



Intention to purchase on social commerce websites across cultures: A cross-regional study



Celeste See-Pui Ng*

Department of Information Management, Yuan Ze University, Taiwan

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ABSTRACT

This study investigates the moderating effect of culture and the mediating effect of trust in a social network community on the relationship between social interactions and purchase intention. Trust transference theory, social interactions, and Hofstede's cultural dimensions are considered. The findings from the research support the moderating effect of culture and the mediating role of trust in a social network community on the relationship between social interactions (in terms of closeness and familiarity) and intention to purchase in social commerce environments. In addition, the mediating effect of trust in a social network community is conditional on culture. The findings also suggest that trust in a social network community may be attributed to the closeness and familiarity developed among its members resulting from social interactions. The results presented herein are in line with the trust transference theory. The empirical study results also suggest that social commerce market penetration in East Asia may have relatively fewer barriers to overcome and be more likely to succeed than in the Latin America region.

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1. Introduction and purpose

The popularity and growth of social commerce in recent years have been driven by consumer–product information sharing. This development in social commerce is due to two main influential factors: consumer bargaining power and rapid progress in information technologies, in particular the introduction of Web 2.0. The improved bargaining power among consumers has caused a noticeable shift in the relationship between businesses and current and potential consumers. Even more interesting is the fact that these consumers have a very close relationship, as in the case of social networking sites. The introduction of Web 2.0 allows the creation of user-controlled content and Internet interactivity.

In this study, we define social commerce as the online buying and selling activities initiated via social media, which entails business transactions through either social media (e.g., on a Facebook store) or other e-commerce sites. Kaplan and Haenlein [30] define social media as “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user-generated content [UGC]” (p. 61). UGC is beneficial in providing useful information for product marketing and development, increasing

brand influence, and facilitating advice and assistance sharing through discussion groups [38].

Specifically, social commerce involves the use of social media that supports social interaction, communications, and user-generated content such as ratings and reviews, blogs, and microblogging to assist in the online buying, selling, and marketing of products and services. Its unique characteristics are the provision of an opportunity for customers to interact to make better-informed buying decisions [82] and allowing the customer to connect with, listen to, understand, and engage other people regarding their purchasing experiences to improve their future shopping experience [9].

A forecast made by the business consulting firm Booz & Company (2012), predicted that the social commerce market will be worth \$30 billion in annual sales by 2015. A report from the IDC consulting firm suggested that 10 to 15 percent of consumer spending in developed countries in the next three to five years (2011–2015) may go to social networking sites such as Facebook [49]. The most powerful drivers possibly underpinning the explosion of the social commerce market are the word-of-mouth marketing and viral marketing capabilities inherent on a social commerce site or fan store. The possible incentive-driven advocacy provided by such online stores is also a major factor.

The rapid growth of social networks (e.g., Facebook and Twitter) over the past decade or so may be attributed to social interaction [28]. It is social interaction that results in word-of-mouth marketing, product advocacy for a consumer brand, and social capital building [26]. Social commerce sites may be grouped into two types: (1) firms

* Corresponding author. Tel.: +886 3 4638800x2614; fax: +886 3 4352077.
E-mail addresses: celeste@saturn.yzu.edu.tw, celestespng@gmail.com

such as Amazon, Levis, TripAdvisor, Mazda, and Gap, which link to Facebook and have Facebook fan pages and apps that take potential customers to their online-stores; and (2) companies such as Hallmark, Groupon USA, Pantene North America, and Watson Malaysia that connect to Facebook and have Facebook fan pages and apps that allow potential customers to buy directly from their Facebook stores. For these consumer brands, the main purposes of utilizing Facebook are to engage with consumers, promote special offers, and/or provide an opportunity for consumers to have social interactions with other consumers and friends.

Social networks such as the Chinese website Taobao that provide a forum for consumer ratings, evaluations, and advice on products have been found to influence other customers' trust in retailers [16]. Business consultants [3] report that "individuals on a social networking site are usually connected to other individuals whom they trust and respect." (p. 1). This phenomenon occurs because social networking environments typically involve an atmosphere of trust between friends. These studies, to some extent, indicate that social network users trust the people with whom they communicate or interact in a social network community.

However, according to another marketing report by Booz & Company in 2010, 73% of online shoppers would not purchase goods on Facebook or through other social networking sites. Some academic researchers [44] have found little evidence of peer influence among college students using Facebook. This lack of evidence suggests that social network users do not equally trust or are not equally influenced by their connections on a social network. This may be because some friends' opinions have a disproportionate influence on one's behavior [24].

In addition, these inconsistent findings may be due to the differences in cultural and national contexts [32]. In particular, the behavior of consumers in the West (e.g., the United States) may not be applied to all cultures [53]. As different countries have varying inherent values, symbols, and cultures, the behavior of social network users and their intention to purchase on social commerce sites may not be equivalent. Following this possibility, the purpose of this study is to investigate the role of culture in influencing peers' online shopping intentions in social commerce conducted on Facebook in a cross-regional setting involving Latin American and East Asian countries – two relatively understudied regions. In particular, we are interested in studying (1) the moderating effect of the cultural factor on the relationships between social interaction and purchase intention in social commerce, and the effect of the cultural factor on the mediating role of trust in a social network community; and (2) the mediating effect of trust in a social network community on the relationship between social interaction and purchase intention. This study attempts to extend the trust transference theory by incorporating the concepts of social interaction, trust in a social network community, and cultural issues to better understand how these concepts influence purchase intentions in the context of social commerce.

The subsequent organization of this paper is as follows. Section 2 provides a review of the literature on social commerce and the theoretical background of social interactions, trust transference, and culture. Section 3 proposes the research model and hypotheses, and Section 4 describes the research methods adopted in this study. Section 5 presents the research findings, and section 6 offers the contributions and implications of this study for use in research and practice.

2. Literature review

2.1. Social commerce

Similar to e-commerce, social commerce sites consist of communities of customers with similar interests, passions or

goals [73], and enable consumers to browse and view products as well as add them to a shopping cart [51]. In contrast to traditional brick and mortar stores, social commerce sites allow consumers to exchange product feedback and provide information that may influence others' choices by expressing their own views and experiences. This process can create word of mouth (WOM) marketing effects, as it provides a means for consumers to discuss products and circulate relevant information. This can build active, mutually beneficial consumer-to-consumer and consumer-to-marketer communications [78].

In social commerce, the main aim of the seller is to convert customers into brand advocates, whereas the aim of the buyer is to make better informed purchasing decisions [30,49]. Either or both of these aims are achieved when a consumer shares purchasing experiences. Some social commercial sites such as Groupon and LivingSocial offer the service of group buying to encourage the spread of deal information.

