



Examining consumer adoption of social commerce: An extended META-UTAUT model

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ABSTRACT

Social commerce has evolved into a mainstream channel for marketers and businesses for selling products online. However, consumers in many developing economies have yet to fully adopt social commerce technology. This research, therefore, aims to develop and empirically validate a conceptual model for understanding the factors influencing consumer adoption of social commerce in Bangladesh using an adapted and extended version of the Meta-UTAUT model. Analysis was undertaken to determine the appropriateness of external constructs such as trust, social support, anxiety, grievance redressal, innovativeness, and continuous participation intention. This research collected data from 402 social commerce users from Bangladesh to test and validate the proposed research model. The results suggest that performance expectancy, effort expectancy, innovativeness and trust have a direct influence on consumer attitude, whilst social influence, grievance redressal, facilitating conditions, social support, anxiety, and attitude, significantly influence usage behavior. The results also found that usage behavior is a strong predictor of continuous participation intention. This research contributes to existing knowledge by conceptualizing and validating a technology adoption model, which emphasizes the role of anxiety and grievance redressal in consumer acceptance of social commerce.

1. Introduction

Social commerce is described as the intersection of social media and e-commerce and is reshaping how consumers discover and purchase products online, integrating shopping features directly into social experiences (McKinsey and Company, 2022). Social commerce facilitates knowledge sharing, promotional content creation and the buying and selling of products and services through social media platforms (Al-Omouh et al., 2022). The technology offers a seamless shopping experience for social media users, where customers browse items while using social media, read feedback comments, ratings and reviews, then decide whether to make a purchase (Hsu and Lin, 2016). Small and medium-size businesses are expanding product and brand awareness utilizing social media and mobile-friendly customized business interactions (Oladapo, 2021). Many studies have examined consumer purchase intentions in social commerce. Some focus on the features of

social commerce to enhance customer experiences, while others explore factors such as consumer trust, perceived usefulness, impulsive buying behavior, system risk, and social support that influence consumer intentions to buy through this technology (Liang et al., 2011; Makmor et al., 2019).

Despite the body of existing research, theoretical and practical shortcomings remain within the literature on social commerce. Over the years, studies have employed widely cited theoretical frameworks and models, including the Technology Acceptance Model (TAM), the Stimulus-Organism-Response (S-O-R) model, social support theory, trust transfer theory, and social presence theory (Liang et al., 2011; Makmor et al., 2019). However, the incorporation of theories such as the Unified Theory of Acceptance and Use of Technology (UTAUT) and the Meta-UTAUT model, appears to be less frequent.

In addition to theoretical gaps, social commerce research has explored a range of positive and negative factors affecting consumer

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behavior. Positive factors often include perceived usefulness (Biucky and Harandi, 2017; Liu et al., 2020), perceived ease of use (Biucky and Harandi, 2017), and trust (Al-Adwan, 2019; Makmor et al., 2018). Negative factors typically center on perceived risk and system risk (Biucky and Harandi, 2017; Farivar et al., 2017). While these factors have been studied extensively, a more holistic consumer-focused theoretical model incorporating less frequently explored constructs is essential for generating deeper insights into consumer adoption of social commerce.

A significant gap in the literature is the limited investigation of technology- and context-specific factors within social commerce research. Although a variety of variables have been validated to examine consumer behavioral intention, relatively few studies have considered attitude as a dependent variable. The existing literature has identified several independent variables that significantly influence consumer attitudes. For example, studies by Cho and Son (2019) and Samarasinghe and Silva (2019) explored the roles of perceived usefulness and perceived ease of use, while Lin and Wu (2015) and Rashid et al. (2017) examined factors such as trust, heuristic and systematic factors, peer norms, and perceived benefits. These studies consistently found positive and significant relationships between the factors and consumer attitudes.

A positive consumer attitude towards a brand and its products is crucial for the success of marketing strategies. Factors such as consumer involvement, knowledge, experience, and situational context, play significant roles in shaping their attitudes (Carvalho, 2008). Models that measure attitudes and predict consumer behavior are essential across various industries (Carvalho, 2008). However, within the realm of social commerce, attitudes—particularly their relationship with usage behavior, remain underexplored, presenting a valuable opportunity for further research.

Perceived usefulness and ease of use are the most studied predictors of behavioral intention (Makmor et al., 2019; Samarasinghe and Silva, 2019). Emotional and informational support are also frequently used variables (Friedrich et al., 2021; Rashid et al., 2020). Within the UTAUT and UTAUT2 models, social influence and facilitating conditions are examined alongside behavioral intention (Abed, 2018; Sheikh et al., 2017). Predictors of consumer usage behavior include habit (Sheikh et al., 2017), heuristic factors (Yeon et al., 2019), seller uncertainty, and social support (Bai et al., 2015). Many studies use behavioral intention as a proxy for usage behavior (Abed, 2018; Chen et al., 2016) but investigating usage behavior can address issues related to response inflation and narrow the intention-usage gap (Jeyaraj et al., 2023; Kwon et al., 2020; Faries, 2016). Additionally, consumer buying habits are significantly influenced by social and cultural environments, regulations, and infrastructure. The literature review highlighted that the fundamental constraint of most social commerce studies is the generalizability of the findings. Many researchers argue that a successful business model could not be directly executed in different societies due to the cultural, political, social, and economic restrictions (Ondrus et al., 2009).

The discussion above identifies several critical gaps in the social commerce literature. Current theoretical frameworks have been only sparingly examined, making it essential to adopt and extend new models for studying social commerce adoption. Additionally, context-specific variables have not been sufficiently considered when implementing and validating new constructs. A focus on actual user attitudes and usage behaviors, rather than just behavioral intentions is crucial for gaining a realistic understanding of social commerce experiences. Furthermore, developing a comprehensive model that integrates new variables and is validated in the context of developing countries is imperative. Bridging these gaps will advance the social commerce technology space and establish a more robust theoretical framework that incorporates context-specific constructs.

Addressing the identified gaps, this study aims to develop and empirically validate a conceptual model that examines the factors

influencing consumer adoption and usage of social commerce. In doing so, this research makes several contributions to the field of social commerce. It is the first to explore social commerce adoption specifically in the context of Bangladesh by validating a consumer-centered conceptual model, based on Meta-UTAUT, which includes unique constructs not previously studied in this domain. Unlike existing models that focus on organizational factors, this study emphasizes consumer attitudes and behavioral factors, providing a more nuanced understanding of social commerce adoption. Additionally, by addressing both positive and negative factors such as anxiety, innovativeness, and grievance redressal, this research fills gaps overlooked by previous studies. This research also shifts focus from merely measuring behavioral intentions to analyzing usage behavior, thus bridging the intention-behavior gap. Practically, the findings will assist social commerce platforms in Bangladesh by highlighting consumer concerns and offering solutions to enhance adoption, ultimately contributing to a more effective implementation of social commerce technologies.

Given this, the remaining sections of the article are structured as follows: The next section develops the framework and formulates relevant hypotheses. Section 3 details the methods employed in the research. The results are presented in Section 4 and discussed in Section 5. Finally, Section 6 provides concluding remarks.

2. Theoretical framework development

This section establishes the theoretical background essential for empirical research by reviewing the various theories and models employed in social commerce studies. It highlights the most frequently adopted theories and identifies the most suitable framework for this research, offering a rationale for its selection. This theoretical review also facilitates the formulation of hypotheses for the study.

2.1. Dominant models/theories of social commerce

Social support refers to the role of individuals who are responsible for and care about the problems that arise (Makmor et al., 2018). Most studies have adopted dimensions of social support theory (i.e., emotional and informational support) or have treated social support as an external individual construct (Liu et al., 2020). However, examining only social support theory is less relevant as it provides information solely on the components of social support. TAM is the second most utilized model in the social commerce context and has been validated by many scholars on the topic of technology adoption (Rashid et al., 2017; Samarasinghe and Silva, 2019). Venkatesh and Davis (2000) demonstrated that the constructs of TAM such as perceived ease of use and perceived usefulness are effective variables that influence behavioral intention. However, in the social commerce context, TAM was examined with other external variables such as trust, risk, and social support. TAM has been extensively used in social commerce research; however, it provides only a limited explanation of social commerce adoption (Ajibade, 2018). Therefore, TAM as an individual model is less appropriate to investigate a more complex phenomenon like social commerce adoption. The S-O-R model has been adopted in social commerce which has been found to be the third most utilized framework within this domain. Mehrabian and Russell (1974) referred to the S-O-R model to better understand consumer behavior. However, the S-O-R model does not contain any specific characteristics other than the different variables randomly selected and integrated by the researcher. Therefore, this model is less rigorous in nature. Social presence is another theory that is frequently used in social commerce research (Bhat and Singh, 2018; Friedrich et al., 2021). The Meta-Analysis conducted by Dwivedi et al. (2023), indicated that social presence has no significant effect on behavioral intention. This finding is consistent with the prior studies on social commerce; hence it was deemed appropriate to exclude this theory from this study.

