

# Social Media and SMEs' Performance in Developing Countries: Effects of Technological-Organizational-Environmental Factors on the Adoption of Social Media

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## Abstract

Increasing globalization and rapid digitization across industries have led to greater international competition. Furthermore, the emergence of new innovation has created both challenges and opportunities for small and medium-sized enterprises (SMEs). SMEs have recently been attracted to social media applications to reach a larger audience, improve their relationship with potential customers, and retain existing customers. However, the scant focus has been devoted to comprehensively understanding the adoption of social media in the SME context in developing countries. This study investigates the effects of technological-organizational-environmental (TOE) factors on social media adoption and its effect on SME performance. Data was collected by generating online survey link. SmartPLS 3.3 was used for the path analysis of 381 SMEs. The findings revealed a significant effect of relative advantage, cost-effectiveness, compatibility, interactivity (technological), entrepreneurial orientation (organizational), and customer pressure (environmental) factors, and an insignificant effect of top management support (organizational) and competitive pressure (environmental) determinants on social media adoption. The study found a significant influence of social media on SME performance. This paper offers several implications for decision-makers, policy-makers, and scholars interested in social media and its use. It builds an empirical, integrated framework for SMEs in developing countries.

## Keywords

TOE framework, SME performance, social media adoption, developing countries

## Introduction

Pakistan has around 3.3 million SMEs, which contribute over 30% of gross domestic product and 25% of exports (Bokhari, 2020). Globally, SMEs represents over 90% of enterprises in emerging economies; in Pakistan, SMEs employ more than 80% of labor force. However, SMEs in emerging countries suffer due to lack of funding and potential opportunities for further growth, globalization, and technology usage, as well as other resources, compared to developed countries. In this context, SMEs in Pakistan are facing various issues and challenges (i.e., rapid changes in market demand, uncertainty, and lack of resources). Further, some SME owners avoid technology adoption due to a lack of training, and the fact that many forms of social media exist and how to engage with them (Qalati, Yuan, et al., 2021).

Furthermore, the COVID-19 pandemic has affected SMEs more than large firms, with these effects including a reduction in labor supply and customer demand, human mobility restrictions, interruptions in supply chains, and self-isolation. Coupled with COVID-19's effects, continuing improvements

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in technology and increased globalization are forcing SMEs toward adopting social media in emerging countries. Therefore, in response to the dynamic business environment, increasing competition, and customer shifts in using online platforms, social media has been proposed as a significant influencing factor for increasing SMEs' performance, thus supporting emerging economies (Alraja et al., 2020; Eze et al., 2021).

Moreover, social media is growing phenomenon whereby businesses can easily find potential customers, irrespective of any boundaries. Alraja et al. (2020) stated that social media applications should be used by SMEs in developing countries because of direct interaction, ease of use, low cost, and demographic targeting. Similarly, Ahmad Syed et al. (2019) concluded that social media is a popular choice for SMEs located in the United Arab Emirates (UAE), as it improves interaction and customer–firm relationships, enables clear communication, facilitates proactive responses to customers' needs, and is an inexpensive strategic choice for customer targeting, analytics, automated publishing, and content management. However, we believe that social media adoption is possible only when SMEs have a supportive culture for the new technology adoption process and there is encouragement for employees to adopt and learn new technologies.

Although several scholars have identified the significance of social media adoption and its usage, most have adopted a business–customer perspective. For example, Salem and Salem (2019) tested the influence of social media usage on brand loyalty, and Palalic et al. (2021) explored its effects on consumer buying decisions. Notably, Abed (2020), Ahmad Syed et al. (2019), Alraja et al. (2020), Fan et al. (2021), Qalati, Ostic, et al. (2021), and Sangi et al. (2018) have called for studies in the context of SMEs operating in UAE, Oman, Saudi Arabia, and Pakistan. Therefore, in order to improve our understanding of SMEs, this research employs the technology–organization–environment (TOE) model to identify determinants of social media and its effect on SMEs' performance in Pakistan.

The present study also aims to extend the TOE framework, adding to the existing literature on social media adoption and SMEs' performance. Moreover, the findings will help SMEs to make decisions regarding marketing activities, reaching customers, and which platform(s) should be used. Practically, SMEs will be able to reduce their marketing costs and improve their performance. Theoretically, the findings add to the literature by expanding the TOE model. In addition, this paper examines how future technologies may match with organizations' future requirements.

The rest of this study is organized as follows. Section 2 covers a literature of social media and the TOE framework, leading to the development of the hypotheses. Section 3 presents the research methodology and the outcomes are presented in Section 4. Section 5 concludes the article, providing a discussion and conclusions covering theoretical and practical contributions, and research limitations.

## Literature Review

### Social Media

Generally, there is no accepted definition of social media, although there have been several attempts. These attempts have been observed and defined in different contexts, including communication, technical, and social (Al Rahbi, 2017). Social media refers “to tools that facilitate and encourage interaction, collaboration, and communication through discussion, voting, comments, and the sharing of information” (Malita, 2011, p. 748). According to Kaplan and Haenlein (2010, p. 61), social media is defined as “a group of internet-based applications that build on the ideological and technological foundation of Web 2.0, and that allow the creation and exchange of user generated content.” Kaplan and Haenlein's (2010) definition is widely used in existing literature, for example in the perspective of education and innovation (Aldahdouh et al., 2020) and SMEs (Ahmad Syed et al., 2019; Qalati, Ostic, et al., 2021).

Many studies have reported the benefits of social media adoption and use in the SME context, both in developed and developing countries. For instance, McCann and Barlow (2015, p. 275) identified the benefits of social media adoption among Scottish SMEs as: “improved communication with customers; increased brand awareness; improved marketing of products and services; better ability to exhibit firm expertise; gaining more business contacts; better market research; better customer feedback; reduced communication costs; increased sales; better customers services; and increased customer satisfaction.” Increased productivity, systems integration, increased competitiveness, cost reductions, and the provision of a collaborative environment have also been reported among benefits of social media usage in the SME context (Irhas et al., 2020).

The current literature also observed many challenges and barriers toward adoption of social media. Such as, Bakri (2017) studied SMEs in “Gulf” countries and observed that 90% of firm owners were not using social media because they were unsure of the benefits and there was a lack of technical skills to integrate social media applications into their business operations. Likewise, El-Gohary (2012) evidenced that along with lack of innovative knowledge and skills regarding how to use, considerable execution costs, are significant barriers to adopt social media. Further, lack of trust, resources (i.e., financial and human), cultural issues, poor supportive environment, are other challenges toward social media adoption (Meske & Stieglitz, 2013; Panahi et al., 2014). However, researchers posit that the potential benefits of social media adoption for SMEs have been relatively unexplored in the existing literature (Bakri, 2017; McCann & Barlow, 2015). Therefore, this research have been conducted.

## TOE Framework

In the technology adoption context, the TOE framework (Tornatzky et al., 1990) and diffusion of innovation theory (Rogers, 1962) have often been used. Scholars have also used the technology acceptance model (TAM) (Davis et al., 1989), the theory of planned behavior (Ajzen, 1991), and the theory of reasoned action (Fishbein & Ajzen, 1975).

