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# **A meta-analysis of the factors associated with s-commerce intention: Hofstede's cultural dimensions as moderators**

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## **Abstract**

**Purpose** – In recent years, the proliferation of s-commerce has attracted many researchers to investigate the drivers of individuals' intentions. However, the empirical results reported in these studies were fragmented and inconsistent. This has led various meta-analyses to synthesize these findings, but without including a large number of s-commerce studies. In addition, investigating meta-analytically the effects of moderators such as the six dimensions of Hofstede's national culture is still lacking.

**Design/methodology/approach** – Drawing on nine theories and models, this meta-analysis aims to summarize the findings reported in 109 s-commerce studies published between 2011 and 2021 and to examine the moderating role of national culture. The correlation coefficient ( $r$ )

has been used as the main effect size for this study. Based on the random-effects method, the CMA V3 software has been employed to calculate the weighted mean effect sizes.

**Findings** – The meta-analysis results showed that all the 11 hypothesized direct relationships are positive and significant. The moderator results also revealed that five out of six cultural dimensions significantly moderate the examined associations.

**Originality/value** – This research serves to enrich the existing s-commerce literature by addressing contradictory and mixed results reported in the empirical studies. This study is one of the first of its kind to investigate the role of Hofstede's six cultural dimensions as moderators in the field of s-commerce using the meta-analytic techniques.

**Keywords** Social commerce; Social shopping; Social media; National culture; Meta-analysis; Moderator analysis

**Paper Type** Research Paper

## 1. Introduction

Introduced in 2005, social commerce (s-commerce) is a new form of e-commerce (Li and Ku, 2018; Lin *et al.*, 2017). S-commerce combines the features of social media and e-commerce into an integrated platform (Lin *et al.*, 2018). The social features enable users to share their comments, ratings, and experiences as well as to seek advice and suggestions (Wang and Herrando, 2019). The commercial features allow users to search, buy, and sell products or services (Shekhar and Jaidev, 2020). S-commerce can be categorized into two types. The first type is a traditional e-commerce site integrated with social features such as Amazon (Lu *et al.*, 2016a). The second type is a social networking site (SNS) equipped with commercial features such as Facebook (Ooi *et al.*, 2018).

Globally, the s-commerce sales reached \$117.4 billion in 2021, a figure that is projected to increase to \$604.5 billion by 2027 (Statista, 2021). The massive usage of SNSs has spawned a rapid growth of the s-commerce market (Liang *et al.*, 2011). According to Hootsuite (2021), individuals spend 2h25min per day using social platforms, which represent 35% of the daily time spent on the Internet. The worldwide number of active SNS users has reached 4.2 billion in 2021, representing 53.6% of the world population and 90.1% of the global Internet users (Hootsuite, 2021). Given the growing potential of the s-commerce market, investigating the social, individual, and technological determinants of the individuals' intentions towards s-commerce may help to expand the knowledge of managers interested in extending their commercial activities into these social channels (Liu *et al.*, 2019).

A considerable effort has been invested to understand why individuals are willing to use s-commerce sites. For example, certain studies have examined the effects of social factors such as emotional support (Molinillo *et al.*, 2018) informational support (Riaz *et al.*, 2020), social interaction (Dabbous *et al.*, 2020), subjective norms (Shin, 2013), and trust (Maia *et al.*, 2020). Another stream of research has investigated the role of individual characteristics such as familiarity (Al-Adwan and Kokash, 2019) and hedonic motivation (Aydın, 2019a). Other researchers focused on technology attributes such as perceived ease of use (Al-Dwairi, 2017), perceived usefulness (Abed, 2020), s-commerce constructs (SCC) (Al-Tit *et al.*, 2020), and social presence (Rashid *et al.*, 2020). However, a closer examination of the literature reveals that they have reported varying empirical findings. In addition, little is known about which moderators are responsible for the amount of heterogeneity across the empirical findings. In this sense, Dwivedi *et al.* (2021) call for more general meta-analyses in the field of s-commerce and Dabbous *et al.* (2020) call for further investigation of the moderating role of national culture in the s-commerce context. Therefore, there is a need to employ the meta-analysis technique

for reconciling the contradictory results and detecting whether national culture can explain these inconsistencies.

To the best of our knowledge, only four meta-studies have attempted to combine the varying findings reported in the s-commerce literature. Although these meta-analyses provided several contributions, they presented some research gaps that need to be closed. Firstly, a meta-analysis by Dwivedi *et al.* (2021) has only focused on the associations between four factors and intention. The authors have ignored a number of key variables related to intention such as hedonic motivation, perceived usefulness and subjective norms. Accordingly, the current meta-study intends to advance the literature by providing a meta-analytical model composed of 11 factors linked with intention. Secondly, the meta-study by Sarker *et al.* (2020) used a limited number of effect sizes ( $k = 86$ ) for the relationships between 20 factors and intention. The authors also analyze the empirical findings from a limited number of s-commerce studies ( $n = 65$ ). Therefore, this study aims to fill this gap by summarizing  $k = 254$  effects sizes gathered from  $n = 109$  empirical studies set in 22 countries. Thirdly, the meta-analysis by Tuncer (2021) lacked more detailed theoretical foundations for the examined five predictors of intention. The author also reported the results of the heterogeneity test without taking into account a further investigation of moderators. In this sense, this study contributes to the current knowledge by integrating nine theories and models (i.e., social support theory, social capital theory, technology acceptance model, theory of reasoned action, motivation theory, relationship quality theory, socio-technical theory, social presence theory and Hofstede's cultural framework) which can help practitioners to have a comprehensive view on the theory-driven variables used in the literature. The rationale behind the selection of these theories and models in our research is motivated by the fact that these theories/models lead in assessing individuals' behavioral intentions and have been frequently used across the s-commerce literature, which the prior research by Tuncer (2021) has not considered in their published work on meta-analysis. Finally, the meta-analysis by Mou and Benyoucef (2021) explored the moderating impact of culture. The authors subgrouped the countries into Eastern and Western cultures. However, this conceptualization of culture remains limited in reflecting the cultural differences among societies. Guided by Hofstede's cultural framework, the present meta-analysis is one of the first studies that aim to elucidate the moderating roles of the six dimensions of national culture in the s-commerce area.

To achieve these goals, the remainder of this study was organized as follows. In Section 2, the theoretical underpinnings of this study are explained. In Section 3, the research model is presented and the hypotheses are developed. In Section 4, the methodology of this meta-study is presented. In Section 5, the results are reported. In Section 6, the findings are discussed, the implications and limitations as well as future directions are provided. In Section 7, this study ends with a brief conclusion.

## **2. Theoretical background**

In the s-commerce literature, several theories and models were applied to understand the main determinants leading to the actual usage or intention to use s-commerce. In the current meta-analysis, we build on the nine theoretical perspectives discussed below to identify the factors associated with s-commerce intention.

This meta-analysis integrates the two intangible dimensions of social support derived from the social support theory (SST) into the theoretical model to investigate their impact on s-commerce intention. The SST proposed by Shumaker and Brownell (1984) described the extent to which an individual perceives the tangible and intangible supportive resources provided by other social network members. In the s-commerce literature, the empirical evidence focused on the intangible nature of social support, which comprises two elements: emotional support and informational support (Fan *et al.*, 2019). The SST has been widely applied by a large number

of scholars investigating the determinants related to s-commerce intention. For example, the study by Bai *et al.* (2015) empirically tested the effect of social support on purchase intention among Renren users in China by formulating a theoretical framework on the basis of the SST. In a past research among social network users in Iran, Dashti *et al.* (2019) applied a modified version of the SST by including the constructs of website quality and attitude to their research model. Using an extended version of the SST as a theoretical basis, Fan *et al.* (2019) empirically tested the influence of social support on swift guanxi in the context of WeChat in China.

In this study, the influence of social interaction and familiarity derived from the social capital theory (SCT) on s-commerce intention are examined. The SCT suggested by Bourdieu (1986) described the sum of benefits gathered from the membership in a network of connections. S-commerce research on SCT argued that the benefits secured from a social network to which an individual belongs are related to knowledge and information sharing (Doha *et al.*, 2019). Cheng *et al.* (2019a) posited that social interaction and familiarity represent the structural and relational dimensions of social capital, respectively. Many s-commerce studies build on the SCT to examine the determinants that may contribute to the development of s-commerce intention. For example, Cheng *et al.* (2019a) incorporated reciprocity and social identity to the SCT to get a more comprehensive understanding of the determinants of purchase intention among s-commerce users in Taiwan. An empirical research set in Iran by Ghahtarani *et al.* (2020) extended the SCT by examining the impact of supplemental factors such as perceived benefit and trust on knowledge sharing. In their research of social network sites in the United States and South Korea, Hossain and Kim (2020) introduced service quality and satisfaction as additional factors to the SCT to measure usage intention.

In this meta-analysis, the influence of two utilitarian factors derived from the technology acceptance model (TAM) in the formation of s-commerce intention is investigated. The TAM was introduced by Davis (1989) to understand the predictors associated with technology use. The TAM suggests that the actual technology usage is predicted by an individual's intention towards the technology, which is explained by two utilitarian predictors, namely perceived usefulness and perceived ease of use. Many authors provided strong support for the TAM when it comes to determining the salient factors driving s-commerce intention. For example, Al-Dwairi (2017) extended the TAM by adding information quality and trust to examine the predictors that influence the intention to adopt a s-commerce site in Jordan. Cho and Son (2019) included additional antecedents to the TAM to investigate the role of social connectedness in predicting perceived ease of use and perceived usefulness among students in the United States. A study by Featherman and Hajli (2016) incorporated the TAM with other constructs to examine the influence of perceived risk on perceived usefulness and intention to use.

In this study, the critical role of subjective norms derived from the theory of reasoned action (TRA) in the formation of s-commerce intention is examined. The TRA was developed by Fishbein and Ajzen (1975) to understand the antecedents of the individual's intention and behavior. According to the TRA, the main predictor of one's actual behavior is behavioral intention, which is determined by attitude towards a behavior and subjective norms. In the s-commerce context, the TRA has been frequently used by previous empirical research to explain the formation of s-commerce intention. For example, a study conducted by Elgheit (2019) in Egypt attempted to explain how subjective norms influence trust by combining the TRA with other factors such as disposition to trust and relationship quality. To verify the major antecedents of s-commerce intention, the research set in Turkey by Akman and Mishra (2017) proposed a conceptual model that is rooted in the TRA. Hung *et al.* (2015) modified the TRA by including additional constructs to investigate the influence of communication quality and trust on attitude among Facebook users in Taiwan.

In this research, hedonic motivation derived from the motivation theory and its relation with s-commerce intention is investigated. The basic tenet of the motivation theory developed by Deci

(1975) is that an individual's behavior is driven by both extrinsic and intrinsic motivations. According to Handarkho (2020a), extrinsic motivation refers to utilitarian motivation (usefulness), while intrinsic motivation refers to hedonic motivation (enjoyment). In the s-commerce context, motivation theory is considered as one of the successful theories in explaining s-commerce intention. For example, the study by Doha *et al.* (2019) integrated innovativeness and similarity with the motivation theory to further our knowledge of the significant predictors driving the intention to purchase. In their work, Yang *et al.* (2016) drew inspiration from the motivation theory in conjunction with additional variables such as promotion and reciprocity to empirically test whether hedonic motivation affects the intention to share in the Meilishuo website.

In this meta-analysis, the effect of trust on s-commerce intention is examined through the lens of relationship quality theory. This theory is deeply embedded in the relationship marketing theory (Crosby *et al.*, 1990). This theory captured the strength and intensity levels of the relationship between service providers and customers (Tajvidi *et al.*, 2021). As expressed by Hossain *et al.* (2020), relationship quality encompasses three dimensions: trust, satisfaction and commitment. This theory has been extensively used by numerous researchers to investigate the predictors of s-commerce intention. For example, in the study conducted by Rashid *et al.* (2020), relationship quality theory and other predictors such as service quality and experience were combined together to investigate the drivers of purchasing intention among s-commerce users in China. A study by Sheikh *et al.* (2019) in the Pakistani context analyzed the impact of relationship quality on intention to use a social network site by considering relationship quality theory as a base model. Under the premise of the relationship quality theory, Hajli (2014) incorporated relationship quality and social support to their framework to measure behavioral intention among Facebook users in the United Kingdom.

This research includes the role of SCC derived from the technical aspect of the socio-technical theory (STT). The basic tenet of the STT is that a particular information system is composed of two subsystems: the technical and the social subsystems (Bostrom and Heinen, 1977). According to Hajli *et al.* (2017a), the technical subsystem of a s-commerce platform consists of the features and functionalities of the website such as forums and ratings. The STT has received considerable attention by a number of s-commerce studies investigating how the behavioral intention of individuals is built. For example, in a study grounded in the STT, SCC were integrated with familiarity and experience to examine the core influencing drivers of purchase intention in a s-commerce site in Jordan (Al-Adwan, 2019). Through a combination of the STT with other determinants such as self-efficacy and experience, Hajli *et al.* (2017a) studied which predictive factors drive the intention to buy in a s-commerce site in the United Kingdom.

In this meta-analysis, the impact of social presence on s-commerce intention is studied through the lens of the social presence theory (SPT). The SPT established by Short *et al.* (1976) elucidated the degree to which users perceive a communication system as having the capability to provide a sense of personal contact and human interaction. The SPT has been recognized in the s-commerce literature as one of the dominant theories to understand the factors that have an influence on s-commerce intention. For example, Al-Adwan and Kokash (2019) incorporated the SPT with other factors such as familiarity and trust to understand how social presence contributes to the formation of trust and purchase intention among Facebook users in Jordan. Hajli *et al.* (2017b) examined the applicability of the SPT among Facebook users to underline the important role of social presence in predicting intention to purchase in Facebook. In addition to the original component of the SPT, a study set in Pakistan by Hassan *et al.* (2018) included experience and trust in their model.

In this study, the six dimensions mentioned in Hofstede's cultural framework are incorporated to assess their moderating effects in the s-commerce context. The six-dimensional framework

of national culture was designed by Hofstede *et al.* (2010) to understand the cultural differences among societies and countries. The six cultural dimensions include power distance, individualism, masculinity, uncertainty avoidance, long term orientation and indulgence. According to Hofstede *et al.* (2010), national culture has an influence on one's behavior, beliefs, and the level of technology adoption. Empirical evidence from the IS adoption literature has thoroughly employed Hofstede's cultural framework. For example, Hofstede's framework was applied by Bauer and Schiffinger (2016) to evaluate the moderating effect of six cultural dimensions on the relationship between trust and online self-disclosure. Referring to Hofstede's framework, a meta-analysis by Franque *et al.* (2020) examined the moderating effects of six dimensions of national culture on the association between perceived usefulness and intention. Zhang *et al.* (2018) included five dimensions of Hofstede's cultural framework to investigate whether national culture has a moderating influence on an extended unified theory of acceptance and use of technology (UTAUT) model.