One survey conducted with 1787 respondents on social media showed that one third of shoppers would prefer to make a purchase directly from Facebook or Twitter [66]. This statistic indicates a promising future for social commerce. For example, Facebook provides a marketplace, advertising means, and social network services. Facebook's strengths as a powerful social commerce site are rooted in its Social Plugins (e.g., the 'Like,' 'Send,' 'Comment,' 'Recommendation' buttons) and Open Graph Protocol. Facebook allows a business to conveniently and professionally set-up a Facebook fan store [12].

2.2. Theoretical background

2.2.1. Social interactions

A social network site provides various types of social interactions and networking features such as message posting, information exchange and contact management. In addition to basic social interaction features, other forms of social interaction such as consumers' numerical ratings of products (favorability) and the number of online reviews (visibility) have been found to correlate with sales [23] and social influence [81]. Wu and Wang [79] also discovered that the social interaction enabled by social network sites, which allows users to cultivate, foster, and maintain online relationships, is a significant predictor of behavioral intentions. These studies suggest that interactions within a social network community boost reliance and trust in a user's personal relationship.

According to Kelman [33], there are three categories of social influence: compliance, identification, and internalization. Among these three, the internalization category is the most relevant to online social networking and commerce. Internalization is defined as a situation in which a person accepts and agrees with another's beliefs and behavior both publicly and privately because the influential content is intrinsically rewarding [33]. Online social networking and social commerce fall into this category because friends' interactions, participation in online activities, and product recommendations and reviews are written, sent, and read freely, and voluntarily among members of the site's community. A user's selected types of interaction, participation in online activities, and buy-in for product recommendations are based on her own choices and preferences. Therefore, the social influence of a friend's product recommendation may have an important role in the product's acceptance and recommendations among other friends.

One of the salient ways to measure the social influence of a sender on a receiver is by quantifying the social impact the sender has on the receiver [40]. The social impact theory states that the impact of any information source may be accounted for as a function of three factors: the number of people who make up that source, the source's immediacy or closeness with the receiver, and

the source's tie strength with the receiver [40]. For simplicity, in this study we are only considering one source of information at a time.

Lee and Kwon [41] used the term "intimacy" to describe the closeness or immediacy factor, saying it is a "feeling of closeness and emotional bonding, involving intense liking, moral support, and the ability to tolerate flaws in the service" (p. 348). Following this approach, we define intimacy as the feeling of closeness and emotional bonding involving intense liking and moral support from social network friends, and the ability to tolerate social network friends' mistakes. In this paper, we use 'intimacy' and 'closeness' interchangeably.

Marsden and Campbell [50] suggest that the best indicators of the strength of a bond with another person are those having to do with time spent together and the depth of the relationship. Consistent with this idea, Brown and Reingen [7] define the strength of ties as the familiarity of one person with another. Familiarity is described as the "feeling of the understanding of an entity, often based on previous interactions, experience, and learning of the what, who, how, and when of what is happening" [41]. Based on this description, we associate the strength of ties, or bonds, with familiarity, and describe familiarity as the feeling of understanding of one's social network friends. This feeling is often based on previous interactions, experiences, and learning about the what, who, whom, how, when, and why of what is happening.

2.2.2. Trust transference theory

Trust is a critical component in online purchase intentions [35], as a consumer is unable to access and evaluate a real product online before purchasing it. It has also been studied in the online contexts of product recommendation agents [76], mobile commerce [75], government services [71], and Internet-based interorganizational systems [39].

Prior studies show that trust may be transferred from one source to another. For example, trust in an organization is transferable to trust in its members, trust in an individual may be transferred to trust in another individual, and trust may be transferred between contexts. Trust transfer occurs when "the unknown target [is] being perceived as related to the source of the transferred trust" ([67], p. 6). The perception of relatedness occurs based on the similarity, proximity, and common fate of the entities from/to which trust is transferred [8]. Similarity describes the entities' degree of sameness, whereas proximity implies the degree of closeness. Common fate refers to the perception that the entities (such as a social community's members) are moving in the same direction. In the context of members of a group, relatedness may also be influenced by an individual member's behavior [77] and the type of interaction involved such as forming a business partnership or a social network community [45].

On a social commerce site, prospective consumers make buying decisions based on the advice of friends and family in a social network community that they know or trust [42]. Based on the idea of relatedness, above, trust in a social network community may be expected to be transferable to other related sources, i.e., trust in other firms in the community. The prospective consumers could believe that the online environment is safe and well managed and that everyone there, including the sellers, is trustworthy. A user will have this belief happen when she perceives that other firms in the community are related to her close community, in such as way that other firms in the community (1) are using a social network service for the same purpose as any other user, (2) closely fit a user's daily life, such that they become an important part of the social network community that she interacts with daily, and (3) share the same future goal and direction as user.

2.2.3. National culture

A study by [72] emphasized the importance of cultural factors in influencing e-commerce adoption decisions. In studying the issue of culture, reference is made to the institutional framework established through Geert Hofstede's dimensions of national culture. The six dimensions of national culture proposed by Hofstede et al. [19] are power distance, uncertainty avoidance, individualism, masculinity, long-term orientation, and indulgence. While the first four dimensions constitute the original Hofstede dimensions of national culture, the last two have been suggested by Michael Bond and Michael Minkov, respectively.

This research focuses on only two dimensions: individualism and uncertainty avoidance, which are the most relevant to this study. The definitions of these two dimensions [18] are as follows: uncertainty avoidance is the degree to which the members of a culture feel threatened by uncertain or unknown situations, and individualism is the extent to which the ties between individuals are loose.

As highlighted in the research [18,19], the national cultural dimensions (with scores ranging from 1 to 120) differ and are clustered quite obviously according to the different regions to which countries belong, such as Latin America, East Asia, Nordic Europe, Southern Europe, the Middle East, and Africa. This study focuses on the regional level, in particular the Latin America region and East Asia region, because of the (1) research resources constraint and the infeasibility of collecting data from many countries; (2) the lack of information on all cultural dimension scores for most Latin American countries, such as Nicaragua, Honduras and Paraguay; and (3) the proximity of cultural dimension scores for some countries (see Table 1), such as Taiwan and Thailand scores of 69 and 64 for uncertainty avoidance and 17 and 20 for individualism, respectively. In addition, the absolute value of the CMSI difference, suggested by [68], within the same region, for instance between Taiwan and Thailand, is very small (i.e., 8), unlike the absolute value of the CMSI difference between Latin America and East Asia ($195 - 148 = 47$). As a result, the subsequent section builds on the hypotheses from the regional level.