These theories proposed that many factors could affect technology adoption. However, the TOE framework has received consistent empirical support in the SME context (Abed, 2020; Eze et al., 2021). Furthermore, recent scholars have argued that TAM and the UTAUT model, when used for ICT-based innovation, overlook organizational, and environmental impact. It is considered necessary to cover both human and non-human viewpoint in a single model (Qalati, Yuan, et al., 2021; Wong et al., 2020) as this presents superior strength over traditional models. Therefore, we have employed the TOE framework, arguing that it can comprehensively demonstrate all of the aspects of determinants affecting social media adoption.

## Hypotheses Development

### Technological factors

*Relative advantage and social media.* Relative advantage defined as the extent to which potential adopters see technology better than available options (Rogers, 2003). Irhas et al. (2020) stated that representatives (i.e., owners and managers) of SMEs usually adopt innovation if they observe that its benefits far outweigh the risks of its adoption. Previously, many scholars have suggested that relative advantage has a positive effects on technology adoption in the SME context in emerging countries, including in blockchain adoption in Malaysian SMEs (Wong et al., 2020), in social media in Indonesian SMEs (Irhas et al., 2020), and in e-commerce in Egyptian SMEs (Hamad et al., 2018). However, Ahmad Syed et al. (2019) reported not a significant correlation between the relative advantage and social media use in SMEs located in UAE. Thus, based on the above findings and contradictory results, we hypothesize:

*H1a:* There is a significant effect of relative advantage on social media adoption.

*Cost-effectiveness and social media.* Cost-effectiveness defined as the degree to which innovation adoption results in more profits or better results in relation to its cost. The cost of technology is one of a critical determinants in the SMEs context because SMEs already suffer from a lack of funds (Qalati, Yuan, et al., 2021). Furthermore, it has been postulated that the “less expensive the cost of technology, the more likely it is that it will be adopted” (Rahayu & Day, 2015, p. 145). Recently, many studies have identified the

significance of cost-effectiveness and its effect on social media adoption in SMEs. For example, Maduku et al. (2016) studied a sample of 205 African SMEs and observed a significant influence of perceived cost on adoption of mobile marketing intention. Similarly, Ahani et al. (2017) also witnessed the positive effect of the cost of adoption on social customer relationship management adoption in Malaysian SMEs. However, Skafi et al. (2020) and Tajudeen et al. (2018) reported an insignificant influence of the cost on technology adoption in Lebanese and Malaysian SMEs, respectively. Moreover, Qalati, Yuan, et al. (2021) recently called for further studies in the social media adoption context in Pakistani SMEs. Accordingly, we hypothesize that:

*H1b:* There is a significant effect of cost-effectiveness on social media adoption.

*Compatibility and social media.* Compatibility defined as “to what extent innovation is appropriate with regard to the technology infrastructure, value, work practices, and culture that already exist in the firm” (Rahayu & Day, 2015, p. 144). These authors stated that technology will be easily accepted in the organization if it is tuned in with the principal value of that organization, can satisfy the desires of the organization, and is in line with the culture. Further, by integrating social media activities in firm operations in a way in line with the firm objectives, policies, and values, organizations are able to reach their target audiences efficiently and effectively via sharing information about the firms’ offerings instantly (Ahmad Syed et al., 2019). The findings of previous studies on IT-based adoption and social media in the SME perspective highlight that they have a positive influence on innovation adoption (Ahani et al., 2017; Eze et al., 2021; Hamad et al., 2018). However, Chatterjee and Kumar Kar (2020), Skafi et al. (2020), and Tajudeen et al. (2018) found an insignificant effect of compatibility on innovation adoption among Indian, Lebanese, and Malaysian SMEs. Thus, we hypothesize:

*H1c:* There is a positive and significant effect of compatibility on social media adoption.

*Interactivity and social media.* Interactive technologies or innovations are more rapidly and likely adopted by their practitioners (Tajudeen et al., 2018). Interactivity plays a key role in e-commerce and other worldwide web technologies, which suggests that both users and academics need to improve and update their information of this concept and use it effectively and efficiently (Ariel & Avidar, 2015). Social media also consider as an interactive media. In addition, there is general agreement that it allows two-way communication instead of a unidirectional distribution and transformation of information to potential customers (Ainin et al., 2015). Social-networking-platforms, like Facebook, YouTube, Twitter, and Instagram, have become ubiquitous, and online business websites have shown a significant interest

and rushed to integrate these social media applications into their sites, enabling increased interactive communication between the company and consumers (Lee & Kozar, 2009). Furthermore, the addition of social networking features also increases websites' credibility (Tajudeen et al., 2018). However, this factor has been little examined in the technological context using the TOE framework (Qalati, Ostic, et al., 2021; Tajudeen et al., 2018).

Therefore, to empirically test interactivity's effects on social media adoption in the SME perspective, we postulate as:

*H1d:* There is a significant effect of interactivity on social media adoption.

### Organizational factors

*Top management support and social media.* Top management support is defined as "resources that are available to managers as part of strategic view of the organization" (Zwikael & Levin, 2008, p. 22). It can be created by a set of policies and standards, access to knowledge resources, and direct communication with other managers. Top management support has been gradually used in existing literature in the context of innovation adoption (Olanrewaju et al., 2020). Managerial support is important in forming a supportive environment and allocating the needed resources for innovation adoption (Hamad et al., 2018; Irhas et al., 2020). The findings of previous studies related to innovation adoption have evidenced that it has a significant influence on innovation adoption in the SME context (Eze et al., 2021; Maduku et al., 2016; Qalati, Yuan, et al., 2021). However, Tajudeen et al. (2018) reported an insignificant effect among Malaysian SMEs. Thus, we hypothesize:

*H2a:* There is a significant effect of top management support on social media adoption.

*Entrepreneurial orientation and social media.* Entrepreneurial orientation refers to "a distinct organization's capability and intangible resources valuable in recognizing, assessing, and implementing new opportunities in a way that should not be easily imitated" (Fang et al., 2021, p. 2). Following the resource-based view (RBV), researchers have recently postulated that entrepreneurial orientation is necessary for SMEs operating in a digital and dynamic business environment as social media tools enable them to have two-way interaction with customers, suppliers, and other trading partners (Sahaym et al., 2021). Previously, several studies have evidenced the significant correlation between entrepreneurial orientation and social media use in the SME context in countries including Malaysia (Parveen et al., 2016; Tajudeen et al., 2018), Pakistan (Fang et al., 2021), and Indonesia (Dirgiatmo et al., 2019). Thus, based on the above findings and recent emphasis on the effect of entrepreneurial orientation on social media adoption, we hypothesize:

*H2b:* There is a significant effect of entrepreneurial orientation on social media adoption.

### Environmental factors

*Customer pressure and social media.* Customer pressure refers to any sort of pressure that is customer-centric or driven by customers, such as demands from the customer to see and interact with brands on social media applications, the sharing of information, etc. Furthermore, SMEs adopt new-technology because they perceive that their potential customers want them to do this. Abed (2020) suggested that meeting customer needs and expectations encourages positive innovation adoption among SMEs. Previously, Maduku et al. (2016) and Rahayu and Day (2015) reported the significant effect of customer pressure on innovation adoption in the SME context. However, this relationship still requires empirical research in the Pakistani context since most SMEs have adopted social media applications due to COVID-19's effects. Thus, we hypothesize:

*H3a:* There is a significant effect of customer pressure on social media adoption.