Based on our analysis, we assert that the models and theories used in

social commerce to date, exhibit a number of shortcomings and do not possess an adequate number of constructs to fully explain consumer behavior, especially in the context of social commerce. Furthermore, a number of existing studies seem to use the same hypotheses, which somewhat limits the diversity of the results. Consequently, this study has decided to use a more comprehensive approach for its investigation. This is discussed in the next section.

2.2. Overview of proposed theoretical framework based on Meta-UTAUT

After considering the underlying reasons presented above, this study analyzed the potential for considering Meta-UTAUT (Dwivedi et al., 2019) as a theoretical foundation for guiding this research. There are several reasons to consider Meta-UTAUT model. Firstly, as the Meta-UTAUT model is based on UTAUT, it provides a comprehensive set of constructs developed from various theories with four independent and two dependent variables, which makes it appropriate as a theoretical foundation (Patil et al., 2020). Secondly, Meta-UTAUT includes attitude, which plays a vital role in consumer acceptance and use of a new product, service, and innovation (Patil et al., 2020). Consumer attitude is a fundamental construct that affects the consumer’s selective process, learning, and buying decisions. Thirdly, Meta-UTAUT does not require moderators as an integral element of the model. Fourthly, most social commerce research studies focus on behavioral intention, while only a few studies examine consumer usage behavior (Nadeem et al., 2017; Sheikh et al., 2017), which is an integral element of Meta-UTAUT model.

After considering the underlying reasons presented above, Meta-UTAUT is deemed an appropriate model to guide the theoretical development of this research. However, the Meta-UTAUT model does not include all suitable constructs required to understand consumer adoption of social commerce in the context of Bangladesh. Therefore, we assert that the model requires further adaptation to include additional constructs to make it more suitable for examining social commerce adoption from the perspective of a developing country. The proposed

conceptual model is outlined in Fig. 1.

2.3. Hypotheses development

This research utilizes the full set of independent constructs of the Meta-UTAUT model (performance expectancy, effort expectancy, social influence, facilitating conditions) and two dependent constructs (attitude and usage behavior). This study opted out of using behavioral intention as the main purpose of this study was to understand the impact of factors affecting consumer usage behavior.

Although the Meta-UTAUT constructs include significant relevant context for this study, we posit that the existing framework cannot provide a comprehensive understanding of social commerce adoption. That said, this research proposes an extension of the core model by including external constructs such as social support, trust, anxiety, innovativeness, grievance redressal, and continuous participation intention, to propose a more comprehensive model. This we believe will offer additional insight to the investigation of the influencing elements for social commerce adoption.

2.3.1. Performance expectancy

Performance expectancy (PE) was conceptualized by mapping several similar constructs, including perceived usefulness, extrinsic motivation, relative advantage, job fit, and outcome expectation (Venkatesh et al., 2003). The research by Venkatesh et al. (2012) defined performance expectancy from the consumer perspective as the degree to which using technology will benefit consumers in performing certain activities. Performance expectancy refers to using technology for a quick and easy system to accomplish a task, improve job performance, and enhance productivity (Venkatesh et al., 2003). Many technology acceptance studies have found performance expectancy to be a significant predictor of attitude (Khurshid et al., 2019; Patil et al., 2020). Performance expectancy may shape an individual’s attitude by the extent to which the technology may prove useful (Dwivedi et al., 2019). Therefore, it is

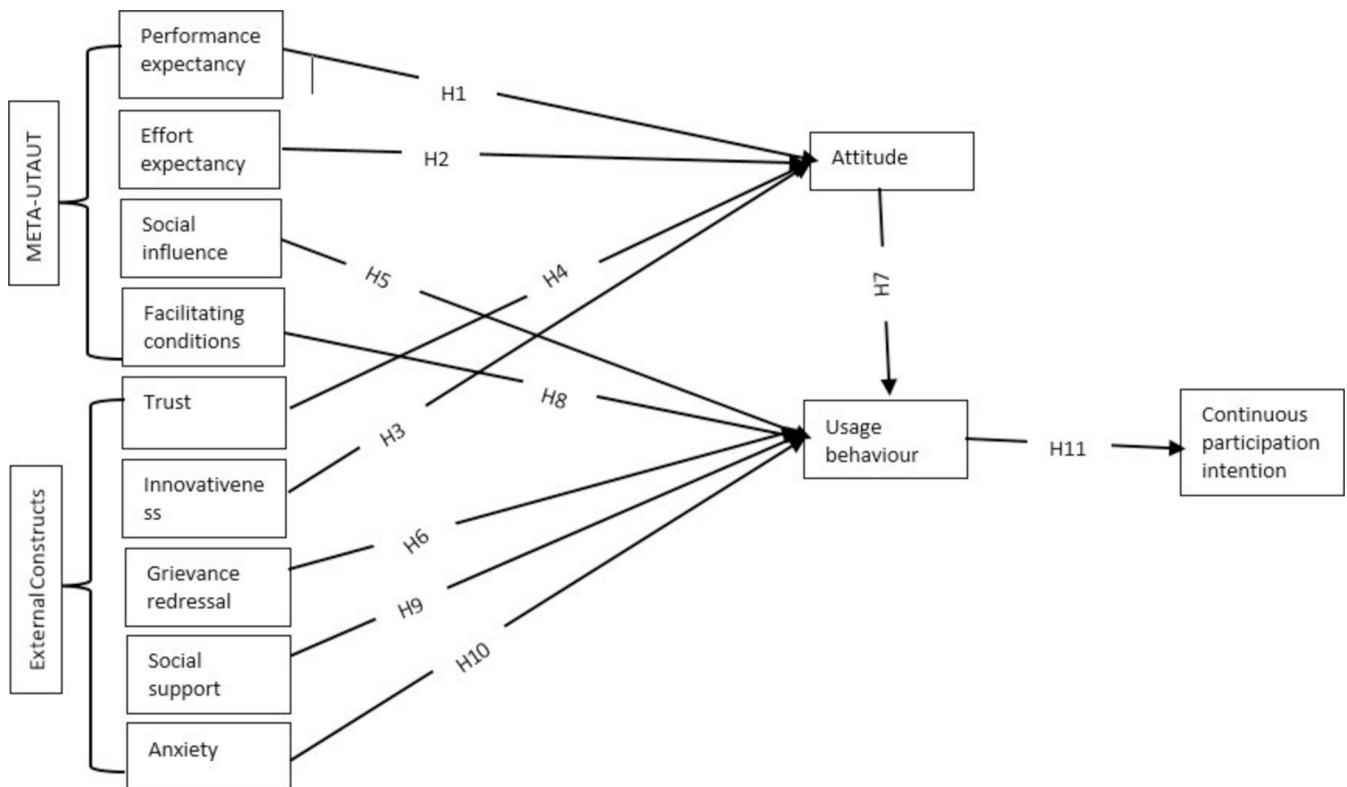


Fig. 1. Proposed Conceptual Model (Source: Adapted from Dwivedi et al., 2019).

important to utilize performance expectancy with consumer attitude in this research with the following hypothesis:

H1. Performance expectancy positively influences consumers' attitudes towards the use of social commerce.

2.3.2. Effort expectancy

Effort expectancy (EE) consists of several constructs, including perceived ease of use, complexity, and ease of use (Venkatesh et al., 2003). Effort expectancy highlights the interplay between the effort exerted, the performance outcomes resulting from that effort, and the subsequent acknowledgment or reward for the effort (Ghalandari, 2012; Venkatesh et al., 2003). Effort expectancy influences potential adopters of systems and affects users' experience in the adoption of new technology (Samarasinghe and Silva, 2019). A number of technology-based studies have investigated effort expectancy with attitude and found a positive and significant relationship (Khurshid et al., 2019; Patil et al., 2020). It is necessary that the system should be easy to learn, easy to use and straight forward to adopt. The interaction among consumers and between consumers and vendors should be comfortable, flexible, and effortless. The learning process of social commerce should be understandable, less time-consuming, and uncomplicated. In the analysis of Meta-UTAUT, effort expectancy was found to have a significant relationship with and was a strong predictor to attitude (Dwivedi et al., 2019). Due to the lack of analysis on effort expectancy within social commerce research, it's role should be investigated in this study as follows:

H2. Effort expectancy positively influences consumers' attitudes towards the usage of social commerce.

2.3.3. Innovativeness

Bao et al. (2012) argued that consumers with high *innovativeness* (IV) are always ready to experience new technologies and products. Innovative products can attract a consumer's attention, generating a positive or negative impression of the product. A positive impression enhances the probability of adopting new technology (Bao et al., 2012). Although innovativeness has not been integrated into any theoretical models used to examine social commerce related issues, it has been applied as an important predictor of new technology adoption studies (Patil et al., 2020). Higher levels of innovativeness leads to greater consumer intention to adopt technology (Williams, 2021). Innovativeness is associated with high levels of individualism and low levels of uncertainty avoidance (Steenkamp et al., 1999). Many technology adoption studies found innovativeness to be a strong predictor of attitude (Kim et al., 2021; Patil et al., 2020). The relationship between innovativeness and attitude has, to the best of our knowledge, yet to be examined in social commerce research despite being influential within technology acceptance research. Social commerce concepts could present innovative ways for consumers to search, compare, and purchase products. Considering that innovativeness may play a positive and significant role within social commerce adoption, the following hypothesis is proposed:

H3. Innovativeness positively influences consumers' attitudes towards the usage of social commerce.

