that using social media has become significant and has influenced SMEs to put more effort into developing their ability to incorporate social media tools with their information systems. At the same time, the adoption of social media is linked with their corporate and marketing

strategy that aims to improve their relationships with customers and then increase customer satisfaction and loyalty by collecting and analyzing information about customers' needs. Hence, social media shows great potential for supporting marketing, sales, and customer services; it is about creating meaningful relationships, providing better services, and gaining competitive advantages. Furthermore, this study provides implications for both customers and competitors. Due to the customers' willingness to use these new technologies in communication with SMEs, companies should not only use social media for communication with customers or marketing but also make social media an essential part of their strategic plan in addition to running a training program to educate employees on how to use social media effectively and efficiently, specifically for those who are close to customers. For example, becoming a fan of a competitor's Facebook pages or following a competitor's Instagram account, which enables the company to retrieve more information about the competitor's activities and new products. This then helps them to achieve a greater positive impact on their performance.

Conclusions and Recommendations

The increase in the use of social media has encouraged both individuals and businesses to take advantage of them. Many SMEs around the world have implemented new services using these tools to expand their existing marketing strategies, attract new customers, and improve their reputation. As more and more companies are using social media to improve their business activities, it is important for enterprises to highlight factors that influence corporate intentions to adopt social media. Therefore, the main objective of this research was to identify the factors that encourage SMEs to use social media as these can be useful tools for improving existing and future business functions. A model for exploring and predicting the use of social media has been presented in this research based on the TOE framework and IDT which help in achieving a better understanding of IT adoption. Drawing from the innovation adoption literature, a range of factors that might influence SMEs' intention to adopt social media were identified and tested. Saudi SMEs have recognized the importance of social media and have thus used them for several objectives. The findings of this study indicate that social media technology, organizational, and environmental contexts contribute to social media adoption and use, which can be used as a foundation of future work in terms of developing and implementing social media platforms. This research has contributed to the existing literature by providing a model that can be used to analyze an organization's behavior towards the use of social media for SMEs,

which is quite different from other models such as TAM and UTAUT that focus on individuals' behavior. These models can also be used to study the role of social media adoption on the companies' performance.

A limitation of this research is that it is focused on Saudi SMEs that are located in Jeddah. Future work would be to validate our findings by recruiting more SMEs not only around the kingdom of Saudi Arabia but also covering companies in Gulf, Middle Eastern, and Western countries. In addition, this research would also include large companies to compare results between them and SMEs. Another limitation is that this research focused on the organizational level; therefore, the researcher also seeks to carry out several interviews with employees and managers for a better understanding of social media use and adoption. Future work will consider additional dimensions of social media usage followed by an in-depth analysis of companies' pages and accounts in social media and the implications for the system design as the model could give the system designer the ability to improve the social media tools by understanding organizations' and customers' attitudes towards using them.

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