### 3. Research model and hypotheses

The research model shown in Figure 1 is rooted in the theories and models discussed above. In this framework, 11 direct relations and six moderating effects were hypothesized. Hypotheses 1 to 5 depict the direct relationships between social factors and intention. Social factors include five variables, namely emotional support (H1), informational support (H2), social interaction (H3), subjective norms (H4), and trust (H5). Hypotheses 6 to 7 depict the direct associations between individual characteristics and intention. Individual characteristics include two variables, namely familiarity (H6) and hedonic motivation (H7). Hypotheses 8 to 11 depict the relations between technology attributes and intention. Technology attributes include four variables, namely perceived ease of use (H8), perceived usefulness (H9), SCC (H10), and social presence (H11). Finally, hypotheses 12 to 17 depict the moderating effects of the six national culture dimensions on the 11 direct relationships. The six cultural moderators were power distance (H12), individualism (H13), masculinity (H14), uncertainty avoidance (H15), long term orientation (H16), and indulgence (H17). In the research model shown in Figure 1, behavioral intention is the main outcome variable. Following the conceptualization by Hajli (2014) and Sheikh *et al.* (2019), behavioral intention is considered in this meta-analysis as a multi-dimensional construct. It includes intention to disclose information (Sharma and Crossler, 2014), intention to recommend or share (Aslam *et al.*, 2019), intention to seek recommendations (Qin and Kong, 2015), and intention to purchase (Saprikis and Markos, 2018). Therefore, intention is defined as a person's willingness to disclose his/her personal information, to share his/her shopping experiences with others, to seek the purchase experiences of others, and to buy the recommended products on a s-commerce platform (Liang *et al.*, 2011; Sheikh *et al.*, 2019).

[Insert Figure 1 about here]

### 3.2. Direct hypotheses

#### 3.2.1. Emotional support (EMS)

Emotional support here represents the provisioning of emotional attention to other members of a s-commerce site including understanding, caring, and empathy (Dashti *et al.*, 2019; Ooi *et al.*, 2018). Previous research within the context of s-commerce specified that emotional support is an important element in enhancing s-commerce intention. For example, Al-Tit *et al.* (2020) performed an empirical study among Facebook and Twitter users in Saudi Arabia. The authors evidence that when emotional support exists, it is expected that intention will be developed. This is also congruent with a study conducted in Spain by Molinillo *et al.* (2018) among 201 s-commerce users. The authors reported that intention towards a s-commerce site is considerably driven by emotional support. Additionally, Riaz *et al.* (2020) identified the critical factors that

may be related to purchase intention among SNS users in Pakistan. Their results elucidated that emotional support is one of the powerful antecedents of the willingness to purchase in a social network site. Based on the above arguments, the following hypothesis is proposed:

**H1.** Emotional support will be positively and significantly associated with behavioral intention.

### 3.2.2. Informational support (INS)

Informational support is viewed as the relevant information given by other s-commerce members in the form of advice, guidance, and suggestions (Friedrich *et al.*, 2019; Hajli, 2014). Some earlier works in the sphere of s-commerce demonstrated that a higher level of informational support can lead to greater s-commerce intention. For example, a study conducted by Al-Tit *et al.* (2020) in Saudi Arabia confirmed that when the informational support provided in Facebook and Twitter is high, social media users will have a stronger behavioral intention. Consistent with this result, a study by Riaz *et al.* (2020) in Pakistan established that a high level of informational support strengthens the likelihood of SNS users to purchase. Considering the above findings, the following hypothesis is developed:

**H2.** Informational support will be positively and significantly associated with behavioral intention.

### 3.2.3. Social interaction (SIN)

Social interaction has been considered as the social relationships and frequent interpersonal interactions among members of a s-commerce site (Hung *et al.*, 2018; Sun *et al.*, 2016). In the s-commerce literature, it has been observed that social interaction plays an important role in influencing s-commerce intention. For example, an empirical research set in Lebanon by Dabbous *et al.* (2020) identified the major factors that would influence the purchase intention of 206 s-commerce users. The research findings revealed that the higher the social interaction between Facebook and Instagram members, the more the likelihood that s-commerce users will buy from these social sites. Consistent with the prior results, the following hypothesis is posited:

**H3.** Social interaction will be positively and significantly associated with behavioral intention.

### 3.2.4. Subjective norms (SN)

Subjective norms are viewed as the degree to which an individual believes that close related people (e.g., friends, parents, spouse and family members) think she/he should purchase from a vendor in a s-commerce site (Handarkho, 2020b; Osatuyi and Turel, 2018). The impact of subjective norms on s-commerce intention is recognized as significant within the existing literature on s-commerce. For example, an empirical research carried out in Iran by Dashti *et al.* (2019) among 514 social network users affirmed that considerable social pressure from important others produces a high degree of s-commerce intention. This is in accordance with Hajli *et al.* (2015) who proved in a study conducted in Malaysia that an increase in the individuals' subjective norms increases their level of intention. In a study conducted in South Korea, Shin (2013) comes to the same conclusion. The author discovered that the greater the subjective norms, the greater the propensity to use a s-commerce site. Consistent with this finding, the study done by Akman and Mishra (2017) in Turkey considered that when individuals perceive high levels of social pressure, the intention towards s-commerce sites increases. In accordance with this stream of research, the following hypothesis is generated:

**H4.** Subjective norms will be positively and significantly associated with behavioral intention.

### 3.2.5. Trust (TRU)

Trust is regarded as the willingness of buyers to be vulnerable to the actions of s-commerce platforms, sellers, or community members (Hajli *et al.*, 2017a; Liu *et al.*, 2019; Shahbaz *et al.*, 2020). It can also be defined as an individual's perception about the integrity, ability, and benevolence of s-commerce platforms, sellers, or community members (Al-Adwan and Kokash, 2019; Goraya *et al.*, 2019; Molinillo *et al.*, 2020). In the domain of s-commerce, numerous studies reported that an increase in the individuals' trust increases their level of intention towards s-commerce. For example, a research conducted in Jordan by Al-Adwan



(2019) claimed that the higher the trust towards a s-commerce site the more the likelihood that individuals will purchase in the social website. A similar result has been found by Al-Dwairi (2017) who revealed that the more Jordanian students develop trust towards a s-commerce site, the more adoption intention will be generated. In the same vein, another study by Bugshan and Attar (2020) involving a sample of 400 s-commerce users from Asian countries identified that trust is one of the prominent enhancers of buying intention. This is consistent with a study conducted by Maia *et al.* (2020) in Brazil among 160 Facebook users. The authors evidenced that trust is a crucial variable in strengthening purchase intention. Based on the results above, the following hypothesis is proposed:

**H5.** Trust will be positively and significantly associated with behavioral intention.

### 3.2.6. Familiarity (FAM)

Familiarity refers to an individual's relevant knowledge of how to search for product information and how to purchase these products in a s-commerce platform based on previous experiences, learning, and interactions with other members (Al-Adwan and Kokash, 2019; Cheng *et al.*, 2019b). A number of authors in the field of s-commerce assumed that familiarity is one of the key factors related to s-commerce intention. For example, Al-Adwan and Kokash (2019) conducted a survey on Facebook users in Jordan and proposed that as individuals' familiarity increases, the purchase intention will then be built. In a past research involving 201 Facebook users, Hajli *et al.* (2017b) noted that familiarity plays a key role in contributing to the building of the individuals' intention to purchase from Facebook. From a Chinese perspective, Lu *et al.* (2016b) provided evidence that if students perceive a high level of familiarity in online group-buying sites, transaction intention can be promoted. Consistent with this finding, an empirical research set in Greece by Saprikis and Markos (2018) contended that the intention towards social network sites is significantly affected by the degree to which an individual is familiar with the SNS. Based on this reasoning, the following hypothesis is formulated:

**H6.** Familiarity will be positively and significantly associated with behavioral intention.

### 3.2.7. Hedonic motivation (HM)

Hedonic motivation can be defined as the amount of entertainment, pleasure, fun, and enjoyment derived from the use of a s-commerce site (Cho and Son, 2019; Sun *et al.*, 2016). Earlier empirical studies in the sphere of s-commerce confirmed that hedonic motivation has a significant and positive effect on s-commerce intention. For example, an investigation carried out by Aydın (2019a) in Turkey among 269 social media users assumed that increasing the level of hedonic motivation in a s-commerce site leads to a higher generation of behavioral intention. Based on the responses of 568 s-commerce users in Indonesia, Handarkho (2020a) believed that when hedonic motivation is high, there is a greater willingness to switch. A similar conclusion has been suggested by Yahia *et al.* (2018) within the Asian context. They argued that when users perceive Instagram as enjoyable and fun, they tend to buy from this social website. This result is supported by a study conducted by Sharma and Crossler (2014) in the United States among 252 students. This investigation confirmed that the greater a social network site is perceived as enjoyable, the better the intention towards the SNS. Given the preceding discussion, the following hypothesis is suggested:

**H7.** Hedonic motivation will be positively and significantly associated with behavioral intention.

### 3.2.8. Perceived ease of use (PEU)

Perceived ease of use reflects the degree to which an individual perceives that learning and using social shopping sites would be clear, understandable, and free from all efforts (Cho and Son, 2019; Saprikis and Markos, 2018). The extant literature concerning s-commerce considered that perceived ease of use plays a crucial role in the formation of s-commerce intention. For example, Al-Dwairi (2017) specified that as Jordanian students will believe that a s-commerce site can be used without difficulties, they are more likely to adopt it. In line with

this, another research by Doha *et al.* (2019) concluded that if students perceive that a s-commerce site is easy to use, their willingness to purchase will be strongly enhanced. This finding was confirmed by Yahia *et al.* (2018), who specified that perceived ease of use is significantly related to the intention to buy from Instagram. This was also supported by a study carried out in South Korea by Kim *et al.* (2012). This study claimed that a higher level of perceived ease of use is associated with a higher level of usage intention towards s-commerce sites. Based on this empirical evidence, the following hypothesis is postulated:

**H8.** Perceived ease of use will be positively and significantly associated with behavioral intention.

### 3.2.9. Perceived usefulness (PU)

Perceived usefulness is regarded as the extent to which an individual believes that using a s-commerce channel will be useful and improve the shopping process (Al-Dwairi, 2017; Cho and Son, 2019). Within the s-commerce field, a reasonable number of authors indicated that perceived usefulness is closely linked with s-commerce intention. For example, a cross-sectional study conducted by Abed (2020) in Saudi Arabia proposed that the higher the beliefs regarding the usefulness of a s-commerce site, the higher the behavioral intention. Using data collected from 344 mobile s-commerce users, Aslam *et al.* (2019) suggested that s-commerce intention is considerably determined by perceived usefulness. This is also congruent with Shin (2013) who pointed out that when s-commerce users in South Korea perceive a higher level of usefulness, they would have a higher level of usage intention. A study done by Osatuyi *et al.* (2020) in the United States among 531 s-commerce users corroborates this result. The authors highlighted that perceived usefulness plays a key role in building the intention towards s-commerce sites. Against this backdrop, the following hypothesis is defined:

**H9.** Perceived usefulness will be positively and significantly associated with behavioral intention.

### 3.2.10. S-commerce constructs (SCC)

The SCC were considered as multi-dimensional constructs including forums and communities, ratings and reviews, and recommendation and referrals (Rahman *et al.*, 2020; Shekhar and Jaidev, 2020). To put it differently, SCC assess the social functionalities of a s-commerce site that allow individuals to interact with each other, generate content, share shopping experiences, access product information, and recommend and rate products or services (Hajli, 2015; Li, 2019). A good number of prior studies in the area of s-commerce pointed out that s-commerce intention is strongly affected by SCC. For example, Al-Tit *et al.* (2020) indicated that greater access to the social features and functions provided by Facebook and Twitter results in a higher level of s-commerce intention. From the perspective of 230 Facebook users in the United Kingdom, Hajli and Sims (2015) also illustrated that behavioral intention is considerably enhanced through SCC. By using a Chinese sample consisting of 1277 WeChat users, Lee and Chen (2020) discovered that behavioral intention is significantly explained by SCC. This finding was confirmed by a study done by Sheikh *et al.* (2019) among 343 SNS users from Pakistan. The authors mentioned that SCC play a major role in predicting intention to use social network sites. Against this background, the following hypothesis is considered:

**H10.** S-commerce constructs will be positively and significantly associated with behavioral intention.

### 3.2.11. Social presence (SPR)

Social presence is defined as the extent to which a s-commerce platform enables individuals to experience human warmth, human contact, sociable interaction, and personal interaction (Um, 2019; Zhang *et al.*, 2014). In previous studies on s-commerce, a strong relationship between social presence and s-commerce intention has been observed. For example, Hajli *et al.* (2017b) figured out that when users perceive a greater level of social presence within Facebook, their purchase intention will be strengthened. This is in line with the finding of Li and Ku (2018)

who acknowledged that by establishing social presence within PChome and Kidshome, a higher level of switching intention can be attained in Taiwan. Pursuing this line of argument, Rashid *et al.* (2020) evinced that a greater purchasing intention is built through perceiving better social presence of s-commerce sites in China. This result has been sustained by an empirical study done by Hassan *et al.* (2018) among 306 online consumers in Pakistan. The authors mentioned that a higher level of social presence within a social network site is associated with a higher level of purchase intention. Based on the extant literature, the following hypothesis is designed: **H11.** Social presence will be positively and significantly associated with behavioral intention.

### 3.3. Moderating hypotheses

#### 3.3.1. Power distance (PDI)

The PDI dimension can be defined as the degree to which members of a culture accept inequalities (Hofstede *et al.*, 2010). In the context of s-commerce, some studies were carried out in high-PDI countries such as Bangladesh (Rahman *et al.*, 2020), Malaysia (Ooi *et al.*, 2018), and Saudi Arabia (Abed, 2020). In these high-PDI countries, the less powerful people are considerably dependent on the more powerful who have privileges (Hofstede *et al.*, 2010). On the other hand, other s-commerce studies were set in low-PDI countries such as Germany (Friedrich *et al.*, 2019), United Kingdom (Hajli, 2014), and the United States (Cho and Son, 2019). In these low-PDI countries, leaders of society and those led are interdependent and have equal rights (Hofstede *et al.*, 2010). This raises the possibility that the PDI dimension as a moderator may cause heterogeneity among the s-commerce studies. As such, there is a need to consider the moderating impact of the PDI dimension in the context of s-commerce.