3. Research model and hypotheses

Fig. 1 depicts the research model and the associated hypotheses. The definition of the constructs proposed in the hypotheses and the references to the constructs (with their measurement items) are shown in Table 2.

3.1. Social interactions

Social interactions may breed closeness and familiarity. One study on continuance intention in the context of web-based services revealed that closeness and familiarity affect users' continuance intention [41]. In the context of social promotion sites, both cognitive and affective involvements, which are social

Table 1
Scores for the two cultural dimensions under examination of the two selected regional areas [19].

Cultural dimension	Score (1–120)			
	Latin America Guatemala, etc.	East Asia		
		Taiwan	Thailand	Average
Uncertainty avoidance (UAI)	101	69	64	66.5
Individualism (IDV)	6	17	20	18.5
CMSI ^a	195	152	144	148

^a CMSI—computer-based media support index, computed based on adding UAI to (100-IDV), refer to [67] for more details.

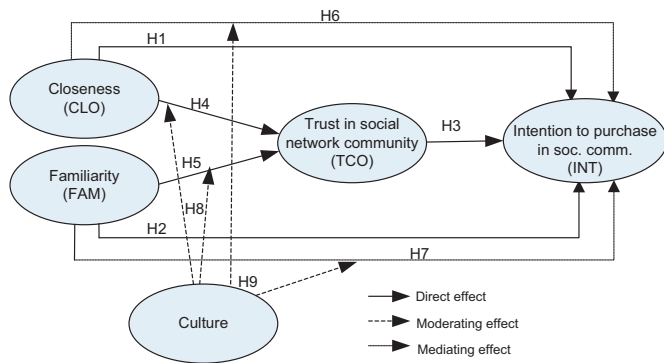


Fig. 1. Research model.

Table 2
Social commerce intention to purchase constructs.

Construct	Definition
Closeness (CLO)	The feeling of closeness and emotional bonding, involving intense liking and moral support from social network friends, and the ability to tolerate social network friends' mistakes.
Familiarity (FAM)	The feeling of understanding between social network friends, often based on previous interactions, experiences, and learning of the what, who, whom, how, when, and why of what is happening.
Trust in social network community (TCO)	The sense of protection, care, and perception of reliability from the messages, feedback, or recommendations from other friends on a social network site.
Culture	The degree of national cultural variation in different countries, from the perspective of the two relevant dimensions of uncertainty avoidance and individualism; stems from a respondent's region or country of origin.
Intention to purchase (INT)	The perceptions and intentions to accept a friend's product recommendation or review when purchasing a product on a social commerce site.

interactions, have been shown to increase social networking users' purchase intention for deals recommended by online social network friends [65]. It is also evident that greater familiarity between the information receiver and sender, implies greater intention to buy the product or service recommended by the information sender [47]. These findings suggest that the intention to purchase is directly motivated by the social interactions between users and a social network community. A user who has more social interactions with others in the social network community, has a stronger feeling of closeness and familiarity with others. Therefore, it is more likely that this user's intention to purchase will be influenced by the community. Based on this line of argument, we hypothesize that:

H1. A stronger feeling of closeness to a social network community, implies a greater influence of the community on the intention to purchase.

H2. A stronger familiarity with a social network community, implies a greater influence of the community on the intention to purchase.

3.2. Trust in the social network community

Trust is one of the key elements in social capital [54] and is an asset rooted in social relationships [29]. A study of virtual

communities found that the level of interpersonal trust significantly influences members' intentions to give and receive information [62]. Working toward interpersonal trust may develop one's reliance on, protection of, and care for others. Trust also represents the degree of one's willingness to be vulnerable to others' actions [52]. We suggest that trust in one's close social network community (i.e., friends) leads to trust in the whole social network community, i.e., all members in the website, including sellers. In other words, if a user trusts a social network community, she is more likely to make a purchase from a social commerce site recommended in that community. On the other hand, if she believes that a social network community cannot be trusted, she is less likely to make a purchase from a social commerce site recommended by that community. Following this line of argument, we expect the following:

H3. The presence of trust in a social network community will have a positive influence on the intention to purchase.

Trust may be developed online [11], on social network sites. Prior study in the e-commerce environment reveals an association between social interactions and trust [14]. In another online context, i.e., in a C2C environment, a similar finding is found. In particular, [10] discover that social interactions among members in a C2C environment increase the level of trust among its members. The study further suggests that trust in the community leads to trust in the C2C platform, which includes sellers. We argue that one's interaction on a social network site leads to trust in one's close community (i.e., friends), and trust in one's close community leads to trust in the entire social network community. Therefore, having more social interactions with members in a social network community, leads to greater trust in that community. This relationship holds because closeness and familiarity help users to feel more secure with their peers in an online community. Likewise, social interactions in a social network community will influence one's trust in the community itself, as member interactions foster a sense of belonging, involvement, and commitment. As such reassurances evolve, users tend to believe that other community members will not deliberately cause harm to a peer because, trust has been established. As a result, closeness and familiarity will increase a user's trust in the social network community. Therefore,

H4. A stronger the feeling of closeness to a social network community, has a greater influence on the level of trust in that community.

H5. A stronger familiarity with a social network community, has a greater its influence on the level of trust in that community.

Prior studies also have demonstrated that trust plays a mediating role in the relationship between familiarity and the perception of receiving useful knowledge from others [43]. That is, trust affects the perception of the usefulness of information received from a social network community. Likewise, a higher level of trust in a social network community fosters a stronger effect on a user's intention to purchase from a social commerce site. Still, the degree of trust in a social network community is founded on social interactions. If trust exists in a social network community, information receivers will have a stronger intention to purchase from social commerce sites recommended by fellow community members, with whom they are intimate and familiar. We propose the following:

H6. Trust in a social network community plays a mediating role in the relationship between closeness and the intention to purchase from a social commerce site.

H7. Trust in a social network community plays a mediating role in the relationship between familiarity and the intention to purchase from a social commerce site.