*Competitive pressure and social media.* Competitor pressure refer to "the degree of pressure from rivals within the industry/market as felt by the organization" (Rahayu & Day, 2015). Competitive pressure is critical element influencing innovation adoption in SMEs context (Hamad et al., 2018). It may be influenced by drivers such as the rapid diffusion of innovation, globalization, and technological advancement (Derham et al., 2011). It has been argued that greater the number of competitors in the industry greater will be new-technology adoption among SMEs (Ahmad Syed et al., 2019). Previously, many authors have recently observed a positive and significant effects of competitive pressure on innovation adoption in the developing countries context, including in Pakistan (Qalati, Yuan, et al., 2021), the UAE (Ahmad Syed et al., 2019), and Thailand (Tripopsakul, 2018). Thus, we hypothesize:

*H3b:* There is a significant effect of competitive pressure on social media adoption.

### Social Media and SME Performance

Social media can help organizations to increase their performance because it offers an opportunity for organizations to build and strengthen their brand name and acquire a completely new platform from which they can ultimately reap benefits (Sahaym et al., 2021). Social media platforms are an extremely essential part of marketing-related activities and it is more convenient for SMEs due to its cost-effective nature as a way to compete, with limited resources, against large organizations. Social media can also help SMEs to create



**Table 1.** Demographics of Participants and SMEs.

Demographic variable		Frequency	Percentage
Gender	Male	248	65.1
	Female	133	34.9
Participants age (years)	<25	80	21.0
	25–35	195	51.2
	36–45	77	20.2
	>45	29	7.60
Owners' and managers' education level	Intermediate and below	64	16.8
	Bachelor's	132	34.65
	Master's	155	40.68
	Other	30	7.87
Service sector	Education	42	11.01
	Healthcare	86	22.58
	Wholesale and retail	121	31.76
	Restaurant and hotels	132	34.65
Firm size (no. of employees)	<10	116	30.45
	11–50	198	51.97
	51–250	67	17.58
Firm age (years)	<1	95	24.93
	1–5	202	53.02
	>5	84	22.05
Years using social media platform(s)	<1	160	42.00
	1–5	189	49.60
	>5	32	8.4
Social media platform	Facebook	218	57.22
	WhatsApp	91	23.89
	Instagram	39	10.23
	Twitter	15	3.93
	Other	18	4.73

more knowledge regarding their products or services, which will convince their potential customers and ultimately increase organizational performance (Odoom et al., 2017; Parveen et al., 2016; Tajudeen et al., 2018). Leonardi and Vaast (2017) proposed that management scholars must focus on how social media enables firms and scholars to expand their examinations related to knowledge co-creation and performance. Thus, we hypothesize:

*H4.* Social media has a significant effect on SME performance.

## Methodology

### Sampling and Data Collection

We randomly selected research participants of Pakistani SMEs. Given the worsening COVID-19 situation, we administered web-based survey (generated via Google-Forms) and the link was distributed using social media applications (e.g., WhatsApp and Facebook) and personal emails to collect data from dispersed participants across the country. This study targeted only those SMEs in the service industry, covering

four sectors: restaurants and hotels; healthcare; wholesale and retail; and education. SMEs in Pakistan constitute nearly 99% of enterprises and contribute 40% of GDP: 58% from the service sector; 20.9% and 21% from the industrial and agriculture sector, respectively. The present research targeted the service sector because of the increasing attention by government bodies, such as the “Small and Medium Enterprise Development Authority” (SMEDA) and the State Bank of Pakistan (SBP). In addition, the service industry has been severely affected by the current pandemic and the associated lockdowns (Qalati, Ostic, et al., 2021).

A closed-ended questionnaire was used for data collection (from July to December 2020); three reminders were sent to participants. Of the 600 distributed questionnaires, we received 381 valid responses (a 63.5% response rate). Table 1 shows that nearly two-thirds of respondents were male, and the remainder were female. Over half (51.2%) of them were aged between 25 and 35 years. The majority (40.68%) had a master's and 34.65% a bachelor's degree. Of the 381 service sector SMEs, over one-third (34.65%) were in the restaurant and hotels sector, and 31.76% were in the wholesale and retail sector. Furthermore, over half (51.97%) of the SMEs had 11 to 50 employees, and nearly

one-third had less than 10 employees. Most of the SMEs (53%) were 1 to 5 years old, 49.6% had been using a social media platform for 1 to 5 years, and 57.22% were using Facebook as a social media platform.

### Measures

This study adopted well-established and recently used scales. Items were recorded using a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The present research includes four technological factors. The relative advantage scale was evaluated using six items borrowed from Ahmad Syed et al. (2019). Cost-effectiveness, compatibility, and interactivity were assessed using 3-, 4-, and 3-item scales, respectively, adapted from Ainin et al. (2015). Regarding organizational factors (top management support and entrepreneurial intention). Four items were used to assess the top management support, adapted from Ahmad Syed et al. (2019). Entrepreneurial orientation was evaluated using seven items taken from Dutot and Bergeron (2016) and Sahoo and Yadav (2017). This study also used customer and competitor pressure as environmental factors. Customer pressure was measured utilizing three questions adapted from Maduku et al. (2016) and competitor pressure through three questions adapted from Gutierrez et al. (2015). In order to measure social media adoption variables, we adapted a 5-item scale from Parveen et al. (2016) and Toker et al. (2016). The SME performance scale was measured by seven questions adapted from Ainin et al. (2015) and Parveen et al. (2016). Table 2 illustrates the factor loadings, and data related to reliability and validity.

### Data Analysis

We have employed partial-least-square-structural-equation-modeling (PLS-SEM) using SmartPLS 3.3 and its tools (e.g., algorithm, blindfolding, and bootstrapping) to test the hypothesized model (Ringle et al., 2015). PLS-SEM provides concurrent analysis both for structural and measurement models, which leads to more precise outcomes (Barclay et al., 1995; Hair et al., 2019). Furthermore, present study also employed SPSS for descriptive analysis and the Kaiser–Meyer–Olkin measure of sampling adequacy, which resulted in a value 0.958, which is higher than the acceptable threshold of 0.5 (Podsakoff et al., 2003). Thus, we can consider that the sample is adequate for the study.

### Common Method Bias (CMB)

This research used the full-collinearity approach employing PLS-SEM suggested by Hair et al. (2019) and Ned (2015) and which has been used in recent studies dedicated to social media use (Qalati, Ostic, et al., 2021). Kock and Lynn (2012) stated that a full collinearity approach is a

more comprehensive method for evaluation both for lateral (predictor criterion collinearity) and vertical collinearity (predictor–predictor collinearity). Hair et al. (2019) recommended utilizing the variance inflation factor (VIF) for full collinearity test using SmartPLS software. A VIF value  $\geq 5$  is indicative of collinearity issues among the variables. Ideally, it should be close to but less than 3 (Hair et al., 2019). In the present study, all of constructs' VIFs value were  $< 5$  and close to 3; thus we can conclude that the data are free from collinearity issues and that CMB (see Table 2).