The significant moderating influence of the PDI dimension has been widely recognized in existing meta-analyses examining the drivers of various technologies. For example, Blut *et al.* (2016) demonstrated that the impact of enjoyment on the acceptance of self-service technologies (SSTs) matters more in countries with high power distance in comparison to low power distance cultures. In a recent meta-analytical study across 77 countries, Blut *et al.* (2021) provided evidence that power distance strengthens the effect of performance expectancy on technology usage. In line with this, Zhang *et al.* (2018) observed that the relationship between social influence and intention is more relevant in high power distance cultures than low power distance cultures. The moderator results also provided support for the significant moderating effects of power distance on the association between trust and behavioral intention (Zhang *et al.*, 2018). Therefore, the following hypothesis is formulated:

**H12.** Power distance will significantly moderate the relationships, such that they will be stronger for high-PDI countries than low-PDI countries.

#### 3.3.2. Individualism (IDV)

The IDV dimension is viewed as the degree to which people in a country evaluate the importance of their own interest versus the interest of the group (Hofstede *et al.*, 2010). In the s-commerce setting, some empirical studies were conducted in high-IDV countries such as France (Yin *et al.*, 2019), United Kingdom (Hajli, 2015), and the United States (Kim *et al.*, 2013). In these individualist societies, s-commerce users prioritize their own interests instead of the interests of the group. S-commerce users are characterized with less human relationships, more opinions expressing, and concern to information sharing (Hofstede *et al.*, 2010). On the other hand, some existing works related to s-commerce were set in low-IDV countries such as Indonesia (Handarkho, 2020b), Pakistan (Aslam *et al.*, 2019), and Taiwan (Chen *et al.*, 2018). In these collectivist societies, s-commerce users place the interest of the group ahead of the individual interest. S-commerce users are characterized with more social contact, less opinions

expressing, and less information sharing (Hofstede *et al.*, 2010). Therefore, it is possible that the IDV dimension as a moderator is one of the sources of differences in effect sizes reported in s-commerce studies. Accordingly, there is a need to examine the moderating effect of the IDV dimension in s-commerce settings.

In the IS adoption setting, the significant moderating effect of the IDV dimension was repetitively confirmed by several previous meta-analyses. For instance, the meta-analytic study by Blut *et al.* (2016) showed a significant moderating effect of individualism dimension on the relationship between enjoyment and the SSTs acceptance. Pursuing this line of argument, Blut *et al.* (2021) concluded that individualism has a significant strengthening effect on the association between performance expectancy and behavioral intention. Moreover, Zhang *et al.* (2018) reported that effort expectancy had a greater effect on behavioral intention in countries with high individualism than countries with low individualism. Using the subgroup analysis, Chauhan *et al.* (2021) highlighted that perceived ease of use has a stronger influence on intention in high individualist societies than collectivist societies. Accordingly, the following hypothesis is developed:

**H13.** Individualism will significantly moderate the relationships, such that they will be stronger for high-IDV countries than low-IDV countries.

### 3.3.3. Masculinity (MAS)

The MAS dimension represents the degree to which people prefer to act with competitiveness (i.e., masculinity) rather than mutual help (i.e., femininity) (Hofstede *et al.*, 2010). In the domain of s-commerce, some empirical studies were carried out in high-MAS countries such as China (Bai *et al.*, 2015), Germany (Friedrich *et al.*, 2019), and the United Kingdom (Hajli and Sims, 2015). In these masculine societies, s-commerce users are more concerned with material success, ambitiousness, challenge, and performance (Hofstede *et al.*, 2010). On the other hand, some past studies about s-commerce were set in low-MAS countries such as South Korea (Kim *et al.*, 2012), Spain (Molinillo *et al.*, 2020), and France (Yin *et al.*, 2019). In these feminine societies, s-commerce users attach great importance to the quality of life, caring, cooperation, and gentleness (Hofstede *et al.*, 2010). Therefore, there is an expectation that the MAS dimension as a moderator is one of the reasons for variation in effect sizes reported in the s-commerce literature. As such, there is a need to assess the moderating influence of the MAS dimension in the s-commerce context.

In many meta-analyses related to technology use, the MAS dimension has been proven to exert a strong moderating influence. For example, Bauer and Schiffinger (2016) drew upon Hofstede's framework to investigate masculinity as a potential moderator. Results from the meta-regression analysis demonstrated that the effect of perceived benefits on online self-disclosure is stronger for societies with higher masculinity than feminine societies. This conclusion has been sustained by Blut *et al.* (2016) who revealed that subjective norms influence SST acceptance more strongly in high masculinity cultures than low masculinity cultures. On a similar note, the meta-analytic study by Blut *et al.* (2021) also contended that masculinity strengthened the association between costs and behavioral intention. Hence, the following hypothesis is considered:

**H14.** Masculinity will significantly moderate the relationships, such that they will be stronger for high-MAS countries than low-MAS countries.

### 3.3.4. Uncertainty avoidance (UAV)

The UAV dimension measures the ways in which people handle and face ambiguous and unknown situations (Hofstede *et al.*, 2010). In the s-commerce literature, some earlier studies were conducted in high-UAV countries such as Greece (Saprikis and Markos, 2018), Turkey (Akman and Mishra, 2017), and South Korea (Kim and Park, 2013). In these high-UAV countries, s-commerce users face ambiguity with tight rules, predictability, and high levels of anxiety, stress, and nervousness (Hofstede *et al.*, 2010). On the other hand, some empirical

studies in the field of s-commerce were set in low-UAV countries such as China (Chen *et al.*, 2017), India (Shekhar and Jaidev, 2020), and Malaysia (Hew *et al.*, 2016). In these low-UAV countries, s-commerce users handle unknown situations with acceptance, tolerance, easygoing, and quietness (Hofstede *et al.*, 2010). Therefore, it can be expected that the high amounts of variability across the results may be due to the moderating influence of the UAV dimension. Accordingly, there is a need to examine the moderating role of the UAV dimension in the area of s-commerce.

In the context of technology adoption, the existence of a significant moderating impact of the UAV dimension has received extensive support in numerous meta-analyses. For instance, in a meta-analysis done by Blut *et al.* (2015), website design was found to be more important in determining e-service quality in high uncertainty avoidance cultures than low uncertainty avoidance cultures. In the same line, Blut *et al.* (2016) also argued that the influence of subjective norm on SSTs acceptance is stronger for high-UAV countries than low-UAV countries. From the perspective of 36 countries, a meta-analysis by Eisend (2019) corroborates this finding. The moderator results highlighted that uncertainty avoidance strengthens the impact of perceived behavioral control on intention. Similarly, Zhang *et al.* (2018) also found a higher relationship between performance expectancy and behavioral intention in countries scoring higher on uncertainty avoidance. Consequently, the following hypothesis is designed:

**H15.** Uncertainty avoidance will significantly moderate the relationships, such that they will be stronger for high-UAV countries than low-UAV countries.

#### 3.3.5. Long term orientation (LTO)

The LTO dimension measures the culture gap between societies focusing on the present and societies focusing on the future (Hofstede *et al.*, 2010). In the domain of s-commerce, some previous studies were conducted in high-LTO countries such as South Korea (Lee and Choi, 2014), China (Leung *et al.*, 2019), and Taiwan (Hung *et al.*, 2015). In these long-term cultures, s-commerce users are oriented toward future gratification and long-term results. S-commerce users in these countries show a higher degree of tenacity, perseverance, adaptiveness, and openness (Hofstede *et al.*, 2010). On the other hand, some past studies in the area of s-commerce were carried out in low-LTO countries such as Egypt (Elgheit, 2019), Iran (Dashti *et al.*, 2019), and Jordan (Al-Adwan, 2019). In these short-term cultures, s-commerce users are oriented toward immediate rewards and quick results. S-commerce users in these countries show a higher concern for stability, tradition, and religion (Hofstede *et al.*, 2010). Thus, it may be that the strength of the correlations reported in the s-commerce literature may vary due to the moderating effect of the LTO dimension. Accordingly, there is a need to examine if the effect sizes in high-LTO countries will significantly differ from those in low-LTO countries.

In the context of technology usage, the strong moderating impact of the LTO dimension has been validated in existing meta-analyses. For instance, a past meta-analysis involving 27 countries by Zhang *et al.* (2018) illustrated that long term orientation exerts a significant moderating effect on the relationship between performance expectancy and behavioral intention. According to their findings, this association was stronger in short-term cultures compared to long-term cultures. Zhang *et al.* (2018) also contended that the strength of the relationship between effort expectancy and behavioral intention depends on the moderating variable of long term orientation. The meta-analysis findings proposed that this association is more important in low-LTO countries than high-LTO countries. Thus, the following hypothesis is proposed:

**H16.** Long term orientation will significantly moderate the relationships, such that they will be stronger for low-LTO countries than high-LTO countries.

#### 3.3.6. Indulgence (IND)

The IND dimension here represents a distinction between societies where having fun is allowed and societies where enjoying life is restrained (Hofstede *et al.*, 2010). In the existing literature

on s-commerce, some earlier studies were conducted in high-IND countries such as Nigeria (Yusuf *et al.*, 2018), United Kingdom (Hajli *et al.*, 2017a), and the United States (Osatuyi *et al.*, 2020). In these indulgent societies, s-commerce users give more importance to pleasure, leisure, happiness, and optimism (Hofstede *et al.*, 2010). On the other hand, some existing s-commerce studies were set in low-IND countries such as Egypt (Elgheit, 2019), Bangladesh (Rahman *et al.*, 2020), and China (Chen *et al.*, 2021). In these restrained societies with prohibitions, s-commerce users have high pessimism levels and low percentages of happiness (Hofstede *et al.*, 2010). Therefore, it is reasonable to expect that the differences in the findings possibly arise from the moderating role of the IND dimension. As such, there is a need to assess the effect of the IND dimension as a moderator within the s-commerce context.

The IND dimension was found to be a major moderator in some meta-analyses examining the use of technologies. For instance, a meta-analysis by Bauer and Schiffinger (2016) considered the indulgence dimension as a key moderator of the relationship between perceived risk and online self-disclosure. In addition, existing s-commerce literature revealed that some relationships were stronger in cultures with higher indulgence compared to restrained cultures. For example, Hossain *et al.* (2020) examined the factors influencing s-commerce intention in a country scoring high in indulgence (i.e., United States) versus a restrained country (i.e., South Korea). They confirmed that social support displays a stronger effect on behavioral intention in a country with a high indulgence culture than a country with low indulgence culture. In their cross-cultural investigation of the factors associated with purchase intention in a s-commerce site, Yin *et al.* (2019) used data collected from a high-IND country (i.e., France) and a low-IND country (i.e., China). The authors reported that the association between closeness and behavioral intention is more important in an indulgent society than in a restrained society. In this sense, the following hypothesis is proposed:

**H17.** Indulgence will significantly moderate the relationships, such that they will be stronger for high-IND countries than low-IND countries.

#### 4. Methodology

As the present study seeks to synthesize quantitatively the extant s-commerce literature, the meta-analysis technique has been used. This statistical method has been employed for the following reasons. First, it addresses inconsistencies by integrating and combining the mixed findings in terms of strength and direction (Ismagilova *et al.*, 2020a; Jeyaraj, 2020; Rana *et al.*, 2013). Second, it examines the significance level of relationships and allows hypotheses testing and results generalization (Eisend, 2019; Mou and Benyoucef, 2021). Third, it also compares the results of multiple studies by detecting and estimating possible moderators (Franque *et al.*, 2020; Zhang *et al.*, 2018). In meta-analysis, there are two main statistical models: fixed and random effects models (Tamilmani *et al.*, 2019). The random-effect model was employed in the current research. In their meta-analysis, Patil *et al.* (2018) stated that this approach is appropriate when effect sizes are extracted from heterogeneous studies. As the studies included in the present meta-analysis were conducted by independent authors using various methods in diverse countries across dissimilar cultures with different participants, it is more evident to employ this statistical model. The correlation coefficient ( $r$ ) has been selected as the main effect size in this study since correlations are the most reported measures in the analyzed studies. In this study, the CMA V3 software was employed as the statistical tool to perform the meta-analytic calculations (Ismagilova *et al.*, 2019; Patil *et al.*, 2019; Rana *et al.*, 2012, 2015).

##### 4.1. Selection of studies

To locate relevant research publications that deal with s-commerce, a literature search was undertaken in the Scopus database using a combination of search terms (Dwivedi *et al.*, 2021). Specifically, keywords such as “social commerce” and “s-commerce” linked with usage-related

terms such as “adoption”, “acceptance”, “intention”, and “use behavior” were employed. In the preliminary scan, 193 publications were found to be eligible for the second round of screening. Next, four selection criteria were retained based on the objectives of this study. Specifically, a paper from the retrieved 193 articles must meet the following criteria for inclusion in this meta-analysis: (a) it had to be a full-text journal article published in English; (b) it had to be quantitative and related to the field of s-commerce; (c) it must have reported Pearson's correlation coefficients and sample size; (d) it must have examined the links between behavioral intention and its antecedents. According to this, a total of 109 journal articles published from 2011 to 2021 have been identified as appropriate for inclusion in this meta-analysis. The journals where the included papers were the most published were *International Journal of Information Management*, *Computers in Human Behavior*, and *Internet Research* (see Table I). Appendix A presents the final listing of included s-commerce studies.

[Insert Table I about here]

#### **4.2. Coding process**

The data from the included studies was coded in a spreadsheet by two independent coders. The coders coded their own and other's data collected to cast a wider analytic net and provided a reality check for each other. For this collaborative venture, an intercoder agreement was implemented through which the two coders agreed and remained consistent with the assignment of same and specific codes to the same set of data (Miles and Huberman, 1994). For descriptive analysis purposes, the general information extracted was the author(s) names, publication year, journals' names, geographic location of samples, respondents' type, data analysis method, and theoretical basis. To identify the country of the sample, the methodology section of the included papers was examined. Where possible, the location of the funding agency was used if the country information was not available in the methods section. For meta-analytic computations, the reported statistical data were collected from the research papers (Dwivedi *et al.*, 2011). In particular, correlation matrix, sample size, and reliability values (Cronbach's alpha or composite reliability) were recorded. For some studies, reliability measures of some constructs were missing. Not reported reliabilities were estimated using the average reliability of the respective construct from all included studies (Baruh *et al.*, 2017). The six cultural dimensions identified by Hofstede *et al.* (2010) and their corresponding categories were coded to assess their moderating effects (Blut *et al.*, 2021). To do so, the cultural scores of the 22 countries examined in this study were obtained either from [www.geerthofstede.com](http://www.geerthofstede.com) or from [www.hofstede-insights.com](http://www.hofstede-insights.com). Since some included studies reported the results about three regions, namely Asia, Latin America and East Asia, the mean cultural score was computed. According to Franque *et al.* (2020), a median split has been done to classify the cultural scores of the examined 22 countries and three regions as either high or low based on all the scores of the 107 countries found in Hofstede's database (see Appendix B). In addition, variable details were extracted from each paper. In particular, the names and the definitions of the 12 constructs analyzed in this study were identified. Following the approach in the study by Bauer and Schiffinger (2016), constructs having different names with similar definitions or measures were combined into one category. For example, perceived enjoyment (Handarkho, 2020c) was integrated with perceived playfulness (Hung *et al.*, 2015) to cover hedonic motivation (Aydın, 2019a). Some empirical studies had used multiple correlations for the same relationship and the same sample population. Therefore, the mean of these correlations was used to address overweighting and double-counting (Blut *et al.*, 2016; Blut and Wang, 2020). For instance, Chen *et al.* (2017) reported the correlations between three dimensions of SCC and intention, namely ratings and reviews ( $r = 0.465$ ), recommendations ( $r = 0.350$ ), and forums and communities ( $r = 0.298$ ). Therefore, these multiple dimensions were averaged into one correlation ( $r = 0.371$ ) representing the association between SCC and intention. In this study, seven out of the 109 included research papers have more than one sample. Therefore, they were

coded as a separate data set to ensure independence of data (Jeyaraj, 2021; Tamilmani *et al.*, 2020). For example, the study by Zhang *et al.* (2014) reported results from two different respondents, namely Renren users (n = 563) and SinaWeibo users (n = 446). Considering this, Renren sample and SinaWeibo sample were treated as two separate individual studies.

