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Investigating Behavior Intention Toward S-Commerce Adoption by Small Businesses in Saudi Arabia

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ABSTRACT

With recent developments in e-commerce and social networking sites, social commerce has emerged as a new business model. S-commerce refers to the purchasing and selling of goods and services through social networking sites while utilizing users' social behavior. Several studies in the s-commerce field have explored adoption behaviors from the perspective of consumers. This study focuses on the business perspective, specifically studying s-commerce adoption in small businesses in Saudi Arabia. The study used the C-TAM-TPB model to identify the factors that positively influence small businesses' intention to adopt s-commerce. An online questionnaire was used to collect data from 392 small businesses. The study applied PLS-SEM to test the hypothesis. Findings show that all factors–attitude, perceived usefulness, perceived behavioral control, and subjective norms–significantly impacted the behavior intention of small businesses to adopt s-commerce. This study provides insights into small businesses' adoption of s-commerce by focusing on sole entrepreneurs and microenterprise owners.

KEYWORDS

Adoption, Behavior Intention, C-TAM-TPB, Microenterprises, Saudi Arabia, Small Business, Social Commerce, Social Networking Sites (SNSs), Sole Entrepreneurs

INTRODUCTION

Technological advancements have drastically changed the world in the last few decades. The conduct of traditional commerce, in particular, has been gradually transforming into an electronic commerce (e-commerce) since the revolutionary invention of the Internet in the 1960s. The rise of Web 2.0 applications and social networking sites (SNSs) facilitated the further transforming of e-commerce conduct. Boyd and Ellison (2007) defined SNSs as follows:

Web-based services that allow individuals to construct a public or semipublic profile within a bounded system, articulate a list of other users with whom they share a connection, and view and traverse their list of connections and those made by others within the system. (p. 211)

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Examples of SNSs include Facebook, Twitter, Instagram, and TikTok. Each is an online social platform on which users can create profiles, present themselves to communities, exchange information, and communicate with one another. By merging SNSs and e-commerce activities, a new form of e-commerce has emerged known as social commerce (s-commerce). S-commerce generally involves using SNSs to assist in the process of selling, purchasing, and engaging in social interactions between businesses and consumers. Rubel (2005) was the first to discuss the concept; he reviewed Yahoo's Shoposphere site as the first example of s-commerce and predicted the future trend of s-commerce. Although scholars have not established a standard definition of s-commerce, it is distinguished mainly by three elements: Community interaction, social media technologies, and commercial activities (Liang & Turban, 2011). In this study, the authors adopt Huang and Benyoucef's (2013) definition of s-commerce as "an Internet-based commercial application, leveraging social media and Web 2.0 technologies which support social interaction and user-generated content to assist consumers in their decision making and acquisition of products and services within online marketplaces and communities" (p. 247).

The recent developments caused by COVID-19 pandemic have accelerated a shift in both consumers and businesses behavior, where online shopping has become the norm for many people (PwC, 2020). Currently, most SNSs have added features to support e-commerce activities on their platform. For instance, as a response to the impact of the COVID-19 lockdown policies that many governments have implemented worldwide, Instagram added a new tab called the "shop" tab to support online retailers, enabling them to sell and reach more customers through the Instagram platform (Instagram, 2020). Moreover, Kemp's (2023b) report shows that 59.4% of the world's population uses social media, with an average daily use of 2 hours and 31 minutes. This high level of usage of SNSs means higher chance for SNSs' users to engage in s-commerce.

Due to the advent of s-commerce, consumers are more proactive in expressing their feelings toward products and services with others by participating in communities, rating products, sharing product reviews, receiving referrals and recommendations, cocreating content with brands, and engaging directly with businesses. These have a substantial positive potential to affect consumers' purchase decisions and build more social connections (Hajli, 2015; Liang & Turban, 2011; Rad & Benyoucef, 2011; Shin, 2013). For businesses, leveraging online communities and social interactions within the s-commerce paradigm can considerably improve the competitive advantage (Zhou et al., 2013). Existing studies have discussed how s-commerce extends the beneficial power of e-commerce by enabling businesses to increase sales, improve customer service, reach new markets, save on marketing costs, and benefit from consumers' social interactions in boosting word-of-mouth and brand image (Abed, 2020; Hajli, 2012a; Huang & Benyoucef, 2013; Lin et al., 2019; Shin, 2013). S-commerce is believed to enable businesses that have limited technology resources, budgets, and staff to leverage SNSs as a business platform with little-to-no start-up financial costs. This presents an opportunity for organizations in general and for micro and small businesses in particular. For many countries, micro and small businesses contribute to the stimulation of economic growth (Zainuddin et al., 2020) and further creation of employment opportunities in the market, including self-employment (Edmiston, 2004; Varga, 2021). Usually, a small-scale business, whether home-based or not, starts out being managed solely by an individual entrepreneur. As the business grows, sole entrepreneurs turn their business into a microenterprise (Edmiston, 2004).

Saudi Arabia offers a promising landscape for s-commerce development. This is based on numerous factors, including high levels of Internet coverage, social media usage, and the reliability of the country's postal services. Saudi Arabia has one of the fastest-growing rates of social media users annually (Radcliffe & Bruni, 2018), which is a key enabler for s-commerce growth. Furthermore, the social media shopping trend is quickly gaining momentum in Saudi Arabia, with 42% of Saudi users reportedly purchasing a product on an SNS (Saudi Communications and Information Technology Commission [SCITC], 2017). Several government initiatives have been established to support the development of the e-commerce sector as part of the Saudi Vision 2030, which is the country's

strategic roadmap. The Maroof[1] site is one such initiative, because it enables online businesses to gain credibility as customers rate and comment on their experiences with the business. S-commerce provides opportunities for small and medium-sized enterprises (SMEs) and larger firms in Saudi Arabia. Likewise, s-commerce creates opportunities for individuals to start a small business as a source of side income or primary income (SCITC, 2017). Small businesses in Saudi Arabia usually adopt a hybrid approach for their business. They use a social media platform to display their products and services, and then receive orders through different channels (e.g., phone or WhatsApp) (SCITC, 2017). When their businesses grow to a point managing it solely is no longer sufficient, business owners turn to use e-commerce solutions provided by third parties such as Zid[2], which connects an e-store site to their social media accounts. Generally, individual entrepreneurs with growing businesses become the owners of microenterprises. The Saudi Small and Medium Enterprises General Authority (Monsha'at) (2023) identifies the characteristics of a microenterprise as a business having 1-5 workers and sales of not more than three million riyals (3,000,000 SR).

Small businesses, whether operated by individuals or as microenterprises, are a valuable resource to the development of the country's economy. This is especially true since Saudi Arabia is seeking a reduction of the unemployment rates among its citizens as per Saudi's 2030 strategic vision (Kingdom of Saudi Arabia, 2016), which small businesses can help achieve due to the job opportunities created for themselves and others within the local community. Although s-commerce is observably used by small businesses, there is a lack of understanding of what factors motivate those businesses to engage in s-commerce. Such understanding is crucial for researchers to expand s-commerce research, and for decision-makers to further exploit the potential of s-commerce in empowering small businesses. The majority of s-commerce extant studies focused on the consumer's side, while fewer studies focused on the business's side, mainly investigating SMEs adoption (Abed, 2020; Abed et al., 2016; Ainin et al., 2015; Lina & Suwarni, 2022; Trawnih et al., 2023). The studies on small-scale businesses are comparatively underresearched, apart from very few nonempirical studies (Alarfaj & Solaiman, 2019; Al-Husain & Mirza, 2015; Alkhowaiter, 2016; Al-Qirim et al., 2022). This indicates a clear gap in the literature that this study intends to fulfill.