3.3. Culture-uncertainty avoidance and individualism dimensions

Countries in Latin America have higher collectivism scores, whereas East Asian countries have higher scores for individualism [19]. Together with a high score on uncertainty avoidance, this difference implies that Latin American people are more likely to listen to the opinions of others in their society rather than act individually based on their intrinsic needs alone. Al-Gahtani et al. [1] argue that countries with low individualism scores might display a strong relationship between subjective norm (the influence of people in one's social environment) and behavioral intention. In addition, people from countries with low individualism scores (i.e., with relatively high collectivism scores) such as Korea more heavily value support from existing social network relationships than do people from high individualism score countries such as the United States [36]. Similarly, we believe that the impact of social interactions (from a social network site) on one's intention to purchase from a recommended social commerce site will be stronger in countries with a higher collective score (Latin America region) than in nations with a higher individual score (East Asia region). In other words, the strength of the relationship between social interactions and one's intention to purchase will be dependent on the culture, as differentiated by the individualism dimension. Following this phenomenon, we propose the following:

H8. Culture, as differentiated by the dimension of collectivism vs. individualism, will moderate the relationship between social interactions (for both closeness and familiarity) and intention to purchase from a social commerce site, such that the effect is stronger in the Latin America region than the East Asia region.

Latin American countries have a culture of avoiding the unknown (a high uncertainty avoidance score), that is more pronounced than in nations in the East Asia region, which have a medium-high uncertainty avoidance score [19]. Prior studies have shown that countries with a high degree of uncertainty avoidance such as Japan may limit their activities using online media [67] unless they find that the online activity is safe and that they are able to trust it [21]. This difference implies that trust is a relatively more important requirement for countries with a higher degree of uncertainty avoidance than it is for countries with a lower degree of uncertainty avoidance.

For the reasons mentioned above, Latin American people may tend to be more careful when considering a purchase intention on a social commerce site that they do not trust. As such, Latin Americans' intentions to purchase from a social commerce site are more likely rooted in trust in a social network community. In addition, because Latin Americans are more likely to avoid uncertainty compared to East Asians, their trust in social communities must be developed through social interactions. In short, their purchase intentions are more likely driven by trust that has strengthened over a long period in a social community rather than merely through social interactions within that community. In sum, culture will affect the degree to which trust in a social community mediates the relationship between social interaction and one's intention to purchase from a social commerce site. Therefore, we hypothesize the following:

H9. Culture, as differentiated by the uncertainty avoidance dimension, will moderate the mediating role of trust in a social network community on the relationship between social interaction (i.e., for both closeness and familiarity) and intention to purchase from a social commerce site, such that the effect is significantly stronger in Latin America region than in East Asia region.

4. Research methodology

The targeted social networking site is Facebook. Facebook is chosen because it is the "largest social network in the world with 500 million active users of whom 50 percent log in on a daily basis" [37]. One global study on Facebook advertising found that companies in many countries choose Facebook for advertising and use the site to promote their campaigns or brands and to communicate with their customers [70]. To test the research model, we develop an experimental social commerce site on Facebook.

The products sold on the site were accessories and clothing, such as bracelets and scarves. This product category "accessories and clothing" was chosen because we observed that it was one of the top three types of items advertised on Facebook [31]. This experimental social commerce site was launched using a convenience sampling method; it originally had three close friends in total from the two different regions under examination – Latin America and East Asia. For ease of reference, we called them the 1st-level friends.

We posted pictures and descriptions of all the products on the "wall" of the experimental Facebook account to share with the 1st-level friends. The 1st-level friends then assessed the products and put their positive reviews and recommendations for each, one product at a time, on their own Facebook accounts as a message for all their friends (identified as the 2nd-level friends) to read. Next, we observed the purchase intentions related to this social commerce site over a period of two weeks. We used the snowball sampling method to send an online questionnaire to all the 2nd-level friends through a Facebook message intended to collect data on social interaction, trust, respondents' country of origin, and social commerce purchase intentions.

The survey instrument was developed using items validated in prior research (see Table 2) and some adaptations of the technologies studied herein. The construct measurement items used in the survey are provided in Appendix A1. All items are measured on a 7-point Likert scale with anchors from "strongly disagree" to "strongly agree." Because this survey was intended for respondents who speak different languages, we translated the English version into two other languages, Mandarin (for respondents from Taiwan) and Thai (for those from Thailand). The English version of the survey instrument was used for the Latin American respondents. To assess the *content and translation validity* of the survey in each language, three people such as university professors and graduate students were recruited who understand both English and the target foreign language used in the version of the survey. In addition, we used back translation to ensure the quality of the translated surveys [5,6]. Back translation was performed by translating the non-English versions of the survey back into the original language (English in this case) to ensure that these versions communicate the same meaning and content as the original. This procedure was performed to minimize the construct bias, method bias, and item bias commonly found in cross-cultural studies [46,74].

A total of 632 questionnaires were sent on Facebook in January 2012 via our experimental Facebook fan page. A total of 284 responses were received; therefore, the return rate was 45 percent. A total of 82 percent of the East Asian group and 78 percent of the Latin American respondents had no social commerce purchasing experience. The largest group of respondents came from East Asia at 62 percent, whereas the share of Latin Americans was 38 percent. A total of 64 percent of the East Asian respondents came from Taiwan, and 42 percent of the Latin American respondents were from Guatemala. In addition, 53 percent of the respondents were male. Most of the respondents were between 23 to 32 years old and possessed a bachelor's degree (46 percent – East Asia, 49

Table 3
Mean, standard deviation and the reliability tests for the constructs.

	Mean	Std. Dev.	Factor loading	SMC ^a	Composite reliability	AVE
Closeness or Intimacy (CLO)					0.856	0.749
CLO 1	4.68	1.446	0.85	0.723		
CLO 2	4.28	1.552	0.88	0.774		
Familiarity (FAM)					0.878	0.707
FAM 1	4.88	1.384	0.88	0.774		
FAM 2	5.14	1.392	0.84	0.706		
FAM 3	4.52	1.312	0.80	0.640	0.708	0.548
Trust in social network community (TCO)					0.913	0.842
TCO2	4.88	1.324	0.74	0.548		
TCO3	4.15	1.571	0.74	0.548		
Purchase intention (INT)						
INT1	4.36	1.861	0.85	0.723		
INT2	3.84	1.737	0.98	0.960		

^a Squared multiple regression.

percent - Latin America). Half of the East Asian region's respondents were employed, whereas slightly more than half (57 percent) of the Latin American respondents were college students. A more detailed summary of the respondents' characteristics is provided in [Appendix A2](#).

5. Results and analysis

5.1. Validity and reliability assessment

The Covariance Based Structural Equation Modeling (CBSEM) approach is adopted in this study as it serves the purpose of this study, i.e., theory testing and development [17]. For this purpose, the Lisrel 9.1 software was utilized in this study.

This study, consisting of 284 responses, meets the minimum sample size requirement, also known as the rule of ten [17]. That is, the sample size is larger than ten times the largest number of structural paths (three) directed at a particular latent construct in the structural model. To reduce the potential for survey evaluation apprehension and to increase the validity of survey responses, procedural remedies to control for common method bias as suggested by Podsakoff et al. [59] are considered in this study. These remedies include protecting respondent anonymity, ensuring data confidentiality, providing concise and clear questions, and avoiding double-barreled questions. To test for the problem of common method bias in the collected data, Harman's single factor test [59] is conducted. The test results confirm that the common method bias is unlikely to be a serious problem in this study.