2.3.4. Trust

Trust (TRU) can be a complex characteristic to define and is treated both as a unitary and multidimensional concept (Mcknight and Chervany, 2001). When the rules are not satisfactory, online consumers reduce the risk by relying on trust (Gefen and Straub, 2004). Trust is more important where electronic transactions are concerned, as they are characterized by anonymity and a lack of social cues (Zhou et al., 2013). According to Hajli et al. (2015), when consumers adopt forums and communities, or observe others' reviews and ratings of products and services, the levels of trust and familiarity increase on social networking sites. Trust builds a long-term relationship with the vendor and

encourages future transactions (Grabner-Kräuter and Kaluscha, 2003). A number of studies have considered trust in the context of influencing consumers' technology adoption (Cheung and To, 2017; Khurshid et al., 2019; Patil et al., 2020). In social commerce research, trust is one of the most frequently employed external constructs for explaining consumers' behavioral intention (Abed, 2018; Al-Adwan, 2019; Liu et al., 2020; Tuncer, 2021). Trust has been used in a multidimensional way in many social commerce studies, such as trust in a platform/website (Farivar et al., 2017), trust in a seller (Yahia et al., 2018; Zhao et al., 2019) and trust in a member or community (Chen and Shen, 2015; Farivar et al., 2017). To our knowledge, only two studies have hypothesized trust and consumer attitude, with both finding positive and significant relationships in social commerce adoption research (Rashid et al., 2017; Yeon et al., 2019). As building trust in a social commerce platform may shape consumer attitudes towards social commerce adoption, the following hypothesis is proposed:

H4. Trust positively influences consumers' attitudes towards the use of social commerce.

2.3.5. Social influence

Social influence (SI) refers to a friend, or a member of a particular group who influence the behavior of others by providing information, recommendations and help in decision making (Venkatesh et al., 2003). When an individual feels the importance of others' beliefs in decision making, social influence becomes the biggest supporting factor, which encourages people to adopt a new system (Brata and Amalia, 2018). Venkatesh et al.'s (2012) study showed that social influence significantly affects consumer behavior towards technology acceptance. The majority of technology acceptance studies have utilized social influence with behavioral intention (Abed, 2018; Friedrich et al., 2021; Sheikh et al., 2017) and found positive and significant relationships. However, this study hypothesizes that social influence has a direct and significant impact on consumer usage behavior. Given that, the following hypothesis is proposed:

H5. Social influence positively influences consumers' social commerce usage.

2.3.6. Grievance redressal

Grievance redressal (GR) is a construct that addresses disputes between consumers and service providers. Grievance redressal is a critical process in service provision designed to address and resolve issues and complaints raised by customers (Khurshid et al., 2019). In specific countries such as India, the grievance redressal system deals with various problems of citizens' everyday lives and attempts to solve them via interaction with government systems (Khurshid et al., 2019; Rana et al., 2017). This system supports people and society to resolve any issues that may arise by the consumers as efficiently as possible. A limited number of technology acceptance studies have incorporated grievance redressal and found it to have a positive and significant impact on consumers' behavior. For example, Kumar et al. (2018) examined the m-wallet system and found a positive impact on consumers' continuous intention to use technology. Patil et al. (2020) found a significant and positive influence on consumers' mobile payment adoption in the context of India. Khurshid et al. (2019) evaluated grievance redressal with consumers' behavioral intention in the e-government transactional system and found a positive influence on consumer behavioral intention. The literature review, however, identified that no studies have incorporated grievance redressal in social commerce despite it being a compelling and important influential factor in technology adoption studies. Thus, this research considers that grievance redressal would be a relevant construct to utilize within the research model. The rational for inclusion includes consumers having less trust in online buying systems, particularly in countries like Bangladesh, due to the risks of financial loss, deceitfulness from sellers, and a lack of information regarding safety and security (Farhin, 2018). We posit that grievance redressal

may provide support in dealing with various issues related to customer complaints within social commerce and help customers to adopt and use this technology. Based on this, the following hypothesis is proposed:

H6. Grievance redressal positively influences consumers' social commerce usage.

2.3.7. Attitude

Attitude (ATT) is an individual's positive and negative feelings on performing the target behavior (Davis, 1989). Venkatesh et al. (2003) stated that enjoyment, interest, fun, and usefulness are essential factors that positively influence consumers' attitude. Attitude could be developed through experience, which could change when new experience replaces old experience (Venkatesh et al., 2003). Several studies examined attitude as a mediating variable between independent variables such performance expectancy and effort expectancy and the dependent variables such as behavioral intention (Dwivedi et al., 2019). From a social commerce perspective, several studies found a significant positive relationship between attitude and buying intention (Shanmugam et al., 2019; Samarasinghe and Silva, 2019; Yeon et al., 2019). However, no studies to date have utilized attitude with consumer's usage behavior within a social commerce perspective. A limited number of studies have examined social commerce usage behavior, and these studies have not included the attitude construct. Utilizing attitude with consumer's usage behavior could provide valuable insights into the purchasing decisions of the targeted audience. Fishbein and Ajzen (1975) suggested that attitude is a better predictor of behavior than subjective norms and perceived behavioral control. Social commerce adoption may be significantly influenced by customers' attitudes towards online shopping, this research examines the relationship between attitude and usage behavior by formulating the following hypothesis:

H7. Attitude positively influences consumers' social commerce usage.

2.3.8. Facilitating conditions

Facilitating conditions first appeared as a perceived behavioral control within the Theory of planned behavior (TPB) model (Ajzen, 1991), which refers to one's perceived control in performing a behavior (Hajli et al., 2015). Facilitating conditions are related to the availability of sufficient resources and support for individuals to use technology. Lack of support, incomplete information, and limited resources may inhibit individuals from adopting technology (Ambarwati et al., 2020; Venkatesh et al., 2003). Existing technology acceptance studies have examined facilitating conditions and consumers' usage behavior (Weerakkody et al., 2013). Research conducted by Alam et al. (2020) highlighted that facilitating conditions have a stronger effect on actual usage behavior than behavioral intention in the context of mobile-health-app adoption. Sheikh et al. (2017) examined the UTAUT model in the context of Saudi Arabia and found that facilitating conditions have no significant relationship with behavioral intention but do have a significant relationship with usage behavior. Facilitating conditions such as internet connectivity, social networking sites, mobile devices and computers are the essential resources to operate social commerce. Sheikh et al. (2017) reported how availability of certain information technology and human support may not enhance consumers' intention to use social commerce. However, consumers pay more attention to support availability when it comes to actual purchases. Realizing that the utilization of facilitating conditions alongside usage behavior may have a greater impact on consumer adoption of social commerce, the following hypothesis is proposed:

H8. Facilitating conditions positively influence consumers' social commerce usage.

2.3.9. Social support

Social support (SS) is a vital element of a social commerce system and found to be useful in relationship building and in enhancing users'

overall well-being within social media platforms (Obst and Stafurik, 2010). Social media features allow users to share information with each other and offer a caring and helpful support system (Bai et al., 2015). Users often provide their shopping experiences, ratings, reviews and recommendations of the products or services within social commerce sites. Liang et al. (2011) found that friendship and trust between social commerce users are enhanced by sharing valuable information and increasing intention in commercial activities. In the social commerce context, social support constructs (information and emotional support) directly and indirectly influence consumer decision-making and behavior in order to adopt the social commerce system (Liang et al., 2011). Social support can reduce an individual's stress levels and improve psychological health, which in turn help individuals in decision making (Lin et al., 2012). Two social commerce studies directly utilized social support with usage behavior rather than behavioral intention. For example, Bai et al. (2015) found that social support has a significant and positive influence on usage behavior compared to other variables. A similar result was found by Shin (2013), who reported that perceived social support is the most influential factor that impacts consumer usage behavior. We assert that social support is a vital factor in improving user relationships and promote content sharing between users on social commerce platforms. New technology can be expanded and adopted when support is available for learning and advice. Sharing information leads to relationships on a social media platform and produces socialization value between users (Bai et al., 2015). Therefore, this study posits the following hypothesis:

H9. Social support positively influences consumers' social commerce usage.