## Results and Discussion

### Assessment of the Measurement Model

Hair et al. (2019) suggested reliability and validity tests to assess the measurement model. The present study used composite reliability (CR) and Cronbach's alpha (CA) measures to test reliability. The suggested value for both reliability measures should be  $\geq .7$  (Hair et al., 2019). Table 2 reveals that all of the values for both measures were found to be satisfactory. Regarding the validity testing, Hair et al. (2019) recommended discriminant and convergent validities. Regarding convergent validity, the factor loading and AVE values were tested. The values for factor loadings must be  $\geq 0.7$  (Hair et al., 2010) and the AVE values should be  $\geq .5$  (Fornell & Larcker, 1981) (see Table 2). Regarding discriminant validity, we used the heterotrait-monotrait ratio (HTMT) criterion proposed by Henseler et al. (2015), which has also been recently suggested by Hair et al. (2019) using PLS-SEM. The recommended value should be  $< 0.85$ . Table 3 shows that all values are acceptable and satisfactory, since the values are below the 0.85 acceptable threshold (Hair et al., 2019).

### Assessment of the Structural Model

The structural model was assessed through hypothesis testing, the coefficient of determination ( $R^2$ ), and cross-validated redundancy measures ( $Q^2$ ). The present study used the bootstrapping technique using 5,000 subsamples for 381 cases to generate paths and their level of significance. The level of significance was  $t\text{-value} > 1.96$  and  $p < .05$  (see Figure 1). Table 4 shows that all of the hypotheses were supported except for  $H2a$  and  $H3b$ . The  $R^2$  results shows that TOE factors explained 73.8% of changes in social media adoption and 21.1% of changes in SME performance due to the impact of social media adoption. Cohen (1998) suggested that  $R^2$  values of .19, .33, and .60 are considered weak, moderate, and substantial, respectively. In this regard, the present study's results are considered substantial for social media adoption and weak for SME performance (see Table 4). Regarding the  $Q^2$  values, values  $> 0$  are meaningful (Hair et al., 2019). Ringle et al. (2012) recommended that values of 0.35, 0.15, and 0.02 indicate large, medium, and small

**Table 2.** Constructs Item Their Respective Descriptive Statistics and Measurement Model.

Construct	Items	M	SD	Loading	CA	CR	AVE	Inner VIF
Relative advantage (RA)	RA1	3.798	1.037	0.837	.950	.960	.799	3.049
	RA2	3.895	1.113	0.893				
	RA	4.034	1.015	0.902				
	RA4	3.984	1.103	0.901				
	RA5	4.055	1.072	0.917				
	RA6	4.071	1.041	0.911				
Cost-effectiveness (CE)	CE1	3.958	0.966	0.910	.895	.935	.827	2.048
	CE2	3.921	1.009	0.902				
	CE3	3.963	1.062	0.916				
Compatibility (C)	C1	4.042	0.982	0.844	.886	.921	.745	2.510
	C2	3.90	1.015	0.894				
	C3	3.766	0.988	0.858				
	C4	3.808	0.96	0.857				
Interactivity (I)	I1	4.00	1.146	0.857	.930	.956	.878	2.716
	I2	4.047	1.17	0.942				
	I3	3.995	1.136	0.932				
Top management support (TMS)	TMS1	3.685	1.058	0.890	.914	.939	.794	1.591
	TMS2	3.761	1.074	0.901				
	TMS3	3.719	1.066	0.901				
	TMS4	3.732	1.097	0.873				
Entrepreneurial orientation (EO)	EO1	4.092	0.887	0.718	.913	.929	.622	3.451
	EO2	3.79	0.841	0.734				
	EO3	3.856	0.901	0.790				
	EO4	3.853	0.928	0.844				
	EO5	3.858	0.903	0.781				
	EO6	3.942	0.951	0.780				
	EO7	4.239	0.883	0.826				
	EO8	4.186	0.966	0.827				
Customer pressure (CP)	CP1	3.913	0.893	0.884	.872	.922	.796	2.140
	CP2	4.076	0.989	0.903				
	CP3	4.013	0.929	0.890				
Competitive pressure (Com_P)	Com_P1	4.15	0.943	0.790	.814	.891	.731	2.393
	Com_P2	4.047	0.924	0.902				
	Com_P3	4.016	0.893	0.870				
Social media adoption (SMA)	SMA1	4.097	0.904	0.717	.908	.933	.736	1.000
	SMA2	3.945	0.797	0.894				
	SMA3	3.942	0.858	0.893				
	SMA4	3.979	0.819	0.888				
	SMA5	3.906	0.849	0.885				
Performance (P)	P1	3.669	0.956	0.821	.935	.960	.721	
	P2	3.669	1.139	0.896				
	P3	3.63	0.957	0.861				
	P4	3.609	0.978	0.854				
	P5	3.709	0.951	0.846				
	P6	3.69	1.011	0.855				
	P7	3.745	1.002	0.806				

