Applied Mathematics & Information Sciences
An International Journal

http://dx.doi.org/10.18576/amis/180516

Social Commerce Adoption among MSME in Kuwait: The Role of Perceived Value and Organizational Innovation

*Mahmoud Ahmad Omar** *and Rosnafisah B. Sulaiman*

Department of Informatics, College of Computing and Informatics, University Tenaga Nasional (UNITEN), Malaysia

Received: 1 Jun. 2024, Revised: 20 Jun. 2024 Accepted: 30 Jun. 2024.
Published online: 1 Sep. 2024

Abstract: Growing internet usage presents chances for MSME to develop their businesses particularly in social media and e-commerce. This research examines how technological, organizational, and environmental factors affect Kuwaiti Micro Small, and Medium Enterprises (MSME) adoption of social commerce (s-commerce). The study also examines the mediating role of perceived value and the moderating role of organizational innovation. Data was collected from such as complexity, compatibility, and relative advantage affected positively the S-commerce usage. In addition, organizational factors such as top management support, organizational readiness, and cost significantly affect e-commerce usage. Environmental factors such as external pressure and governmental support are substantial predictors of S-commerce usage. Perceived value mediated the effect of technological and organizational factors on S-commerce usage while organizational innovation moderated the impact of technological factors on S-commerce usage. This study guides MSMEs through the changing terrain of s-commerce adoption by synthesizing theoretical and practical findings, laying the groundwork for informed decision-making and future research and benefits to MSMEs.

Keywords: Technological factors, Individual factors, TOE, Perceived value, Organizational Innovation.

Introduction

Social commerce (S-commerce) is a trendy method to do business online. The first time the term was mentioned by Yahoo! in 2005 [1], [2]. This creative idea integrates E-commerce with social media to simplify the purchase and selling of a variety of products and services [3], [4]. S-commerce grew in the early 2000s, predicting community-driven trade. It improves users and companies by creating social media-based business models and monetization tactics [5]. It also empowers consumers to share information, comment, and influence purchasing choices using social networks, and this has transformed the customer experience. S-commerce is predicted to reach $474 billion by 2023, making it important for businesses and customers [6]. S-commerce is important, but it confronts obstacles such increasing market rivalry, logistical delivery concerns, and misleading suggestions and ignorant judgements [7]. Nevertheless, there is a scarcity of S-commerce research which highlights the need for more studies [8].

S-commerce is crucial for businesses, especially Micro, Small and Medium Enterprises (MSMEs). These organisations with limited financial resources and staff need S-commerce to grow their consumer base and save expenses via social media marketing [9]. However, studies that are related to the usage of S-commerce by MSMEs are still limited and in particular in developing countries [8]. The World Bank reports that SMEs face significant pressure to create jobs and improve performance, especially after the COVID-19 pandemic which has affected businesses of all sizes and nationalities [10] [11], [12]. MSMEs must use technology, including Facebook, to adapt to the changing business landscape [13]–[15]. MSMEs, especially in developing nations, require 46% more funding in East Asia and the Pacific, 23% in Latin America and the Caribbean, and 15% in Europe and Central Asia. The financing gap is worse for MSMEs since formal SMEs generally lack formal credit [16].

MSME contributions to GDP and employment vary widely but are especially important in developing nations. Kuwait's low GDP and employment (3% and 23%, respectively) need deliberate interventions [17]. S-commerce has helped Kuwaiti small enterprises adjust to the COVID-19 epidemic, reducing personnel, increasing revenues, and maintaining social distance [18]. Online shopping is becoming more popular post-COVID-19 [19]. This transition requires MSMEs to improve their online presence, digital skills, and strategies to adapt to changing customer behaviour [9], [20]. After COVID-19, consumer tendencies towards online purchases highlight the necessity of s-commerce for MSMEs to boost sales and profitability.

Organizational adoption requires a theory that goes beyond the Technology Acceptance paradigm (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT). Current research on individual adoption fail to address organizational adoption, especially in MSME's. Lorente-Martínez [21] and [22] suggest combining models

*Corresponding author e-mail: 4mahmoud2030@gmail.com

in various scenarios to improve explanatory power of S-commerce adoption. This research fills this the gap by examining and improving previous models, considering pandemic factors and technical advances preventing MSMEs from embracing s-commerce. The goal is to provide a valid model that explains how MSMEs use s-commerce, and to examine the mediating role of perceived value and the moderating role of organizational innovation. Next section discusses the literature review, research methodology, findings, implications, and conclusion.

2. Literature Review

This section reviews the literature related to the S-commerce adoption. The section discusses the s-commerce, theoretical framework, and factors affecting the S-commerce adoption as well as the conceptual framework and hypotheses.

2.1 Social Commerce

S-commerce is a new business model of E-commerce powered by SM (e.g., SNSs) that allows the acquiring and selling of different items and services" [23]. S-commerce differs from E-commerce because it allows the interaction of customers using SM characteristics. Since the early 2000s, s-commerce has grown in importance, with experts predicting community-driven online business dynamics [24]. This forecast came true when enterprises adopted s-commerce methods. Post-COVID-19, s-commerce has grown, particularly for small enterprises [25], [26]. However, few academic research have examined s-commerce's adoption by at the organizational level [8].

S-commerce benefits consumers and businesses [5]. Companies establish new business models using SM platforms to communicate with consumers and enable transactions. Through two-way tactics, customers influence one other's purchase choices, improving company connections, finding new possibilities, and monetizing SM [27]. S-commerce enables users share information and provide product and service reviews, changing the purchasing experience and purchase behaviour [28]. Social networks in SM increase mutual effects on online product selection and purchases [29], [30]. S-commerce is growing and this rise has increased competition and caused delivery failures and misleading suggestions [31][7].

2.1.1 Issues of S-commerce Adoption in Kuwait

In Kuwait, mobile subscriptions exceed 161.4% of the population with 6.94 million throughout the nation. 98.8% of the population are users of social media (SM) [32]. Facebook in Kuwait is the most popular SM platform [32]. The government in Kuwait encourage MSMEs to enhance their contribution and growth. However, few studies have examined the practices of S-commerce in Kuwait. MSMEs refers to micro (1-10 employees), small (11-50 employees) and medium (51-250 employees) [33]. The performance of these entities was massively affected by COVID19. Small business was forced to lay off employees, had a reduction in sales and access to customers. S-commerce can be the effective solution as it can reduce the need for staff and enhance the sales as well as keep the social distance [18]. It is evident that the post-COVID-19 era has witnessed a discernible shift in customer needs, demands, and preferences. There has been a noticeable trend towards an increased preference for online shopping [19]. MSMEs must adapt to the current business landscape, which has been significantly influenced by the pandemic [34]. To remain competitive and meet customer demands, MSMEs must adapt to the changing environment. This can involve strengthening their online presence, enhancing digital capabilities, and adjusting business strategies to align with post-COVID-19 shifts in consumer behaviour [9], [20].