2.3.10. Anxiety

Anxiety (ANX) is defined as an emotional state characterized by feelings of tension, unease, and persistent worrying thoughts and is deemed to be an expected cognitive and emotional response to a perceived threat (Barlow, 2000). Anxiety around online shopping and internet transactions can be an issue among online consumers. According to Nagar and Gandotra (2016), there is a significant disparity between the number of internet users and those who use the internet to purchase goods and services. Fraudulent activities over the internet and the absence of personal contact with products and sellers, as well as poor online transaction security and privacy protection, increase hesitation among consumers with regards to online shopping (Passyn et al., 2011). Internet usage for shopping causes additional uncertainty and risk perception due to its intangible nature, increasing online shopping anxiety (Kim and Forsythe, 2008). A higher level of anxiety reduces the confidence needed to overcome the difficulties of the system's operation (Igbaria et al., 1989). Many technology acceptance studies validated anxiety as a strong predictor that negatively influences consumers' behavior. Celik (2016) stated that anxiety is associated with a customer's interaction and online purchasing. Meuter et al.'s (2003) finding suggests that high anxiety levels reduce self-service technology adoption. Several studies have highlighted that anxiety has a significant impact on technology adoption. Social commerce is one of the domains that involve financial transactions, data security, and trust. However, no study has previously considered anxiety within social commerce adoption research. Srinivasan (2015) previously specified that cash on delivery is one of the options that can reduce anxiety. Anxiety still occurs if the seller asks for a pre-paid bank transfer before sending the product. This is a greater factor in developing countries like Bangladesh, where anxiety levels tend to increase due to the prospect of losing money. Trust issues among consumers when shopping online is also a factor in Bangladesh and anxiety can negatively influence consumers to adopt social commerce technology. The following hypothesis is proposed:

H10. Anxiety negatively influences consumers' social commerce usage.

2.3.11. Usage behavior

Our review of the social commerce literature suggests that most of the studies examined consumers' behavioral intentions and some extended *usage behavior*. Once consumers purchase the product, it is important to know whether they are satisfied with the service and whether they will continue to use the system or not. Dwivedi et al. (2019) found that facilitating conditions and behavioral intention are the significant predictors for usage behavior. However, this study is taken further to examine the relationship between usage behavior and continuous participation intention. Continuous intention to use IS/IT was first examined by Bhattacharjee (2001) to discuss users' continuous behavior after the initial adoption decision (Li and Yu, 2020). The sustainability and operability of any online platform are highly reliant on continuous participation intention and engagement (Al-Debei et al., 2015). Users' continuous participation intention is widely dependent on users' intention and behavior (Hajli et al., 2015). Some technology adoption studies have examined usage behavior with continuous participation intention. For example, Naranjo-Zolotov et al. (2019) investigated continuous usage and participation within the virtual community. The author found that usage behavior positively and significantly influenced continued participation by consumers within virtual communities, highlighting the importance of understanding consumer participation at the technology adoption stage. Based on the discussion presented above, this study proposes the following hypothesis:

H11. Usage behavior positively influences consumers' continuous participation intention.

3. Research methodology

Based on the alignments of the proposed research model, a quantitative approach is deemed appropriate for this study. We posit that a quantitative approach is required to adequately validate the conceptual model and test the stated hypotheses. Various aspects of the survey-based quantitative approach employed in this study are briefly discussed hereafter.

3.1. Scale validation

In order to conduct the data collection, we first consider adapting and validating the items to be measured. The previously validated measurement items of these constructs were considered to accumulate knowledge and ensure comparability among studies (Boudreau et al., 2001). Survey measurements were collected from existing studies on social commerce and technology adoption. Items for measuring performance expectancy, effort expectancy, social influence, and facilitating conditions were adapted from Venkatesh et al. (2012). The items for measuring attitude were adapted from Shin (2013) and Patil et al. (2020). Trust has been extensively studied in social commerce and was measured using items collected from previous research in this domain (Liang et al., 2011; Williams, 2021). This study adopted items to measure social support from Hajli and Sims (2015) to examine the role of social support in adopting social commerce technology. Items measuring innovativeness were taken from Williams (2021) and Patil et al. (2020). Items for measuring anxiety were adopted from technology acceptance studies, including e-government systems and mobile payment adoption (Patil et al., 2020; Rana et al., 2017). Items for measuring grievance redressal were adapted from Kumar et al. (2018) and Patil et al. (2020). Finally, items for measuring continuous participation intention were adapted from Hajli et al. (2015) and Liang et al. (2011). The items from the aforementioned studies were adapted to make them appropriate for this study. A pretest was conducted with academics and doctoral students, followed by a pilot test using a small sample of Bangladeshi consumers. These tests yielded valuable feedback for improvements. The feedback was incorporated before conducting the main data

collection.

3.2. Sampling procedure

This study focused on citizens of Bangladesh aged 18 and above who made purchases through social media platforms such as Facebook and Instagram. The samples were collected in the year 2022. The research targeted Bangladeshi consumers engaged in social commerce, irrespective of their social status or occupation. A questionnaire was designed using Google Forms and distributed online. The survey link was shared through various social media platforms. To maximize data collection, a convenience sampling method was used employing a snowball technique as recommended by Saunders et al. (2015). This approach was chosen because it was not feasible to identify all social commerce users in advance. Participants were invited to complete the survey and were encouraged to share the survey link within their social networks among individuals who use social commerce platforms. The snowball technique began by contacting a small group of respondents, who were then asked to refer others to participate in the survey (Bhattacharjee, 2012).

In this study, the researcher used a computer-generated web link for the questionnaire, distributing it among known persons who purchased through social commerce sites such as Facebook or Instagram. The selection of a sample size is usually a compromise between resource limits and the desire to generate findings applicable to the larger population (Bell et al., 2022). From the social commerce literature, most studies collected samples of between 200 and 500 participants for quantitative analysis. This study targeted a minimum of 400 usable samples and conducted data collection with 616 survey samples overall, assuming that a number of these may be discarded during data screening process.

4. Results

4.1. Participants profile

A total of 616 surveys were gathered from social commerce users. After removing incomplete and outlier samples, 402 responses were selected for further analysis. Respondents' demographic details are provided in Appendix A. The majority of the respondents (28 %) were in the age group 25 to 30 years. The age range - 20 to <25 years accounted for 25 %, followed by the age range of 30 to <35 years at 19 %. The younger age groups, 18 to <20 years, make up 14 %, while older groups such as 35 to <40 years (6 %) and 40 to <45 years (3 %). The smallest percentages are from those aged 45 to <50 years (2 %) and 50 to <55 years (2 %), 55 to <60 years (1 %), and above 60 years were <1 %. The male and female ratio was almost equal, with 51 % female respondents and 49 % male respondents. Most participants have a bachelor's degree (42 %), followed by master's degree holders (28 %). Those with a Higher Secondary School Certificate (22 %) form a significant proportion, while Secondary School Certificate holders (5 %) and individuals with education below the secondary school level (3 %). Notably, no participants reported having a PhD. The largest occupation group is students (32 %), followed by individuals working in private companies (28 %) and those in government service (15 %). Smaller percentages include those who are self-employed (13 %), homemakers (10 %), unemployed (1 %), and retired individuals (1 %). The results also suggest that most respondents were from district town areas (33 %), metropolitan city and divisional city areas (32 %), capital city (27 %), sub-district (6 %) and only 2 % respondents were from rural areas.

The majority of respondents - 76 %, prefer cash on-delivery, showing a strong inclination towards traditional physical payment methods. Only 16 % prefer bKash (Online payment service in Bangladesh), while 6 % favor debit or credit cards. Other payment methods such as Rocket (1 %), Nagad (0.5 %), and U-Cash (0.5 %) are used minimally. Facebook is overwhelmingly the preferred platform for the use of social commerce, chosen by 94 % of respondents. Other platforms, such as Instagram (4

%), YouTube (1 %), and Twitter (1 %) have minor uses. A high proportion of participants (84 %), prefer using smartphones for online activities, indicating mobile dominance. Desktop computers and laptops are equally preferred at 7 % each, while smart tablets are used by 2 % of the participants. The largest group, 27 %, uses these platforms once a month, while 21 % do so once or more in six months. Frequent users include 18 % who shop once a week and 11 % who shop more than twice a month. Smaller proportions include 8 % shopping twice a month or two to five times a week, and 7 % shopping once or more in a year. The majority, 57 %, have been using social networking sites for buying for 1 to <4 years, and 26 % have used them for <1 year. Fewer respondents, 13 %, reported 4 to <6 years, while very few have a longer history.

4.2. Common method bias

Harman’s single factor test was considered for this research to show that the data used in this research is less likely to have common method bias (Podsakoff et al., 2003). According to Podsakoff et al. (2003), data is considered to be free from common method bias when the cumulative variance extracted value for first component is <50 %. This study found 24.70 % cumulative variance extracted on the first component which is far below the cut off value. Therefore, the study found that the data used in this study is less likely to suffer from the common method bias problem.

4.3. Reliability and validity of final measurement model

In terms of reliability of measurements of constructs used in this study, all Cronbach alpha values exceeded the threshold value of 0.70, which is generally considered satisfactory. The attitude construct had the lowest alpha value of 0.72, while anxiety had the highest alpha value of 0.94 (Table 1). The average variance extracted (AVE) values were also found at the required threshold level. The discriminant validity was satisfied as square roots of the AVE value for each factor were greater than the inter-construct correlations (Fornell and Larcker, 1981). The square roots of the AVE value of PE is 0.78 which is greater than the AVE value 0.54 and AVE value greater than the MSV value 0.21. The ASV value of 0.09 is less than the MSV value. Finally, the composite reliability values exceed Nunnally and Bernstein’s (1994) proposed cut off of 0.70, which is also consistent with Cronbach alpha values, suggesting adequate internal consistency in the measurements. The correlation of all the constructs with anxiety indicates negative values. This is expected as the items of anxiety are negative by nature.