The two-step approach suggested by [2] is applied here to test the validity of the measurement model and then to assess the model fits of the structural models. To do so, confirmatory factor analysis (CFA) is first performed to test the unidimensionality, convergent validity, internal consistency reliability, and the discriminant validity of the measurement items used herein. This analysis is conducted by creating a measurement model based on the latent variables used in the research model. Prior to CFA, item CLO3 is dropped to satisfy the requirement for face validity. After CFA, each item's unidimensionality is assessed by evaluating its shared residual variance and checking the modification index for theta-epsilon with other items. The pairs of items with standardized residuals far above 2.58 and modification indexes (for theta-delta and theta-epsilon) above 5, thus threatening the unidimensionality, are dropped one at a time until there are no problematic measurement items [15]. Following these rules, TCO1, TCO4 and TCO5 are dropped to prevent the violation of unidimensionality. Following these procedures, the CFA achieved satisfactory

model fit with normalized $\chi^2 = 59.87$, $df = 44$, $RMSEA = .036$, $GFI = .97$, $AGFI = .94$, $NFI = .98$, $CFI = .99$ and P -value = .056.

[Table 3](#) shows that the factor loading of all construct items ranges from 0.74 to 0.98. The composite reliability of the survey items intended to measure the same construct are higher than 0.7 for all constructs (see [Table 3](#)). The average variance extracted (AVE) for all constructs are higher than 0.50 ([Table 3](#)), and the square roots of the AVEs are greater in all cases than the off-diagonal elements in their corresponding row and columns ([Table 4](#)); these facts confirm the convergent and discriminant validity of the constructs and the measurement items used in the survey instrument [13]. In addition, the correlation between latent constructs does not exceed 0.70 ([Table 4](#)), which further signals measure distinctness [58].

5.2. The structural model

The beta path coefficients for closeness and familiarity to intention to purchase (in [Fig. 2A](#)) are positive (in the expected direction) and statistically significant. Therefore, hypotheses H1 and H2 are supported. Similarly, the beta path coefficient for trust in the social network community to the intention to purchase (in [Fig. 2B](#)) is also positive and statistically significant, supporting hypothesis H3.

Both familiarity and closeness in [Fig. 2B](#) are significant in predicting the level of trust in a social network community and are able to explain 56 percent of the variance in trust in the social network community examined. These findings support hypotheses H4 and H5. In overall, the entire model in [Fig. 2B](#) explains 33 percent of the variance exhibited in the intention to purchase through social commerce in this sample.

In testing the mediation effect of trust in a social community, the three conditions suggested by [34] and colleagues [4,27] have been examined. The results in [Fig. 2A](#) and [B](#) show that the three conditions for testing the mediation effect of trust in a social network community on the relationship between closeness (and familiarity) and the intention to purchase from a social commerce site are all met. Closeness, familiarity, and trust in a social network

Table 4
Discriminant validity (intercorrelations) of variable constructs.

	1	2	3	4
1. Closeness	0.89			
2. Familiarity	0.57	0.84		
3. Purchase intention	0.40	0.37	0.74	
4. Trust in a social network community	0.62	0.67	0.55	0.92

Note: Diagonal is the square-root of the construct's AVE.

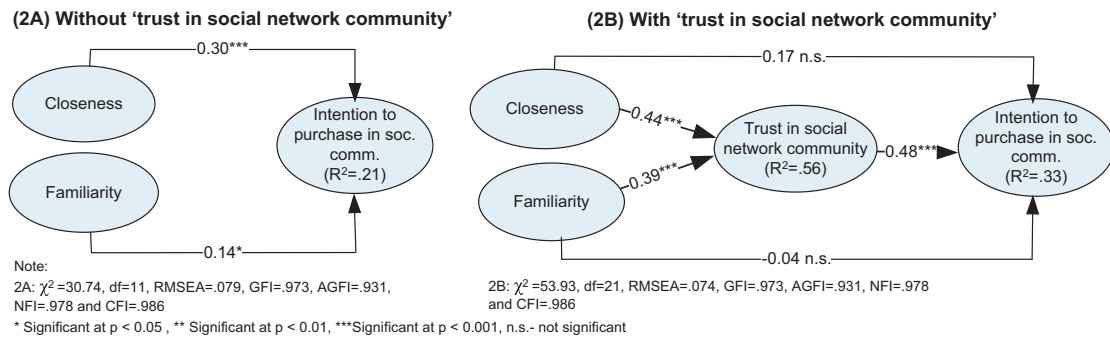


Fig. 2. The initial structural model results for the whole sample.

Table 5
Sobel significance test results for indirect effects.

	Path coefficient	Standard Error	Z-values
<i>Closeness</i>			
Direct effect (c1)	0.171	0.0992	1.721
Indirect effect (Sobel Test)			
CLO-> TCO (a1)	0.437	0.0901	4.853
TCO-> INT (b1)	0.475	0.119	3.999
Sobel Z-value	3.082 (significant at $P < 0.01$)		
<i>Familiarity</i>			
Direct effect (c2)	-0.0422	0.0875	-0.482
Indirect effect (Sobel Test)			
FAM->TCO (a2)	0.387	0.0858	4.514
TCO->INT (b2)	0.475	0.119	3.999
Sobel Z-value	2.963 (significant at $P < 0.01$)		

community (the mediator) significantly predict the intention to purchase; see Fig. 2A and B. However, the direct effects of closeness and familiarity on the intention to purchase are no longer significant after controlling for the mediator. The results of the Sobel significance test, referring to [4], for the indirect effects of the two independent variables on the dependent variable via the mediator are all significant at $P < 0.01$, as shown in Table 5. In addition, complete mediation occurs in the direct effects of closeness and familiarity on the intention to purchase after controlling for the mediator. Therefore, H6 and H7 are supported.

Similar to the study by [67], cultural factors were neither collected nor measured in our survey instrument. Therefore, the interaction terms between culture and other independent variables could not be computed and included in the measurement model. In this situation, subgroup analysis is appropriate for testing the moderation strength and is analyzed using Lisrel [4].

To justify subgroup analysis and analysis of moderating effects in different groups, testing the measurement model invariance is required [63]. This procedure is followed to determine whether the

measurement parameters are the same across all groups and whether the same construct is measured in all groups. A Chi-square difference test was performed for this purpose. The results for the measurement model are shown in Appendix A3. The large P -value suggests that there is sufficient evidence to accept the null hypothesis that the factor loadings of the measurement model are invariant across the two cultural groups.