Thus, the researchers aim to answer the following research question: What factors drive small businesses to adopt s-commerce in Saudi Arabia? The study's objective is to examine the factors that affect the behavior intention of small businesses toward s-commerce adoption in Saudi Arabia. In this study, small businesses refer to small-scale businesses owned by individuals or microenterprises. The rationale behind pursuing this aim is to fulfill a need for a missing understanding within the s-commerce research and to follow a research direction that has been introduced earlier in the literature (Alarfaj & Solaiman, 2019; Baethge et al., 2016). In this study, the authors adopted the combined model of the technology acceptance model (TAM) and theory of planned behavior (TPB) as the theoretical framework to conduct an empirical examination. The significance of the study lies in identifying and fulfilling a research gap within the s-commerce literature and determining the factors that influence small businesses to adopt s-commerce within the Saudi Arabian context. Moreover, the authors employed the combined models of TAM and TPB as the theoretical framework in a new context, which extends the theoretical implications of the model. Lastly, the study provides a classification of small businesses as "small-scale social media-based businesses that are owned by individuals or microenterprises" that scholars can use in future research to further investigate this specific sector of businesses within the s-commerce domain.

The remainder of this paper is organized as follows. The second section provides a literature review on s-commerce adoption, covering both the consumers' and businesses' perspectives. The third section proposes the theoretical framework and specifies the research hypotheses. The fourth section outlines the research methodology, while the fifth section presents the SEM analysis and hypotheses testing. The sixth section presents the discussion of the results. Finally, the seventh and eighth sections provide the implications, conclusion, limitations, and directions for future work.

LITERATURE REVIEW

S-Commerce Adoption by Consumers

S-commerce research has become a notable research area in recent years, witnessing a growth in the number of publications (Baethge et al., 2016). The fundamental driver of s-commerce development is user purchases, where their intention and adoption of s-commerce determines purchase behavior. Therefore, identifying the factors influencing user behavior intention is essential to s-commerce research (Wang & Xie, 2020). Previous research on factors influencing consumers' adoption has revealed several key factors.

By a notable study, Hajli (2012b) identified new constructs known as the social commerce constructs (SCCs), namely, ratings and reviews, forums and communities, and recommendations and referrals. The SCCs are considered as differentiating components of s-commerce from traditional e-commerce, enabled by Web 2.0 technologies and SNSs (Hajli, 2013). These components allow customers to socialize and participate in an interactive shopping experience, leading to higher trust and favorable behavior towards s-commerce. Hajli (2015) revealed that all SCCs were facilitating social interactions and social support among s-commerce users, which, in turn, positively influenced consumers' trust and intention to buy in the UK. This finding is also in line with other studies (Ali et al., 2020; Zamrudi et al., 2016). Moreover, these constructs provide a basis for online social support to users (Hajli, 2015). The social support factor is a result of social relationships through social media interactions (Hajli, 2014), which is based on the social support theory (SST) (Lakey & Cohen, 2000). Sheikh et al. (2019) demonstrated that social support is positively related to the s-commerce intention of consumers, which previous studies had already pointed out (Hajli, 2014; Hajli & Sims, 2015). Al-Adwan (2019) explored the influence of SCCs on the perceived usefulness (PU) of s-commerce in the Jordanian context. The findings indicated that customers' positive s-commerce behavior is induced by trust, which in turn determined by the PU of s-commerce supported by the existence of SCCs.

PU and perceived ease of use (PEU) are also among the most investigated factors in studies related to s-commerce adoption (Erwin, Rahman et al., 2020). PU and PEU have been proven to have a positive influence on consumers' intention to use s-commerce in several studies (Akram et al., 2021; Biucky et al., 2017; Cho & Son, 2019; Cutshall et al., 2021; Solangi et al., 2019). Trust is a common key factor that researchers have examined in terms of its influence on adoption and intention to buy online (Cho & Sagynov, 2015; Jia et al., 2014). Akman and Mishra (2017) found that trust and other behavioral factors such as awareness and social pressure influence the intention to use substantially–and the actual use of–social media for commerce activities within the context of Turkey. Another study that is in line with literature on the significance of the trust factor was by Attar et al. (2021). The authors developed a novel construct known as surface credibility, which refers to an individual's first impression of an s-commerce platform. They found that trust, supported by surface credibility, significantly affects consumer satisfaction and purchase intention. Solangi et al. (2019) examined behavior intention toward s-commerce adoption using an extended model of TAM and TRA, which showed the successful adoption of s-commerce by Pakistani e-businesses. However, in their study, trust was not a significant factor in consumers' adoption of s-commerce. Their findings contradict those of previous studies showing a positive relationship between trust and s-commerce adoption, likely attributable to the cultural differences between those studies (Akman & Mishra, 2017; Alshibly, 2014; Attar et al., 2021). Other scholars have researched different topics related to consumer intention and behavior, including the design of s-commerce sites (Huang & Benyoucef, 2017), demographic characteristics (Abed & Ezzi, 2020), and specific s-commerce sites such as Facebook and Instagram (Abed, 2018; Al-Adwan & Kokash, 2019).

In the context of Saudi Arabia, several studies have explored consumers' adoption of s-commerce using similar factors to those considered in the above-mentioned global studies (Abed, 2020; Alghamdi, 2020; Al-Tit et al., 2020; Biucky et al., 2017; Sheikh et al., 2017). S. Abed et al.'s (2015) study was one of the earliest to use the extended unified theory of acceptance and use of technology (UTAUT)

model. In their study, the authors found all factors to have a positive role in shaping consumers' behavior intention. Sheikh et al. (2017), too, used the extended UTAUT model; they comprehensively examined social media purchase intention in Saudi Arabia. Their study concluded that habit has the most significant and positive relationship with buying intention and confirmed the positive influence of SCCs and social support. The authors' findings are consistent with previous studies undertaken in other countries that have documented the influence of SCCs and social support on consumers' intention to engage in s-commerce (Hajli, 2015; Sheikh et al., 2019). Although Sheikh et al.'s (2017) study was limited to male university students, their findings represent a valuable contribution to understanding the behavior intention of consumers within Saudi Arabia. Additionally, Al-Tit et al.'s (2020) the findings identified the positive relationships between trust, SCCs, social support, and s-commerce adoption by consumers, which is consistent with previous literature (Hajli & Sims, 2015; Sheikh et al., 2017). A notable theme that has not been investigated before in the literature with global context is the role of government initiatives in enabling s-commerce adoption. Alghamdi (2020) investigated the impact of government initiatives on consumers' s-commerce adoption behavior using an extended TPB and SST model. In the study, two novel factors represented two Saudi initiatives: Maroof and Sadad[3]. Despite the positive perception of the two factors, the author found that only Sadad influenced consumers' s-commerce positively. At the same time, Maroof was not proven to be significant in encouraging consumers to adopt s-commerce.

S-Commerce Adoption by Businesses

Aside from exploring the adoption intention of customers, it is essential to understand the s-commerce phenomenon from the business's perspective. This is because it will facilitate an assessment of the true value that s-commerce brings to businesses in general. Compared to customers' s-commerce adoption research, the empirical research on businesses' acceptance toward s-commerce and the factors that impact their behavior are mostly related to SMEs business context. The technology-organization-environment (TOE) framework is mostly used to present findings on businesses' intention to use s-commerce (Erwin, Abdul Rahman et al., 2020). Trawnih et al. (2023) integrated factors of the TOE and TAM models to examine the s-commerce behavior intention of SMEs with 200 or fewer employees in Jordan. The researchers found that both organizational factors of top management support and organizational readiness, and environmental factors of consumers and partners pressure, are significant factors for SMEs to adopt s-commerce. Besides, Trawnih et al. found technological factors of PU and security concerns were insignificant; this contradicts the findings of Abed's (2020b) notable study where the researcher investigated the adoption intention of Saudi SMEs applying the integrated TOE and TAM models. Abed's findings indicated the significance of the study's constructs, particularly top management support, and PU. These two factors were also validated in Abdulla Ali et al.'s (2019) research as the most influential factors for SMEs' s-commerce adoption in Malaysia. Lina and Suwarni (2022) explored SMEs' s-commerce behavior adoption and performance impact perception in Indonesia. Their findings revealed that perceived advantage, top management support, information technology/information system (IT/IS) knowledge, and competitive pressure are influential to SMEs' s-commerce adoption. Contrasting to Abed's (2020a) and Trawnih et al.'s (2023) research, Lina and Suwarni did not find customer pressure significant to Indonesian SMEs acceptance of s-commerce. This could be because most SMEs under study were relatively new businesses that had operated for less than a year, and they might have a small customer base that did not impose high demands to meet. Hung et al. (2018) proposed a study on microenterprises and small sellers by composing a conceptual framework using TPB and social exchange theory (SET). They identified targeted businesses as "companies with an individual owner and recruiting less than five employees" (p. 17). SET is a popular model that explains individuals' behavior based on social norms, trust, reputation, and reciprocity. Hung et al. suggested that SET factors influence sellers' attitudes, subsequently influencing the intention to continue using s-commerce. The authors' findings attest to the relevance of attitude (ATT) and perceived behavior control (PBC) in affecting the intention to continue using s-commerce in Taiwan. In a nonempirical