4.4. Measurement model

Model fit indices for the measurement model were examined by

Table 1
Reliability and Validity Measures.

Constructs	α	CR	AVE	MSV	ASV	Discriminant validity												
						PE	EE	SI	FC	SS	TRU	GR	ANX	AT	IV	UB	CPI	
PE	0.77	0.78	0.54	0.21	0.09	0.74												
EE	0.73	0.73	0.41	0.39	0.16	0.46	0.64											
SI	0.76	0.77	0.45	0.39	0.16	0.45	0.63	0.67										
FC	0.76	0.76	0.52	0.28	0.13	0.41	0.53	0.44	0.72									
SS	0.84	0.84	0.72	0.23	0.11	0.17	0.27	0.41	0.31	0.85								
TRU	0.91	0.91	0.62	0.18	0.05	0.15	0.26	0.43	0.24	0.29	0.79							
GR	0.75	0.75	0.51	0.37	0.15	0.28	0.39	0.39	0.32	0.38	0.10	0.71						
ANX	0.94	0.93	0.74	0.03	0.01	-0.13	-0.18	-0.09	-0.10	0.12	-0.01	-0.14	0.86					
AT	0.72	0.72	0.46	0.29	0.16	0.30	0.46	0.45	0.41	0.45	0.26	0.53	-0.08	0.68				
IV	0.74	0.74	0.59	0.28	0.13	0.19	0.35	0.35	0.35	0.42	0.10	0.48	-0.11	0.48	0.77			
UB	0.83	0.84	0.51	0.37	0.19	0.30	0.45	0.47	0.47	0.48	0.18	0.61	-0.14	0.54	0.53	0.71		
CPI	0.77	0.77	0.62	0.32	0.14	0.35	0.39	0.34	0.41	0.33	0.15	0.49	-0.17	0.44	0.47	0.57	0.79	

Legends: α = Cronbach alpha, CR = Composite reliability; AVE = Average variance extracted; MSV = Maximum shared squared variance; ASV = Average squared variance; PE = Performance expectancy; EE = Effort expectancy; SI = Social influence; FC = Facilitating conditions; TRU = Trust; IV = Innovativeness; AT = Attitude; SS=Social support; GR = Grievance redressal; ANX = Anxiety; UB=Usage behavior; CPI=Continuous participation intention; √AVE is shown in bold on the diagonal.

using five common indicators namely: χ^2/df , AGFI, CFI, PNFI and RMSEA. Initially, the AGFI and CFI did not reach the appropriate values. However, the analysis was conducted multiple times and various modifications were made such as adding covariance between TRU4-TRU5, TRU6-TRU7, ANX1-ANX2, ANX1-ANX4, ANX3- ANX4 and ANX4-ANX5. The analysis process entailed the deletion of items with low standardized regression weight, as these items had less impact on the model fit measurement scale. The following attributes were removed: PE1 and PE3 from the performance expectancy construct, SI5 from social influence, FC1 from facilitating conditions, AT1, AT4 and AT6 from attitude, ANX6 from anxiety, TRU1, TRU8 and TRU9 from trust, IV1, IV3 from innovativeness and SS3 to SS6 from social support.

The Chi-Square/degree of freedom value was found to be 1.51, which is below the cut off value of 3 (Hair et al., 2010). The AGFI value was found to be 0.854, which is above the threshold of 0.80 (Hair et al., 2010). The CFI value was found to be 0.954, which is also above the threshold value of 0.90 (Hair et al., 2010). Lastly, the RMSEA value was found to be 0.036, which is below the cut off value of 0.06 (Hair et al., 2010). Therefore, all the values for the measurement model satisfied the recommended threshold.

4.5. Structural model

The structural model analysis found that the model fit indices reached the expected threshold values, and no further modification required. The test of overall model fit found that the Chi- square = 1616.598; χ^2/DF = 1.912; AGFI = 0.811; CFI = 0.902; PNFI = 0.755 and RMSEA = 0.051.

The findings reported that *p*-values of all hypotheses analysis are below the threshold value of 0.05 (Di Leo and Sardanelli, 2020). The path coefficients results (see Table 2) suggest that performance expectancy (SRW = 0.18, *p* = 0.003), effort expectancy (SRW = 0.23, *p* < 0.001), innovativeness (SRW = 0.63, *p* < 0.001) and trust (SRW = 0.20, *p* < 0.001) significantly influenced consumer’s attitude to adopt social commerce. Additionally, social influence (SRW = 0.11, *p* = 0.04), attitude (SRW = 0.16, *p* < 0.023) and grievance redressal (SRW = 0.55, *p* < 0.001), social support (SRW = 0.29, *p* < 0.001), facilitating conditions (SRW = 0.20, *p* < 0.001) has a positive and significant influence on usage behavior in terms of adopting social commerce. However, anxiety (SRW = - 0.12, *p* = 0.013) has a negative and significant relationship with usage behavior. Finally, usage behavior (SRW = 0.69, *p* < 0.001) positively and significantly influenced consumers continuous participation intention to adopt social commerce. Fig. 2 is the final model that presents the selected items along with standardized regression weights (SRW) values. Table 2 presents the SRW, critical ratio, and *p*-value. All eleven hypotheses proposed in this study were found to be significant and supported.

Table 2
Summary of Results of Structural Relationships.

Structural Path	SRW	Critical Ratio	P-Value	Hypothesis Supported? [Yes/No]
H1 Performance expectancy → Attitude	0.18	2.983	0.003	Yes
H2 Effort expectancy → Attitude	0.23	3.562	***	Yes
H3 Innovativeness → Attitude	0.63	7.582	***	Yes
H4 Trust → Attitude	0.20	3.414	***	Yes
H5 Social influence → Usage behavior	0.11	2.057	0.04	Yes
H6 Grievance redressal → Usage behavior	0.55	6.546	***	Yes
H7 Attitude → Usage behavior	0.16	2.267	0.023	Yes
H8 Facilitating conditions → Usage behavior	0.20	3.522	***	Yes
H9 Social support → Usage behavior	0.29	4.685	***	Yes
H10 Anxiety → Usage behavior	-0.12	-2.487	0.013	Yes
H11 Usage behavior → Continuous participation intention	0.69	7.819	***	Yes

Note: SRW = Standardized regression weight, p = Significance.

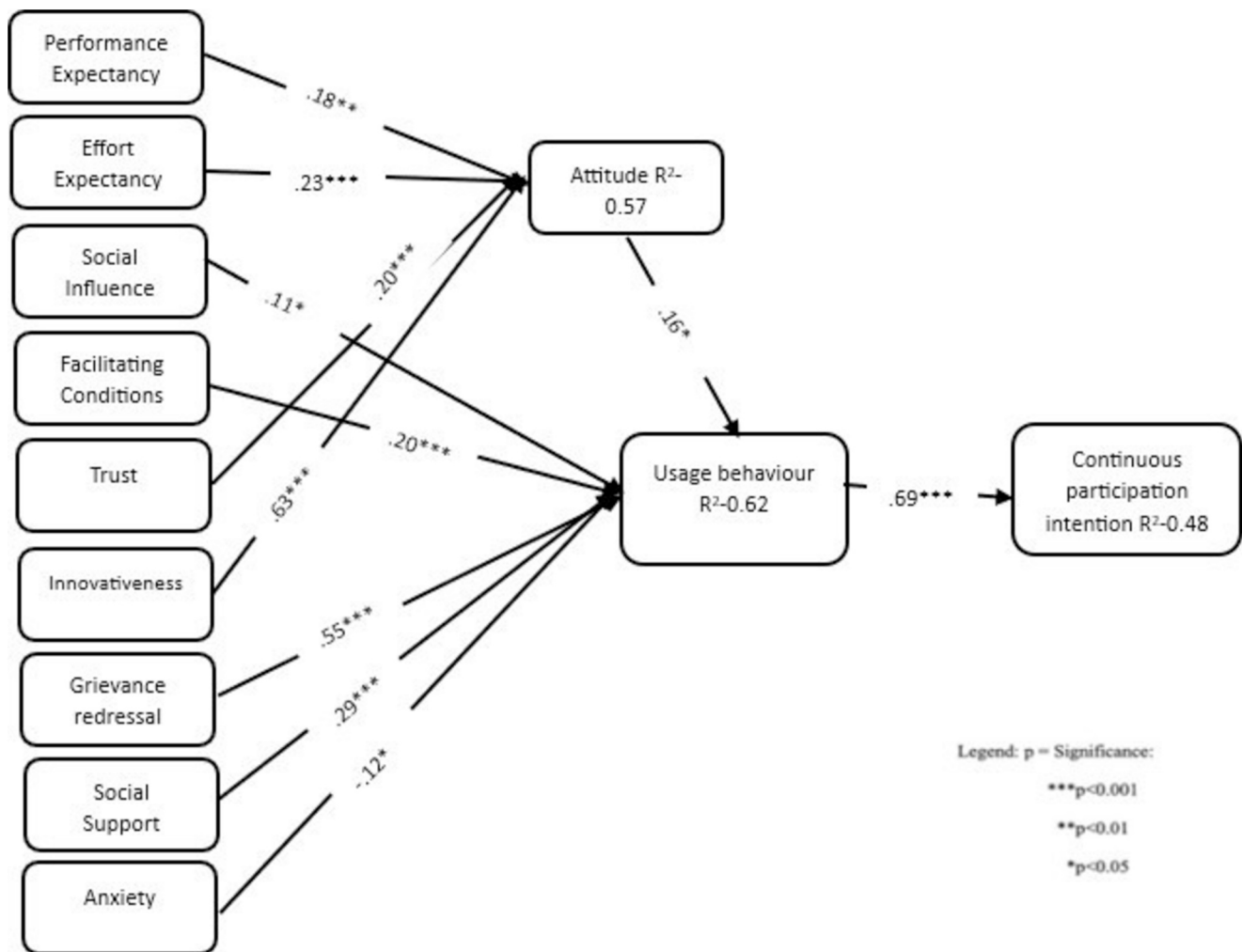


Fig. 2. Validated Research Model.