Fig. 3 illustrates the structural model results for both the East Asia and Latin America regions. In comparing the model results between these two groups, it was found that only the relationship between closeness and the intention to purchase was significant within the East Asia group, whereas only familiarity was significant in predicting the intention to purchase within the Latin America group. A Chi-square difference test was conducted to test whether these two groups have equal parameter estimates in the path model. The results in Table 6 show that the Chi-square difference was $\Delta\chi^2 = 13.41$, $df = 6$, $P = .037$. This finding indicates that differences in parameter estimates exist between the two model analyses. However, H8 was supported only for the relationship between familiarity and intention to purchase but not for the relationship between closeness and intention to purchase because this relationship was insignificant within the Latin America group.

The moderated mediation tested in this study was conducted by examining the mediation effects and then the moderating effect. Similarly, to test the mediation effect of trust in a social community on the two different regions, the three required conditions were met as shown in Fig. 4A and B. The mediation test of trust in a social network community, using the Sobel significance test, on the relationships (1) between closeness and the intention to purchase is significant at $P < 0.05$, with a Z-value of 2.342, for the East Asia group, and (2) the relationship between familiarity and the intention to purchase is significant at $P < 0.05$, with a Z-value of 2.077, for the Latin America group. Partial mediation was observed as the predictive utility of closeness was reduced from $\beta = 0.41$, $P < 0.001$ to $\beta = 0.28$, $P < 0.01$, and there was a drop in the

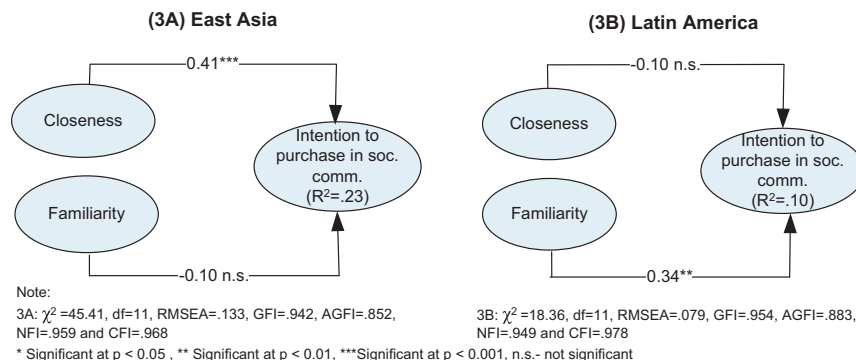


Fig. 3. Structural model results of social interactions for the two regions.

Table 6
Parameter estimates for the two groups – Chi-square difference test results.

Hypothesis	Chi-square	DF	P-value
Equal parameter estimates (H0)	148.89	39	0.0001
Unequal parameter estimates (H1)	135.48	33	0.0001
Difference	13.41	6	0.0370

significance of the direct effects of closeness on the intention to purchase after controlling for the mediator. To assess the statistical conclusion validity of the type of mediation, the significance of indirect effects is further examined [48]. This assessment was accomplished by comparing the constraint model (where the coefficient of the direct effect path is constrained to 'zero') with the base model (which includes all the direct and indirect paths). The addition of this constraint (CLO->TCO set to 'zero') in the East Asia group significantly deteriorates the model ($\Delta\chi^2 = 7.68$, $df = 1$, $P = 0.0056$) compared to the base model, see Table 7. This finding indicates that the indirect effects are significant and that the direct effect remained significant even in the presence of the mediator. This supports the partial mediation model.

In contrast, the mediation test effect of trust in a social community between familiarity and the intention to purchase, shown in Fig. 4B, indicates that complete mediation occurred. This finding exists because the previously significant relationship between familiarity and the intention to purchase becomes insignificant after controlling for trust in a social network community. The model comparison between the constraint model and base model in the Latin America group showed that the addition of this constraint (FAM->TCO sets to 'zero') did not significantly deteriorate the model ($\Delta\chi^2 = 0$, $df = 1$, $P = 1$) compared to the base model as shown in Table 7. This finding proves that adding the FAM->TCO path does not provide any additional information. Therefore, trust in a social network community fully mediates the relationship between familiarity and the intention to purchase in the Latin America group.

To compare these results across subgroups in a more rigorous way, between-group structural equation model analyses; see [60], were conducted in Table 8. These analyses were accomplished by comparing the constraint model with the default model. In the default model (as presented in Fig. 2B), all the structural parameters were allowed to vary freely across the East Asia and Latin America groups, but the measurement model equivalence constraints were

Table 7
Mediation test of TCO for East Asia and Latin America.

	East Asia (N=176)		Latin America (N=108)	
	Base	Constraint model	Base	Constraint model
CLO->TCO	0.417***	0.466***	0.206	0.205
FAM->TCO	0.350***	0.302**	0.634***	0.635***
CLO->INT	0.284**	(Constrained)	NA	NA
FAM->INT	NA	NA	0.006	(Constrained)
TCO->INT	0.313**	0.603***	0.464*	0.470***
χ^2	66.26	73.94	37.81	37.81
DF	22	23	22	23
CFI	0.973	0.968	0.972	0.974
RMSEA	0.107	0.112	0.082	0.077
$\Delta\chi^2$	-	7.68	-	0
P-value	-	0.0056 ^a	-	1 ^b

NA – not applicable for testing the mediating role of TCO as the paths (FAM->TCO in the East Asia and CLO->TCO in the Latin America) are not significant as indicated in Fig. 3A and B respectively.

(Constrained) – the path is set to 'zero'.

^a Reject H0: the path coefficient of CLO->INT in the base model and the constraint model is the same.

^b Accept H0: the path coefficient of FAM->INT in the base model and the constraint model is the same.

* Significant at $P < 0.05$
 ** Significant at $P < 0.01$
 *** Significant at $P < 0.001$.

Table 8
Mediation test–Between the two group comparisons.