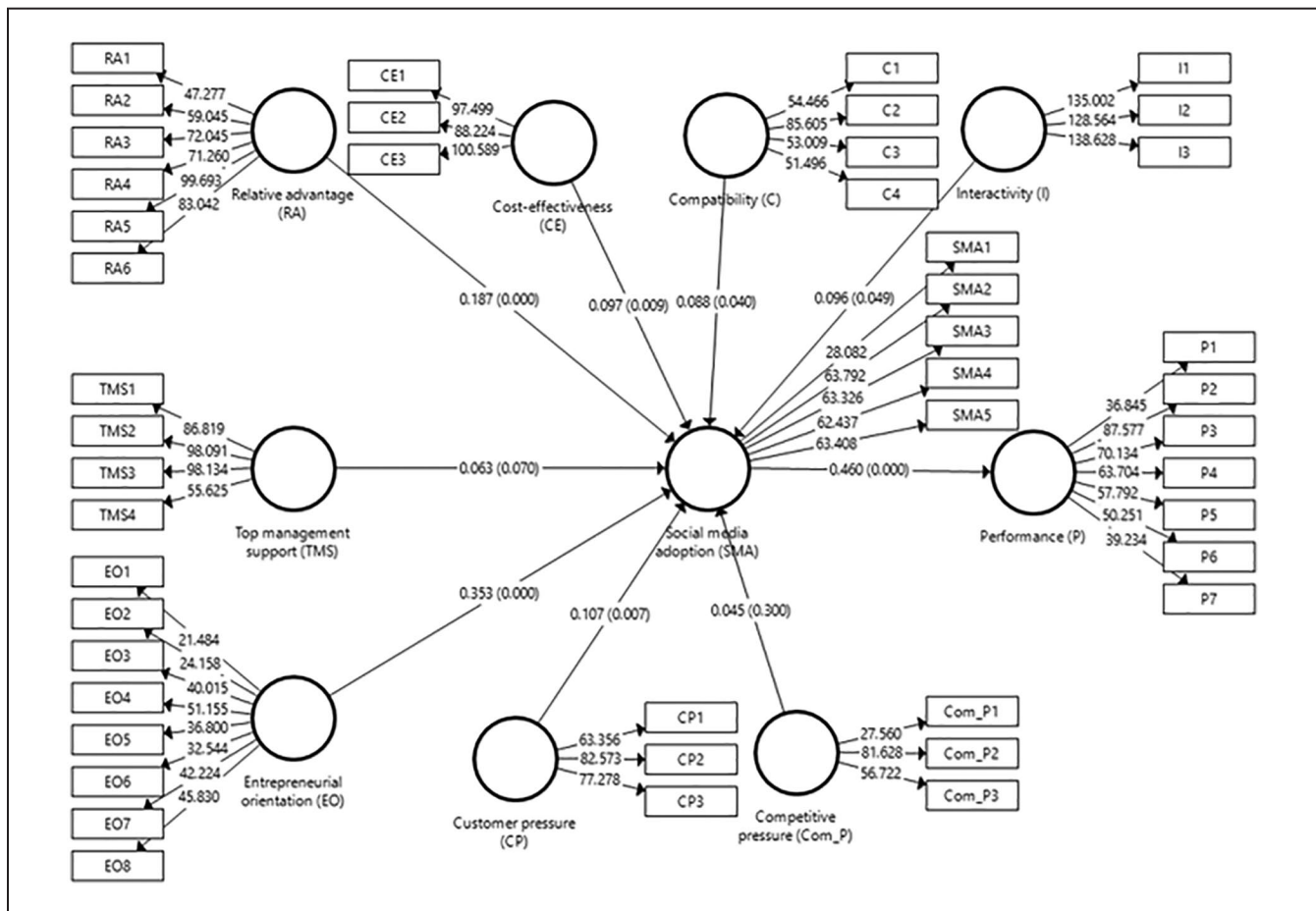
predictive relevance, respectively. This study's results reveal a large relevance ( $0.493 > 0.35$ ) for social media adoption and weak relevance ( $0.141 < 0.15$ ) for SME performance (see Table 4). In order to measure goodness of fit, this study used the standardized root mean square residual (SRMR) suggested by Hair et al. (2019). The SRMR value for the present study was 0.05, which is below the  $< 0.08$  acceptable threshold (Hair et al., 2019).

### Discussion of Results

The present quantitative-based study primarily objectives to explore the determinants influencing social media adoption and its effects on SME performance in the developing country context. The results yielded were interesting; using the TOE framework, this study evidenced that relative advantage, cost-effectiveness, compatibility, and

**Table 3.** Discriminant Validity (Using HTMT Criterion).

	C	Com_P	CE	CP	EO	I	P	RA	SMA	TMS
C										
Com_P	0.624									
CE	0.532	0.694								
CP	0.462	0.779	0.7							
EO	0.742	0.781	0.655	0.652						
I	0.722	0.683	0.606	0.578	0.789					
P	0.409	0.412	0.337	0.302	0.501	0.405				
RA	0.795	0.659	0.637	0.554	0.758	0.759	0.425			
SMA	0.727	0.755	0.698	0.684	0.874	0.77	0.495	0.789		
TMS	0.401	0.543	0.475	0.511	0.637	0.509	0.675	0.487	0.592	



**Figure 1.** Structural equation modeling.

interactivity (technological factors), entrepreneurial orientation (organizational factor), and customer pressure (environmental factor) have a significant influence on social media adoption, whereas top management support (organizational factor) and competitive pressure (environmental factor) have an insignificant influence. Furthermore, there is a significant correlation between adoption of social media and SME performance. In addition, social media

adoption is customer-focused and seems quite unpredictable in the SME context. Notably, the present work offers a comprehensive understanding of the antecedents and consequences of social media in SME context. This study also offers a holistic view of technology adoption in SMEs operating in operating countries in the service sector, providing opportunities to transfer these outcomes to other sectors.



**Table 4.** Path Coefficient and Hypotheses Testing.

Hypothesis	Relationship	Path coefficient	SD	t-Value	Decision
Technological factors					
H1a	Relative advantage → social media adoption	.187	0.048	3.895*	Supported
H1b	Cost-effectiveness → social media adoption	.097	0.037	2.604*	Supported
H1c	Compatibility → social media adoption	.088	0.043	2.052*	Supported
H1d	Interactivity → social media adoption	.096	0.049	1.968*	Supported
Organizational factors					
H2a	Top management support → social media adoption	.063	0.035	1.815	Not supported
H2b	Entrepreneurial orientation → social media adoption	.353	0.065	5.417*	Supported
Environmental factors					
H3a	Customer pressure → social media adoption	.107	0.040	2.676*	Supported
H3b	Competitor pressure → social media adoption	.045	0.044	1.035	Not supported
H4	Social media adoption → SME performance	.460	0.051	9.011*	Supported

Note. Critical values.  $R^2$ (Social media adoption) = .738 and (SME performance) = .211.

$Q^2$ (Social media adoption) = 0.493 and (SME performance) = 0.141.

Goodness of fit summary: SRMR = 0.050.

\*t-Value > 1.96 ( $p < .05$ ).

The findings this research reveal that relative advantage has a positive and significant influence on social media adoption ( $p = .000$ ); thus *H1a* is supported. This implies that the expected benefits of social media will encourage SMEs in emerging countries, especially Pakistan, to adopt social media. This result is in line with prior work of (Ahmad Syed et al., 2019; Hamad et al., 2018; Irhas et al., 2020; Wong et al., 2020) arguing that relative advantage is one of the essential factors in new technology adoption in the SME context (Hamad et al., 2018; Maduku et al., 2016; Pateli et al., 2020; Skafi et al., 2020).

In addition, cost-effectiveness was observed to be a positive and significant factor concerning social media adoption ( $p = .009$ ); thus, *H1b* is supported. This result implies that the relatively low cost related to social media adoption presents a beneficial way for SMEs to carry out their marketing activities within their limited resources environment. This outcome is consistent with earlier studies (Ahani et al., 2017; Ainin et al., 2015; Maduku et al., 2016; Qalati, Yuan, et al., 2021) arguing that social media provides SMEs with better low-cost opportunities compared to traditional marketing activities or media.

Similarly, this research evidenced that compatibility is a significant influencing factor for social media adoption in the SME context ( $p = .009$ ); thus, *H1c* is supported. These research findings suggest that anyone with access to the internet can use social media applications, such as Facebook, WhatsApp, Twitter, and Instagram. Therefore, social media is highly compatible with existing SMEs' infrastructure as the technology is extremely simple and can be effortlessly adopted and used by any firm (Tajudeen et al., 2018). This result is in line with previous studies that have also confirmed the positive and significant association between these constructs (Ahani et al., 2017; Eze et al., 2021; Hamad et al., 2018).

Regarding the fourth technological factor, the present study witnessed a positive and significant relationship ( $p = .049$ ); thus, *H1d* is supported. This finding infers that social media's interactive nature enables two-way communication with stakeholders, which persuades SMEs to adopt it. In addition, interactive features not only offer two-way communication but also speed up adoption since customers are involved in the process. This result is in line with previous studies (Ainin et al., 2015; Odoom et al., 2017; Tajudeen et al., 2018).