### 4.3. Meta-analysis procedures

In line with Dwivedi *et al.* (2017), measurement error was addressed for all 254 effect sizes using the formula  $r_c = \frac{r_{xy}}{\sqrt{r_x r_y}}$ . Where  $r_c$  is the reliability-corrected correlation;  $r_{xy}$  is the correlation extracted from a study;  $r_x$  and  $r_y$  are the reliability values for the first and the second variables in a relationship, respectively. The weighted mean effect sizes for the investigated relationships were calculated through Fisher's Z transformations (Ciftci *et al.*, 2021). More specifically, the reliability-adjusted correlations are transformed to Fisher's Z and then converted back to weighted mean effect sizes. Following the guidelines by Borenstein *et al.* (2009), p-values, z-values, and 95 % confidence intervals (95 % CIs) were used in conjunction as a significance test of the relationships. Borenstein *et al.* (2009) suggested that a 95 % CI that does not include zero is an indication that a relationship is significant at  $p < 0.05$ . While a z-value  $z \geq \pm 1.96$  implies a significant relationship at  $p < 0.05$  according to Borenstein *et al.* (2009). The strength level of the analyzed relationships was interpreted as follows:  $r \geq 0.50$ ,  $r \geq 0.30$ , and  $r \geq 0.10$  denote large, medium, and small correlations, respectively (Cohen, 1992). Fail-safe N (FSN) was used as a statistical test to detect potential publication bias in the analysis. An  $FSN > 5k + 10$  (k is the number of effect sizes) signifies that the results are less likely to be influenced by publication bias (Mou and Benyoucef, 2021).

### 4.4. Moderator analysis procedures

It is argued by Blut *et al.* (2015) that the existence of heterogeneity requires the examination of potential moderators that may explain the variation across the research findings. Q-statistic and  $I^2$  index were computed to detect whether heterogeneity across the s-commerce studies exists (Tuncer, 2021). A significant Q-test indicates the existence of heterogeneity among effect sizes (Chauhan *et al.*, 2021). Whereas  $I^2$  represents the extent of heterogeneity in percentages. An  $I^2 > 75\%$  has been interpreted as an indication of high heterogeneity among correlations (Blut and Wang, 2020). In cases where Q-values were significant, a three-stage partitioning approach was performed to estimate moderator variables (Tao *et al.*, 2020). First, the included s-commerce studies and coded effect sizes were partitioned by the moderators' categories. Second, a separate meta-analysis was performed with at least three effect sizes on each subgroup. Third, a  $Q_{\text{between}}$  test was performed to indicate the existence of significant difference across the subgroups.

## 5. Results

### 5.1. Study characteristics

The included 109 studies provided a total of 116 independent data sets, 254 effect sizes, and a cumulative sample size of 38,617 respondents from 22 countries. A variety of s-commerce platforms were studied in this meta-analysis, including Facebook, WeChat, Taobao, Weibo, and Instagram (see Appendix A).

[Insert Table II about here]

Most s-commerce studies (n = 82) were published between 2017 and 2021, representing 75% of the included studies (see Table II). The countries in which s-commerce studies were the most conducted were China (k = 36), followed by the United States (k = 13), Taiwan (k = 10), South Korea (k = 9), and Malaysia (k = 6) (see Figure 2). The empirical studies were mostly from Asian countries (73%), while studies from non-Asian countries appear less frequently (21%)



(see Table II). Across the included studies, 53% were conducted in high power distance countries, 69% in low individualism countries, 66% in high masculinity countries, 78% in low uncertainty avoidance countries, 69% in high long term orientation countries, and 54% in low indulgence countries (see Table II). Most of the respondents were s-commerce users (77%), while students represent only 19% of the samples (see Table II). More than half of the research (56%) employed PLS-SEM as the main data analysis approach, while 36% of empirical studies used the CB-SEM to test their models (see Table II). Among the used theories in the s-commerce literature, social support theory, technology acceptance model, and social presence theory were the most employed (see Figure 3).

[Insert Figure 2 about here]

[Insert Figure 3 about here]

## 5.2. Relationships description

The descriptive analysis of relationships is depicted in Table III. Among the 11 factors associated with intention, trust (63/116), perceived usefulness (28/116), and hedonic motivation (26/116) were the variables that have been the most frequently examined. Regarding the sign of effects sizes, all included studies reported positive correlation coefficients. However, the findings are inconsistent regarding the magnitude of the extracted correlations. For example, the correlations ranged from 0.020 to 0.816, from 0.025 to 0.685, and from 0.146 to 0.803 for the **TRU-BI**, **INS-BI**, and **SN-BI** relationships, respectively. The trust-intention relationship scored the highest cumulative sample size (TSS) with  $N = 21,324$  participants, while the association between social interaction and intention scored the lowest TSS with  $N = 3,735$  participants.

[Insert Table III about here]

## 5.3. Meta-analysis results

Table IV presents a summary of the meta-analytic findings. In summary, all the examined 11 variables were significantly associated with intention as z-values were greater than 1.96 and p-values  $< 0.001$ , which indicates that hypotheses 1 to 11 are supported. The 95% CIs did not contain zero for all relationships, confirming the statistical significance of the meta-analytic results. For instance, the 95% CIs ranged from 0.472 to 0.711, from 0.426 to 0.589, and from 0.539 to 0.671 for the **FAM-BI**, **PEU-BI** and **PU-BI** relationships, respectively. Although all the 11 combined effect sizes were large ( $r \geq 0.50$ ), trust presented the highest correlation with intention ( $r = 0.681$ ;  $p < 0.001$ ), while perceived ease of use presented the lowest correlation with intention ( $r = 0.512$ ;  $p < 0.001$ ). For all proposed associations, an examination of the Fail-Safe N (FSN) indicates that FSN was greater than the critical value of  $5k + 10$ , where  $k$  is the number of observations (see Table IV). For example, for the **SPR-BI** relationship, the FSN = 1941 exceeds the tolerance level of  $5k + 10 = 110$ . This indicates the absence of publication bias and provides strong support for the meta-analytic findings.

[Insert Table IV about here]

## 5.4. Moderator analysis results

The heterogeneity test results are reported in Table IV. All Q-statistics were significant at  $p < 0.001$ , denoting that correlations are heterogeneous. In addition, all  $I^2$  statistics were over 75% (93% – 99%), showing a substantial amount of variance across the s-commerce studies. Thus, investigating moderator variables is justified. Table V shows the findings of moderator analysis for power distance, Table VI for individualism, Table VII for masculinity, Table VIII for uncertainty avoidance, Table IX for long term orientation, and Table X for indulgence. Note that significant findings reported in the Q-between tests are shown in bold.

[Insert Table V about here]

[Insert Table VI about here]

As proposed in H12, the subgroup analysis results indicate that power distance moderated significantly the relationship between social interaction and intention ( $Q-b = 4.18$ ;  $p < 0.05$ ). This confirms that the **SIN-BI** relationship was significantly greater in high-PDI countries ( $r_{high\_PDI} = 0.617$ ;  $p < 0.001$ ) than low-PDI countries ( $r_{low\_PDI} = 0.408$ ;  $p < 0.001$ ). The association between perceived ease of use and intention is significantly moderated by power distance ( $Q-b = 9.08$ ;  $p < 0.01$ ). Contrary to our expectations, the **PEU-BI** relationship was significantly stronger in low-PDI countries ( $r_{low\_PDI} = 0.600$ ;  $p < 0.001$ ) than high-PDI countries ( $r_{high\_PDI} = 0.392$ ;  $p < 0.001$ ).

Consistent with H13, the moderating effect of individualism on the relationship between emotional support and intention was significant ( $Q-b = 12.25$ ;  $p < 0.001$ ). This implies that the **EMS-BI** relationship was significantly stronger for high-IDV countries ( $r_{high\_IDV} = 0.766$ ;  $p < 0.001$ ) compared to low-IDV countries ( $r_{low\_IDV} = 0.449$ ;  $p < 0.001$ ). In support of H13, individualism has also a significant moderating effect on the relationship between informational support and intention ( $Q-b = 9.41$ ;  $p < 0.01$ ). This confirms that the **INS-BI** relationship was significantly stronger in high-IDV countries ( $r_{high\_IDV} = 0.795$ ;  $p < 0.001$ ) than low-IDV countries ( $r_{low\_IDV} = 0.492$ ;  $p < 0.001$ ). Consistent with H13, there was a significant moderating effect of individualism on the relationship between trust and intention ( $Q-b = 7.85$ ;  $p < 0.01$ ). This implies that the **TRU-BI** association was stronger in high-IDV countries ( $r_{high\_IDV} = 0.758$ ;  $p < 0.001$ ) and weaker in low-IDV countries ( $r_{low\_IDV} = 0.647$ ;  $p < 0.001$ ). As proposed in H13, individualism significantly moderates the association between hedonic motivation and intention ( $Q-b = 4.09$ ;  $p < 0.05$ ). This indicates that the **HM-BI** relationship was significantly stronger in high-IDV countries ( $r_{high\_IDV} = 0.761$ ;  $p < 0.001$ ) compared with low-IDV countries ( $r_{low\_IDV} = 0.592$ ;  $p < 0.001$ ). In support of H13, the relationship between perceived ease of use and intention was significantly affected by the moderating variable of individualism ( $Q-b = 4.95$ ;  $p < 0.05$ ). This suggests that a significant difference exists for the **PEU-BI** relationship, where high-IDV subgroup display stronger combined correlation ( $r_{high\_IDV} = 0.602$ ;  $p < 0.001$ ) than the low-IDV subgroup ( $r_{low\_IDV} = 0.427$ ;  $p < 0.001$ ). As proposed in H13, a significant moderating effect of individualism on the association between SCC and intention was observed ( $Q-b = 6.74$ ;  $p < 0.01$ ). This indicates that the **SCC-BI** relationship is significantly stronger in high-IDV countries ( $r_{high\_IDV} = 0.820$ ;  $p < 0.001$ ) as compared to low-IDV countries ( $r_{low\_IDV} = 0.490$ ;  $p < 0.001$ ).

[Insert Table VII about here]

[Insert Table VIII about here]

In line with H14, masculinity has a significant moderating role in the association between emotional support and intention ( $Q-b = 4.19$ ;  $p < 0.05$ ). This reveals that the combined correlations in the masculinity subgroups were significantly different from each other, where the **EMS-BI** relationship presented stronger correlation in high-MAS countries ( $r_{high\_MAS} = 0.579$ ;  $p < 0.001$ ) than low-MAS countries ( $r_{low\_MAS} = 0.346$ ;  $p < 0.01$ ). As proposed in H14, the association between social interaction and intention was significantly moderated by masculinity ( $Q-b = 4.18$ ;  $p < 0.05$ ). This indicates that the **SIN-BI** relationship was significantly stronger in high-MAS countries ( $r_{high\_MAS} = 0.617$ ;  $p < 0.001$ ) than low-MAS countries ( $r_{low\_MAS} = 0.408$ ;  $p < 0.001$ ). Consistent with H14, a significant moderating effect of masculinity was found in the association between subjective norms and intention ( $Q-b = 5.91$ ;  $p < 0.05$ ). This reveals that the **SN-BI** relationship was significantly stronger in high-MAS countries ( $r_{high\_MAS} = 0.798$ ;  $p < 0.001$ ) than low-MAS countries ( $r_{low\_MAS} = 0.521$ ;  $p < 0.001$ ). In support of H14, masculinity significantly moderates the association between familiarity and intention ( $Q-b = 8.65$ ;  $p < 0.01$ ). This suggests that the **FAM-BI** relationship is significantly stronger in high-MAS countries ( $r_{high\_MAS} = 0.620$ ;  $p < 0.001$ ) compared to low-MAS countries ( $r_{low\_MAS} = 0.362$ ;  $p < 0.001$ ). As suggested in H14, the moderating effect of masculinity on the relationship

between social presence and intention was significant ( $Q-b = 4.66$ ;  $p < 0.05$ ). This confirms that, for the **SPR-BI** association, the combined effect size in the high-MAS subgroup ( $r_{high\_MAS} = 0.571$ ;  $p < 0.001$ ) was significantly stronger than the pooled correlation in the low-MAS subgroup ( $r_{low\_MAS} = 0.384$ ;  $p < 0.001$ ).

The results of moderator analysis show that the combined effect sizes of the **HM-BI**, **PEU-BI**, and **PU-BI** relationships were stronger in high-UAV countries than for low-UAV countries. In contrast, we also found that the weighted mean correlations of the **SN-BI** and **TRU-BI** relationships for low-UAV countries were stronger than those of high-UAV countries. Contradicting H15, there are however no significant differences between the two subgroups of UAV (high UAV versus low UAV) for these 5 pairs of relationships.

In line with H16, the subgroup analysis results revealed that long term orientation was a significant moderator of the relationship between subjective norms and intention ( $Q-b = 5.92$ ;  $p < 0.05$ ). This indicates that the **SN-BI** relationship is significantly stronger in low-LTO countries ( $r_{low\_LTO} = 0.780$ ;  $p < 0.001$ ) as compared to high-LTO countries ( $r_{high\_LTO} = 0.501$ ;  $p < 0.001$ ).

Indulgence moderated significantly the association between social interaction and intention ( $Q-b = 14$ ;  $p < 0.001$ ). Contrary to our predictions, low-IND countries showed the strongest overall effect size ( $r_{low\_IND} = 0.612$ ;  $p < 0.001$ ) in comparison to high-IND countries ( $r_{high\_IND} = 0.266$ ;  $p < 0.01$ ). As proposed in H17, the relationship between subjective norms and intention was significantly moderated by indulgence ( $Q-b = 12.02$ ;  $p < 0.001$ ). This reveals that the **SN-BI** relationship was significantly stronger for studies conducted in high-IND countries ( $r_{high\_IND} = 0.773$ ;  $p < 0.001$ ) than for studies conducted in low-IND countries ( $r_{low\_IND} = 0.407$ ;  $p < 0.001$ ).