2.2 Factors affected S-commerce Usage

Studies that have examined the factors that affect the S-commerce have used several theories. One of these theories is TAM which has been used in several studies that highlighted the importance of PU and PEOU as well as attitude in predicting the behaviour of using S-commerce [35]–[39]. The literature also uses the UTAUT model. In which variables of UTAUT which include the PE, EE, SI and FC along with other variables affected the s-commerce usage by individual and SMEs [40], [41]. Other theories were used in the literature such as the TPB in the study of [42] to examine the s-commerce usage and found that information seeking mediated the effects of trust on familiarity, social presence, and purchase intention. In the study of [43] interactivity, cost efficiency, and compatibility influenced SM use and performance gains. The study of [44] used information system success (IS success) theory and found that service quality, information quality, system quality, and trust were the most important factors affecting Thai SMEs' s-commerce use. [45] showed that PEOU, peer usage, knowledge to use, and relative advantage facilitate adoption in Australia.

Previous research used TOE to predict corporate technology use from many perspectives. In UAE, [46] used the TOE and discovered that organizational and environmental contexts are more important than technology context for SMEs to adopt SM. [47] observed that only organizational and environmental factors impacted SM adoption. The research revealed no impact of SM

adoption on corporate performance. In Indonesia [48], technical considerations have little effect on SMEs' e-commerce utilization. In UAE, [49] found that organizational characteristics and perceived strategic value impacted e-commerce adoption. Organizational element affected e-commerce via perceived strategic value.

However, [50] in UAE revealed that technical (compatibility, observability), organizational (top management support), and environmental aspects impact SMEs' SM use. [51] used TOE to study SM marketing. The results demonstrated that SM awareness, technical, organizational, and environmental context influenced COVID 19 SM marketing intention. [52] used TOE to study social CRM adoption in Malaysia. All TOE factors were significant except complexity and government support. These above studies collectively highlighted the importance of variables of TOE as well as TAM and UTAUT in predicting the adoption of S-commerce by SMEs in different locations and context. This study examines the effect of variables of TOE as well as perceived value and organizational innovation on the usage of S-commerce by MSMEs in Kuwait.

2.3 Theoretical Framework

This research uses TAM, UTAUT, and TOE to explain S-commerce adoption. TAM was developed by [53] to explain technology utilisation. The model relies on perceived usefulness (PU) and ease of use (PEOU). TAM originally focused on voluntary technology adoption. Many technology adoption studies employ TAM, despite its simplicity and weak explanatory power [54]. To improve the understanding of technology adoption, [54] developed UTAUT by combining eight technology adoption models, including TAM. UTAUT seeks to uncover variables impacting users' technology adoption perceptions. These factors impact behavioural intention (BI) and use behaviour and include performance expectancy, effort expectancy, social influence, and facilitating conditions. Despite its broad usage, UTAUT is not well-established in s-commerce and it also address the individual level of adoption. TOE, developed by [55], measures organisational adoption of IT and IS products and services. TOE is a popular theoretical paradigm for forecasting IT product and service adoption due to its inclusion of technological, organisational, and environmental aspects. TOE is a complete framework despite criticism for its absence of important components such as the individual factors.

Researchers [22], [56], [57] reviewed SM and s-commerce adoption by SMEs. These reviews found that TAM and UTAUT are the most popular models while there is a lack of using TOE. Therefore, this study uses the TOE and UTAUT to explain the effect of individual and technological factors on the adoption of S-commerce. These models have gained popularity in studying individual technology adoption. However, they have faced criticism for oversimplifying the complex interplay between technological and social factors. TAM and UTAUT focused on individual related variables while TOE is criticized for its low explanatory power [58]. Given the constraints, it has been suggested by certain studies that a combination of models could be employed to improve the accuracy of predictions. As an illustration, [21] conducted a study on the adoption of Internet of Things among SMEs in Spain, utilizing a combination of TAM and TOE. Similarly, [22] examined the adoption of s-commerce by SMEs during COVID-19, employing a combination of TAM and TOE. Therefore, we combined TAM, UTAUT and TOE to explain better the adoption of S-commerce.

2.4 Conceptual Framework

Based on TOE as well as the review of the literature, this study proposed that the variables that affect the SC usage can be divided into three group. The first group is the technology factors (complexity, relative advantage, and compatibility) which has been used by previous studies as technological factors [45] [52]. The organizational factors include the top management support, organizational readiness, cost, and familiarity. These variables were included in prior literature [59] [60]. The environmental factors include external factor and governmental support and expected to have significant effects on SC usage [61]. Perceived value is expected to mediate the effect of technological and organizational factors on SC usage which is supported by previous studies [62]. In addition, organizational innovation moderates the effect of technological and organizational factors on SC usage. Figure 1 shows the conceptual framework of this research.

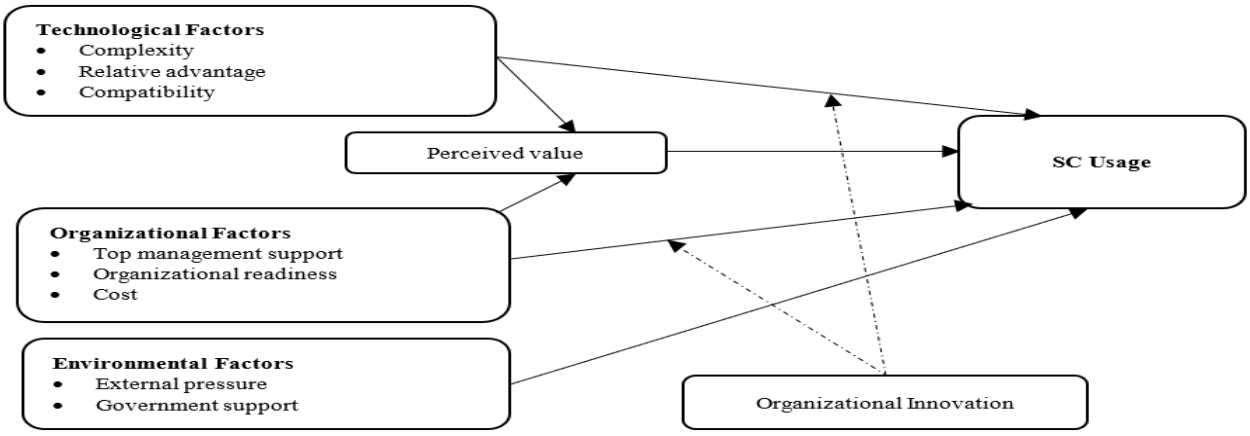

Fig. 1: Conceptual Framework

Studies related to S-commerce are still emerging and this is evident from large number of conceptual and review research which predominate the literature, whereas empirical studies are limited. Therefore, this study aims to empirical examines a set of variables and identify their effects on s-commence adoption. Accordingly, the following is hypothesized:

H1: Technological factors have significant effect on SC usage.