The present study used top management support and entrepreneurial orientation as organizational factors. Regarding the effect of top management support on social media adoption, this study evidenced a positive but insignificant relationship ( $p = .070 > .05$ ); thus, *H2a* is not supported. This result can be interpreted as due to a lack of trust and technical skills as, initially, top level management did not support the adoption of social media in Pakistani SMEs. Further, a lack of understanding regarding which platform to use can create ambiguity and impede management in small enterprises from adopting social media. This result is inconsistent with the previous work of Abed (2020), Ahmad Syed et al. (2019), and Tajudeen et al. (2018).

Regarding the second organizational factor, this research witnessed a positive and significant effect of entrepreneurial orientation on social media adoption ( $p = .070 > .05$ ); thus, *H2b* is supported. This result implies that Pakistani SMEs are acting entrepreneurially regarding social media adoption to compete locally and internationally, achieve sustainability in the market, gain competitive advantage, and avoid losing potential customers. This finding is consistent with recent work (Dirgiatmo et al., 2019; Fan et al., 2021; Fang et al., 2021; Parveen et al., 2016; Qalati, Ostic, et al., 2021) confirming the significant role of entrepreneurial orientation in technology adoption in Indonesian, Malaysian, and Pakistani SMEs.

Regarding the first environmental factor, customer pressure, this study found that customer pressure has positive and significant influence on social media adoption ( $p = .007$ ); thus, *H3a* is supported. This finding suggests that, in order to maintain a relationship with customers, SMEs must adopt social media, otherwise they will lose their customers and their organization will be considered backward, which consequently becomes one of the reasons behind switching to competitors and negative word-of-mouth (Abed, 2020). This finding is consistent with those of Maduku et al. (2016) and Rahayu and Day (2015), who also reported the significant effect of customer pressure on innovation adoption in the SME context.

This study did not find support for the effect of competitive pressure on social media adoption ( $p = .300$ ), thus, *H3b* is not supported. This result implies that, due to the current pandemic across developing countries, social media adoption and usage is a basic requirement for SMEs; therefore, there is less pressure from competitors while there is constant pressure from customers. This outcome is consistent with (Rahayu & Day, 2015) while inconsistent those of Ahmad Syed et al. (2019) and Hamad et al. (2018).

Regarding the consequential effect of social media adoption on SME performance, the present study's findings show that social media adoption has a strong positive and significant influence on SME performance in developing countries ( $p = .000$ ), thus, *H4* is supported. This implies that social media adoption enables SMEs to improve firm–customer relationships and communication, decrease marketing costs, increase sales volume, and improve brand loyalty and customer retention. This finding supports those of previous studies (Fan et al., 2021; Fang et al., 2021; Olanrewaju et al., 2020; Tajudeen et al., 2018).

Overall, these findings provide an extremely important and clear picture of how SMEs' performance will improve when they adopt social media. These findings should help convince SMEs to use social media and encourage them to adopt new technology to improve performance.

## Conclusion

### *Theoretical Contributions*

The existing studies on technology adoption offers few examples of work investigating the factors affecting, and the extent of, information technology use and SME performance in an integrative framework (Tajudeen et al., 2018). Recently, some studies have explored the antecedents and consequences of the adoption of several technologies (e.g., e-commerce, blockchain, social commerce, customer relationship management, cloud computing, and social media; Abed, 2020; Ahani et al., 2017; Odoom et al., 2017; Rahayu & Day, 2015; Skafi et al., 2020). However, in the social media context, there is lack of studies exploring SMEs' adoption of

social media in an integrated model (Ahmad Syed et al., 2019; Qalati, Yuan, et al., 2021; Tajudeen et al., 2018).

Thus, this scholarship explores the antecedents of social media adoption (using an integrative model) and the extent of social media adoption and its impact of SME performance in the emerging countries context.

The present study extends the TOE framework by examining several determinants to study their relationship with adoption of social media emerging countries (a case of Pakistan). Most previous studies employing the TOE model have used DOI or technological factors to examine the adoption of the technology. For example, Ahmad Syed et al. (2019) studied a sample of UAE SMEs by using DOI factors (i.e., relative advantage, complexity, compatibility, trialability, and observability). Similarly, Hamad et al. (2018) used relative advantage, compatibility, and complexity. The present study used variables specific to social media, such as cost-effectiveness and interactivity, to verify their relationship with social media adoption. Instead of using descriptive measures for technology adoption, such as formalization, firm size, business scope, or the CEO's personal characteristics (Awa Hart et al., 2017; Skafi et al., 2020), this study examined the effect of managerial support and entrepreneurial orientation on social media adoption. Coupled with generally employed determinants, cost-effectiveness, interactivity, and entrepreneurial orientation were added to extend the TOE model and the existing literature dedicated to IT-based technology adoption, particularly in the context of social media adoption in developing countries.

This study also improves our understanding of this phenomenon, clearly determining the impact of social media adoption on SME performance in terms of increased customer loyalty and retention, sales volume, number of customers, information accessibility, improved customer service and relationships, and decreased marketing costs. Thus, future studies can explore the effect of social media adoption and its use on the categorization of different motivators determined in the present research and extend the result to different contexts.

### *Practical Contributions*

Over recent years, there has been a continuing debate regarding the positive and negative impacts of social media adoption. Most SMEs operating in emerging economies avoid social media adoption due to negative word-of-mouth, a lack of technical skills, uncertainty regarding the benefits, cultural issues, and expected costs (Bakri, 2017; McCann & Barlow, 2015). The present study provides a comprehensive picture of determinants affecting social media adoption, enabling decision-makers to comprehend the significance of social media adoption and its usage in their respective SMEs and sectors. In addition, this paper improves understanding that effective and proper technology adoption will enhance

firm performance. For example, the study's results reveal that social media adoption has a strong effect on SME performance in terms of improved relationships and communication with stakeholders, cost reduction in marketing activities, and increased customer loyalty and retention. In addition, social media adoption improves information accessibility regarding competitors and customers.

The identified influencing factors provide a clearer understanding for practitioners and decision-makers, enabling them to focus on the factors that have positive and significant effects on social media adoption. For example, entrepreneurial orientation has strong impact on social media adoption relative to other factors. Therefore, decision-makers need to support entrepreneurial activities in SMEs. Furthermore, as observed, most SMEs are using Facebook as a social media platform, suggesting that decision-makers must organize training related to the use of Facebook, as well as how to interpret analytics from any platform.

### Limitations and Future Research

The present study examined various factors influencing social media adoption and its influence on SME performance. However, as other factors may exist, such as visibility, trading partner pressure, and government support, the inclusion of only these factors may be considered a limitation. In addition, the sample size, means of reaching the target audience, and data collection methods may be considered a limitation.

As the empirical model was tested in the SME context in developing countries (namely Pakistan), this model can be used in different countries and in comparative studies to validate our results. Moreover, this research investigated the impact of social media adoption on SME performance in general; however, future studies can examine its impact on financial and non-financial performance. As the present study only focused on the service sector, future studies can investigate other sectors. Finally, the present study did not explore the intervening role of social media adoption between TOE factors and SME performance. Thus, it would be interesting for future studies to examine the mediating role of social media adoption.