study, Alkhowaiter (2016) explored how individual sellers, particularly female sellers, used Instagram for their small businesses. The study reported that the interviewed sellers' perceived advantages of the following: Ease of use, less effort to set up an account, reaching local and global customers, the ability to manage the business from anywhere, and–most importantly–the ability to interact with customers directly through comments and private messages. The researcher concluded by stressing the significant potential of using Instagram for marketing and e-commerce activities. The most common factors investigated in the literature, both globally and within the Saudi Arabian context, are factors related to the TAM, TPB, UTAUT, and TOE theories. Table A1 in the Appendix shows a summary of the reviewed prior studies on s-commerce adoption. The Table shows each paper's study focus, aim, theory applied, factors considered, and the research setting.

After reviewing the literature, the authors may reasonably conclude that most prior studies focused on consumers' s-commerce intention and adoption. The research on s-commerce adoption by businesses mainly focused on SMEs, while few, if any,focused on microenterprises or solo entrepreneurs. This literature review shows that a minimal amount of empirical research was conducted on s-commerce adoption by small businesses, particularly in the context of Saudi Arabia. However, it is paramount to understand the perceptions of small businesses regarding the use of s-commerce, just as it is essential to understand SMEs' and larger businesses' perceptions. Therefore, in this study the authors aimed to fill this research gap by examining s-commerce adoption by Saudi small businesses (where small businesses are as defined in the introduction) using a quantitative and theory-based approach.

THEORETICAL FRAMEWORK AND HYPOTHESES DEVELOPMENT

The authors examined the key factors affecting the behavior intention of small businesses in Saudi Arabia to adopt s-commerce. The adopted theoretical framework to investigate the factors is the integrated TAM and TPB (C-TAM-TPB) model.

The TAM model is derived from the theory of reasoned action (TRA) model, developed to predict users' acceptance of a given technology (Davis, 1989). The TAM has two primary behavioral constructs: PU and PEU. The TAM is one of the most influential models that explain new technology acceptance by individuals (Venkatesh & Davis, 2000). The model is centered around the idea that the actual use of a system is determined by the behavioral intention, which is - in turn - determined by the ATT influenced by PU and PEU (Davis, 1989). Despite the model's effectiveness and popularity in the research field, it has some limitations in terms of explaining the "why" behind a technology's adoption. The two constructs of the TAM do not reflect the specific influences of the social and usage-context aspects that may alter user acceptance (Safeena et al., 2013). The TAM was initially developed in view of how computer design aspects influence the behavior of employees toward acceptance to use, neglecting to include other factors that may impact individuals' behavior. For example, the impact that other people opinions such as family and friends, have on an individual's ATT and behavior to adopt a technology was proven influential (Kurniasari et al., 2023). Moreover, the viewpoint a user beholds and the confidence regarding the ability to use technology is prevalent within technology adoption studies (Choe et al., 2021; Gómez-Ramirez et al., 2019; Triutomo et al., 2022). Hence, to understand the behavioral intention of small businesses to adopt e-commerce, the authors considered ATT, social influence, and capability perception, in this study.

The TPB, developed by Ajzen (1985), is a well-established social psychology theory that explains behavioral intention. The TPB model predicts intention and actual behavior by examining three constructs that are influenced by three different beliefs. Behavioral beliefs shape the ATT construct, the subjective norm (SN) construct is shaped by normative ideas, and control beliefs shape the perceived behavioral control construct. Generally, the user's intention to perform a certain behavior is stronger with a more positive ATT, more favorable SN, and greater PBC.

Taylor and Todd (1995) developed the combination of the two models (i.e., TAM and TPB) to better predict intention and behavior by including the social and control factors of the TPB with the TAM model.

Davis (1989) suggested that future technology acceptance studies should include other constructs than those in the TAM to examine their effect on usefulness, ease of use, and acceptance. Adding the TPB's social and control factors to the TAM provides a more comprehensive model on the intention to adopt, as several studies have confirmed the effect of social and control factors on technology acceptance and user behavior (Legrisa et al., 2003; Venkatesh & Davis, 2000; Yi et al., 2006). The integrated model suggests that the intention to engage in a particular behavior determines the actual performance of that behavior; it also suggests that the ATT toward the behavior itself influences the intention. Taylor and Todd (1995) argued that PEU positively influences PU, and both PU and PEU positively influence ATT. Thus, ATT, SNs, and PBC positively influence behavior intention. The effectiveness of C-TAM-TPB has been empirically supported by several studies that have examined users' adoption of different emerging technologies, including MOOCs e-learning (Yang & Su, 2017), QR digital payments (Triutomo et al., 2022), Drone food delivery (Choe et al., 2021a), bike-sharing systems (Yu, Yi, Feng, et al., 2018), Internet banking (Safeena et al., 2013), m-learning (Gómez-ramirez et al., 2019), SNSs (Leng, 2011), e-commerce (Awa et al., 2012), and s-commerce (Joo, 2015b).

In the context of s-commerce, small businesses conduct different social interactions, such as interacting with customers, as well as using a specific technology of SNSs. Therefore, in this study, the authors deliberately adopted the integrated model of TAM and TPB to explore small businesses' behavior intention to adopt s-commerce in Saudi Arabia. To the best of the authors' knowledge, no previous study applied the combined model to predict the intention of small businesses to adopt s-commerce. Although one study in the s-commerce domain used the combined model, it was conducted on the consumers' side, specifically university students (Joo, 2015b). Thus, this study could advance current knowledge of s-commerce adoption by applying the C-TAM-TPB model for the first time on the businesses' side. The model constructs are PU, PEU, ATT, SNs, PBC, and intention. Figure 1 shows the theoretical framework for the study.

PEU refers to "the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320). Prior studies showed that PEU positively affects users' ATTs (Choe et al., 2021a; Luan & Teo, 2009; Yu, Yi, Liu, et al., 2018). Furthermore, various studies (Choe et al., 2021a; Joo, 2015b; Yu, Yi, Liu, et al., 2018) confirmed the effect of PEU on PU. In the context of this study, as s-commerce is believed to be easy to use by small businesses, the likelihood that they will adopt s-commerce is higher. Hence, the authors hypothesized the following:

Hypothesis 1 (H1): PEU has a positive effect on small businesses' ATT toward behavior intention to adopt s-commerce.

Hypothesis 2 (H2): PEU has a positive effect on the PU of s-commerce for small businesses.

PU is defined as "the degree to which a person believes that using a particular system would enhance his or her job performance" (Davis, 1989, p. 320). Researchers have established PU to positively influence the ATT toward usage and behavioral intention, specifically by studies related to s-commerce adoption (Abed, 2020; Aldhahery et al., 2019; Hajli, 2013; Joo, 2015b; Solangi et al., 2019). This study examines the influence of the PU factor on small businesses' ATTs and the intention to adopt s-commerce. Therefore, the authors proposed the following hypotheses:

Hypothesis 3 (H3): PU has a positive effect on small businesses' ATT toward behavior intention to adopt s-commerce.

Hypothesis 4 (H4): PU has a positive effect on small businesses' behavior intention to adopt s-commerce.