H1a: Complexity has a significant effect on SC usage.

H1b: Relative advantage has a significant effect on SC usage.

H1c: Compatibility has a significant effect on SC usage.

H2: Organizational factors have significant effect on SC usage.

H2a: Top management support has a significant effect on SC usage.

H2b: Organizational readiness has a significant effect on SC usage.

H2c: Cost has a significant effect on SC usage.

H2d: Familiarity has a significant effect on SC usage.

H3: Environmental factors have significant effect on SC usage.

H3a: External pressure has a significant effect on SC usage.

H3b: Government support has a significant effect on SC usage.

H4: Perceived value mediates the effect of technological factors on SC usage.

H5: Perceived value mediates the effect of organizational factors on SC usage.

H6: Organizational innovation moderates the effect of technological factors on SC usage.

H7: Organizational innovation moderates the effect of organizational factors on SC usage.

3. Research Methodology

This research examines the adoption of S-commerce by MSMEs. To identify the factors that affect S-commerce adoption, deductive reasoning is used. This research focuses on MSMEs in Kuwait, especially owners, managers, and directors. Based on Kuwait Institute for Scientific Research (KISR) there are 39,198 MSMEs. This research used random sampling to provide equal selection possibilities for MSMEs in the population. Smart PLS recommends a sample size over 200 responses for structural equation modelling. To prevent a low response rate, the sample size was expanded by 70% from the projected minimum of 383 respondents to 651 (383 * 70% + 383 = 651). We use a survey questionnaire to collect the data. The measurement was adopted from previous studies. Measurement of complexity (5 items), relative advantage (6 items), compatibility (5 items), organizational readiness (4 items), and cost (3 items) were adopted from [59]. Top management support (7 items) and S-commerce usage (3 items) were adopted from [60]. Familiarity (4 items) were adopted from [61] and perceived value (3 items) were adopted from [62]. In addition, the measurements of external pressure (5 items) was adopted from [63], measurement of government support (3 items) was adopted from [64] and measurement of organizational innovation (3 items) was adopted from [65]. The questionnaire was translated into Arabic using back-to-back translation. A validity was conducted by asking four experts with experience and related background to validate the measurement of the variables. This is followed by a pilot study to ensure the reliability. All Cronbach's Alpha is higher than 0.70 supporting that the measurements are reliable. [59] [60] [61] [62].

The initial phase of the data collection process involved identifying the target population, consisting of managers, directors, and owners of MSMEs. A total of 651 questionnaires were distributed digitally to the respondents primarily using online survey methods. To enhance the response rate, a follow-up procedure was implemented. The overall response yielded 323 responses, achieving an approximate 50% response rate. With this number of responses, meeting the rule of thumb for Smart PLS of surpassing 200 responses, the dataset is considered sufficient for analysis. The findings are presented, and recommendation are given at the end of this paper.

4. Findings

This section prepares the data for further analyses and presents the descriptive information of respondents as well as the analyses of Smart PLS.

4.1 Data examination

The missing value was assessed using frequency analysis. The findings showed that 11 responses miss a large number of answers and they were deleted. This has resulted in 312 complete responses. These responses were further checked for outliers and 12 responses were identified with issues of outliers and deleted from the dataset. This made the final sample accounts to 300 responses. We used SPSS to test Skewness and Kurtosis for all variables to determine normality. The histogram should be bell-shaped with Skewness and Kurtosis less than two as shown in Table 1. Multicollinearity were checked by assessing the values of tolerance and variation inflation factor (VIF). VIF should be less than 10 and tolerance greater than 0.10. These two conditions were achieved as shown in Table 1.

Table 1: Normality and Multicollinearity

Variable	Normality		Multicollinearity	
	Skewness	Kurtosis	Tolerance	VIF
Complexity (COX)	-.280	-1.441	.386	2.589
Relative Advantage (RA)	-.756	-.948	.240	4.166
Compatibility (COMP)	-.792	-.973	.219	4.563
Top management support (TMS)	-.668	-.904	.216	4.634
Organizational readiness (OR)	-.737	-.955	.220	4.537
Cost	.126	-1.524	.459	2.181
Familiarity (FA)	-.404	-.835	.304	3.288
External Pressure (EP)	-.773	-.718	.362	2.764
Government support (GS)	-.360	-1.129	.423	2.366
Organizational Innovation (OI)	-.865	-.560	.556	1.799
Perceived Value (PV)	-.909	-.478	.284	3.526
s-commerce Usage (SCU)	-1.172	.072	-	-

4.2 Profile of Respondents

A total of 300 MSMEs participated in this study. Out of which, the highest percentage are males (249 or 83%), with age between 35-45 years (123 or 41.0%) or between 25 and 35 (101 or 33.7%). The highest percentage has a bachelor's degree (145 or 48.3%) and 195 or 65% are the owners of MSMEs with experience between 3-7 years (124 or 41.3%) or 8-11 years (111 or 37%). A total of 90 of the respondents or 30% are working in marketing, 88 or 29.3% are working as directors.

A total of 130 (43.3%) of MSMEs are aged between 8-11 years while 69 or 23% are aged between 12-15 years. A total of 170 or 56.7% employ between 5-49 employees while 125 or 41.7% employ less than five employees. 33.3% of MSMEs have annual revenue of $100,000-$150,000 USD. 297 or 99% of the MSMEs are using S-commerce.