[Insert Table IX about here]

[Insert Table X about here]

## 6. Discussion

The objective of this meta-analysis was to bring clarity to the main factors related to s-commerce intention, as well as to investigate whether the heterogeneity across s-commerce studies depends on the moderating role of national culture. To achieve this goal, 109 s-commerce studies and 116 data sets were included, 11 factors related to s-commerce intention were identified, 254 effect sizes were analyzed using the random-effect method, a cumulative sample size of over 38k participants was obtained from 22 countries, the effects of six culturally-based moderators were examined, and a theoretical framework drawing on nine theories and models was proposed (see Figure 1).

### 6.1. Direct relationships

The meta-analysis results show that all the direct hypothesized relations in the research model were significant (see Table IV). In support of H1, the results indicated that there is a significant association between emotional support and s-commerce intention. This may explain that when care, sympathy, and backing from other community members are present, the willingness to buy, share, or recommend in a s-commerce site is boosted. This is similar to the findings reported by some earlier studies suggesting that emotional support plays a critical role in determining s-commerce intention (Molinillo *et al.*, 2018; Riaz *et al.*, 2020). As hypothesized in H2, the findings of this meta-analysis showed that informational support is significantly and positively linked with s-commerce intention. This result implies that with greater exchange of commercial information, shopping experience, and guidance between members, individuals will be more able to buy, share, or recommend in a s-commerce platform. This is consistent with some earlier s-commerce studies demonstrating that informational support is a vital element in fostering s-commerce intention (Al-Tit *et al.*, 2020; Riaz *et al.*, 2020). As predicted in H3, the results of this study suggested that there is a strong positive correlation between social interaction and s-commerce intention. One explanation is that the higher the frequent

communication and interpersonal relationships between members, the more the likelihood that individuals will buy, share, or recommend on social websites. This is in line with an empirical study by Dabbous *et al.* (2020) indicating that social interaction is a key antecedent in forming s-commerce intention. Consistent with H4, the meta-analytic findings revealed that there is a significant relationship between subjective norms and s-commerce intention. This result demonstrates that the more individuals consider the influence and pressure from colleagues, friends or family to engage in s-commerce, the more likely it is that they will buy, share, or recommend. This is aligned with the results obtained in previous research reporting that subjective norms lead to increased s-commerce intention (Akman and Mishra, 2017; Dashti *et al.*, 2019). As predicted in H5, the results of this meta-analysis affirmed that the association between trust and s-commerce intention is significant. This indicates that if individuals perceive a s-commerce site or a s-commerce vendor as reliable, benevolent, and promise keeper they tend to buy, share, or recommend in the s-commerce platform. This finding confirms the results reported by several researchers claiming that trust is one of the essential elements affecting s-commerce intention (Bugshan and Attar, 2020; Maia *et al.*, 2020). In support of H6, the results of this study indicated that familiarity is strongly linked with s-commerce intention. This finding may indicate that a higher level of understanding and comprehension of the searching and shopping procedures obtained by previous interaction with a s-commerce site can lead to greater individuals' intention. This is consistent with existing studies in the s-commerce literature showing that familiarity significantly affects s-commerce intention (Al-Adwan and Kokash, 2019; Hajli *et al.*, 2017b). As hypothesized in H7, the findings of the current research pointed out that hedonic motivation is significantly associated with s-commerce intention. This probably means that the more the social shopping activity is viewed as enjoyable, fun, and entertaining, the more individuals will buy, share, or recommend on a s-commerce platform. This is in line with several scholars in the field of s-commerce revealing that hedonic motivation is an important determinant of s-commerce intention (Aydin, 2019a; Yahia *et al.*, 2018). Consistent with H8, the findings of this study demonstrate that perceived ease of use is strongly related to s-commerce intention. This significant result suggests that individuals are more willing to buy, share, or recommend if they perceive learning and using a s-commerce site as simple, free of effort, and free of difficulties. This is similar to the findings obtained by several authors assuming that perceived ease of use is one of the central predictors of s-commerce intention (Doha *et al.*, 2019; Kim *et al.*, 2012). In support of H9, this meta-analysis proved that there is a strong correlation between perceived usefulness and s-commerce intention. Therefore, it is clear that individuals perceiving that the use of a s-commerce site will improve the searching and purchasing process are more likely to buy, share, or recommend in a social website. This result echoes that of the empirical evidence confirming that perceived usefulness has a strong effect on s-commerce intention (Abed, 2020; Osatuyi *et al.*, 2020). As hypothesized in H10, the current findings mentioned that there is a significant correlation between SCC and s-commerce intention. It is highly plausible that if the s-commerce features and functions allow individuals to share and to seek shopping experiences, suggestions, ratings, and comments, a high level of behavioral intention can be developed. This result lends support for the findings obtained in some prior literature considering that SCC enhance the individual's intention (Lee and Chen, 2020; Sheikh *et al.*, 2019). As predicted in H11, the current results revealed that social presence is strongly associated with s-commerce intention. It is quite possible that individuals who are more likely to perceive human warmth, personal connection, and intimacy within a s-commerce site are more inclined to buy, share, or recommend in a s-commerce platform. This finding corroborates the evidence from several empirical studies proposing that social presence is very influential in forming s-commerce intention (Hassan *et al.*, 2018; Rashid *et al.*, 2020).

## 6.2. Moderating effects

Given the variability across the findings in the s-commerce literature (see Table IV), it was important to assess the role of moderating variables such as national culture. In this regard, this study meta-analytically tested the impact of six cultural moderators on the 11 investigated associations by building on Hofstede's model (Hofstede *et al.*, 2010). The moderator analysis revealed that 10 of the 11 examined relationships are significantly moderated by one or more cultural dimensions. The linkage between perceived usefulness and intention was not moderated by any cultural dimension. This is consistent with the meta-analysis results reported by Franque *et al.* (2020), who revealed that the six dimensions of national culture do not exert significant moderating effects on the PU-intention relationship. This raises the possibility that people from different cultures would have the same perceptions regarding the utility and the functional aspect of the s-commerce websites. Most significant moderator results were observed for individualism and masculinity, while uncertainty avoidance has no significant moderating effects on any association (see Table VIII). This is congruent with the meta-analytic findings obtained by Blut *et al.* (2021), who provides support for the non-significant moderating effects of uncertainty avoidance in a technology usage setting. This probably means that UAV does not play an important moderating role in the amounts of variability across the empirical findings reported by earlier studies in the s-commerce area. As seen in Table V, the moderator results confirmed that power distance moderates significantly two out of 11 relationships. The meta-study by Franque *et al.* (2020) also revealed that power distance is a key moderator variable in the IS context. As expected, people from cultures high in power distance would have more close relationships and interactions with other members in a s-commerce site than those from low power distance. Contrary to predictions, people in countries low in power distance would have more beliefs regarding the ease and effortlessness associated with the usage of a s-commerce site than people in countries high in power distance. As shown in Table VI, this meta-study observed that individualism was among the most critical moderators influencing significantly six out of 11 relationships. The meta-analysis by Blut *et al.* (2016) also suggested that individualism is an influencing moderator in the IS context. As hypothesized, the availability of emotional support, informational support, and fun in online platforms such as s-commerce sites gain importance in countries with higher individualism than collectivist societies. As expected, within countries with a dominant individualism culture, people have greater trust towards s-commerce, have more perception of s-commerce easiness, and have greater ability to generate more user content than collectivist cultures. As illustrated in Table VII, this meta-analysis proved that masculinity was among the prominent moderator variables impacting significantly five out of 11 relationships. The meta-study by Blut *et al.* (2021) also reported that masculinity plays a key moderating role in the IS context. In line with expectations, persons from masculine countries have a greater emotional support, high level of social interaction, and are more familiar with the use of a s-commerce site than persons from feminine countries. As predicted, people from societies high in masculinity have a greater belief about the presence of human warmth within a s-commerce site along with the existence of a high level of perceived social pressure to use a s-commerce site. As described in Table IX, the moderation analysis demonstrated that long term orientation displays a moderating impact on one relationship. The meta-analysis by Zhang *et al.* (2018) also assumed that long term orientation plays a significant moderating role in the IS context. In line with predictions, in short-term societies, people show a higher concern for what important others think about the usage of a s-commerce site than members of long-term cultures. As seen in Table X, the subgroup analysis reported that indulgence moderates significantly two out of 11 relationships. The meta-study by Bauer and Schiffinger (2016) also demonstrated that indulgence is a significant moderator in the IS context. Contrary to predictions, people in low indulgence countries have closer social relationships in a s-commerce site compared to people in high

indulgence countries. As hypothesized, persons from indulgent societies give more importance to the social pressure exerted by friends and family to adopt s-commerce compared to persons from restrained societies.

### **6.3. Theoretical contributions**

The current study provides several theoretical contributions for the s-commerce research. When looking across s-commerce studies, the findings appear to be fragmented with regards to the magnitude and significance level of effect sizes. This meta-analysis contributes to the s-commerce literature by reconciling the mixed results in terms of strength and significance of the relationships. Specifically, the results assumed that all the examined 11 factors show large, positive, and significant associations with s-commerce intention. An examination of the literature reveals that the empirical studies on s-commerce built only on few theoretical perspectives. This has led this study to extend the theoretical knowledge on s-commerce by integrating the constructs coming from nine theories and models. The evidence regarding the moderating effects of the six dimensions of national culture in the s-commerce domain appears to be limited. This meta-analysis offers important insights for researchers in the area of s-commerce by clarifying the moderating role of cultural characteristics.

In addition, this meta-study enriches the literature by confirming the importance of theory-driven variables in the s-commerce context. Specifically, Fan *et al.* (2019) postulated that emotional support and informational support are influential factors in the social support theory (Shumaker and Brownell, 1984). In line with the SST, the meta-analysis results highlighted that emotional support and informational support are strongly related to s-commerce intention. Cheng *et al.* (2019a) indicated that social interaction and familiarity are fundamental variables in the social capital theory (Bourdieu, 1986). This study empirically supports the SCT in the s-commerce setting by discovering that social interaction and familiarity are strongly linked with s-commerce intention. Cho and Son (2019) pointed out that perceived ease of use and perceived usefulness are essential elements in the technology acceptance model (Davis, 1989). The findings provided support for the TAM by claiming that perceived ease of use and perceived usefulness are significantly linked with s-commerce intention. Featherman and Hajli (2016) asserted that subjective norms are a central predictor in the theory of reasoned action (Fishbein and Ajzen, 1975). Consistent with the TRA, the results of this study showed that there is a significant correlation between subjective norms and s-commerce intention. Doha *et al.* (2019) noted that hedonic motivation is a key variable in the motivation theory (Deci, 1975). The findings of this meta-analysis confirm the assumption of the motivation theory by claiming that hedonic motivation is closely linked with s-commerce intention. Hossain *et al.* (2020) posited that trust is an influential factor in the relationship quality theory Crosby *et al.* (1990). Consistent with the relationship quality theory, the current results indicated that trust is closely associated with s-commerce intention. Hajli *et al.* (2017a) opined that SCC are vital elements in the socio-technical theory (Bostrom and Heinen, 1977). The findings of this study proved that the STT can be integrated into the s-commerce context by affirming that SCC have a significant correlation with s-commerce intention. Hajli *et al.* (2017b) contended that social presence is a critical factor in the social presence theory (Short *et al.*, 1976). This meta-analysis supports the importance of the SPT by mentioning that social presence is significantly associated with s-commerce intention. Franque *et al.* (2020) evinced that the cultural characteristics (Hofstede *et al.*, 2010) constitute major moderators in the IS domain. The subgroup analysis results confirmed that five out of six cultural dimensions are important moderators in the area of s-commerce.

### **6.4. Managerial implications**

This research proposes several practical insights for social platforms such as Facebook and WeChat. Based on the significant results, these guidelines for practice are ranked by their degree of importance. To build trust towards s-commerce, designers are encouraged to develop a five-star rating system to differentiate between opportunistic and trustworthy vendors. They are also advised to require users to put #ad or #af hashtags to stories or posts of paid promotional products or services. To enrich the entertainment within a social platform, designers are advised to create an augmented reality filter that allows buyers to design customized products (e.g., clothes) using their smartphone camera. They are also encouraged to develop mini-games where users reaching high scores get rewarded by a unique coupon code. To increase the authenticity of the s-commerce features such as product recommendations, designers are encouraged to develop an AI that detects which reviews are fake and limit the number of accounts a person can use for sharing feedback. To improve perceived usefulness, designers are advised to promote cross-sells by suggesting complementary or alternative products (e.g., recommending earphones when buying a smartphone). They are also encouraged to include more options for online and mobile payments. To promote familiarity with s-commerce, designers should make efforts to increase the knowledge of users on how to search and buy products through educational live streaming. They are also advised to give the opportunity to experience a shopping simulation through interactive free demos. To strengthen the perceived social pressure, designers need to display first the posts of important others and reward users who bring their family members, close friends, and colleagues to the s-commerce platform. To increase informational support, designers need to incorporate a functionality that allows files and document sharing among users and provide an opinion mining feature for brands to detect whether the customers' comments are positive or negative. To facilitate the social presence of the s-commerce platform designers should continue to maintain video and voice calling, live streaming, and instant text messaging. To ensure social interaction, designers are encouraged to show notifications when a brand being followed shares new products or promotions. They are also advised to allow users to comment content through voice messages and short videos. To strengthen emotional support, designers are advised to implement specialized groups where users can get emotional attention when facing difficulties. They are also encouraged to assist users to create their own emojis, GIFs, and avatars to add more emotional reactions to posts. To advance perceived ease of use, designers need to develop a search filtering tool with multiple entries so that it is easier for users to identify a product. They are also advised to provide an easy way to link the posted products with the seller's own online store or the map location of the offline store. In terms of national culture, this study sheds light on which factors are more or less central according to the cultural context of countries. For example, firms that target low power distance societies should pay great attention to perceived ease of use, and firms that target high individualist societies should put more emphasis on emotional support. In addition, familiarity is among the variables to consider in high masculine societies, while subjective norms are important to consider in short-term societies. Finally, firms targeting people living in restrained societies should focus more on social interaction.