The findings of the structural path analysis are illustrated in Table 2. This demonstrates the significant relationships between variables that impact usage behavior and attitude in the context of social commerce. For example, performance expectancy, effort expectancy, innovativeness, and trust all positively influence attitude, with SRW of 0.18, 0.23, 0.63, and 0.20, respectively. Strong statistical significance is indicated by the critical ratios and p-values for these paths, which provide support to the proposed hypotheses that these elements have positive effects on attitude. Social support, facilitating conditions, and grievance redressal all show positive and significant impacts on usage behavior, with SRWs of 0.29, 0.20, and 0.55, respectively. Anxiety, however, has a negative

influence on usage behavior (SRW = -0.12), indicating that higher levels of anxiety reduce usage behavior. Attitude and social influence also positively affect usage behavior, though to a lesser extent, with SRWs of 0.16 and 0.11, respectively. Finally, with a high SRW of 0.69, usage behavior is shown to strongly influence continuous participation intention, indicating that users who engage regularly in social commerce are more likely to continue using social commerce. This study found that all potential paths were validated, emphasizing importance of these variables in determining role of attitudes, usage behavior and continuous participation intention in social commerce settings.

5. Discussion

This study employed and extended the Meta-UTAUT model as a theoretical framework to investigate the factors affecting the social commerce usage behavior of Bangladeshi consumers. The research proposed and validated eleven hypotheses, including testing the influence of nine independent variables: performance expectancy, effort expectancy, innovativeness, trust, social influence, grievance redressal, facilitating conditions, social support, and anxiety, on three dependent variables: attitude, usage behavior, and continuous participation intention. A number of observations related to adoption of social commerce platforms have been reported. The results of the hypothesis testing are discussed below.

This study reaffirms the significance of *performance expectancy (H1)* in influencing consumer attitudes towards social commerce adoption in Bangladesh and is consistent with previous research on acceptance of other technologies. The relationship between performance expectancy and attitude was found to be stronger in this study compared to several prior studies in different contexts, such as mobile payments and e-government systems (Patil et al., 2020; Rana et al., 2017). This suggests that performance expectancy, which relates to aspects like relative advantage, extrinsic motivation, and usefulness (Venkatesh et al., 2003), provides a comprehensive understanding of consumer attitudes. Other comparable studies for example: Cho and Son (2019) reported lower coefficients of 0.12. The findings of this study exhibit a stronger relationship with a coefficient of 0.18. This indicates a more robust influence of performance expectancy on attitude in a market like Bangladesh, where social commerce is relatively new. The perceived benefit from these platforms is crucial in shaping positive consumer attitudes and driving adoption. This highlights the importance for social commerce platform operators to prioritize to enhance consumer productivity and foster positive attitudes, ultimately encouraging broader adoption of social commerce technology in Bangladesh.

This study validated the influence of *effort expectancy (H2)*, which refers to the perceived ease of using social commerce. Effort expectancy was found to significantly influence consumers' attitudes towards adopting social commerce, with a coefficient of 0.23 ($p < 0.001$). While this result is consistent with several technology acceptance studies, it is slightly lower than coefficients reported in studies on e-government adoption, e.g. 0.34 by Rana et al. (2017) and mobile payments, e.g. 0.32 by Patil et al. (2020). In the realm of social commerce, similar studies have shown varying coefficients, such as 0.19 by Cho and Son (2019) and 0.32 by Samarasinghe and Silva (2019), with some studies, such as Khurshid et al. (2019), rejecting the relationship entirely. Nevertheless, effort expectancy emerged as a more significant predictor of consumer attitude than performance expectancy, emphasizing the need for user-friendly and easily understandable systems on platforms like Facebook Marketplace and Instagram. In Bangladesh's growing social commerce market, where ease of use is crucial, these findings suggest that platform operators should prioritize usability to foster positive consumer attitudes and drive adoption. The results underscore the importance of creating technology that is less complicated, easy to use, and simple to understand.

Innovativeness refers to an individual's tendency to seek out and adopt new products for unique experiences (Tellis and Chandrasekaran, 2010). It is particularly relevant in technology acceptance studies, where it is often linked to the successful adoption of new technologies (Williams, 2021). Previous research, such as Patil et al. (2020), found that innovativeness positively influences consumer attitudes towards mobile payments, with a coefficient of 0.19. Kim et al. (2021) reported a strong influence with a coefficient of 0.56. This study extends this focus to social commerce, finding that innovativeness has a notably stronger relationship with consumer attitude (H3), showing a coefficient of 0.63 ($p < 0.001$), which is the second strongest effect in this study. The results suggest that higher innovativeness strongly correlates with positive attitudes towards technology adoption. Consequently, social commerce

operators and sellers should continuously introduce new features and products to sustain consumer interest and leverage the competitive advantage that innovativeness offers (Kim et al., 2021; Patil et al., 2020).

Another factor that has been found to be important for determining consumer attitude is *trust*. Gefen and Straub (2004) emphasize that in circumstances when online controls and safeguards are unsatisfactory, consumers rely on trust to mitigate perceived risks. Several studies have supported this notion, for example, Lin and Wu (2015) and Patil et al. (2020) demonstrating that trust positively impacts consumer attitude. Yeon et al. (2019) found a positive influence of trust on consumer attitude with a coefficient of 0.26, although trust in vendors had no significant effect. Similarly, Khurshid et al. (2019) noted a significant impact of trust on consumer attitude in e-government contexts, with a coefficient of 0.27, while Patil et al. (2020) reported an even stronger coefficient of 0.40 in mobile payments. The results of this research confirm a significant relationship between trust and consumer attitude (H4) in social commerce with a coefficient of 0.20 ($p < 0.001$) which is slightly lower compared to previous studies. Bangladeshi consumers showed trust in platforms that display security policies and recommendations from algorithms but expressed concerns over issues like product mismatching, pricing, and delivery, which impacted their trust. To build consumer trust, social commerce platforms and vendors should address these concerns and offer remedies such as discounts or compensations for faults. We assert that improving trust could enhance consumer attitudes and adoption of social commerce in Bangladesh, aligning with findings from other technology acceptance studies (Rashid et al., 2017).

This research explored the impact of *social influence (H5)* on consumer usage behavior within the context of social commerce in Bangladesh, finding a significant positive relationship as hypothesized (Dwivedi et al., 2019). Although the positive impact of social influence is well-documented in technology acceptance studies, only a few have integrated it into social commerce research using the UTAUT model. Among these studies stronger coefficients were reported in Abed (2018) (0.40) and in Friedrich et al. (2021) (0.21), whereas Sheikh et al. (2017) found an insignificant relationship in the context of Saudi Arabia. This is because Saudi consumers are frequent social media users and they find these platforms convenient for online shopping, with the abundance of information minimizing the need for external social influence (Sheikh et al., 2017). Alam et al. (2020), studying mobile health apps in Bangladesh, found coefficient of 0.11 which is similar to the current study. This study found that while social influence is a significant predictor, it is the weakest among other factors explored. Bangladeshi social commerce users, particularly younger individuals, are influenced by word-of-mouth, peer opinions, and product reviews due to concerns about security and technology literacy. This aligns with Friedrich et al. (2021), who noted that consumers value the opinion of others and conform to their recommendations. Additionally, the study by Abed (2018), highlighted the impact of positive word-of-mouth, thereby enhancing social influence through user recommendations and reviews. These factors could facilitate easier adoption of social commerce among new and existing users in Bangladesh.