Table 2: Profile of Respondents

Variable	Label	Frequency	Percent
Gender	Male	249	83.0
	Female	51	17.0
	Total	300	100.0
Age	Less than 25 years	20	6.7
	25-35 years	101	33.7
	36-45 years	123	41.0
	46-55 years	51	17.0
	56-65 years	5	1.7
	Total	300	100.0
Education	High school or less	30	10.0
	Diploma	98	32.7
	Bachelor's degree	145	48.3
	Master	25	8.3
	PhD	2	.7
	Total	300	100.0
Are you a business owner	Yes	195	65.0
	No	105	35.0
	Total	300	100.0
Working experience of MSMEs	Less than 3 years	31	10.3
	3-7 Years	124	41.3
	8-11 years	111	37.0
	12-15 years	30	10.0
	More than 15 years	4	1.3
	Total	300	100.0
Position	Marketing	90	30.0
	Employee	77	25.7
	Director	88	29.3
	Financial Manager	45	15.0

	Total	300	100.0
Sector	Retailing sector	179	59.7
	Service sector	93	31.0
	Education sector	23	7.7
	Other	5	1.7
	Total	300	100.0
Age of MSMEs	Less than 3 years	32	10.7
	3-7 years	58	19.3
	8-11 years	130	43.3
	12-15 years	69	23.0
	More than 15 years	11	3.7
	Total	300	100.0
No. of employees	Less than 5 employees	125	41.7
	5-49 employees	170	56.7
	50-250 employees	5	1.7
	Total	300	100.0
Estimated revenues	Less than 50,000 dollar (15,000 Kuwait Dinar)	56	18.7
	50,001-100,000 dollar (15,001-30,000)	63	21.0
	100,001-150,000 dollar (30,001-45,000)	100	33.3
	150,001-200,000 dollar (45,001-60,000)	81	27.0
	Total	300	100.0
Usage of s-commerce	Yes	297	99.0
	No	3	1.0
	Total	300	100.0
Length of using s-commerce	Less than 3 years	106	35.3
	3-7 years	136	45.3
	8-11 years	58	19.3
	Total	300	100.0

4.3 Measurement Model

Based on [66], the measurement model can be assessed by checking the factor loading (FL). Items with low FL were removed. The measurement showed that Cronbach's Alpha and composite reliability are above 0.70. Thus, reliability is achieved as shown in Table 2. This means that the items are sufficient for measuring the variables.

In addition, the convergent validity is achieved because the value of average variance extracted is above 0.50. This indicates that more than 50% of the variation in the variable can be explained by the items that have been used to measure the variable. Discriminant validity is also achieved because the square root of AVE is above the cross-loading of the other indicators as shown in Table 3.

Table 2: Reliability and Validity

Variables	CA	CR	AVE	1	2	3	4	5	6	7	8	9	10	11	12
Compatibility	0.92	0.93	0.93	0.96											
Cost	0.92	0.93	0.87	0.64	0.93										
Complexity	0.91	0.91	0.91	0.61	0.49	0.95									
External pressure	0.91	0.91	0.86	0.51	0.32	0.51	0.92								
Familiarty	0.91	0.91	0.92	0.51	0.57	0.24	0.41	0.96							
Government support	0.86	0.88	0.77	0.60	0.48	0.34	0.62	0.54	0.88						
Organizational innovation	0.92	0.92	0.86	-0.17	-0.26	0.09	0.20	-0.41	-0.13	0.93					
Organizational readiness	0.91	0.91	0.89	0.56	0.61	0.35	0.40	0.63	0.56	-0.37	0.94				
Privacy	0.94	0.94	0.89	0.68	0.53	0.51	0.60	0.60	0.69	-0.03	0.61	0.94			
Relative advantage	0.91	0.91	0.90	0.63	0.60	0.69	0.55	0.49	0.58	-0.22	0.56	0.65	0.95		
S-Commerce usage	0.93	0.93	0.88	0.68	0.52	0.41	0.55	0.60	0.62	-0.40	0.64	0.60	0.69	0.94	
Top management support	0.91	0.91	0.84	0.64	0.63	0.42	0.41	0.60	0.59	-0.41	0.65	0.65	0.61	0.67	0.91

4.4 Structural Model

This research evaluates the structural model using three criteria: R-square (R^2), path coefficient (β), and effect size (F^2) [66], [67]. As shown in Figure 2, the R-square of S-commerce is 0.767 while for perceived value is 0.572. These values are substantial in explaining the variation in S-commerce adoption. All the f-square showed values above 0.02 except for some paths such as familiarity→SCU. Figure 2 shows the results of structural model. It also includes the test of the mediation of perceived value.

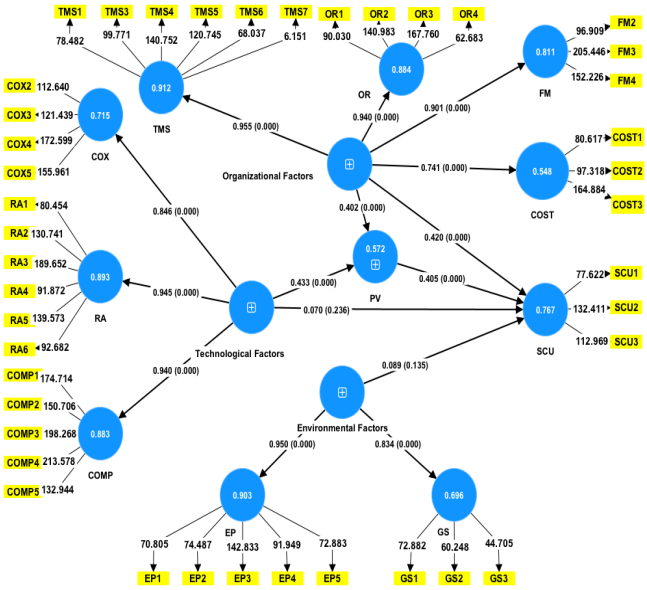

Fig. 2: Structural Model Including the Mediator

For testing the moderating role of organizational innovation, Figure 3 shows the structural model. The moderating is shown in dotted lines and in red and blue colours for the values of path coefficient and p-value.

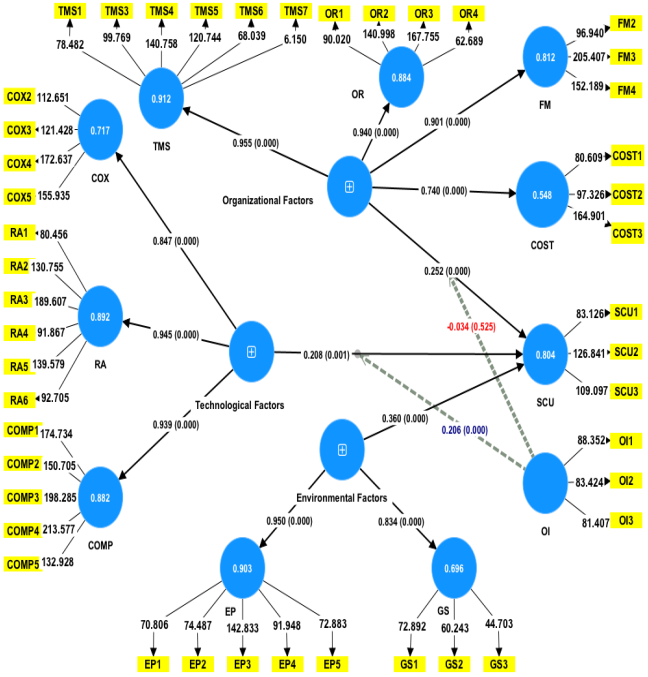

Fig. 3: Structural Model

To sum up the results of this research, the direct, mediating and moderating effects are presented in Table 3. The table shows the paths as well as the labels along with the coefficient (B), p-value and t-value.