### **6.5. Limitations and future directions**

This meta-analysis has some issues that could be addressed by future researchers. This study focused only on the moderating impact of national culture. More meta-analyses are needed in the future to examine the rarely studied moderating effect of analysis approach (CB-SEM vs. PLS-SEM). Testing the moderating effects of IDV, UAV, and LTO on some relations was constrained by the insufficient number of studies in some subgroups. Including more empirical studies from multiple databases would help to address this limitation in the future. Using the Pearson's *r* deterred us from investigating causal relationships between variables. Future meta-analyses should consider alternative effect sizes such as coefficient beta to study a cause-and-



effect model. In this study, estimating the explanatory power of the research model has been neglected. Future studies should conduct MASEM to assess how much variance in s-commerce intention is explained by the examined 11 factors. This meta-analysis was limited to the examination of the associations between 11 variables and intention. Investigating additional factors such as attitude and reciprocity must be considered in the future. This study considered behavioral intention as the only outcome variable in the research model. Future meta-studies should pay attention to the association between intention and the actual usage behavior. Further, the studies for this research were collected only from the Scopus database. The future research could use a wider range of databases such as EBSCO, Web of Science, etc. (Ismagilova *et al.*, 2020b) and also the Google Scholar search engine to find some unidentified studies through the existing databases. Although no publication bias was detected, this study neglected the inclusion of book chapters and conference papers. Future research should incorporate these types of articles in their meta-analyses. To classify countries as either high or low in each cultural dimension, a median calculation was done based on the available scores of 107 countries. It is possible that the subgrouping of studies may be imprecise due to the absence of cultural data about the remaining 86 United Nations members. Therefore, an effort should be made to gather the cultural scores of these countries for a more precise moderator analysis of culture in the future. Also, this study only used the quantitative studies for the meta-analyses and excluded qualitative studies. However, the future studies could use both qualitative as well as quantitative studies for the meta-analysis.

## 7. Conclusions

In recent years, various meta-analyses in the field of s-commerce attempted to synthesize the contradictory results across the s-commerce studies. However, these meta-studies have either failed to include a large number of empirical findings or neglected to test the effects of moderators. To fill these gaps, the aim of the current meta-study was twofold. First, summarizing quantitatively a large number of results revealed in the s-commerce literature in the past decade. Second, detecting and estimating the moderating variables that may be responsible for the inconsistencies in these results. To that end, 254 effect sizes from 109 empirical studies were combined and the impacts of six moderators were analyzed.

This study found that all the 11 examined factors have significant, positive, and strong associations with s-commerce intention, which provides support for all the hypothesized direct relationships. For theory, this research presented, tested, and validated a comprehensive meta-analytic model that integrates the constructs from nine theories and models. Moreover, this study was among the first to demonstrate meta-analytically that five out of six dimensions of Hofstede's national culture play a significant moderating role in the s-commerce context. For practice, this meta-analysis provided several practical insights for decision makers based on data from a total of 38,617 respondents, which is difficult for a survey-based study to gather due to time and cost constraints. To conclude, several limitations were observed in this study, implying that future marketing strategies must be carefully implemented when drawing inspiration from the above meta-analytic findings.

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**Table I:** Source of publications.

Journal names	n	%
International Journal of Information Management	10	9%
Computers in Human Behavior	7	6%
Internet Research	6	6%
Information Technology & People	5	5%
Technological Forecasting & Social Change	5	5%
Journal of Internet Commerce	4	4%
Electronic Commerce Research and Applications	4	4%
Journal of Retailing and Consumer Services	4	4%
Journal of Theoretical and Applied Electronic Commerce Research	4	4%
Others	60	55%
<b>Total</b>	<b>109</b>	



**Table II:** Description of included s-commerce studies.

Characteristics	n	%	Characteristics	n	%
<b>Publication year</b>	<b>109</b>		<b>Individualism</b>	<b>116</b>	
2011 – 2016	27	25%	High IDV countries	31	27%
2017 – 2021	82	75%	Low IDV countries	80	69%
<b>Region of sample</b>	<b>116</b>		N/A	5	4%
Asian countries	85	73%	<b>Masculinity</b>	<b>116</b>	
Non-Asian countries	24	21%	High MAS countries	77	66%
International	2	2%	Low MAS countries	34	29%
N/A	5	4%	N/A	5	4%
<b>Respondent type</b>	<b>116</b>		<b>Uncertainty avoidance</b>	<b>116</b>	
Users	89	77%	High UAV countries	20	17%
Students	22	19%	Low UAV countries	91	78%
Others	5	4%	N/A	5	4%
<b>Analysis approach</b>	<b>116</b>		<b>Long term orientation</b>	<b>116</b>	
PLS-SEM	65	56%	High LTO countries	80	69%
CB-SEM	42	36%	Low LTO countries	31	27%
Others	9	8%	N/A	5	4%
<b>Power distance</b>	<b>116</b>		<b>Indulgence</b>	<b>116</b>	
High PDI countries	61	53%	High IND countries	48	41%
Low PDI countries	50	43%	Low IND countries	63	54%
N/A	5	4%	N/A	5	4%

[**Note(s):** N/A = Not available; SEM = Structural equation modeling; PLS = Partial least squares; CB-SEM = Covariance-based SEM.]

**Table III:** Descriptive analysis of relationships.

Relations	n	k	Sample size				Correlations			Direction	
			MIN	MAX	AVG	TSS	MIN	MAX	AVG	(+)	(-)
EMS-BI	21	22	200	750	365	8019	0.037	0.658	0.400	22	0
INS-BI	17	18	201	563	358	6442	0.025	0.685	0.433	18	0
SIN-BI	11	11	144	972	340	3735	0.192	0.630	0.422	11	0
SN-BI	16	17	100	750	360	6113	0.146	0.803	0.455	17	0
TRU-BI	63	63	107	784	338	21324	0.020	0.816	0.548	63	0
FAM-BI	16	16	199	972	364	5818	0.190	0.693	0.453	16	0
HM-BI	25	26	142	750	357	9288	0.234	0.837	0.518	26	0
PEU-BI	13	14	100	557	342	4794	0.247	0.661	0.436	14	0
PU-BI	27	28	100	750	357	9986	0.180	0.754	0.504	28	0
SCC-BI	19	19	100	784	355	6738	0.240	0.749	0.461	19	0
SPR-BI	19	20	201	750	347	6947	0.209	0.631	0.423	20	0

**[Note(s):** n = Number of studies; k = Number of observations; MIN = Minimum; MAX = Maximum; AVG = Average; TSS = Total sample size; (+) = Number of positive relationships; (-) = Number of negative relationships; BI = Behavioral intention; EMS = Emotional support; INS = Informational support; SIN = Social interaction; SN = Subjective norms; TRU = Trust; FAM = Familiarity; HM = Hedonic motivation; PEU = Perceived ease of use; PU = Perceived usefulness; SCC = S-commerce constructs; SPR = Social presence.]

**Table IV:** Meta-analytic results, publication bias, and heterogeneity detection.

H	Relations	n	k	TSS	ES	SL	Significance test		95% CIs		FSN	Heterogeneity test				Results
							p-value	z-value	LL	UL		Q	df (Q)	p-value	I <sup>2</sup>	
H1	EMS-BI	21	22	8019	0.522	Large	0.000	8.318	0.416	0.614	4114	801	21	0.000	97%	Supported
H2	INS-BI	17	18	6442	0.557	Large	0.000	7.871	0.440	0.656	1673	687	17	0.000	98%	Supported
H3	SIN-BI	11	11	3735	0.531	Large	0.000	7.314	0.408	0.635	3649	228	10	0.000	96%	Supported
H4	SN-BI	16	17	6113	0.604	Large	0.000	7.531	0.475	0.707	9776	816	16	0.000	98%	Supported
H5	TRU-BI	63	63	21324	0.681	Large	0.000	23.235	0.641	0.716	6800	1659	62	0.000	96%	Supported
H6	FAM-BI	16	16	5818	0.605	Large	0.000	7.315	0.472	0.711	146	777	15	0.000	98%	Supported
H7	HM-BI	25	26	9288	0.666	Large	0.000	10.387	0.573	0.742	5195	1366	25	0.000	98%	Supported
H8	PEU-BI	13	14	4794	0.512	Large	0.000	10.017	0.426	0.589	5282	192	13	0.000	93%	Supported
H9	PU-BI	27	28	9986	0.609	Large	0.000	13.300	0.539	0.671	4452	748	27	0.000	96%	Supported
H10	SCC-BI	19	19	6738	0.624	Large	0.000	6.058	0.458	0.748	5549	1734	18	0.000	99%	Supported
H11	SPR-BI	19	20	6947	0.536	Large	0.000	9.914	0.446	0.615	1941	471	19	0.000	96%	Supported

[**Note(s):** H = Hypotheses; n = Number of studies; k = Number of observations; TSS = Total sample size; ES = Weighted mean effect size; SL = Strength level of the correlations; CIs = Confidence intervals; LL = Lower limit; UL = Upper limit; FSN = Fail-Safe N; df = Degree of freedom; BI = Behavioral intention; EMS = Emotional support; INS = Informational support; SIN = Social interaction; SN = Subjective norms; TRU = Trust; FAM = Familiarity; HM = Hedonic motivation; PEU = Perceived ease of use; PU = Perceived usefulness; SCC = S-commerce constructs; SPR = Social presence.]

**Table V:** The moderating role of power distance (PDI).

	EMS-BI	INS-BI	SIN-BI	SN-BI	TRU-BI	FAM-BI	HM-BI	PEU-BI	PU-BI	SCC-BI	SPR-BI
<b>High PDI</b>											
k	13	10	6	6	35	8	10	6	9	10	12
ES	0.465	0.512	0.617	0.762	0.682	0.551	0.616	0.392	0.514	0.515	0.553
SL	Medium	Large	Large	Large	Large	Large	Large	Medium	Large	Large	Large
TSS	5126	3749	2574	2157	12358	3354	3928	1780	3144	3983	4668
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.001	0.000
z-value	5.616	5.182	7.668	5.871	17.129	6.481	5.654	6.513	6.328	3.414	8.364
<b>Low PDI</b>											
k	9	8	5	9	27	7	16	5	16	9	7
ES	0.597	0.610	0.408	0.525	0.680	0.536	0.695	0.600	0.651	0.722	0.450
SL	Large	Large	Medium	Large	Large	Large	Large	Large	Large	Large	Medium
TSS	2893	2693	1161	2932	8779	2263	5360	1797	5625	2755	2078
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
z-value	6.380	5.800	4.144	4.194	14.984	5.839	8.532	10.227	11.606	5.186	4.953
<b>Q-test</b>											
Q-b	1.75 <sup>n.s</sup>	0.76 <sup>n.s</sup>	<b>4.18<sup>a</sup></b>	3.61 <sup>n.s</sup>	0.00 <sup>n.s</sup>	0.02 <sup>n.s</sup>	0.74 <sup>n.s</sup>	<b>9.08<sup>b</sup></b>	3.47 <sup>n.s</sup>	2.00 <sup>n.s</sup>	1.24 <sup>n.s</sup>
p-value	0.186	0.383	<b>0.041</b>	0.057	0.971	0.879	0.389	<b>0.003</b>	0.063	0.157	0.265

[**Note(s):** <sup>a</sup> = Significant at  $p < 0.05$ ; <sup>b</sup> = Significant at  $p < 0.01$ ; <sup>c</sup> = Significant at  $p < 0.001$ ; <sup>n.s</sup> = Not significant; k = Number of observations; ES = Weighted mean effect size; SL = Strength level of the correlations; TSS = Total sample size; Q-b = Q-between test; BI = Behavioral intention; EMS = Emotional support; INS = Informational support; SIN = Social interaction; SN = Subjective norms; TRU = Trust; FAM = Familiarity; HM = Hedonic motivation; PEU = Perceived ease of use; PU = Perceived usefulness; SCC = S-commerce constructs; SPR = Social presence.]

**Table VI:** The moderating role of individualism (IDV).

	EMS-BI	INS-BI	SIN-BI	SN-BI	TRU-BI	FAM-BI	HM-BI	PEU-BI	PU-BI	SCC-BI	SPR-BI
<b>High IDV</b>											
k	4	3	X	4	17	4	10	4	9	6	3
ES	0.766	0.795	X	0.541	0.758	0.639	0.761	0.602	0.644	0.820	0.468
SL	Large	Large	X	Large	Large	Large	Large	Large	Large	Large	Medium
TSS	1142	942	X	1424	5106	1103	3464	1345	3165	1668	653
p-value	0.000	0.000	X	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.001
z-value	7.407	6.678	X	2.905	14.797	5.543	8.090	8.141	7.978	5.839	3.328
<b>Low IDV</b>											
k	18	15	X	11	45	11	16	7	16	13	16
ES	0.449	0.492	X	0.665	0.647	0.506	0.592	0.427	0.583	0.490	0.526
SL	Medium	Medium	X	Large	Large	Large	Large	Medium	Large	Medium	Large
TSS	6877	5500	X	3665	16031	4514	5824	2232	5604	5070	6093
p-value	0.000	0.000	X	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
z-value	7.575	7.459	X	6.370	18.821	6.825	6.980	6.997	9.249	3.984	8.962
<b>Q-test</b>											
Q-b	<b>12.25<sup>c</sup></b>	<b>9.41<sup>b</sup></b>	X	0.65 <sup>n.s</sup>	<b>7.85<sup>b</sup></b>	1.57 <sup>n.s</sup>	<b>4.09<sup>a</sup></b>	<b>4.95<sup>a</sup></b>	0.67 <sup>n.s</sup>	<b>6.74<sup>b</sup></b>	0.21 <sup>n.s</sup>
p-value	<b>0.000</b>	<b>0.002</b>	X	0.421	<b>0.005</b>	0.211	<b>0.043</b>	<b>0.026</b>	0.411	<b>0.009</b>	0.644

[**Note(s):** <sup>a</sup> = Significant at  $p < 0.05$ ; <sup>b</sup> = Significant at  $p < 0.01$ ; <sup>c</sup> = Significant at  $p < 0.001$ ; <sup>n.s</sup> = Not significant; k = Number of observations; ES = Weighted mean effect size; SL = Strength level of the correlations; TSS = Total sample size; Q-b = Q-between test; X = Insufficient number of ESs ( $k < 3$ ); BI = Behavioral intention; EMS = Emotional support; INS = Informational support; SIN = Social interaction; SN = Subjective norms; TRU = Trust; FAM = Familiarity; HM = Hedonic motivation; PEU = Perceived ease of use; PU = Perceived usefulness; SCC = S-commerce constructs; SPR = Social presence.]