Grievance redressal refers to a crucial process for addressing consumer disputes with service providers and can play a significant role in social commerce (H6) by resolving issues and enhancing consumer confidence. Effective grievance redressal systems have proved to be beneficial in developing countries like India (Patil et al., 2020). This helps to resolve post-purchase problems and improve customer satisfaction. Research in technology acceptance has highlighted its importance, for example, Patil et al. (2020) found a positive influence on consumer behavior with a coefficient of 0.16, and Khurshid et al. (2019) a coefficient of 0.28 in e-government contexts. Kumar et al. (2018) reported a coefficient of 0.21 related to mobile wallet usage. In contrast, this study demonstrates a notably stronger relationship in the context of social commerce in Bangladesh, with a coefficient of 0.55 and

significance at $p < 0.001$, making it the third strongest factor. The study's findings underscore the necessity for social commerce platforms in Bangladesh to implement effective grievance redressal mechanisms, such as dedicated helplines or support links, to address issues like transaction failures or product complaints. A well-managed redressal system could significantly enhance user confidence and drive higher adoption rates (Khurshid et al., 2019) reinforcing the importance of transparent and timely resolution of disputes.

Attitude is defined as an individual's evaluative response to an object (Eagly and Chaiken, 2007) and is considered to play a crucial role in the Meta-UTAUT model, influencing consumer adoption (Dwivedi et al., 2019). This construct, which has been integrated into various models such as Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB) significantly impacts behavioral intention by shaping how users perceive technology (Rana et al., 2017). Prior studies have highlighted the importance of attitude, for instance, Patil et al. (2020) found a substantial coefficient of 0.61 for attitude in mobile payments, while Yeon et al. (2019) reported a coefficient of 0.42 in South Korea. This study supports these findings by demonstrating a positive and significant relationship between attitude and usage behavior (H7) with a coefficient of 0.16. By doing so, this research extends the Meta-UTAUT model by incorporating attitude as a mediating variable, showing that it significantly enhances the model's performance in predicting social commerce adoption. The findings suggest that a more positive consumer attitude towards social commerce leads to stronger usage behavior, thus underscoring the need for businesses to foster positive attitudes through improved service and user experience to drive adoption in Bangladesh.

Facilitating conditions, a key component of the Meta-UTAUT model, functions as a crucial factor in influencing consumer usage behavior (H8) for adopting social commerce (Dwivedi et al., 2019). This study confirms that facilitating conditions positively impact consumer adoption of social commerce in Bangladesh, aligning with findings from various studies (Alam et al., 2020; Tak and Panwar, 2017). The research by Alam et al. (2020) and Tak and Panwar (2017) both highlighted the importance of facilitating conditions for technology adoption, noting their influence on usage behavior rather than behavioral intention. Sheikh et al. (2017) also examined this relationship in social commerce but found a lower impact compared to the current study. Studies have reported that facilitating conditions are essential, encompassing access to resources such as the internet and hand-held devices, as well as necessary knowledge for using the system (Venkatesh et al., 2003). Effective facilitating conditions, such as providing technical support and training and creating awareness about its benefits and risks, are vital for encouraging social commerce adoption. Platforms should therefore focus on offering comprehensive resources and assistance, including personalized support and technical help, to facilitate easier adoption of social commerce in Bangladesh.

Social support plays a crucial role in social commerce adoption (H9), influencing consumer behavior and technology adoption by enhancing decision-making and user relationships on social media platforms (Obst and Stafurik, 2010). Prior research has demonstrated the significance of social support in consumer behavior and its ability to alleviate stress and anxiety associated with adopting social commerce. For instance, Bai et al. (2015) reported a strong positive relationship between social support and purchase behavior, with a coefficient of 0.43 indicating substantial impact. Liang et al. (2011) and Lin et al. (2012) also noted that social support helps mitigate risks related to sellers and products. The current study supports these findings, revealing that social support significantly influences usage behavior among Bangladeshi consumers, with a coefficient of 0.29 and significance at < 0.001 . Social support is found to be a stronger predictor of social commerce adoption compared to social influence and performance expectancy. Respondents noted that social support, through reviews, feedback, and recommendations from other users, is crucial for overcoming challenges and making decisions. The study introduces a novel element by suggesting that social commerce platforms should incentivize content creation,

such as by rewarding users who provide consistent and valuable reviews. This strategy not only encourages greater user engagement but also supports both new and existing users in adopting the technology more effectively.

Anxiety is characterized as a mood state anticipating or preparing for negative events (Barlow, 2000), plays a crucial role in technology adoption. Previous studies have consistently shown that anxiety negatively affects technology acceptance, such as online shopping (Donmez-Turan, 2019). For example, Donmez-Turan (2019) reported a significant negative influence of anxiety on online shopping adoption with a coefficient of -0.30 , while Lu and Su (2009) found lower effect with a coefficient of -0.16 for mobile shopping. This study introduces anxiety as a factor affecting social commerce adoption in Bangladesh, revealing a negative and significant relationship with usage behavior (H10). The analysis indicated a coefficient of -0.12 and significance at < 0.05 , which, although significant, is the second lowest among the variables included in this study. This finding suggests that while anxiety does impact adoption, its effect is relatively modest compared to other factors. The reduced impact may be due to the high prevalence of cash-on-delivery, which alleviates financial anxiety. Nevertheless, the presence of anxiety among consumers emphasizes the need for social commerce platforms to enhance security and privacy measures. Improving trust and reducing anxiety could encourage higher adoption rates, addressing a notable gap in the current research.

Usage behavior is a central component in many theoretical models of technology acceptance, such as TRA, TAM, and TPB (Ajzen, 1991; Davis, 1989; Fishbein and Ajzen, 1975). Although usage behavior has been examined in various contexts, including social commerce, its relationship with continuous participation intention has not been extensively explored. This study extends the Meta-UTAUT model by incorporating continuous participation intention (H11), building on Bhattacharjee's (2001) work, which highlighted the importance of users' ongoing behavior post-adoption. Naranjo-Zolotov et al. (2019) found a positive relationship between usage behavior and continuous intention to e-participate, with a coefficient of 0.26, emphasizing that habitual use influences ongoing engagement. However, this research reported a stronger connection, with a coefficient of 0.69 and significance at < 0.001 , indicating that usage behavior is a positive and significant predictor of continuous participation intention in social commerce. This study's novel contribution stands on demonstrating that high usage level of social commerce platforms leads to greater likelihood of continued use. Social commerce platforms in Bangladesh should encourage usage behavior to foster ongoing consumer participation.

The validated model explained 57 % of the variance in attitude, 62 % of the variance in usage behavior and 48 % of the variance in continuous participation intention. Patil et al. (2020) examined Meta-UTAUT for mobile payments in the context of India and reported that the model explained 50 % of the variance in usage behavior (less than this study). Rahman et al. (2020) investigated social commerce within Bangladesh and the model explained 31.7 % of the variance in usage behavior, which also suggests a lower predictive power in comparison to this research. A limited number of studies examined UTAUT and UTAUT2 models in social commerce but all highlighted lower predictive values than the current study. For example, Sheikh et al. (2017) utilized UTAUT2 and reported 44.4 % of the variance in usage behavior in the context of Saudi Arabia. Naranjo-Zolotov et al. (2019) utilized UTAUT and reported that it explained 31.5 % of the variance in usage behavior and 47.3 % of the variance in continuous participation intention in the context of virtual community adoption. Utilization of other dominant models such as TAM have resulted in lower predictive values than this research in the social commerce context. For example, Shin (2013) utilized TAM with TPB and reported 23.8 % of the variance in attitude. Rashid et al. (2017) examined TAM with trust and risk and reported 49.8 % of the variance in attitude. Hung et al. (2018), reported 42 % of the variance in consumer attitude and 45.8 % of the variance in continuous intention. Similarly, Kim (2015) applied the S-O-R model

and reported 40.8 % of the variance in continuous participation intention. In comparison with other related social commerce studies, it is evident that this study has demonstrated better predictive power.

5.1. Theoretical implication

The main gaps in most of the existing social commerce research suggest that there are a number of influential factors that could drive social commerce adoption and are yet to be investigated, including country-specific factors. Experiments with new theories are very limited in social commerce adoption research. Thus, we considered it important to initiate a comprehensive investigation to gain a more holistic understanding of factors affecting adoption of social commerce technology particularly in the context of Bangladesh.

This research contributed to the extant literature by introducing and utilizing Meta-UTAUT in the social commerce domain. Meta-UTAUT was previously applied only once in the context of India to examine adoption of mobile payments (Patil et al., 2020). Thus, to our knowledge, this is the first attempt to apply Meta-UTAUT for examining social commerce adoption and empirically test it using data gathered from Bangladesh. This research also contributes to the literature by reviewing and identifying several external constructs relevant to social commerce and IT/IS adoption. This has led to the identification of trust, anxiety, innovativeness, grievance redressal, social support, and continuous participation intention as the most relevant constructs for integration with the Meta-UTAUT model.

The specific novelty of this research is to utilize and validate anxiety and grievance redressal, as existing social commerce studies had not examined the role of these very relevant and important constructs. A number of technology acceptance studies have identified the role of anxiety to negatively influence consumer adoption of IS/IT and found the construct to have a significant influence on usage behavior (Donmez-Turan, 2019). Similarly, the role of grievance redressal is more relevant to technology acceptance in developing countries such as Bangladesh. Hence, these constructs were integrated as external constructs to the Meta-UTAUT model to make it more comprehensive to better understand the adoption of complex technologies such as social commerce. As illustrated in the Results section, all these constructs were found to have significant influence on social commerce adoption. This clearly demonstrates that this research contributes to an existing theory (UTAUT and Meta-UTAUT models) by identifying, integrating, and validating the role of these external constructs. This also provides a pathway for future researchers to use such constructs to examine the adoption of social commerce in other contexts.