ATT refers to "the degree to which a person has a favorable or unfavorable evaluation or appraisal of the behavior in question" (Ajzen, 1991, p. 188). According to the TPB, a positive ATT toward a

behavior is expected to influence the behavior intention positively. Several studies have confirmed that this factor positively influences behavioral intention, especially within the s-commerce literature (Alghamdi, 2020; Cho & Son, 2019; Hung et al., 2018; Joo, 2015a; Kim et al., 2013). This study proposes that small businesses with a positive ATT toward s-commerce are more likely to adopt s-commerce. Therefore, the authors proposed the following hypothesis:

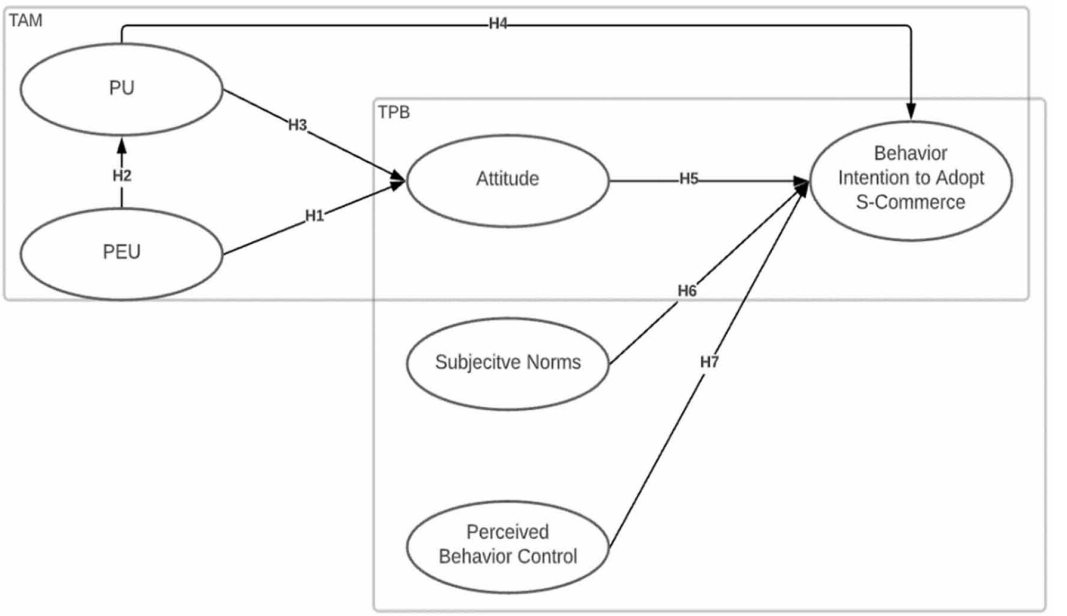
Hypothesis 5 (H5): The ATT of small businesses has a positive effect on the behavior intention to adopt s-commerce.

SN is defined as "the perceived social pressure to perform or not to perform the behavior" (Ajzen, 1991, p. 188). Social norms are characterized as peer pressure to employ new technology in IS adoption studies (Venkatesh et al., 2003). Several studies have shown that the factor of SNs has a substantial influence on behavioral intention (Choe et al., 2021a; Shin, 2013; Yang & Su, 2017). In this study, social norms pressure small businesses to adopt s-commerce for their business. Therefore, the authors hypothesized the following:

Hypothesis 6 (H6): SN has a positive effect on small businesses' behavior intention to adopt s-commerce.

PBC refers to "the perceived ease or difficulty of performing the behavior" (Ajzen, 1991, p. 188). It refers to a person's belief in the capabilities they hold to perform a specific behavior (i.e., their confidence in their ability to perform the behavior). The significance of PBC on adoption intention was proved by several studies that adopted the TPB to examine different technologies (Choe et al., 2021b; Ko, 2017; Nayanajith & Damunupole, 2019; Yang & Su, 2017; Yu, Yi, Liu, et al., 2018). In the context of this study, the more confident small businesses feel about their capabilities, the more likely they are to adopt s-commerce. Thus, the authors formulated the following hypothesis:

Figure 1.
Theoretical framework



Hypothesis 7 (H7): PBC has a positive effect on small businesses' behavior intention to adopt s-commerce.

RESEARCH METHODOLOGY

The authors applied quantitative methodology by developing a self-administered online questionnaire. The developed questionnaire sought to study the effect of the examined factors on small businesses' intention to use s-commerce. Specifically, the factors were PEU, PU, ATT, SNs, and PBC. This section describes the developed instrument, survey design, data collection, and data analysis.

Instrument Development

The authors measured the six constructs by scale items adopted from the literature using a five-point Likert-type scale that ranges from a value of 5 ("Strongly agree") to a value of 1 ("Strongly disagree"). In this study, the authors used the five-point scale to reduce respondents' dissatisfaction and enhance the response rate (Babakus & Mangold, 1992; Verma & Sachdev, 2004). The authors adopted: The measuring items for the PU and PEU constructs from Davis (1989); the ATT construct items from Bhattacherjee (2000), Shin (2009), and Taylor and Todd (1995); the SNs items from Venkatesh and Davis (2000); the items for PBC from Bhattacherjee (2000); finally, the items for the behavior intention construct from Agarwal and Karahanna (2000) and Shin (2009). Table A2 in the Appendix shows the questionnaire.

Survey Design

The authors developed an online questionnaire using Google Forms with two sections and 30 questions in total. The first section presented the demographic questions related to gender, age, qualifications, monthly income, working status, length of time using s-commerce, and business classification (i.e., individual or microenterprise owner). The last two questions intended to identify the respondents' overall satisfaction with the s-commerce experience, and the most used social platform. The second section included the 19 instruments of the research's theoretical model constructs and one optional question. All survey questions were mandatory to avoid missing values, except for the optional question. The researchers distributed the questionnaire between October 2021 and November 2021, in English and translated into Arabic, since all target population members were native Arabic speakers.

Data Collection

The target population for this research was small businesses in Saudi Arabia, either individuals (sole entrepreneurs) or microenterprise owners. Data were collected from respondents using a convenience sampling technique because of its higher reach and cost-effectiveness (Ackoff, 1955; Franzosi, 2004). The questionnaire was randomly disseminated through several social media platforms. The reason for selecting social media platforms as primary distributing channels was because of their popularity in Saudi Arabia, as active social media users are equivalent to 79.3% of the population (Kemp, 2023a). Moreover, the questionnaire was also distributed through direct messaging random small business owners over WhatsApp, Telegram, Twitter, Instagram, and TikTok. Allowing higher probability for the survey to reach potential targeted population. A total of 392 responses were collected and determined suitable for the study's analysis. The number of collected responses exceeds the minimum acceptable sample size of 190, which was based on Bartlett et al.'s (2001) recommendation of having 10 responses per factor's questions. The number of responses also exceeds another sample size recommendation to avoid biasness, which is 200, according to Loehlin and Beaujean (2016).

Data Analysis

The authors used Statistical Package for the Social Sciences version 27 (SPSS) for descriptive analysis. The researchers used partial least squares structural equation modeling (PLS-SEM) to evaluate the

research model. PLS-SEM is an effective technique widely applied in different research disciplines for its power in explaining variations in the dependent construct of the examined model (Hair et al., 2011). The PLS-SEM is useful when the sample size is small, the data does not follow a normal distribution, or the research model is highly complex (Hair et al., 2011). The Mardia's kurtosis test for multivariate normality reveals that the data multivariate ratio was more than 5.00, indicating that the data in this study were not normally distributed (Bentler & Wu, 2005). This justifies using PLS-SEM to analyze this study's data. The authors used WrapPLS 8.0 for this study to conduct PLS-SEM testing. The study carried out a two-step process for analysis: First assessing the measurement model by testing reliability to confirm internal consistency and testing constructs' validity through convergent and discriminant validity; second, the structural model to test the study's hypotheses.

RESULTS

Descriptive Analysis

Table 1 shows the descriptive statistics of the respondents. The total number of responses obtained was 392, with 54.3% female respondents. Most respondents were categorized into two age groups: 21-30 and 31-40 (33.7% and 37.5%, respectively). The bachelor's degree was the highest qualification level most respondents held (45.4%). Also, most respondents were individuals (62.5%), while microenterprise owners accounted for 37.5% of the sample, of which 22% had 3-5 workers. Most respondents were either privet sector employees or self-employed (41.6% and 26.8%, respectively). This shows how many people seek s-commerce to build a small business and a side income. Around 46% of the small businesses that participated in the study had already engaged in s-commerce for 1-3 years. The participants generally expressed satisfaction with their s-commerce experience, with 52% describing themselves as satisfied and 15.8% as extremely satisfied. The most used social platform for s-commerce by small businesses was Instagram (35.5%), followed by Snapchat (27.8%), which reflects the popularity of these two SNSs in Saudi Arabia.