**Table VII:** The moderating role of masculinity (MAS).

	EMS-BI	INS-BI	SIN-BI	SN-BI	TRU-BI	FAM-BI	HM-BI	PEU-BI	PU-BI	SCC-BI	SPR-BI
<b>High MAS</b>											
k	16	14	6	5	43	10	14	7	14	15	13
ES	0.579	0.583	0.617	0.798	0.694	0.620	0.690	0.550	0.635	0.668	0.571
SL	Large	Large	Large	Large	Large	Large	Large	Large	Large	Large	Large
TSS	5604	5065	2574	1288	14586	3802	5100	2145	4654	5027	4439
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
z-value	8.608	7.267	7.668	6.309	19.593	10.637	8.135	8.583	9.788	5.895	10.173
<b>Low MAS</b>											
k	6	4	5	10	19	5	12	4	11	4	6
ES	0.346	0.457	0.408	0.521	0.651	0.362	0.636	0.398	0.566	0.423	0.384
SL	Medium	Medium	Medium	Large	Large	Medium	Large	Medium	Large	NA	Medium
TSS	2415	1377	1161	3801	6551	1815	4188	1432	4115	1711	2307
p-value	0.004	0.004	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.088	0.000
z-value	2.880	2.874	4.144	4.745	11.844	3.950	6.672	4.502	7.454	1.704	4.306
<b>Q-test</b>											
Q-b	<b>4.19<sup>a</sup></b>	0.79 <sup>n.s</sup>	<b>4.18<sup>a</sup></b>	<b>5.91<sup>a</sup></b>	0.99 <sup>n.s</sup>	<b>8.65<sup>b</sup></b>	0.39 <sup>n.s</sup>	2.79 <sup>n.s</sup>	0.89 <sup>n.s</sup>	1.43 <sup>n.s</sup>	<b>4.66<sup>a</sup></b>
p-value	<b>0.041</b>	0.373	<b>0.041</b>	<b>0.015</b>	0.321	<b>0.003</b>	0.532	0.095	0.345	0.231	<b>0.031</b>

[**Note(s):** <sup>a</sup> = Significant at  $p < 0.05$ ; <sup>b</sup> = Significant at  $p < 0.01$ ; <sup>c</sup> = Significant at  $p < 0.001$ ; <sup>n.s</sup> = Not significant; k = Number of observations; ES = Weighted mean effect size; SL = Strength level of the correlations; TSS = Total sample size; Q-b = Q-between test; BI = Behavioral intention; EMS = Emotional support; INS = Informational support; SIN = Social interaction; SN = Subjective norms; TRU = Trust; FAM = Familiarity; HM = Hedonic motivation; PEU = Perceived ease of use; PU = Perceived usefulness; SCC = S-commerce constructs; SPR = Social presence.]

**Table VIII:** The moderating role of uncertainty avoidance (UAV).

	EMS-BI	INS-BI	SIN-BI	SN-BI	TRU-BI	FAM-BI	HM-BI	PEU-BI	PU-BI	SCC-BI	SPR-BI
<b>High UAV</b>											
k	X	X	X	4	11	X	6	3	7	X	X
ES	X	X	X	0.591	0.679	X	0.739	0.525	0.673	X	X
SL	X	X	X	Large	Large	X	Large	Large	Large	X	X
TSS	X	X	X	1435	3861	X	1795	1152	2255	X	X
p-value	X	X	X	0.001	0.000	X	0.000	0.000	0.000	X	X
z-value	X	X	X	3.226	9.562	X	5.772	4.686	7.540	X	X
<b>Low UAV</b>											
k	X	X	X	11	51	X	20	8	18	X	X
ES	X	X	X	0.650	0.681	X	0.641	0.486	0.577	X	X
SL	X	X	X	Large	Large	X	Large	Medium	Large	X	X
TSS	X	X	X	3654	17276	X	7493	2425	6514	X	X
p-value	X	X	X	0.000	0.000	X	0.000	0.000	0.000	X	X
z-value	X	X	X	6.107	20.692	X	8.472	6.858	9.732	X	X
<b>Q-test</b>											
Q-b	X	X	X	0.16 <sup>n.s</sup>	0.00 <sup>n.s</sup>	X	1.00 <sup>n.s</sup>	0.13 <sup>n.s</sup>	1.56 <sup>n.s</sup>	X	X
p-value	X	X	X	0.693	0.962	X	0.316	0.723	0.212	X	X

[**Note(s):** <sup>a</sup> = Significant at  $p < 0.05$ ; <sup>b</sup> = Significant at  $p < 0.01$ ; <sup>c</sup> = Significant at  $p < 0.001$ ; <sup>n.s</sup> = Not significant; k = Number of observations; ES = Weighted mean effect size; SL = Strength level of the correlations; TSS = Total sample size; Q-b = Q-between test; X = Insufficient number of ESs ( $k < 3$ ); BI = Behavioral intention; EMS = Emotional support; INS = Informational support; SIN = Social interaction; SN = Subjective norms; TRU = Trust; FAM = Familiarity; HM = Hedonic motivation; PEU = Perceived ease of use; PU = Perceived usefulness; SCC = S-commerce constructs; SPR = Social presence.]

**Table IX:** The moderating role of long term orientation (LTO).

	EMS-BI	INS-BI	SIN-BI	SN-BI	TRU-BI	FAM-BI	HM-BI	PEU-BI	PU-BI	SCC-BI	SPR-BI
<b>High LTO</b>											
k	18	14	X	9	47	10	19	6	14	14	X
ES	0.527	0.567	X	0.501	0.685	0.534	0.662	0.533	0.651	0.647	X
SL	Large	Large	X	Large	Large	Large	Large	Large	Large	Large	X
TSS	6406	4829	X	2925	16343	4271	6641	1823	5075	5102	X
p-value	0.000	0.000	X	0.000	0.000	0.000	0.000	0.000	0.000	0.000	X
z-value	7.442	6.852	X	4.279	20.028	6.870	8.613	6.793	10.233	5.310	X
<b>Low LTO</b>											
k	4	4	X	6	15	5	7	5	11	5	X
ES	0.497	0.523	X	0.780	0.666	0.564	0.677	0.451	0.542	0.554	X
SL	Medium	Large	X	Large	Large	Large	Large	Medium	Large	Large	X
TSS	1613	1613	X	2164	4794	1346	2647	1754	3694	1636	X
p-value	0.001	0.001	X	0.000	0.000	0.000	0.000	0.000	0.000	0.010	X
z-value	3.271	3.309	X	6.630	10.824	5.174	5.410	5.055	7.051	2.563	X
<b>Q-test</b>											
Q-b	0.05 <sup>n.s</sup>	0.10 <sup>n.s</sup>	X	<b>5.92<sup>a</sup></b>	0.17 <sup>n.s</sup>	0.08 <sup>n.s</sup>	0.02 <sup>n.s</sup>	0.69 <sup>n.s</sup>	2.20 <sup>n.s</sup>	0.27 <sup>n.s</sup>	X
p-value	0.825	0.751	X	<b>0.015</b>	0.682	0.772	0.881	0.405	0.138	0.604	X

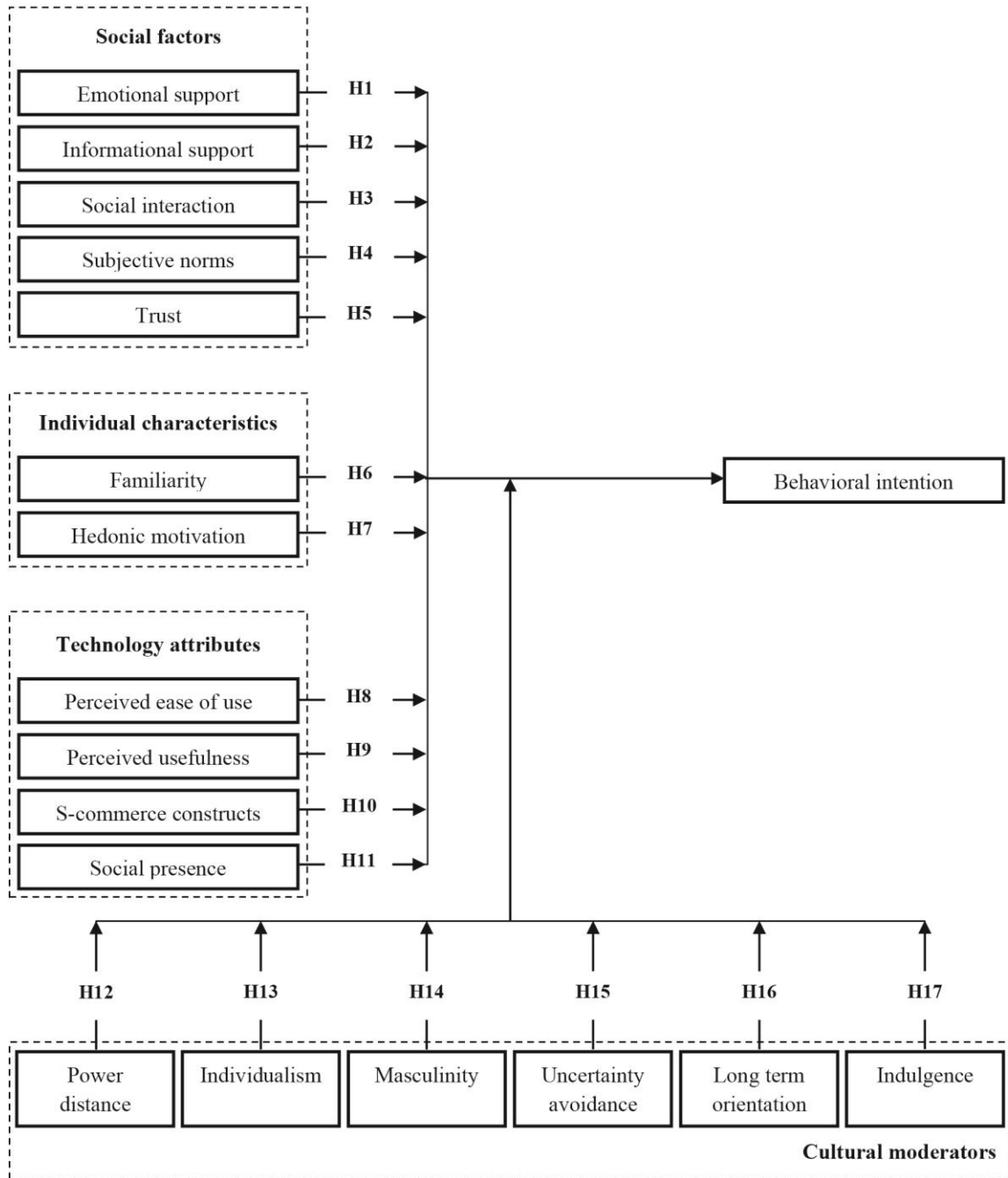
[**Note(s):** <sup>a</sup> = Significant at  $p < 0.05$ ; <sup>b</sup> = Significant at  $p < 0.01$ ; <sup>c</sup> = Significant at  $p < 0.001$ ; <sup>n.s</sup> = Not significant; k = Number of observations; ES = Weighted mean effect size; SL = Strength level of the correlations; TSS = Total sample size; Q-b = Q-between test; X = Insufficient number of ESs ( $k < 3$ ); BI = Behavioral intention; EMS = Emotional support; INS = Informational support; SIN = Social interaction; SN = Subjective norms; TRU = Trust; FAM = Familiarity; HM = Hedonic motivation; PEU = Perceived ease of use; PU = Perceived usefulness; SCC = S-commerce constructs; SPR = Social presence.]



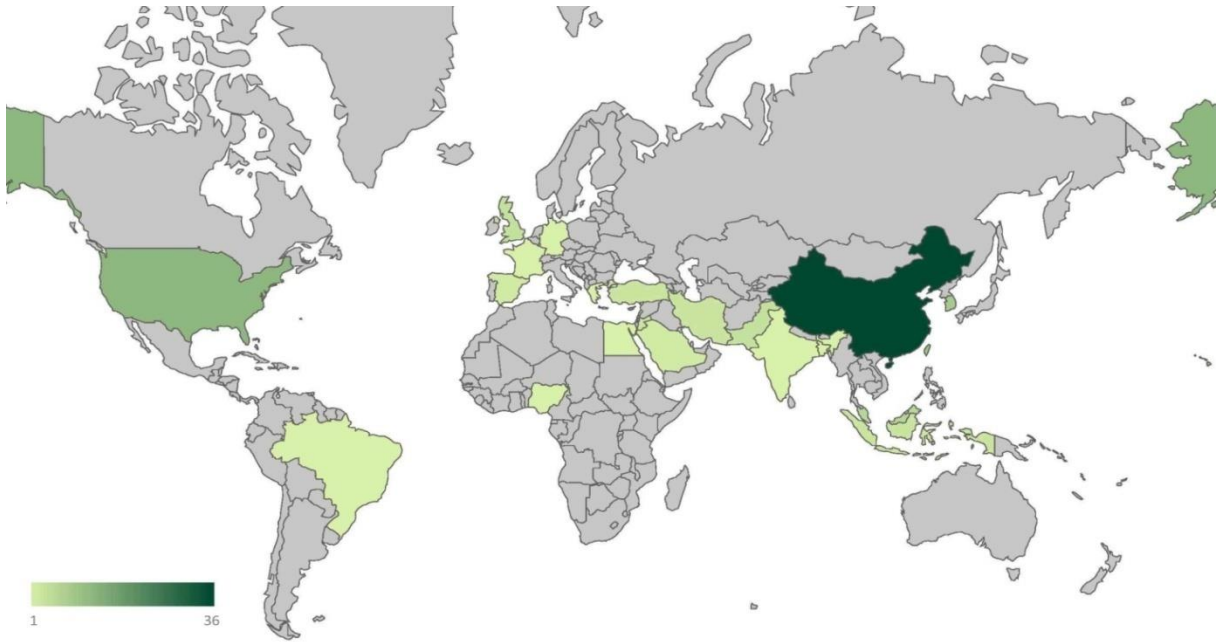
**Table X:** The moderating role of indulgence (IND).