Model ^a	Constraint	χ^2	DF	$\Delta\chi^2$	P-value	RMSEA
Default	(No structural constraint)	64.82	50			0.046
Model A	CLO->INT	99.08	51	34.26	0.0001	0.084
Model B	FAM->INT	112.64	51	47.82	0.0001	0.093

^a Measurement model was constrained to be equal across the two cultural groups (East Asia and Latin America) in all the models

imposed [64]. On the other hand, the constraint model has an additional equality constraint of setting the path coefficient (CLO->INT or FAM->INT) to be equal across the two groups in models A and B, respectively. The $\Delta\chi^2$ values in models A and B in Table 8 were significant (model A: $\Delta\chi^2 = 34.26$, $df = 1$, $P = .0001$; model B: $\Delta\chi^2 = 47.82$, $df = 1$, $P = .0001$). These showed deterioration in model fit, indicating that the paths (CLO->INT in model A and FAM->INT in

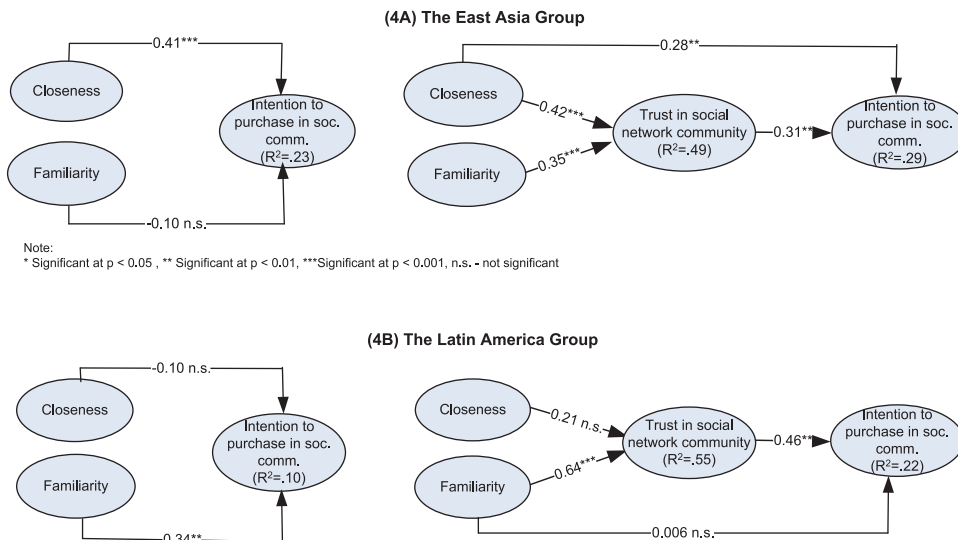


Fig. 4. Structural model results of the mediating effect of TCO in the two regions.

Table 9

Hypotheses conclusions.

Hypotheses conclusions	Result supported
H1: A stronger feeling of closeness to a social network community increases the community's influence on the intention to purchase.	Yes
H2: A stronger familiarity with a social network community increases the community's influence on the intention to purchase	Yes
H3: Presence of trust in a social network community has a positive influence on the intention to purchase.	Yes
H4: A stronger feeling of closeness to a social network community has a stronger influence on the level of trust in that community.	Yes
H5: A stronger familiarity with a social network community has a stronger influence on the level of trust in that community.	Yes
H6: Trust in a social network community plays a mediating role in the relationship between closeness and the intention to purchase from a social commerce site.	Yes – complete mediation
H7: Trust in a social network community plays a mediating role in the relationship between familiarity and the intention to purchase from a social commerce site.	Yes – complete mediation
H8: Culture, as differentiated by the dimension of collectivism vs. individualism, moderates the relationship between social interactions (for both closeness and familiarity) and the intention to purchase from a social commerce site such that the effect is stronger in the Latin America region than the East Asia region	Yes – moderation occurs (But, only for FAM->INT, the effect is found to be stronger in the LA region)
H9: Culture, as differentiated by the uncertainty avoidance dimension, will moderate the mediating role of trust in a social network community on the relationship between social interaction (i.e., for both closeness and familiarity) and the intention to purchase from a social commerce site such that the effect is significantly stronger in the Latin America region than in the East Asia region.	Inconclusive – as no comparable relationship can be made between the two regions from our sample data. (However, complete mediation of TCO happens within the LA region for FAM->INT, and partial mediation occurs within the EA region for CLO->INT.)

model B) were not equal in the two regions [64]. These results indicate that the strengths of the mediator role of trust in a social network community (TCO) in these two relationships (CLO->INT and FAM->INT) vary significantly across the two regional settings. In this case, the effect of the mediator is stronger in the Latin America group as complete mediation occurs, whereas partial mediation occurs in the East Asia group.

6. Conclusions and implications

Table 9 presents the outcomes of the hypotheses tested in this study.

6.1. Conclusions

The results from the sample in this study suggest that closeness and familiarity (social interactions) are good predictors of trust in a social network community. A total of 56% of the variation in trust in a social network community may be explained by a user's closeness and familiarity with a social network community (Fig. 2B). Furthermore, based on our whole sample, trust in a social network community is a salient factor influencing the intention to purchase on social commerce websites.

In comparison to closeness, familiarity is a weaker measure of social impact (see Fig. 2A). Our conclusion is consistent with that of [41], who also argued that closeness/intimacy is a purer affective concept and has a greater impact on online users' behavior or compared to familiarity.

In addition, this study verifies that trust in a social networking community plays a mediating role in the relationship between social interactions and the intention to purchase from a social commerce site. Whereas closeness was significant in the East Asia group, familiarity was significant in the Latin America group in predicting users' purchase intention on social commerce sites. Our results also provide evidence that (1) the differences in culture between regions moderate the relationship between social interaction and the intention to purchase from a social commerce site and (2) the differences in culture between regions moderate the mediating role of trust in a social network community differently in the relationship between social interactions and the intention to purchase from a

social commerce site – i.e., a partial mediation of closeness's direct effect in the East Asia region and a complete mediation of familiarity's direct effect in the Latin America region. This finding implies that the mediating effect of trust in a social network community is relatively stronger within the LA region.

6.2. Theoretical contribution

This study shows that trust transference theory helps in to explain social commerce purchase intention. It is clear from the results that one third of the variations in the intention to purchase from a social commerce site observed in our sample are based on trust in a social network community. This finding shows that trust in other firms in a social network community may be transferred from trust in one's close social network community. This finding is consistent with that of [10]; whose study shows that mutual trust between members boosts their trust in the C2C platform provider. This finding highlights the importance of building up trust in a social network community to boost users' intentions to purchase from a social commerce site. In addition, this study has extended the trust transference theory by suggesting that culture somehow plays a moderating role in the transfer of trust in one's close social network community to trust other firms in that social network community.

This study has also contributed to research on purchase intentions via social commerce in the following ways: (1) confirming that culture plays a moderating role in predicting purchase intentions through the social commerce context; (2) showing that both the closeness and familiarity of members on a social network site are important in building trust in a social network community, and (3) showing that trust in a social network community mediates the relationship between social interactions and the intention to purchase, and this mediation is conditional on culture.