The optional question focused on the main motivational factors that encouraged the respondents to engage in s-commerce. The reported factors were related to aspects of Saudi Arabia's environment, including the existence of e-commerce regulations in Saudi Arabia. Out of the 392 respondents, 322 answered the optional question. Figure 3 in the Appendix shows the distribution of answers to the question. In particular, 19% of the respondents selected the Maroof platform as the most encouraging reason to engage in s-commerce, followed by the e-commerce regulations provided by the Saudi Ministry of Commerce and third-party e-commerce solutions providers such as Zid, with 18% for each. The least selected reason was the available financing solutions and loans (5%), which is understandable as s-commerce requires minimal investment (Kanani & Glavee-Geo, 2021).

Multicollinearity Test

In this study, the authors used the independent variables' variance inflated factor (VIF) value to test the multicollinearity between variables. (Table 2) Multicollinearity implies a close direct relationship between independent variables, possibly contributing to bias in the study's analysis. The obtained VIF values for the independent variables confirmed the absence of multicollinearity, as their VIF was less than 5 (Hair Jr et al., 2021).

Measurement Model Assessment

The authros assessed the measurement model by computing reliability, convergent validity, and discriminant validity. The researchers measured the instrument's internal consistency and precision by Cronbach's alpha and composite reliability. The ideal test values for both Cronbach's alpha and composite reliability should be more than 0.70, for the instrument to be trustworthy (Hair et al., 2011; Pallant, 2011). The coefficients of Cronbach's alpha and composite reliability for each variable

Table 1.
Descriptive statistics of the respondents (N=392)

Demographics		Frequency	Percentage
Age	Younger than 18	10	2.6%
	18-20	24	6.1%
	21-30	132	33.7%
	31-40	147	37.5%
	41-50	55	14.0%
	51-60	12	3.1%
	Older than 60	12	3.1%
Gender	Male	179	45.7%
	Female	213	54.3%
Highest educational qualification	Less than secondary school	8	2.0%
	Secondary school	87	22.2%
	Diploma	84	21.4%
	Bachelor	178	45.4%
	Postgraduate	35	8.9%
Work status	Student	24	6.1%
	Public sector worker	59	15.1%
	Private sector worker	163	41.6%
	Self-employed	105	26.8%
	Retired	13	3.3%
	Unemployed or job-seeking	28	7.1%
Monthly income (in SR)	Less than or equal to 5,000	93	23.7%
	5,001-10,000	178	45.4%
	10,001-15,000	76	19.4%
	15,001-20,000	26	6.6%
	More than 20,000	19	4.8%
Business classification	Individual (not an enterprise owner)	245	62.5%
	Microenterprise owner	147	37.5%
Number of workers (for microenterprise owners)	1-2	57	14.5%
	3-5	87	22.2%
Time using s-commerce	Less than 1 year	62	15.8%
	1-3 years	182	46.4%
	4-6 years	108	27.6%
	More than 6 years	40	10.2%
Evaluation of s-commerce experience	Very satisfied	62	15.8%
	Satisfied	204	52.0%
	Neutral	83	21.2%
	Unsatisfied	22	5.6%
	Very unsatisfied	17	4.3%
Most used s-commerce platform	Instagram	139	35.5%
	Twitter	79	20.2%
	Facebook	9	2.3%
	WhatsApp	27	6.9%
	Snapchat	109	27.8%
	TikTok	27	6.9%
	Other	2	0.5%

Table 2.
VIF for each independent variable

Dependent Variable	Independent Variable	VIF
ATT	PU	2.958
	PEU	2.958
Behavior Intention	PU	3.713
	ATT	4.693
	SNs	2.143
	PBC	4.201

exceeded 0.70, indicating that the adopted questionnaire scale items had a high level of internal consistency. Table 3 shows the results of the reliability tests.

The authors assessed convergent validity by computing the value of the outer loading on each measurement item and the value of the average variance extracted (AVE). An outer loading value greater than 0.70 shows that an item has strong convergent validity (Hair Jr et al., 2021). If a variable has an AVE higher than 0.50, the latent variable has good item validity (Hair Jr et al., 2021). The findings of the convergent validity suggested a strong association between the items and variables created, as the outer loading values were greater than 0.70. Likewise, the values of AVE for each latent variable are greater than 0.50. The results determined that the combined model of TAM and TPB has valid and accurate measurement items for investigating small businesses' s-commerce adoption. Table 4 reports a summary of the findings of the convergent validity tests.

Furthermore, the authors evaluated the discriminant validity based on the cross-loading and the Fornell-Larcker criterion, which uses the square root of the AVE. When the value of an item's outer loading is greater than the cross-loading with other constructs, the item is considered valid (Hair Jr et al., 2021). Tests results show that all items have an outer loading value higher than cross-loading for each item. This suggests that the study's SEM model had strong discriminant validity. Additionally, the study's good discriminant validity was attained as the square root of each latent variable's AVE was larger than its correlation with the constructs of other latent variables (Hair Jr et al., 2021). Therefore, the SEM in this study is considered to have good discriminant validity based on the Fornell-Larcker criterion. Table 5 shows discriminant validity testing using the Fornell-Larcker criterion.

Structural Model Assessment

The authors evaluated this study's structural model by assessing the R-squared coefficient and predictive relevance, goodness-of-fit, hypothesis testing of each independent variable, and effect size

Table 3.
Internal consistency/reliability result

Variable	Cronbach's Alpha	Composite Reliability
PU	0.938	0.956
PEU	0.929	0.955
ATT	0.949	0.963
SNs	0.899	0.952
PBC	0.933	0.957
Behavior intention	0.936	0.959

Table 4.
Convergent validity result

Item	PU	PEU	ATT	SN	PBC	BI	P Value	AVE
PU1	0.918	-0.079	0.084	-0.069	-0.039	0.200	<0.001	0.843
PU2	0.935	-0.104	0.132	-0.040	-0.045	0.078	<0.001	
PU3	0.920	0.029	-0.142	0.018	0.091	-0.042	<0.001	
PU4	0.900	0.159	-0.079	0.093	-0.006	-0.243	<0.001	
PEU1	0.041	0.934	-0.045	-0.002	-0.051	0.164	<0.001	0.876
PEU2	-0.062	0.949	-0.035	0.035	0.071	-0.076	<0.001	
PEU3	0.022	0.924	0.081	-0.034	-0.021	-0.088	<0.001	
ATT1	-0.001	0.066	0.931	-0.011	0.047	0.016	<0.001	0.867
ATT2	-0.042	0.024	0.937	-0.030	0.033	-0.015	<0.001	
ATT3	-0.050	-0.104	0.930	0.011	-0.049	0.015	<0.001	
ATT4	0.094	0.014	0.927	0.030	-0.031	-0.017	<0.001	
SN1	0.011	0.035	-0.165	0.953	-0.001	0.083	<0.001	0.908
SN2	-0.011	-0.035	0.165	0.953	0.001	-0.083	<0.001	
PBC1	0.035	-0.080	0.001	0.041	0.950	0.018	<0.001	0.882
PBC2	-0.051	0.058	0.007	-0.030	0.926	-0.162	<0.001	
PBC3	0.014	0.024	-0.008	-0.012	0.941	0.141	<0.001	
BI1	-0.001	0.070	-0.030	-0.034	0.065	0.938	<0.001	0.887
BI2	-0.069	-0.066	-0.065	0.019	0.022	0.948	<0.001	
BI3	0.070	-0.003	0.096	0.015	-0.087	0.939	<0.001	

Table 5.
Discriminant validity using the Fornell-Larcker criterion

Item	PU	PEU	ATT	SNs	PBC	Behavior Intention
PU	0.918	0.810	0.822	0.691	0.799	0.818
PEU	0.810	0.936	0.789	0.657	0.791	0.789
ATT	0.822	0.789	0.931	0.681	0.848	0.837
SN	0.691	0.657	0.681	0.953	0.677	0.698
PBC	0.799	0.791	0.848	0.677	0.939	0.813
BI	0.818	0.789	0.837	0.698	0.813	0.942

estimation (Hair Jr et al., 2021). The R-square of the correlation between the variables determines the influence of independent variables on the dependent variable. Cohen et al. (2013) suggested using the adjusted R-squared to prevent biases of the predictors included in the model. The predictive relevance (Q2) measures the precision of the study model in predicting the observed dependent variables in the future. The test findings showed that the R-squared, adjusted R-squared, and Q-squared are almost identical, which verifies the model prediction accuracy. The Q-square values showed that the constructs of PU, ATT, SN, and PBC explain 78% of the variance in small businesses' behavior

intention. Table 6 shows the R-squared, adjusted R-squared, and Q-squared. Kock (2014) suggested several criteria to assess the goodness-of-fit for the model in PLS. the structural model is deemed fit if at least one of the criterions is met. Table 7 shows the result values and threshold for each goodness of fit criteria and acceptance status. Thus, the model the authors adopted in this study is deemed good for acceptance research in future studies.