Table 3: Results of Testing the Hypotheses

H	Path	B	Std	T	P	Label
H1	Technological Factors -> SCU	0.149	0.062	2.402	0.016	Supported
H1a	COX -> SCU	-0.118	0.039	3.060	0.002	Supported
H1b	RA -> SCU	0.251	0.057	4.425	0.000	Supported
H1c	COMP -> SCU	0.123	0.058	2.110	0.035	Supported
H2	Organizational Factors -> SCU	0.534	0.062	8.545	0.000	Supported
H2a	TMS -> SCU	0.267	0.081	3.301	0.001	Supported
H2b	OR -> SCU	0.173	0.083	2.091	0.037	Supported
H2c	COST -> SCU	-0.113	0.047	2.411	0.016	Supported
H2d	FM -> SCU	0.085	0.069	1.234	0.217	Rejected
H3	Environmental Factors -> SCU	0.290	0.050	5.830	0.000	Supported
H3a	EP -> SCU	0.083	0.041	2.035	0.042	Supported
H3b	GS -> SCU	0.248	0.044	5.687	0.000	Supported
H4	Technological Factors -> PV -> SCU	0.175	0.036	4.869	0.000	Supported
H5	Organizational Factors -> PV -> SCU	0.163	0.035	4.690	0.000	Supported
H6	OI x Technological Factors -> SCU	0.206	0.04	5.182	0.000	Supported
H7	OI x Organizational Factors -> SCU	-0.034	0.054	0.635	0.525	Rejected

H1 proposed that technological factors directly affect S-commerce use. The results in Table 3 support H1, because the P-value is less than 0.05. H1a claimed that complexity greatly affects Kuwaiti MSMEs' S-commerce usage. Table 3 verifies H1a, showing a substantial negative impact of complexity on S-commerce use (β= -0.118, P<0.05). Relative advantage affected S-commerce use in H1b showing a substantial positive relationship between relative advantage and S-commerce use (β= 0.251, P<0.05). Table 3 confirms H1c, indicating that compatibility positively impacts S-commerce use (β=0.123, P<0.05). H2 proposed that organisational factors strongly impact S-commerce use. Table 3 confirms H2, showing a substantial positive impact of organisational factor on S-commerce use (β= 0.534, P<0.05). Top management support affected positively SCU (β= 0.267, P<0.05). Thus, TMS drives S-commerce use by Kuwaiti MSMEs. Organisational readiness significantly affected S-commerce use (β= 0.173, P<0.05). Thus, H2b is supported. This highlights the importance of organisational readiness in affecting Kuwaiti MSMEs' S-commerce use. H2c believed cost influenced S-commerce use. According to Table 3, H2c has a substantial negative impact (β= -0.113, P<0.05). Thus, cost is a key predictor of S-commerce usage, with Kuwaiti MSMEs decreasing usage as cost rises. H2d claimed that familiarity significantly affects S-commerce use. Table 3 showed that there is a positive but not significant (β= 0.085, P>0.05). Thus, MSMEs in Kuwait do not consider familiarity a key component in S-commerce usage.

For H3, the effect of environmental factors on SCU is positive and significant (B=0.290, P<0.05). Therefore, H3 is supported. Similarly, the effect of external pressure on SCU (B=0.083, P<0.05) and the effect of government support (B=0.248, P<0.05) are positive indicating that H3a and H3b are supported. In H4 and H5, perceived value was proposed to mediate the effect of technological and organisational factors on S-commerce use. The indirect effect of technological factors on SCU is positive (β=0.175, P<0.05). Thus, perceived value fully mediated the effect of technological factors on S-commerce adoption. This is because the direct effect turned insignificant after including perceived value as a mediator. Thus, the mediation is fully indicating that all the relationship between technological factors and SCU can be explained by perceived value (H4). In H5, perceived value partially mediates the connection between organisational factors and S-commerce use, indicating a significant indirect association (B=0.163, P<0.05). In H6, organizational innovation moderated the effect of technological factors on SCU (B=0.206, P<0.05) while it did not moderate the effect of organizational factors on SCU (B=-0.034, P<0.05). Therefore, H7 is rejected.

5. Discussion and implications

We examined the effect of technological, organizational, and environmental factors on s-commerce usage. The findings showed that technological, organizational and environmental factors affected s-commerce. This finding showed that complexity and cost has negative effect while relative advantage, compatibility, TMS, external pressure, governmental support and organizational readiness have significant positive effect. Familiarity did not affect the SCU. This research strengthens the literature on MSMEs' use of s-commerce in developing countries by offering theoretical contributions in many crucial areas. A key gap in existing research is the lack of empirical studies on s-commerce adoption, particularly compared to conceptual and review studies. This study presents empirical data unique to Kuwaiti MSMEs, unlike numerous conceptual and review studies [22], [56], [57], [68], [69]. It significantly improves s-commerce adoption comprehension by confirming and improving theoretical models and notions in the literature. The study's focus on MSMEs' particular difficulties and resource limits is important theoretically. Technology adoption theories have mostly focused on bigger firms, ignoring MSMEs' unique needs. This research increases theoretical knowledge by tailoring it to this important business area. The research also assesses the validity of TAM, UTAUT, and TOE frameworks in Kuwaiti MSMEs. This application validation strengthens these hypotheses in numerous circumstances.

The findings of this study can help Kuwaiti MSMEs and other comparable enterprises worldwide. MSMEs should actively explore and implement technologies that provide a competitive edge. Relative advantage is critical therefore, technological solutions with demonstrable benefits may boost s-commerce efficiency and competitiveness. Compatibility was found important factor. Technology adoption requires system compatibility. Technology integration reduces interruptions and boosts s-commerce. Senior management support is crucial. Leaders must promote digital transformation and s-commerce. Cost has a negative effect. Therefore, decision makers should use cost-effective tactics, budget planning, and return on investment (ROI) evaluations to make decisions. In addition, complexity also has a negative effect which suggests that decision makers should simplify the process of using S-commerce. The increase in external pressure and government support will facilitate the adoption of SC by MSMEs in Kuwait. Specific training courses for managers of MSMEs can lead to better understanding of the benefits of SC and more usage. The perceived value mediated the effect of technological and organizational factors on s-commerce usage. Therefore, increase s-commerce products' perceived value by enhancing product quality, customer service, and user experiences. Customer satisfaction and loyalty increase with a good impression. Therefore, resources must be invested in value-influencing methods. Organizational innovation is essential to support the usage of new

technology such as S-commerce.