5.2. Implications for practice

This study provides several recommendations for mitigating issues related to social commerce with a view to encouraging consumer adoption in Bangladesh. Operators should prioritize user-friendly technology, loyalty-building with existing customers, reliable features like product filtering and auto-generated feedback, easy-to-learn systems, and simple refund and return processes that are particularly important for Bangladeshi consumers. Simple and secure sites will encourage more adoption of social commerce technology. Operators should place a higher priority on enhancing client loyalty and user-friendly technologies. Reliable features can influence consumer attitudes towards adoption, such as product screening and auto-generated feedback. A straightforward refund and return mechanism should be designed, and new customers should be given clear information and instruction in terms of how to use the system. Consumers are more likely to utilize social commerce technology when it is simple and secure. Social commerce operators should provide adequate infrastructural facilities for the users to establish a reliable shopping platform. Sellers on social commerce should provide different methods of payment, such as cash on delivery, bank transfer, and card, so that users can feel comfortable

while using the system. Different methods of product delivery, such as home delivery or pick-up-point services could also be beneficial for customers and make it more convenient to adopt social commerce technology. Additionally, social commerce operators should develop a system where consumers can easily provide their opinions, feedback, or recommendations about their experience anonymously or by revealing their identity. This could help other users in decision-making by reviewing those comments posted by other users on social commerce sites. Social commerce platforms should also pay attention to engendering positive Word of Mouth (WOM) from existing customers, as consumers socialize with each other often and negative feedback might result in loss of sales or potential customers. Sellers on social media platforms should interact with customers more often, notifying them about any new services/products that would influence users to adopt social commerce.

When suppliers and sellers guarantee data privacy and when several authentication procedures are utilized during transactions, social commerce platforms are more trustworthy. Increased confidence is also achieved by displaying security policy statements and providing services for product returns or refunds. Establishing trust requires fast problem resolution, open communication with clients, and the provision of both emotional and factual assistance. By creating online communities where users may connect and get assistance, social commerce vendors may encourage user loyalty by rewarding content creation. Sellers may also provide various forms of assistance, such as free shipping choices and price comparisons.

Platforms should prioritize unique customer preferences by creating an automated system that is customized for each user in order to increase the adoption of social commerce. By using this strategy vendors would get insights on customers' preferences, while also assisting consumers in finding desired products. An inventive consumer base that is receptive to new technologies is more likely to promote adoption. Sellers should offer services depending on client attributes to meet the wide range of customer requirements. User adoption can be increased, and a devoted customer base can be built by producing captivating content such as interactive campaigns and innovative commercials. Social commerce platforms can create ingrained usage patterns in their users by providing cutting-edge goods and technology. Additionally, adding additional features like offers, discounts, and short movies for group purchases can have a beneficial influence on consumer perceptions.

Participants can be hesitant to adopt social commerce due to a lack of trust in sellers, poor security around financial transactions, products being mismatched or missing, and late deliveries. An authority with a transparent grievance redressal mechanism could solve these problems that social commerce users encounter and improve consumers' shopping experience. The findings of this research highlight the importance of an authority and mechanism able to resolve problems if they occur, for example, financial transaction-related issues or settling claims. The social commerce platform should involve third-party or government officials who can handle such issues in a timely manner. Social commerce platforms should establish legal disputes that could help consumers by settling complaints regarding the system or a seller. The government of Bangladesh could help social commerce platforms by creating a department to handle any situation related to social commerce or online marketplaces, which will eventually help users to adopt this system.

Consumers believe that online purchasing generates uncertainty and risk, which increases anxiety and further inhibits them from using online platforms for purchasing (Kim and Forsythe, 2008). The social commerce platforms should focus on minimizing consumer anxiety. Social commerce platforms and sellers should focus on building trust and ensuring customer safety to gain their loyalty. Positive WOM could reduce anxiety and encourage consumers to use the system. Consumers often worry about financial loss through using online shopping platforms, or worry that sellers are fraudulent, which increases their anxiety. Participants stated that the cash-on-delivery system somewhat reduces this anxiety but does not completely mitigate it. Financial

companies could provide assurance about online transactions so that consumers can use the system without hesitation or anxiety. Additionally, social commerce platforms should authenticate sellers by requiring identity checks to reduce the amount of fraud in the system.

5.3. Limitations and future research directions

The first limitation of this research is the use of a non-probability-based convenience sampling method for data collection. Non-random sampling techniques are associated with reduced generalizability (Slade et al., 2015). Future research could improve this aspect of the findings by testing the proposed model with random samples. A quantitative method was utilized for this research to conduct statistical analysis for testing the conceptual model and hypotheses. However, quantitative methods can restrict the attainment of an in-depth understanding of the phenomenon. Closed-ended questions limit respondents to a set of alternatives, whereas open-ended questions allow for more expressive responses (Reja et al., 2003). To mitigate this, a ‘comment’ option was provided for additional information. Future research could use qualitative methods to gain deeper insights to social commerce users and their adoption behaviors. Additionally, this research utilized cross-sectional data. Future studies are recommended to use a longitudinal approach to explore changes in the importance of antecedents over time. The model did not analyze demographic variables such as age and gender as a moderator. Moderators may be valuable but not universally applicable in all contexts. As a result, most of the existing research does not consider demographic variables in the models. However, future research may go beyond this by including demographic variables as a moderator, which might help to obtain a more in-depth view of social commerce research. This research advocates the use of factors (trust, anxiety, social support, innovativeness, and grievance redressal) that reveal more information about social commerce in Bangladesh. However, future studies may consider the analysis of other factors relevant to the nature and context of their specific research. Another limitation of this research is the generalizability of the results. This research collected the data from social commerce users in Bangladesh. There exists an economic, political, and cultural difference between one country and another, which may limit the generalizability of the research model to other contrasting contexts. However, future studies could use this model with modification to examine social commerce adoption in other

contexts.

6. Conclusion

This study advances the understanding of social commerce adoption by addressing a gap in the literature specific to a Bangladeshi context. By extending the Meta-UTAUT model by integrating novel elements such as grievance redressal, anxiety, innovativeness and incorporating consumer attitudes, this research goes beyond the scope of traditional models like TAM and TPB. The scientific value of this study is highlighted through comprehensive examination of both positive and negative factors that influence social commerce adoption. The inclusion of grievance redressal as a variable provides a new dimension to the existing body of knowledge, emphasizing its importance in fostering consumer trust. This enhanced model provides a more nuanced understanding of the dynamics at play, offering a more appropriate and adequate representation of the factors affecting usage behavior in social commerce. The research highlights key determinants such as performance expectancy, effort expectancy, trust, and innovativeness, providing actionable insights for improving consumer attitude. While social influence, facilitating conditions, grievance redressal, social support and attitude have significant and positive influence on usage behavior, anxiety has a negative influence. Recommendations are posited for the development of user-friendly technologies, establishing reliable grievance redressal systems, and offering diverse payment and delivery options can help mitigate adoption barriers and enhance consumer trust. By focusing on these practical aspects, businesses can better cater to the needs of their users and improve their overall social commerce strategy, particularly in markets such as Bangladesh.

CRedit authorship contribution statement

Prianka Sarker: Writing – original draft, Validation, Software, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Laurie Hughes:** Conceptualization, Methodology, Writing – review & editing, Supervision. **Tegwen Malik:** Conceptualization, Methodology, Writing – review & editing, Supervision. **Yogesh K. Dwivedi:** Conceptualization, Methodology, Writing – review & editing, Supervision.

Appendix A. Respondents’ Demographic Details

Variable	Group	Frequency	Percentage	
Age	25 to <30 years	113	28 %	
	20 to <25 years	99	25 %	
	30 to <35 years	75	19 %	
	18 to <20 years	55	14 %	
	35 to <40 years	24	6 %	
	40 to <45 years	13	3 %	
	45 to <50 years	8	2 %	
	50 to <55 years	10	2 %	
	55 to <60 years	4	1 %	
Gender	Above 60 years	1	0 %	
	Female	204	51 %	
Level of education	Male	198	49 %	
	Bachelor’s degree	170	42 %	
	Master’s degree	112	28 %	
	Higher Secondary school certificate (HSC)	89	22 %	
	Secondary school certificate (SSC)	21	5 %	
	Below secondary school certificate	10	3 %	
	PhD	0	0 %	
	Occupation	Student	128	32 %
		Private company	111	28 %
Government service		61	15 %	

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Variable	Group	Frequency	Percentage
Area of living	Self-employed	53	13 %
	Housemaker	39	10 %
	Retired	3	1 %
	Unemployed	6	1 %
	District town	133	33 %
	Metropolitan city and divisional city	127	32 %
	Dhaka division	109	27 %
	Upazila town/sub-district	24	6 %
	Rural area/village	9	2 %

Data availability

The data that has been used is confidential.

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