6.3. Implications for practice

Social media brings businesses closer to their customers. A study conducted by [16] suggests that "social networks are the most prominent feature in predicting how consumers choose their transaction partners." A better understanding of the characteristics of social commerce users and the impacts of social interactions on

social commerce purchasing decisions, may help online companies to better plan and target their marketing strategies at a predefined segment of customers on a predetermined social network site.

According to a global study [69], if social interactions (which may create closeness and familiarity) on a social networking site and trust in the community are properly managed, a social networking site can also serve as a venue for (1) retaining and increasing an online company's customer loyalty (as such sites facilitate a direct and open point of contact with customers), (2) obtaining more customer feedback and electronic word-of-mouth advertisements, and (3) managing enterprise knowledge. Our study has proven that social interactions with a social network community may result in a stronger sense of trust in the community and may drive the intention to purchase from a social commerce site in that community.

Online and offline companies must be open to and aware of external changes that are occurring worldwide with regard to managing brand awareness and customer relationship management to remain competitive [56]. Companies may incorporate and apply the right social media strategy by modularizing this innovative business strategy in their organizational routines [55] to shape organizational rhetorical practices [22] or by adopting a project evaluation model suggested in the research [57] to manage their organizational commitments for social media strategy.

Similar to other popular online companies such as Google and Yahoo, social networking sites such as Facebook that are free of charge allow companies to attract a high volume of users and visitors. Setting up a store to sell products on a social networking site may be accomplished at almost no cost, provides unlimited access to a large potential base of customers, and may increase an online company's brand equity. However, a firm understanding of the importance of social interactions and of the characteristics of a particular customer segment is required to guarantee success in social commerce. For instance, our study has shown that both closeness and trust in a social network community are significant predictors of the intention to purchase on social commerce sites in the East Asia region (Fig. 4A) but that only trust in a social network community is a significant predictor for the Latin America region (Fig. 4B). These findings suggest that, if social commerce requires social interactions among the members in its community, social commerce market entry or penetration in East Asian countries may have relatively fewer barriers and has a greater potential for success than in Latin American countries.

6.4. Implications for future research directions and limitations

The use of Hofstede's cultural dimensions in studying cross-regional cultural issues may face some criticisms [25]. Wu [80] emphasizes that values in a specific culture change and evolve over time, as they may be influenced by political changes, social factors and increasingly integrated global economies. As a result, purchasers' behavior will change over time as well. Nevertheless, this study may serve as a foundation for comparative studies in future research, for example, by comparing the relative relevance and robustness of Hofstede's cultural dimensions with the recently developed GLOBE approach [20] for measuring cultural values. Moreover, future studies may repeat this study's research model under different cultural settings such as examining Western countries versus Middle Eastern countries or under different national economic environments such as developed versus developing countries.

In addition, this study considers social capital factors only. Consequently, other factors related to social commerce systems such as system quality, information quality and user-friendly interfaces (cf., [61]), after-sales service, and operational environments (e.g., reliability and availability services provided by the postal system in a country) may merit further investigation. In addition, other future studies may consider or control payment behavior, examine macroeconomic differences between different world regions (e.g., Internet infrastructure and legal system), and study differences at the individual level, such as an individual's purchasing power and habits, Internet usage behavior, prior purchasing experience, and interest in a product as well as a product's price. In addition, trust in a social network community may change over time; therefore, a longitudinal study may be beneficial for a deeper understanding of the dynamics of trust transfers occurring in a social commerce environment.

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Appendix A1. Predictor and predicted latent construct items

Survey items	Dropped item
Closeness or Intimacy (CLO)	
CLO 1: I feel a sense of closeness with my friends on Facebook.	
CLO 2: I feel a sense of intimacy with my friends on Facebook.	
CLO 3: I feel my friend's product recommendations or product reviews are a very important part of my consumption life.	Yes – to satisfy face validity
Familiarity or Tie strength (FAM)	
FAM 1: I am familiar with my friends on Facebook through message exchanges.	
FAM 2: I am familiar with my friends on Facebook through photo sharing.	
FAM 3: I have a very high level of interaction with each person on Facebook.	
Trust in social network community (TCO)	
TCO1: I feel fine interacting with the social network community (e.g., friends, and relatives) because it fulfills my needs of interaction efficiently.	Yes – dropped in CFA
TCO2: I always feel confident that I can rely on the social network community's (e.g., friends, and relatives) responses and feedback when I interact with them.	
TCO3: I assume my Facebook friends would always look out for my interests.	
TCO4: I assume my Facebook friends would make sure that I was not harmed or in danger.	Yes – dropped in CFA
TCO5: I feel like my Facebook friends care what happens to me.	Yes – dropped in CFA
Purchase intention (INT)	
INT1: I have a strong intention to purchase a product online if the product is recommended by my social network friends.	
INT2: I choose to accept my friend's product recommendations or product reviews without any hesitation when purchasing goods on the Internet.	
EXP: Have you bought a product from any companies that promote themselves on Facebook?	Yes – dropped in CFA

Appendix A2. Summary of respondent characteristics (n = 284)

		Frequency	Percent
Country region			
Latin American countries (n = 108)	Guatemala	46	16
	Nicaragua	18	6
	Honduras	13	5
	Other	31	11
East Asian countries (n = 176)	Taiwan	113	46
	Thailand	59	24
	Other	4	1
Interaction level return rate	Low	134/402 (sent), 134/246 (returned)	33, 54
	Average	68/132, 68/246	52, 28
	High	44/98, 44/246	45, 18
Social Commerce Experience		49/246	20
	East Asia	32/176	18
	Latin America	24/108	22
Age (for both mode and median)	East Asia	23–32	65
	Latin America	23–32	75
Gender	Male	130/246	53
	Female	116/246	47
Education level (mode)	East Asia	Bachelor Degree	46
	Latin America	Bachelor Degree	49
Employment (mode)	East Asia	Employed	50
	Latin America	College Student	57

Appendix A3. Invariance of factor loadings–Chi-square difference test results

Hypothesis	Chi-square	DF	P-value
Equal factor loadings (H0)	143.82	95	0.0009
Unequal factor loading (H1)	137.88	88	0.0005
Difference	5.94	7	0.5468

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Celeste S-P Ng is currently an Assistant Professor of the Department of Information Management at Yuan Ze University. Dr. Ng has published research work and articles in the *Journal of Information Technology*, *Information & Management*, *Journal of Systems and Software*, *Journal of Software Maintenance and Evolution: Research and Practice*, *Information Systems Frontier* among others. Dr. Ng's research interests include social media, social commerce, and Enterprise Resource Planning (ERP) maintenance and upgrade issues.