6. Conclusion

The findings of this study confirmed that technological factors such as complexity, relative advantage and compatibility are critical for s-commerce usage. In addition, organizational factors such as the TMS, organizational readiness, and costs are also having equal importance for the usage of s-commerce. Further, environmental factors such as external pressure and government support carry similar importance for the S-commerce usage among MSMEs. Perceived value is an important mediator and organizational innovation is an important moderator. This study was conducted in Kuwait among MSMEs. Therefore, the findings are applicable only to Kuwaiti MSMEs, limiting their general application on other types of enterprises in other countries. The research examines directors, owners, and employees' views of this industry. The sample size of the study is adequate, but more generalization can be obtained from a larger sample size. Therefore, to expand the findings of this study, future study should compare MSMEs' s-commerce adoption across nations or regions, taking into account cultural differences and regulatory frameworks. In addition, mixed methods can provide more insight into the adoption of s-commerce by MSMEs, and this could be a direction for future work. Further research is suggested to increase the sample size to increase the generalizability. Further, the future work is recommended to include other variables such as government support, level of innovation by management, and external pressure from customers, business partners, and competitors to use s-commerce. Demographic information such as gender, age, and level of education can be a moderating variable in future work to explain the s-commerce usage by MSMEs.

References

[1] B. Lu and W. Fan, "Social presence, trust, and social commerce purchase intention: An empirical research," *Comput. Human Behav.*, vol. 56, pp. 225–237, 2016.

[2] Y. Zhang, L. Liu, and S. Y. Ho, "How do interruptions affect user contributions on social commerce?," *Inf. Syst. J.*, vol. 30, no. 3, pp. 535–565, 2020.

[3] G. I. Huang, Y. V. Chen, and I. A. Wong, "Hotel guests' social commerce intention," *Int. J. Contemp. Hosp. Manag.*, vol. 32, no. 2, pp. 706–729, 2020.

[4] L. Y. Leong, T. S. Hew, K. B. Ooi, and A. Y. L. Chong, "Predicting the antecedents of trust in social commerce – A hybrid structural equation modeling with neural network approach," *J. Bus. Res.*, vol. 110, no. December 2018, pp. 24–40, 2020.

[5] X. Yang, "How perceived social distance and trust influence reciprocity expectations and eWOM sharing intention in social commerce," *Ind. Manag. Data Syst.*, 2019.

[6] Influencer Marketing, "30 Social Commerce Statistics – Users, Revenue & Usage Stats," *Influencer Marketing Hub*, 2021. [Online]. Available: https://influencermarketinghub.com/social-commerce-stats/. [Accessed: 27-May-2021].

[7] M. U. Riaz, L. X. Guang, M. Zafar, F. Shahzad, M. Shahbaz, and M. Lateef, "Consumers' purchase intention and decision-making process through social networking sites: a social commerce construct," *Behav. Inf. Technol.*, vol. 40, no. 1, pp. 99–115, 2021.

[8] K. S. Al-Omoush, A. de Lucas Ancillo, and S. G. Gavrila, "The role of cultural values in social commerce adoption in the Arab world: An empirical study," *Technol. Forecast. Soc. Change*, vol. 176, p. 121440, 2022.

[9] H. Hendrawan, A. A. Bakri, A. Fatchuroji, and R. Effendi, "Effects of Capital, Usage of Accounting Information, Financial Statements, and Characteristics Entrepreneurship on Financial Capability and Business Performance of MSMEs," *ES Account. Financ.*, vol. 1, no. 02, pp. 72–81, 2023.

[10] The World Bank, "Improving SMEs' access to finance and finding innovative solutions to unlock sources of capital.," 2021.

[11] A. Marjański and Ł. Sułkowski, "Consolidation strategies of small family firms in Poland during Covid-19 crisis," *Entrep. Bus. Econ. Rev.*, vol. 9, no. 2, pp. 166–181, 2021.

[12] J. Kithiia, I. Wanyonyi, J. Maina, T. Jefwa, and M. Gamoyo, "The socio-economic impacts of Covid-19 restrictions: Data from the coastal city of Mombasa, Kenya," *Data Br.*, vol. 33, p. 106317, 2020.

[13] L.-Y. Leong, N. I. Jaafar, and S. Ainin, "The effects of Facebook browsing and usage intensity on impulse purchase in f-commerce," *Comput. Human Behav.*, vol. 78, pp. 160–173, 2018.

[14] S. Singh, A. Dixit, and G. Joshi, ""Is compulsive social media use amid COVID-19 pandemic addictive behavior or coping mechanism?," *Asian J. Psychiatr.*, vol. 54, p. 102290, 2020.

[15] S. Ainin, F. Parveen, S. Moghavvemi, N. I. Jaafar, and N. L. M. Shuib, "Factors influencing the use of social media by SMEs and its performance outcomes," *Ind. Manag. Data Syst.*, vol. 115, no. 3, pp. 570–588, 2015.

[16] M. J. Pour and G. Taheri, "Moving toward adoption of social commerce: exploring drivers and barriers using AHP approach," *Int. J. Bus. Innov. Res.*, vol. 23, no. 4, pp. 453–479, 2020.

[17] V. Stepanyan, G. Abajyan, A. Ndoye, and M.

Alnasaa, "Enhancing the Role of SMEs in the Arab World—Some Key Considerations," *Policy Pap.*, vol. 19, no. 040, 2019.

[18] A. Kumar and N. Ayedee, "Technology Adoption: A Solution For SMEs to Overcome Problem During COVID-19," *Acad. Mark. Stud. Journa*, vol. 25, no. 1, pp. 1–6, 2021.

[19] D. Varma and P. Dutta, "Restarting MSMEs and start-ups post COVID-19: a grounded theory approach to identify success factors to tackle changed business landscape," *Benchmarking An Int. J.*, vol. 30, no. 6, pp. 1912–1941, 2023.

[20] N. A. Saad, S. Elgazzar, and S. Mlaker Kac, "Investigating the Impact of Resilience, Responsiveness, and Quality on Customer Loyalty of MSMEs: Empirical Evidence," *Sustainability*, vol. 14, no. 9, p. 5011, 2022.