Hypothesis Testing

The significance level of the path coefficients examines the relationships between the study's variables. The path coefficient indicates the relationship's direction and strength (Hair Jr et al., 2021). When the path coefficient p-value is less than the significance level (10%, 5%, or 1%), the path coefficient is considered significant. Figure 2 shows the path coefficients and p-value of each independent variable. The results of the path coefficients confirm the significance of all of the study's hypotheses.

DISCUSSION

The authors aimed to investigate the factors influencing small businesses' intention to adopt s-commerce in Saudi Arabia using the joint model of TAM and TPB. The factors the researchers examined in this study were PEU, PU, ATT, SN, and PBC. They applied PLS-SEM to test the hypotheses and their significance. The findings supported all the hypotheses of the study as expected. Table 8 reports the hypothesis test results. First, for the factors related to TAM, PEU was found to have a significant and positive influence on small businesses' ATTs toward s-commerce adoption (PEU→ATT: b = 0.361, p = <.001). The higher the perception of the simplicity to use s-commerce, the more likely small businesses are to use s-commerce. This finding is consistent with studies examining the influence of PEU on ATT(Choe et al., 2021; Gómez-Ramirez et al., 2019). Additionally, PEU significantly and positively impacted the PU of s-commerce (PEU→PU, b = 0.810, p = <.001). This study also supports the relationship between PU and ATT toward using s-commerce (PU→ATT, b = 0.529,

Table 6.
R-squared, adjusted r-squared, and q-squared of dependent variables

Dependent Variable	R-Squared	Adjusted R-Squared	Q-Squared
PU	0.656	0.656	0.655
ATT	0.722	0.721	0.721
Behavior intention	0.778	0.776	0.778

Table 7.
Goodness-of-fit PLS-SEM model

Criteria	Threshold	Result	Status
Average adjusted R-squared	p-value ≤ 0.05	< 0.001	Acceptable
Average full collinearity VIF	Acceptable if < 5	3.445	Acceptable
Tennenhaus goodness of fit	Very weak (< 0.1), Weak (0.1 – 0.25), medium (0.25 – 0.36), Strong (>0.36)	0.794	Strong
Sympson's paradox ratio	Acceptable if ≥ 7.0, ideally = 1	1.000	Ideal
Standardized root mean squared residual	Acceptable if < 0.1	0.034	Acceptable
Standardized mean absolute residual	Acceptable if < 0.1	0.027	Acceptable

Figure 2. Path coefficient and p-value of each independent variable

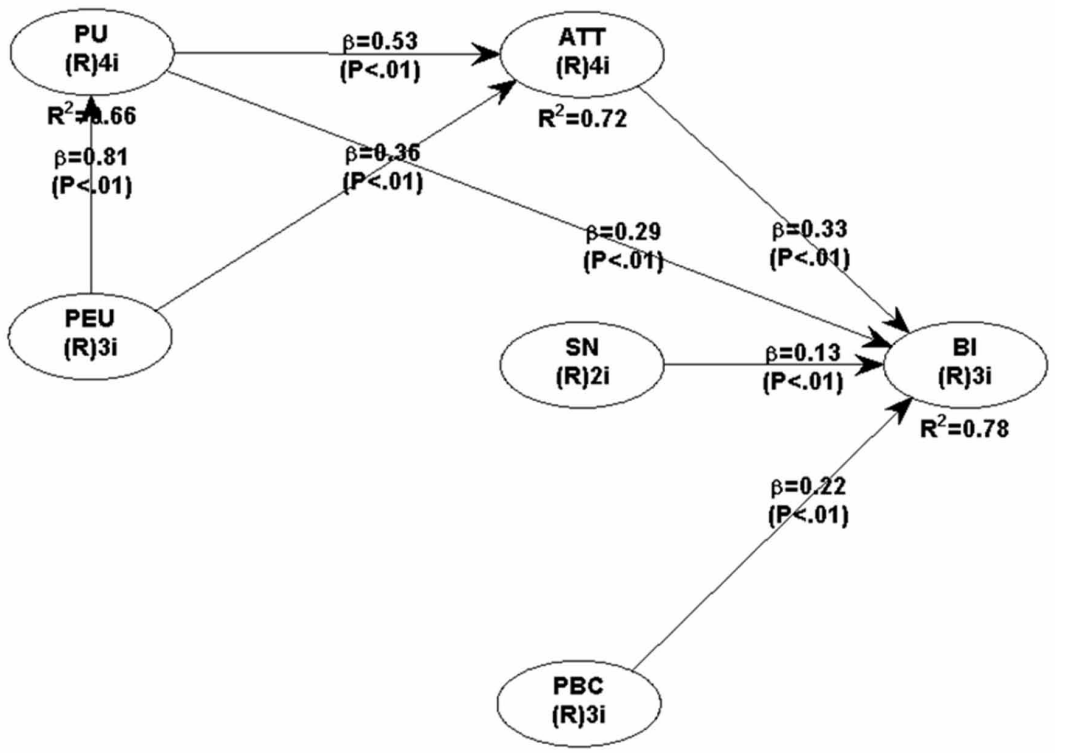


Table 8.
Hypothesis test result

Hypothesis	β	S.E	P-value	Result
H1: PEU has a positive effect on small businesses' ATT towards intention to adopt s-commerce.	0.361	0.048	<0.001	Supported
H2: PEU has a positive effect on the PU of s-commerce to small businesses.	0.810	0.045	<0.001	Supported
H3: PU has a positive effect on small businesses' ATT towards intention to adopt s-commerce.	0.529	0.047	<0.001	Supported
H4: PU has a positive effect on small businesses' intention to adopt s-commerce.	0.288	0.049	<0.001	Supported
H5: ATT of small businesses has a positive effect on the intention to adopt s-commerce.	0.325	0.048	<0.001	Supported
H6: SN has a positive effect on small businesses' intention to adopt s-commerce.	0.128	0.050	0.005	Supported
H7: PBC has a positive effect on small businesses' intention to adopt s-commerce.	0.220	0.049	<0.001	Supported

p = <.001), indicating a significant and positive influence. Existing literature also supports these findings (Joo, 2015; Yu, Yi, Feng, et al., 2018). Therefore, H1, H2, and H3 were all supported and accepted by this study, confirming Joo's (2015b) results. Joo's (2015b) study showed that the TAM combined with the TPB proved effective in explaining consumer s-commerce adoption. In this study, the authors obtained a similar result.