	EMS-BI	INS-BI	SIN-BI	SN-BI	TRU-BI	FAM-BI	HM-BI	PEU-BI	PU-BI	SCC-BI	SPR-BI
<b>High IND</b>											
k	10	9	3	8	24	10	15	7	17	8	5
ES	0.589	0.593	0.266	0.773	0.690	0.509	0.710	0.520	0.615	0.758	0.453
SL	Large	Large	Small	Large	Large	Large	Large	Large	Large	Large	Medium
TSS	3420	3220	763	2007	7382	3138	4972	2386	5606	2202	1418
p-value	0.000	0.000	0.007	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
z-value	6.644	5.916	2.709	8.699	14.426	7.003	8.633	7.051	10.027	5.449	4.190
<b>Low IND</b>											
k	12	9	8	7	38	5	11	4	8	11	14
ES	0.461	0.519	0.612	0.407	0.675	0.607	0.598	0.455	0.585	0.496	0.538
SL	Medium	Large	Large	Medium	Large	Large	Large	Medium	Large	Medium	Large
TSS	4599	3222	2972	3082	13755	2479	4316	1191	3163	4536	5328
p-value	0.000	0.000	0.000	0.001	0.000	0.000	0.000	0.000	0.000	0.000	0.000
z-value	5.370	4.981	11.710	3.459	17.626	6.249	5.753	4.550	6.453	3.516	8.706
<b>Q-test</b>											
Q-b	1.67 <sup>n.s</sup>	0.44 <sup>n.s</sup>	<b>14.00<sup>c</sup></b>	<b>12.02<sup>c</sup></b>	0.14 <sup>n.s</sup>	1.06 <sup>n.s</sup>	1.57 <sup>n.s</sup>	0.40 <sup>n.s</sup>	0.14 <sup>n.s</sup>	3.51 <sup>n.s</sup>	0.71 <sup>n.s</sup>
p-value	0.196	0.509	<b>0.000</b>	<b>0.001</b>	0.713	0.304	0.210	0.527	0.704	0.061	0.401

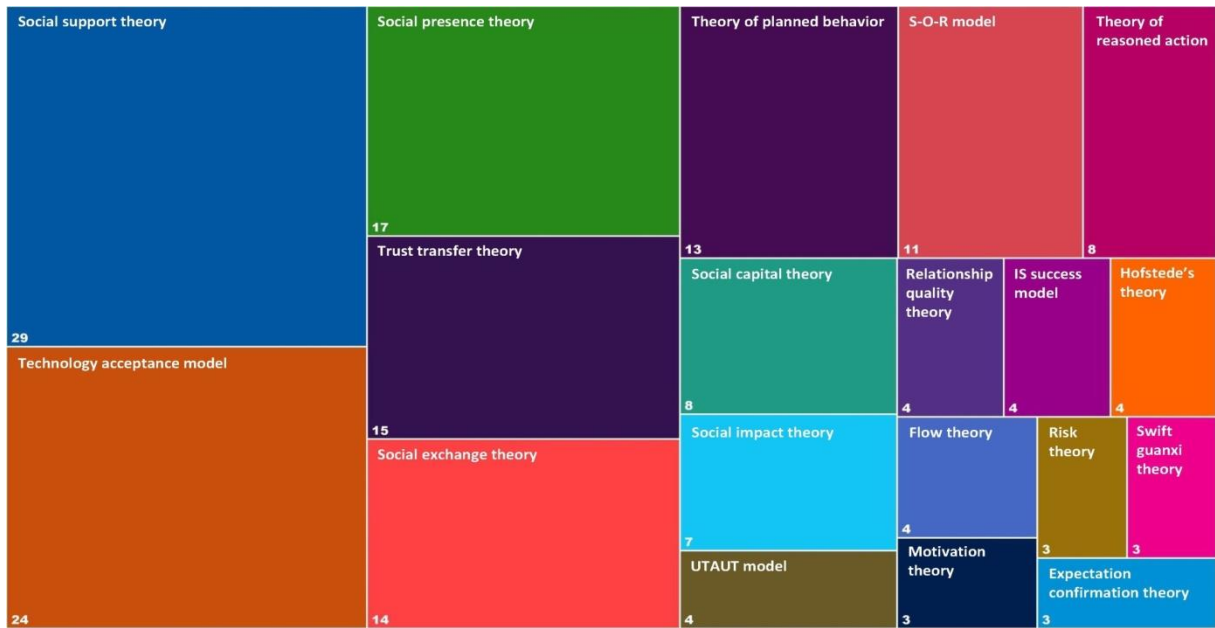
[**Note(s):** <sup>a</sup> = Significant at  $p < 0.05$ ; <sup>b</sup> = Significant at  $p < 0.01$ ; <sup>c</sup> = Significant at  $p < 0.001$ ; <sup>n.s</sup> = Not significant; k = Number of observations; ES = Weighted mean effect size; SL = Strength level of the correlations; TSS = Total sample size; Q-b = Q-between test; BI = Behavioral intention; EMS = Emotional support; INS = Informational support; SIN = Social interaction; SN = Subjective norms; TRU = Trust; FAM = Familiarity; HM = Hedonic motivation; PEU = Perceived ease of use; PU = Perceived usefulness; SCC = S-commerce constructs; SPR = Social presence.]



**Figure 1:** Research model.



**Figure 2:** Number of s-commerce studies conducted per country.



**Figure 3:** The most frequently used theories in the included s-commerce studies.

**Appendix A:** The s-commerce studies included in the meta-analysis.

No.	Study	N	Location	Research context
1	Abed (2020)	181	Saudi Arabia	S-commerce site
2	Akman and Mishra (2017)	142	Turkey	S-commerce site
3	Al-Adwan and Kokash (2019)	237	Jordan	Facebook
4	Al-Adwan (2019)	418	Jordan	S-commerce site
5	Al-Dwairi (2017)	295	Jordan	S-commerce site
6	Al-Tit <i>et al.</i> (2020)	389	Saudi Arabia	Facebook & Twitter
7	Aslam <i>et al.</i> (2019)	344	Pakistan	Mobile s-commerce
8	Attar <i>et al.</i> (2020)	107	Asian countries	S-commerce site
9	Aydin (2019a)	269	Turkey	S-commerce site
10	Aydin (2019b)	268	Turkey	S-commerce site
11	Bai <i>et al.</i> (2015)	212	China	Renren
12	Bugshan and Attar (2020)	400	Asia	S-commerce site
13	Chen <i>et al.</i> (2017)	243	China	Taobao
14	Chen <i>et al.</i> (2018)	281	Taiwan	S-commerce site
15	Chen and Shen (2015)	376	China	Douban
16	Chen <i>et al.</i> (2021)	282	China	Xiaohongshu
17	Cheng <i>et al.</i> (2019a)	395	Taiwan	S-commerce site
18	Cheng <i>et al.</i> (2019b)	614	China	S-commerce apps
19	Cheng <i>et al.</i> (2020)	972	China	S-commerce apps
20	Cho and Son (2019)	446	USA	S-commerce site
21	Dabbous <i>et al.</i> (2020)	206	Lebanon	Facebook & Instagram
22	Dashti <i>et al.</i> (2019)	514	Iran	S-commerce site
23	Doha <i>et al.</i> (2019)	193	N/A	S-commerce site
24	Dong and Wang (2018)	511	China	WeChat
25	Elgheit (2019)	599	Egypt	E-commerce site
26	Fan <i>et al.</i> (2019)	333	China	WeChat
27	Farivar <i>et al.</i> (2017)	187	N/A	Etsy
28*	Featherman and Hajli (2016)	467	N/A	E-billpay service
		557	N/A	E-billpay service
29	Friedrich <i>et al.</i> (2019)	237	Germany	S-commerce site
30	Fu <i>et al.</i> (2019)	370	China	S-commerce site
31	Gan and Wang (2017)	277	China	S-commerce site
32	Ghahtarani <i>et al.</i> (2020)	254	Iran	S-commerce site
33	Goraya <i>et al.</i> (2019)	784	China	Holiday booking site
34	Hajli (2014)	200	UK	Facebook
35	Hajli (2015)	243	UK	Social network site
36	Hajli (2019)	512	Iran	S-commerce site
37	Hajli <i>et al.</i> (2015)	200	Malaysia	Social media sites
38	Hajli and Sims (2015)	230	UK	Facebook
39	Hajli <i>et al.</i> (2017a)	199	UK	S-commerce site
40	Hajli <i>et al.</i> (2017b)	201	N/A	Facebook
41	Handarkho (2020a)	568	Indonesia	S-commerce site
42	Handarkho (2020b)	288	Indonesia	S-commerce site
43	Handarkho (2020c)	750	Indonesia	S-commerce site
44	Hassan <i>et al.</i> (2018)	306	Pakistan	Social network site
45	Hew <i>et al.</i> (2016)	208	Malaysia	Mobile s-commerce
46*	Hossain <i>et al.</i> (2020)	232	USA	S-commerce site
		279	South Korea	S-commerce site
47	Hossain and Kim (2020)	549	USA; South Korea	Social network site
48	Hung <i>et al.</i> (2015)	446	Taiwan	Facebook
49	Hung <i>et al.</i> (2018)	166	Taiwan	Social network site
50	Hussain <i>et al.</i> (2021)	430	China	Weitao
51	Kim <i>et al.</i> (2012)	365	South Korea	S-commerce site
52	Kim and Park (2013)	371	South Korea	S-commerce site
53	Kim <i>et al.</i> (2013)	232	USA	S-commerce coupons
54	Ko (2020)	284	Taiwan	Facebook

55	Lee and Choi (2014)	324	South Korea	S-commerce site
56	Leung <i>et al.</i> (2019)	287	China	WeChat
57	Li (2019)	408	Taiwan	Kidshome
58	Li and Ku (2018)	357	Taiwan	PChome & Kidshome
59	Liang <i>et al.</i> (2011)	411	Taiwan	Plurk
60	Lin and Wu (2015)	202	Taiwan	Online group-buying
61	Lin <i>et al.</i> (2018)	511	China	WeChat
62	Lin <i>et al.</i> (2017)	506	China	Weibo
63	Liu <i>et al.</i> (2019)	288	China	Dianping
64	Liu <i>et al.</i> (2016)	349	China	S-commerce site
65	Lu <i>et al.</i> (2016a)	546	China	Taobao
66	Lu <i>et al.</i> (2016b)	260	China	Online group-buying
67	Maia <i>et al.</i> (2020)	160	Brazil	S-commerce site
68	Makmor <i>et al.</i> (2019)	100	Malaysia	S-commerce site
69	Molinillo <i>et al.</i> (2020)	437	Spain	Facebook
70	Molinillo <i>et al.</i> (2018)	201	Spain	S-commerce site
71*	Ng (2013)	176	East Asia	Facebook
		108	Latin America	Facebook
72	Ooi <i>et al.</i> (2018)	495	Malaysia	Mobile s-commerce
73	Osatuyi <i>et al.</i> (2020)	531	USA	S-commerce site
74	Osatuyi and Turel (2018)	531	USA	S-commerce site
75*	Qin (2020)	131	USA	S-commerce site
		125	China	S-commerce site
76	Qin and Kong (2015)	204	USA	S-commerce site
77	Rahman <i>et al.</i> (2020)	300	Bangladesh	Social network site
78	Rashid <i>et al.</i> (2020)	303	China	S-commerce site
79	Riaz <i>et al.</i> (2020)	232	Pakistan	Social network site
80	Saprikis and Markos (2018)	433	Greece	Social network site
81	Shahbaz <i>et al.</i> (2020)	367	China	Taobao
82	Shanmugam <i>et al.</i> (2019)	100	Malaysia	Social media sites
83	Sharma and Crossler (2014)	252	USA	Social network site
84	Sharma <i>et al.</i> (2019)	215	USA	Social network site
85	Sheikh <i>et al.</i> (2019)	343	Pakistan	Social network site
86	Shekhar and Jaidev (2020)	267	India	Social network site
87	Shi and Chow (2015)	375	China	Weibo
88	Shin (2013)	329	South Korea	S-commerce site
89	Sohn and Kim (2020)	144	South Korea	S-commerce site
90	Sun <i>et al.</i> (2016)	215	China	WeChat
91	Sun <i>et al.</i> (2019)	504	China	S-commerce site
92	Tang and Zhang (2020)	360	USA	S-commerce site
93	Teh <i>et al.</i> (2015)	220	Malaysia	S-commerce site
94	Um (2019)	354	South Korea	S-commerce site
95	Wang <i>et al.</i> (2020)	310	China	Xiaohongshu
96	Wang <i>et al.</i> (2019a)	402	China	WeChat
97	Wang <i>et al.</i> (2019b)	408	USA	Amazon
98	Wang and Herrando (2019)	318	USA	S-commerce site
99	Wu (2021)	323	Taiwan	Social media sites
100	Yahia <i>et al.</i> (2018)	205	Asian countries	Instagram
101*	Yang <i>et al.</i> (2016)	390	China	Meilishuo
		523	China	Meilishuo
102	Yang (2018)	302	China	WeChat
103	Yang (2019)	243	China	WeChat
104	Yeon <i>et al.</i> (2019)	323	South Korea	Social network site
105*	Yin <i>et al.</i> (2019)	291	China	S-commerce site
		227	France	S-commerce site
106	Yusuf <i>et al.</i> (2018)	218	Nigeria	Konga & Jumia
107*	Zhang <i>et al.</i> (2014)	563	China	Renren
		446	China	Weibo

108	Zhao <i>et al.</i> (2019)	206	China	WeChat
109	Zhou (2019)	339	China	S-commerce site

[**Note(s):** \* = Studies including multiple datasets; N/A = Not available; N = Sample size; UK = United Kingdom; USA = United States of America.]

**Appendix B:** The cultural dimensions of the examined countries.

Cultural dimensions	PDI		IDV		MAS		UAV		LTO		IND	
	CS	CL	CS	CL	CS	CL	CS	CL	CS	CL	CS	CL
Median score	68.0		30.0		48.5		70.0		44.6		42.9	
<b>Countries</b>												
Bangladesh	80	High	20	Low	55	High	60	Low	47	High	20	Low
Brazil	69	High	38	High	49	High	76	High	44	Low	59	High
China	80	High	20	Low	66	High	30	Low	87	High	24	Low
Egypt	70	High	25	Low	45	Low	80	High	7	Low	4	Low
France	68	Low	71	High	43	Low	86	High	63	High	48	High
Germany	35	Low	67	High	66	High	65	Low	83	High	40	Low
Greece	60	Low	35	High	57	High	112	High	45	High	50	High
India	77	High	48	High	56	High	40	Low	51	High	26	Low
Indonesia	78	High	14	Low	46	Low	48	Low	62	High	38	Low
Iran	58	Low	41	High	43	Low	59	Low	14	Low	40	Low
Jordan	70	High	30	Low	45	Low	65	Low	16	Low	43	High
Lebanon	75	High	40	High	65	High	50	Low	14	Low	25	Low
Malaysia	104	High	26	Low	50	High	36	Low	41	Low	57	High
Nigeria	80	High	30	Low	60	High	55	Low	13	Low	84	High
Pakistan	55	Low	14	Low	50	High	70	Low	50	High	0	Low
Saudi Arabia	95	High	25	Low	60	High	80	High	36	Low	52	High
South Korea	60	Low	18	Low	39	Low	85	High	100	High	29	Low
Spain	57	Low	51	High	42	Low	86	High	48	High	44	High
Taiwan	58	Low	17	Low	45	Low	69	Low	93	High	49	High
Turkey	66	Low	37	High	45	Low	85	High	46	High	49	High
UK	35	Low	89	High	66	High	35	Low	51	High	69	High
USA	40	Low	91	High	62	High	46	Low	26	Low	68	High

[**Note(s):** CS = Cultural score; CL = Cultural level; UK = United Kingdom; USA = United States of America; PDI = Power distance; IDV = Individualism; MAS = Masculinity; UAV = Uncertainty avoidance; LTO = Long term orientation; IND = Indulgence.]