[21] J. Lorente-Martínez, J. Navío-Marco, and B. Rodrigo-Moya, "Analysis of the adoption of customer facing InStore technologies in retail SMEs," *J. Retail. Consum. Serv.*, vol. 57, no. June, p. 102225, 2020.

[22] A. Trawnih, H. Yaseen, A. S. Al-Adwan, A. R. Alsoud, and O. A. Jaber, "Factors Influencing Social Media Adoption Among Smes During Covid-19 Crisis," *J. Manag. Inf. Decis. Sci.*, vol. 24, no. 6, pp. 1–18, 2021.

[23] S. Kim and H. Park, "Effects of various characteristics of social commerce (s-commerce) on consumers' trust and trust performance," *Int. J. Inf. Manage.*, vol. 33, no. 2, pp. 318–332, 2013.

[24] Y. Wang and C. Yu, "Social interaction-based consumer decision-making model in social commerce: The role of word of mouth and observational learning," *Int. J. Inf. Manage.*, vol. 37, no. 3, pp. 179–189, 2017.

[25] S. Alam and M. Rahman, "COVID-19 impact on Facebook-based social commerce in Bangladesh.," *Int. J. Electr. Comput. Eng.*, vol. 12, no. 2, 2022.

[26] A. Kumar and D. Ayedee, "Technology adoption: A solution for SMEs to overcome problems during COVID-19," *Forthcoming, Acad. Mark. Stud. J.*, vol. 25, no. 1, 2021.

[27] V. Saprikis and A. Markos, "Modeling Users' acceptance of social commerce," *Int. J. E-bus. Res.*, vol. 14, no. 4, pp. 28–50, 2018.

[28] U. Rahardja, T. Hongsuchon, T. Hariguna, and A. Ruangkanjanases, "Understanding Impact Sustainable Intention of S-Commerce Activities: The Role of Customer Experiences, Perceived Value, and Mediation of Relationship Quality," *Sustainability*, vol. 13, no. 20, p. 11492, 2021.

[29] H. Han, H. Xu, and H. Chen, "Social commerce: A systematic review and data synthesis," *Electron. Commer. Res. Appl.*, vol. 30, pp. 38–50, 2018.

[30] M. Blazquez, T. Zhang, R. Boardman, and C. E. Henninger, "Exploring the effects of social commerce on consumers' browsing motivations and purchase intentions in the UK fashion industry," in *Social commerce*, Springer, 2019, pp. 99–115.

[31] Y. Wu and X. Chen, "A new cognitive framework for understanding social commerce: A service ecosystem perspective," *J. Serv. Sci. Manag.*, vol. 13, no. 3, pp. 459–469, 2020.

[32] Hootsuite, "Digital 2022: Global overview report," 2022.

[33] United Nations Development Programme, "United Nations Development Programme MICRO , SMALL AND MEDIUM SIZED ENTERPRISES IN THE ARAB REGION : STRUCTURAL VULNERABILITIES AT A TIME OF," 2021.

[34] D. S. Budiarto, A. Amanda, and N. Nordin, "Digital Technologies Application and Competitive Advantage for MSMEs Sustainability and Market Performance," *Ekuilibrium J. Ilm. Bid. Ilmu Ekon.*, vol. 18, no. 2, pp. 169–178, 2023.

[35] M. Beier and K. Wagner, "Social media adoption: Barriers to the strategic use of social media in SMEs," *24th Eur. Conf. Inf. Syst. ECIS 2016*, 2016.

[36] M. C. Gavino, D. E. Williams, D. Jacobson, and I. Smith, "Latino entrepreneurs and social media adoption: personal and business social network platforms," *Manag. Res. Rev.*, vol. 42, no. 4, pp. 469–494, 2019.

[37] A. T. Ramachandran, N. Ahmad, S. Miskon, N. A. Iahad, and N. M. Ali, "Factors influencing the adoption of social media in service sector small and medium enterprises (Smes)," *Adv. Intell. Syst. Comput.*, vol. 1073, no. 8, pp. 917–925, 2020.

[38] S. Hassan and A. Shahzad, "The Impact of Social Media Usage on Small and Micro Social Commerce Enterprises in Malaysia," *Pakistan J. Commer. Soc. Sci.*, vol. 16, no. 1, pp. 141–166, 2022.

[39] M. N. Alraja, S. F. Khan, B. Khashab, and R. Aldaas, "Does Facebook Commerce Enhance SMEs Performance? A Structural Equation Analysis of Omani SMEs," *SAGE Open*, vol. 10, no. 1, 2020.

[40] S. Vatanasakdakul, C. Aoun, and Y. H. Suyoso Putra, "Social media in micro-enterprises: Exploring adoption in the Indonesian retail sector," *J. Glob. Inf. Manag.*, vol. 28, no. 3, pp. 184–203, 2020.

[41] Fatmah Amir Abdat, "Using UTAUT Model to Predict Social Media Adoption among Indonesian

SMEs," *Saudi J. Econ. Financ.*, vol. 4, no. 10, pp. 498–505, 2020.

[42] N. Hajli, M. Shanmugam, S. Papagiannidis, D. Zahay, and M.-O. Richard, "Branding co-creation with members of online brand communities," *J. Bus. Res.*, vol. 70, pp. 136–144, 2017.

[43] R. Odoom, T. Anning-Dorson, and G. Acheampong, "Antecedents of social media usage and performance benefits in small- and medium-sized enterprises (SMEs)," *Eletronic Libr.*, vol. 34, no. 1, pp. 1–5, 2017.

[44] N. Vongsraluang and V. Bhatiasevi, "The determinants of social commerce system success for SMEs in Thailand," *Inf. Dev.*, vol. 33, no. 1, pp. 80–96, 2017.

[45] S. Burgess, C. Sellitto, C. Cox, J. Buultjens, and S. Bingley, "An Innovation Diffusion Approach to Examining the Adoption of Social Media by Small Businesses: an Australian Case Study," *Pacific Asia J. Assoc. Inf. Syst.*, vol. 9, no. 3, pp. 1–24, 2017.

[46] A. AlSharji, S. Z. Ahmad, and A. R. Abu Bakar, "Understanding social media adoption in SMEs: Empirical evidence from the United Arab Emirates," *J. Entrep. Emerg. Econ.*, vol. 10, no. 2, pp. 302–328, 2018.

[47] S. Z. Ahmad, A. R. Abu Bakar, and N. Ahmad, "Social media adoption and its impact on firm performance: the case of the UAE," *Int. J. Entrep. Behav. Res.*, vol. 25, no. 1, pp. 84–111, 2019.