Moreover, the results of this study showed a significant, positive, and direct impact on the behavior intention by the PU factor, thereby confirming the relationship posited in H4 (PU→BI, b =

0.288, p = <.001). Similarly, the results of several studies support the same finding for both types of users (i.e., consumers and businesses) (Abed, 2020; Cutshall et al., 2021; Joo, 2015b; Solangi et al., 2019). This result suggests that, when small businesses in Saudi Arabia find s-commerce useful, their intention to adopt the technology will increase. This is similar to Salem and Nor's (2020) findings, which suggested that Saudi Arabian consumers' likelihood of adopting e-commerce increases when they perceive it as more valuable. The study supports the relationship proposed by H5 regarding the impact of ATT on the behavior intention of small businesses to adopt s-commerce. The results indicate that ATT significantly and positively impacted behavioral intention (ATT→BI, b = 0.325, p = <.001). Several studies have concluded with a similar result, reporting on the significant and positive effect of ATT on the behavior intention of consumers and businesses to adopt s-commerce (Alghamdi, 2020; Hung et al., 2018; Joo, 2015b; Shin, 2013). Hung et al.'s (2018) findings indicated that ATT has a significant and positive impact on the intention of small business owners to continue using s-commerce. H6 is supported in this study (SN→BI, b = 0.128, p = .005), indicating that the SNs factor positively influences s-commerce adoption. However, the results indicate that it is the least influential among all the factors. This result may be attributable to the fact that most of the respondents in this study had already been using s-commerce for their business for 1-3 years, meaning that they were less affected by others' opinions. The finding contradicts Shin (2013), who found that the SNs factor is a positive, yet highly influential, factor for Korean users' adoption of s-commerce. The authors found the SNs factor to be inconsistent in the literature, with several studies confirming its insignificance in the s-commerce context (Alghamdi, 2020; Hung et al., 2018; Joo, 2015b). Although these conflicting results can be attributed to the differences between each study's sample, further investigation into the factor is needed within the s-commerce context. Finally, the authors found the PBC to influence behavioral intention positively, supporting the relationship posited in H7 (PBC→BI, b = 0.220, p = <.001). The result of this study confirms previous studies that determined the positive effect of PBC on behavior intention toward s-commerce (Hung et al., 2018; Joo, 2015b; Ko, 2017). The authors concluded that the more positive the perception of PBC, the more motivated small businesses will be to adopt s-commerce.

The hypothesis tests show a positive and significant relationship between all factors and s-commerce adoption behavior intention for small businesses. Thus, when PU, ATT, SNs, and PBC increase, consequently small businesses' intention to use s-commerce increases. Among the factors, ATT was the strongest predictor of behavior intention, with a positive and direct relationship. This was followed by PU, PBC, and SNs. The authors found both PEU and PU to be positive and significant in their relationship with ATT, which, in turn, makes the two factors indirect predictors of behavioral intention. As users perceive the easiness and usefulness of s-commerce, the greater the likelihood that they will have a positive ATT toward adoption, which will subsequently positively influence their behavior intention. The findings also confirmed the validity of the C-TAM-TPB model in the context of s-commerce adoption by small businesses in Saudi Arabia. The positive ATT of small businesses toward s-commerce, along with a positive perception of capabilities and conformity to social expectations, the stronger the behavior intention and adoption towards s-commerce.

The additional question on motivational reasons was intended to learn why small businesses, particularly in Saudi Arabia, were motivated to participate in s-commerce. Most respondents selected the Maroof platform as the most important factor for their practice of s-commerce. This emphasizes that the major goal of Maroof was accomplished, which was to encourage and regulate e-commerce practices between sellers and buyers. The Maroof site works like a reputation system, regardless of the platform businesses use (whether an Instagram account or an e-commerce site), giving them an evaluation score out of 10 based on consumer ratings. It can be assumed that most respondents chose to use Maroof because it makes it easier for sellers and business owners to build an online reputation and authenticate their business, which might have encouraged them to practice s-commerce in the first place. Since it is still a relatively new service, only a few studies have empirically researched the role of Maroof in purchase and adoption decisions in Saudi Arabia (Alghamdi, 2020; Alotaibi et al.,

2019), which have mainly focused on the consumer side. Future research should extend s-commerce studies by investigating Maroof's effect on businesses' s-commerce adoption within Saudi Arabia.

THEORETICAL AND PRACTICAL IMPLICATIONS

This study presents several theoretical contributions to literature. First, the study has distinguished small businesses from SMEs as small-scale businesses that are either managed solely by individuals or microenterprises. This explicit focus provides a clearer identification of a business sector that researchers and practitioners often overlook in the s-commerce domain. Second, the study enhances the previous s-commerce literature by validating the C-TAM-TPB model in s-commerce research. All model constructs of PEU, PU, ATT, SNs, and PBC were found to significantly influence small businesses' intention to adopt s-commerce in Saudi Arabia. This study is meaningful as it provides empirical evidence of the combined model's effectiveness in a new context and technology and supports the findings of previous literature that adopted C-TAM-TPB (Choe et al., 2021; Gómez-Ramirez et al., 2019; Joo, 2015a; Joo, 2015b; Safeena et al., 2013; Triutomo et al., 2022; Yu, Yi, Feng, et al., 2018). Third, the study further reveals the small influence the SNs factor has on s-commerce adoption behavior. This factor showed fluctuating results within the literature that examined the SNs factor. It was found to be highly influential in s-commerce adoption by consumers (Shin, 2013) and insignificant in several other studies (Alghamdi, 2020; Triutomo et al., 2022). In this study, the small impact of the SNs factor may be attributed to the fact that s-commerce is becoming more common to use now in Saudi Arabia, and the social pressure to use it might be minimal. Nevertheless, the SNs factor must be investigated thoroughly to assess the impact of influencing adoption behavior.

The study also offers several insights for practitioners. The study shows how small businesses are positively affected by PU, ATT, SNs, and PBC. Therefore, SNSs developers should consider these factors when developing strategies to attract small businesses to engage in s-commerce on their social platforms. In addition, this study's findings indicate that most small businesses–at least those included in this study's sample–are operated by sole entrepreneurs. This highlights the importance of focusing more on this demographic of small businesses from researchers and practitioners. A deeper understanding of how sole entrepreneurs are approaching s-commerce and whether their perspective is similar to enterprises will help better shape the user experience provided by current and future s-commerce platforms. Moreover, the findings are also significant for entrepreneurs and application developers. Understanding s-commerce from the perspective of businesses, specifically small businesses will provide a knowledge source that can help new startups develop business models and applications that combine social media networking with e-commerce functionality, which could compete with current major s-commerce platforms. This is especially true for Saudi Arabia as several local startups have successfully competed with international companies. A prime example of this is how Mrsool[4], a local startup specializing in delivery services, outperformed Uber in Saudi Arabia (Bloomberg, 2019).

CONCLUSION

In this study, the authors aimed to investigate the factors contributing to s-commerce acceptance and adoption from the perspective of small Saudi businesses in Saudi Arabia. The study's theoretical framework was based on the combined model of the TAM and TPB, and it included the analysis of the following five factors: PEU, PU, ATT, SN, and PBC. The authors employed a quantitative survey method by conducting a self-administered questionnaire and surveyed 392 small businesses. They presented a descriptive analysis of respondents' demographics. The researchers employed PLS-SEM for the hypothesis analysis, and presented the results of the evaluation of the measurement model and structural model. To the best of the authors' knowledge, this is the first study to examine s-commerce adoption by small businesses using C-TAM-TPB and the first in the Saudi Arabian

context. The objective of the study was fully met, as the findings reveal that the key direct predictors of s-commerce adoption by small businesses are, in order of significance, ATT, PU, PBC, and SN. Although the authros found the SNs factor to be the least important predictor of small businesses' behavior intention to adopt s-commerce, more research is needed to fully evaluate the significance of the factor's explanatory power within the s-commerce context. It can be concluded from the study that the current state of s-commerce in Saudi Arabia is promising. There is high growth potential, especially because SNS usage is expected to increase in the coming years. Among other things, if current SNSs such as Instagram integrate payment and shipping functions, a definite increase in s-commerce growth will likely be witnessed globally and within Saudi Arabia. Another important conclusion of this study is that small businesses within Saudi Arabia have developed a positive attitude towards s-commerce. This fact may be accounted for based on the popularity of social media sites among Saudi users and the fact that it is generally inexpensive to start an s-commerce business. Additionally, the optional question included in this study's questionnaire indicates that many Saudi Arabian users believe that the Maroof site is a motivating factor for engaging in s-commerce. This reflects the positive impact of the Saudi government's initiatives regarding the acceleration of e-commerce growth in the country.

Limitations and Future Research

This study has some limitations.

First, the study was conducted only in Saudi Arabia, which means that the findings may not be generalizable to other countries. Therefore, future studies should explore the behavior intention to adopt s-commerce among small businesses—as defined in this study—in other countries and cultures to identify any similarities or dissimilarities.

Second, the authors used a survey strategy—specifically, a questionnaire—as the data collection method, which highlights an opportunity for future studies to leverage different data collection methods, including qualitative methods, to deepen the knowledge gained.