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### References

- Abed, S. S. (2020). Social commerce adoption using TOE framework: An empirical investigation of Saudi Arabian SMEs. *International Journal of Information Management*, 53, 102118. <https://doi.org/10.1016/j.ijinfomgt.2020.102118>
- Ahani, A., Rahim, N. Z. A., & Nilashi, M. (2017). Forecasting social CRM adoption in SMEs: A combined SEM-neural network method. *Computers in Human Behavior*, 75, 560–578. <https://doi.org/10.1016/j.chb.2017.05.032>
- Ahmad Syed, Z., Abu Bakar Abdul, R., & Ahmad, N. (2019). Social media adoption and its impact on firm performance: The case of the UAE. *International Journal of Entrepreneurial Behavior & Research*, 25(1), 84–111. <https://doi.org/10.1108/IJEBR-08-2017-0299>
- Ainin, S., Parveen, F., Moghavvemi, S., Jaafar, N. I., & Mohd Shuib, N. L. (2015). Factors influencing the use of social media by SMEs and its performance outcomes. *Industrial Management & Data Systems*, 115(3), 570–588. <https://doi.org/10.1108/IMDS-07-2014-0205>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211.
- Al Rahbi, H. S. A. (2017). *Factors influencing social media adoption in small and medium enterprises (SMEs)*. Brunel University London.
- Aldahdouh, T. Z., Nokelainen, P., & Korhonen, V. (2020). Technology and social media usage in higher education: The influence of individual innovativeness. *SAGE Open*, 10(1), 2158244019899441. <https://doi.org/10.1177/2158244019899441>
- Alraja, M. N., Khan, S. F., Khashab, B., & Aldaas, R. (2020). Does Facebook commerce enhance SMEs performance? A structural equation analysis of Omani SMEs. *SAGE Open*, 10(1), 2158244019900186. <https://doi.org/10.1177/2158244019900186>
- Ariel, Y., & Avidar, R. (2015). Information, interactivity, and social media. *Atlantic Journal of Communication*, 23(1), 19–30. <https://doi.org/10.1080/15456870.2015.972404>
- Awa Hart, O., Ukoha, O., & Igwe Sunny, R. (2017). Revisiting technology-organization-environment (T-O-E) theory for enriched applicability. *The Bottom Line*, 30(01), 2–22. <https://doi.org/10.1108/BL-12-2016-0044>
- Bakri, A. A. A. (2017). The impact of social media adoption on competitive advantage in the small and medium enterprises. *International Journal of Business Innovation and Research*, 13(2), 255–269. <https://doi.org/10.1504/ijbir.2017.083542>
- Barclay, D. W., Higgins, C., & Thompson, R. (1995). The partial least squares approach to causal modeling: Personal computer adoption and use as illustration. *Technology Studies*, 2(2), 285–309.
- Bokhari, A. (2020). *Small and medium-sized enterprises (SMEs) in Pakistan*. <https://nation.com.pk/27-Nov-2020/small-and-medium-sized-enterprises-smes-in-pakistan>
- Chatterjee, S., & Kumar Kar, A. (2020). Why do small and medium enterprises use social media marketing and what is the impact: Empirical insights from India. *International Journal of Information Management*, 53, 102103. <https://doi.org/10.1016/j.ijinfomgt.2020.102103>
- Cohen, J. (1998). *Statistical power analysis for the behavioural sciences*, xxi. L Erlbaum associates.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science*, 35(8), 982–1003. <https://doi.org/10.1287/mnsc.35.8.982>

- Derham, R., Cragg, P., & Morrish, S. (2011). Creating value: An SME and social media. *PACIS*, 53, 1–9.
- Dirgijatmo, Y., Abdullah, Z., & Ali, R. H. R. M. (2019). The role of entrepreneurial orientation in intervening the relationship between social media usage and performance enhancement of exporter SMEs in Indonesia. *International Journal of Trade and Global Markets*, 12(2), 97–129. <https://doi.org/10.1504/ijtgm.2019.100332>
- Dutot, V., & Bergeron, F. (2016). From strategic orientation to social media orientation. *Journal of Small Business and Enterprise Development*, 23(4), 1165–1190. <https://doi.org/10.1108/JSBED-11-2015-0160>
- El-Gohary, H. (2012). Factors affecting E-Marketing adoption and implementation in tourism firms: An empirical investigation of Egyptian small tourism organisations. *Tourism Management*, 33(5), 1256–1269. <https://doi.org/10.1016/j.tourman.2011.10.013>
- Eze, S. C., Chinedu-Eze, V. C. A., & Awa, H. O. (2021). Key success factors (KSFs) underlying the adoption of social media marketing technology. *SAGE Open*, 11(2), 21582440211006695. <https://doi.org/10.1177/21582440211006695>
- Fan, M., Qalati, S. A., Khan, M. A. S., Shah, S. M. M., Ramzan, M., & Khan, R. S. (2021). Effects of entrepreneurial orientation on social media adoption and SME performance: The moderating role of innovation capabilities. *PLOS One*, 16(4), e0247320. <https://doi.org/10.1371/journal.pone.0247320>
- Fang, G. G., Qalati, S. A., Ostic, D., Shah, S. M. M., & Mirani, M. A. (2021). Effects of entrepreneurial orientation, social media, and innovation capabilities on SME performance in emerging countries: A mediated-moderated model. *Technology Analysis & Strategic Management*, Advance online publication. <https://doi.org/10.1080/09537325.2021.1957816>
- Fishbein, M., & Ajzen, I. (1975). Belief. *Attitude, Intention and Behavior: An Introduction to Theory and Research*, 578, 177–188.
- Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of Marketing Research*, 18(3), 382–388. <https://doi.org/10.1177/002224378101800313>
- Gutierrez, A., Boukrami, E., & Lumsden, R. (2015). Technological, organisational and environmental factors influencing managers' decision to adopt cloud computing in the UK. *Journal of Enterprise Information Management*, 28(6), 788–807. <https://doi.org/10.1108/JEIM-01-2015-0001>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Pearson Prentice Hall
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2–24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Hamad, H., Elbeltagi, I., & El-Gohary, H. (2018). An empirical investigation of business-to-business e-commerce adoption and its impact on SMEs competitive advantage: The case of Egyptian manufacturing SMEs. *Strategic Change*, 27(3), 209–229. <https://doi.org/10.1002/jsc.2196>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Irhas, E. M., Dyah, S., & Yuni, I. (2020). Social media adoption in SMEs impacted by COVID-19: The TOE model. *The Journal of Asian Finance, Economics and Business*, 7(11), 915–925. <https://doi.org/10.13106/JAFEB.2020.VOL7.NO11.915>
- Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons*, 53(1), 59–68. <https://doi.org/10.1016/j.bushor.2009.09.003>
- Kock, N., & Lynn, G. (2012). Lateral collinearity and misleading results in variance-based SEM: An illustration and recommendations. *Journal of the Association for Information Systems*, 13(7), 546–580.
- Lee, Y., & Kozar, K. A. (2009). Designing usable online stores: A landscape preference perspective. *Information & Management*, 46(1), 31–41. <https://doi.org/10.1016/j.im.2008.11.002>
- Leonardi, P. M., & Vaast, E. (2017). Social media and their affordances for organizing: A review and agenda for research. *Academy of Management Annals*, 11(1), 150–188.
- Maduku, D. K., Mpinganjira, M., & Duh, H. (2016). Understanding mobile marketing adoption intention by South African SMEs: A multi-perspective framework. *International Journal of Information Management*, 36(5), 711–723. <https://doi.org/10.1016/j.ijinfomgt.2016.04.018>
- Malita, L. (2011). Social media time management tools and tips. *Procedia Computer Science*, 3, 747–753. <https://doi.org/10.1016/j.procs.2010.12.123>
- McCann, M., & Barlow, A. (2015). Use and measurement of social media for SMEs. *Journal of Small Business and Enterprise Development*, 22(2), 273–287. <https://doi.org/10.1108/JSBED-08-2012-0096>
- Meske, C., & Stieglitz, S. (2013). *Adoption and use of social media in small and medium-sized enterprises* [Paper presentation]. The Practice-Driven Research on Enterprise Transformation, Berlin, Heidelberg.
- Ned, K. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration (IJEC)*, 11(4), 1–10. <https://doi.org/10.4018/ijec.2015100101>
- Odoom, R., Anning-Dorson, T., & Acheampong, G. (2017). Antecedents of social media usage and performance benefits in small- and medium-sized enterprises (SMEs). *Journal of Enterprise Information Management*, 30(3), 383–399. <https://doi.org/10.1108/JEIM-04-2016-0088>
- Olanrewaju, A.-S. T., Hossain, M. A., Whiteside, N., & Mercieca, P. (2020). Social media and entrepreneurship research: A literature review. *International Journal of Information Management*, 50, 90–110. <https://doi.org/10.1016/j.ijinfomgt.2019.05.011>
- Palalic, R., Ramadani, V., Mariam Gilani, S., Gërguri-Rashiti, S., & Dana, L. P. (2021). Social media and consumer buying behavior decision: What entrepreneurs should know? *Management Decision*, 59(6), 1249–1270. <https://doi.org/10.1108/MD-10-2019-1461>
- Panahi, S., Watson, J., & Partridge, H. (2014). Social media and physicians: Exploring the benefits and challenges. *Health Informatics Journal*, 22(2), 99–112. <https://doi.org/10.1177/1460458214540907>