[48] L. Setiyani and Y. Rostiani, "Analysis of E-commerce adoption by SMEs using the technology-organization-environment (TOE) model: A case study in karawang, Indonesia," *Int. J. Sci. Technol. Manag.*, vol. 2, no. 4, pp. 1113–1132, 2021.

[49] M. O. H. K. Alzaabi and R. Bin Omar, "Organizational factors and e-commerce adoption in SMEs of United Arab Emirates: Mediating role of perceived strategic value," *Int. J. Entrep.*, vol. 25, pp. 1–18, 2021.

[50] A. R. Abu Bakar, S. Z. Ahmad, and N. Ahmad, "SME social media use: A study of predictive factors in the United Arab Emirates," *Glob. Bus. Organ. Excell.*, vol. 38, no. 5, pp. 53–68, 2019.

[51] M. I. Effendi, D. Sugandini, and Y. Istanto, "Social Media Adoption in SMEs Impacted by COVID-19: The TOE Model*," *J. Asian Financ. Econ. Bus.*, vol. 7, no. 11, pp. 915–925, 2020.

[52] A. Ahani, N. Z. A. Rahim, and M. Nilashi, "Forecasting social CRM adoption in SMEs: A combined SEM-neural network method," *Comput. Human Behav.*, vol. 75, pp. 560–578, 2017.

[53] F. D. Davis, R. P. Bagozzi, and P. R. Warshaw, "User acceptance of computer technology: A comparison of two theoretical models," *Manage. Sci.*, vol. 35, no. 8, pp. 982–1003, 1989.

[54] V. Venkatesh, M. G. Morris, G. B. Davis, and F. D. Davis, "User acceptance of information technology: Toward a unified view," *MIS Q. Manag. Inf. Syst.*, vol. 27, no. 3, pp. 425–478, 2003.

[55] L. Tornatzky and M. Fletscher, "The Deployment of Technology," in *The Processes of Technological Innovation*, 1990, pp. 118–147.

[56] S. Erwin, N. Rahman, and A. Awains, "Determination of the influence factors on social commerce in SME: A review," *Int. J. Softw. Eng. Comput. Syst.*, vol. 6, no. 2, pp. 74–83, 2020.

[57] Y. K. Dwivedi, E. Ismagilova, P. Sarker, A. Jeyaraj, Y. Jadil, and L. Hughes, "A Meta-Analytic Structural Equation Model for Understanding Social Commerce Adoption," *Inf. Syst. Front.*, 2021.

[58] L. G. Tornatzky and M. Fleischer, "The processes of technological innovation," *J. Technol. Transf.*, vol. 16, no. 1, pp. 45–46, 1990.

[59] S. S. Alam, Y. Ali, and M. F. M. Jani, "An Empirical Study of Factors Affecting Electronic Commerce Adoption among SMEs in Malaysia/VEIKSNIU, TURINCIU ITAKOS ELEKTORINEI PREKYBAI, STUDIJA: MALAIZIJOS PAVYZDYS," *J. Bus. Econ. Manag.*, vol. 12, no. 2, p. 375, 2011.

[60] O. Jayeola *et al.*, "The Mediating and Moderating Effects of Top Management Support on the Cloud ERP Implementation–Financial Performance Relationship," *Sustain.*, vol. 14, no. 9, pp. 1–17, 2022.

[61] M. Rahimi and M. Katal, "The role of metacognitive listening strategies awareness and podcast-use readiness in using podcasting for learning English as a foreign language," *Comput. Human Behav.*, vol. 28, no. 4, pp. 1153–1161, 2012.

[62] R. El-Haddadeh, M. Osmani, D. Thakker, V. Weerakkody, and K. K. Kapoor, "Examining citizens' perceived value of internet of things technologies in facilitating public sector services engagement," *Gov. Inf. Q.*, no. December 2017, pp. 1–11, 2018.

[63] S. S. Abed, "Social commerce adoption using TOE framework: An empirical investigation of Saudi Arabian SMEs," *Int. J. Inf. Manage.*, vol. 53, no. October 2019, p. 102118, 2020.

[64] P. Ifinedo, "an Empirical Analysis of Factors Influencing Internet/E-Business Technologies Adoption By Smes in Canada," *Int. J. Inf. Technol. Decis. Mak.*, vol. 10, no. 04, pp. 731–766, 2011.

[65] A. Noruzy, V. M. Dalfard, B. Azhdari, S. Nazari-Shirkouhi, and A. Rezazadeh, "Relations between transformational leadership, organizational learning,

knowledge management, organizational innovation, and organizational performance: An empirical investigation of manufacturing firms," *Int. J. Adv. Manuf. Technol.*, vol. 64, no. 5–8, pp. 1073–1085, 2013.

[66] J. Hair, J. F. Hair Jr, M. Sarstedt, C. M. Ringle, and S. P. Gudergan, *Advanced issues in partial least squares structural equation modeling*. saGe publications, 2023.

[67] P. B. Lowry and J. Gaskin, "Partial Least Squares (PLS) Structural Equation Modeling (SEM) for Building and Testing Behavioral Causal Theory : When to Choose It and How to Use It," in *IEEE Transactions on Professional Communication*, 2014, vol. 57, no. 2, pp. 123–146.

[68] A. Adam, J. Jizat, and M. Noor, "A review of factors that influenced the intention of acceptance and use of social commerce among small medium-sized enterprises in Malaysia," *Adv. Business-Related Sci. Res. J.*, vol. 7, no. 2, pp. 15–26, 2016.

[69] S. S. Abed, Y. K. Dwivedi, and M. D. Williams, "Social commerce as a business tool in Saudi Arabia's SMEs," *Int. J. Indian Cult. Bus. Manag.*, vol. 13, no. 1, p. 1, 2016.

Biography:

Mahmoud Omar, holds a master's degree in computer engineering and works Computer Science Teacher at The Higher Institute of Telecommunication and Navigation ,in Kuwait, where he has taught computer science for 12 years in both The Higher Institute of Telecommunication and Institute for Higher Studies in Kuwait. He wants to further their career in a digital world in E-learning and E-Business for modern organizations and companies and an academic researcher with a deep understanding of search engine optimization, competitive research, and a proven track record of success helping clients rank results in organic search in addition to deep knowledge of electronic commerce.

Rosnafisah Sulaiman has been working as a Director at Universiti Tenaga Nasional for 22 years. Universiti Tenaga Nasional is part of the Colleges & Universities industry and located in Malaysia. she hold PhD in ICT, Universiti Tenaga Nasional, 2012 and Master of Computer Science, Universiti Malaya, 1999 Senior Lecturer at University Tenaga Nasional from 2009 uptodate.