Third, the study has nonempirically introduced other factors related to the Saudi Arabian context such as the Maroof site, e-commerce regulations, and third-party e-commerce solutions. Future studies should incorporate these factors into the conceptual models to empirically study their effect on the adoption of s-commerce.

Forth, the authors examined small businesses' adoption behavior; future studies should further explore the characteristics of small businesses and incorporate comparison of behavior between small businesses and larger businesses to identify undiscovered knowledge on adoption behavior.

Fifth, although the adopted model proved effective in explaining the behavior intention of small businesses, future studies should add more context-unique constructs to the C-TAM-TPB to increase its explanatory power.

Finally, the authors identified small businesses as entities running s-commerce businesses solely or the owners of microenterprises using s-commerce. Future studies could narrow the focus even further or differentiate new classification of businesses.

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ENDNOTES

1 Maroof (https://maroof.sa/) is a Web site that displays each seller's business information, their reviews, and their customer ratings.

2 Zid (https://zid.sa/en/) is a Saudi startup company that provides e-commerce solutions for business owners, helping them build their online shops.

3 Sadad (https://www.sadad.com/en/Pages/home.html) is a service that allows users to pay for products and services using a secure online payment gateway.

4 Mrsool (https://mrsool.co/about) is a Saudi delivery startup that allows users to order and receive deliveries from local stores and restaurants.

APPENDIX

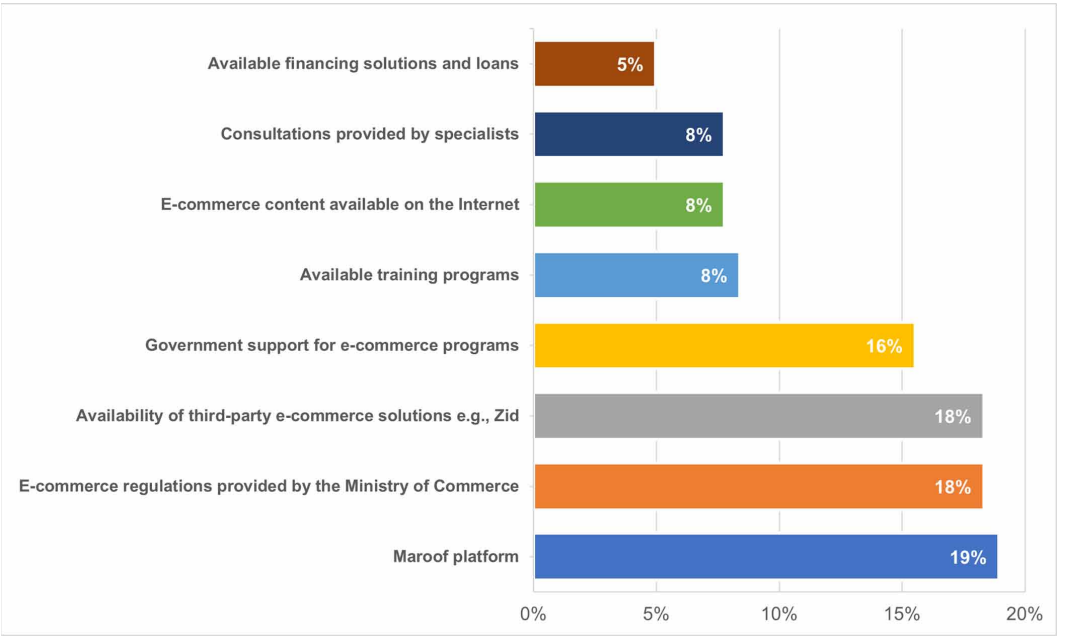
Table A1.
Summary of prior studies on s-commerce adoption

Author	Study Focus	Aim	Theory	Factors	Setting
(Trawnih et al., 2023)	SMEs	Examine SMEs' adoption intention of s-commerce.	TOE, TAM	PU, security concern, top management support, organizational readiness, consumer pressure, and trading partner pressure.	Jordan
(Lina & Suwarni, 2022)	SMEs	Examine SMEs intention to adopt s-commerce and performance expectations.	TOE	Perceived advantage, compatibility, top management support, IT/IS knowledge, customer pressure, and competitor pressure.	Indonesia
(Attar et al., 2021)	Consumers	Analyze the influence of various factors on purchase intention within s-commerce.	SST	Social media activity, trust, surface credibility, and e-commerce satisfaction.	Malaysia
(Al-Tit et al., 2020)	Consumers	Investigate s-commerce adoption and its driving factors.	SST, SCCs	Trust, SCCs, informational support, and emotional support.	Saudi Arabia
(Alghamdi, 2020)	Consumers	Study the role of government initiatives to influence s-commerce adoption.	TPB, SST	ATT, emotional support, informational support, price, SNs, PBC, trust, electronic word of mouth, and secure payment.	Saudi Arabia
(S. Abed, 2020)	SMEs	Examine SMEs' adoption intention of s-commerce.	TOE, TAM	PU, security concern, top management support, organizational readiness, consumer pressure, and trading partner pressure.	Saudi Arabia
(Solangi et al., 2019)	Consumers	Propose an extended model to investigate consumers' adoption of s-commerce.	TAM, TRA	PEU, PU, social media influence (SNs), risk, trust, and online experience.	Pakistan
(Al-Adwan, 2019)	Consumers	Identify factors to influence s-commerce adoption.	TAM	SCCs, user experience, familiarity, PEU, PU, and trust.	Jordan
(Hung et al., 2018)	Small businesses	Identify the determining factors for small vendors to engage and continue participating in s-commerce.	TPB, SET	Perceived benefits, commitment to build relationships, perception on reputation, social interaction, trust, attitude, personal standards (SNs), and behavior control.	Taiwan
(Akman & Mishra, 2017)	Consumers	Study the factors that influence consumer intention to adopt.	Conceptual	Perceived ethics, trust, perceived enjoyment/easiness, social pressure, satisfaction, and perceived awareness.	Turkey
(Sheikh et al., 2017)	Consumers	Examine social media purchase intention factors.	UTAUT2, SST	Performance expectancy, effort expectancy, social influences, hedonic motivation, habit, facilitating conditions, price saving, SCCs, social support, and cultural factors.	Saudi Arabia
(Schaupp & Bélanger, 2016)	Sellers	Analyze small firms' perceptions of the benefits of s-commerce.	TOE	Social media technology quality, s-commerce rules and regulations, stakeholder pressure, competitor pressure, and firm's organizational constraints.	USA
(N. Hajli, 2015)	Consumers	Investigate the effect of social interactions through SCCs on intention to adopt s-commerce.	Conceptual	SCCs, trust, and PU.	UK
(S. Abed et al., 2015)	Consumers	Identify the factors affecting consumer adoption of s-commerce.	UTAUT2	Performance expectancy, effort expectancy, social influences, hedonic motivation, habit, trust, consumer innovativeness, and information quality.	Saudi Arabia

Table A2
Questionnaire items

Construct	Item	Source
PU	I find it useful to use s-commerce. Using s-commerce improves business performance. Using s-commerce enables me to accomplish business-related tasks more quickly. Using s-commerce makes it easier to operate a business.	(Davis, 1989)
PEU	I find s-commerce easy to use. Learning to use s-commerce for business purposes is easy for me. I find it easy to become skillful at using s-commerce.	(Davis, 1989)
ATT	Using s-commerce for business is a pleasant experience. I like the idea of using s-commerce. Using s-commerce is a good idea for business. In general, I have positive perception about s-commerce.	(Bhattacherjee, 2000; Shin, 2009; Taylor & Todd, 1995)
SN	People who influence my behavior think I should engage in s-commerce. People who are important to me think I should engage in s-commerce.	(Venkatesh & Davis, 2000)
PBC	I have the resources, knowledge, and ability to use s-commerce. Using s-commerce is entirely within my control. I would be able to use s-commerce to conduct my business activities.	(Bhattacherjee, 2000)
BI	I plan to use s-commerce in the future. I intend to continue using s-commerce in the future. I will recommend others to engage in s-commerce.	(Agarwal & Karahanna, 2000; Shin, 2009)

Figure 3.
Respondents' main reasons for engaging in s-commerce (N=322)



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