- Parveen, F., Jaafar, N. I., & Ainin, S. (2016). Social media's impact on organizational performance and entrepreneurial orientation in organizations. *Management Decision*, 54(9), 2208–2234. <https://doi.org/10.1108/MD-08-2015-0336>
- Pateli, A., Mylonas, N., & Spyrou, A. (2020). Organizational adoption of social media in the hospitality industry: An integrated approach based on DIT and TOE frameworks. *Sustainability*, 12(17), 7132. <https://doi.org/10.3390/su12177132>
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879.
- Qalati, S. A., Ostic, D., Shuibin, G., & Mingyue, F. (2021). A mediated–moderated model for social media adoption and small and medium-sized enterprise performance in emerging countries. *Managerial and Decision Economics*. Advance online publication. <https://doi.org/10.1002/mde.3422>
- Qalati, S. A., Yuan, L. W., Khan, M. A. S., & Anwar, F. (2021). A mediated model on the adoption of social media and SMEs' performance in developing countries. *Technology in Society*, 64, 101513. <https://doi.org/10.1016/j.techsoc.2020.101513>
- Rahayu, R., & Day, J. (2015). Determinant factors of e-commerce adoption by SMEs in developing country: Evidence from Indonesia. *Procedia – Social and Behavioral Sciences*, 195, 142–150. <https://doi.org/10.1016/j.sbspro.2015.06.423>
- Ringle, C. M., Sarstedt, M., & Straub, D. (2012). A critical look at the use of PLS-SEM in MIS quarterly. *MIS Quarterly (MISQ)*, 36(1), 12.
- Ringle, C. M., Wende, S., & Becker, J.-M. (2015). *SmartPLS 3. Boenningstedt: SmartPLS GmbH*.
- Rogers, E. (2003). *Diffusion of innovations* (5th ed.). Free Press.
- Rogers, E. M. (1962). *Diffusion of innovations* (1st ed.). Free Press.
- Sahaym, A., Datta, A., & Brooks, S. (2021). Crowdfunding success through social media: Going beyond entrepreneurial orientation in the context of small and medium-sized enterprises. *Journal of Business Research*, 125, 483–494. <https://doi.org/10.1016/j.jbusres.2019.09.026>
- Sahoo, S., & Yadav, S. (2017). Entrepreneurial orientation of SMEs, total quality management and firm performance. *Journal of Manufacturing Technology Management*, 28(7), 892–912. <https://doi.org/10.1108/JMTM-04-2017-0064>
- Salem, S. F., & Salem, S. O. (2019). Effects of social media marketing and selected marketing constructs on stages of brand loyalty. *Global Business Review*, 22(3), 650–673. <https://doi.org/10.1177/0972150919830863>
- Sangi, N., Shuguang, L., & Sangi, A. R. (2018). *Robustness of factors influencing social media usage/adoption amongst SMEs in developing countries: A case of Pakistan* [Paper presentation]. The Proceedings of the 9th International Conference on E-Education, E-Business, E-Management and E-Learning, San Diego, California. <https://doi.org/10.1145/3183586.3183600>
- Skafi, M., Yunis, M. M., & Zekri, A. (2020). Factors influencing SMEs' adoption of cloud computing services in Lebanon: An empirical analysis using TOE and contextual theory. *IEEE Access*, 8, 79169–79181. <https://doi.org/10.1109/ACCESS.2020.2987331>
- Tajudeen, F. P., Jaafar, N. I., & Ainin, S. (2018). Understanding the impact of social media usage among organizations. *Information & Management*, 55(3), 308–321. <https://doi.org/10.1016/j.im.2017.08.004>
- Toker, A., Seraj, M., Kuscu, A., Yavuz, R., Koch, S., & Bisson, C. (2016). Social media adoption: A process-based approach. *Journal of Organizational Computing and Electronic Commerce*, 26(4), 344–363. <https://doi.org/10.1080/10919392.2016.1228361>
- Tornatzky, L. G., Fleischer, M., & Chakrabarti, A. K. (1990). *Processes of technological innovation*. Lexington books.
- Tripopsakul, S. (2018). Social media adoption as a business platform: An integrated TAM-TOE framework. *Polish Journal of Management Studies*, 18(2), 350–362.
- Wong, L.-W., Leong, L.-Y., Hew, J.-J., Tan, G. W.-H., & Ooi, K.-B. (2020). Time to seize the digital evolution: Adoption of blockchain in operations and supply chain management among Malaysian SMEs. *International Journal of Information Management*, 52, 101997. <https://doi.org/10.1016/j.ijinfomgt.2019.08.005>
- Zwikacl, O., & Levin, G. (2008). Top management support-The project friendly organization. *Cost Engineering*, 50(9), 22.