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The impact of social media characteristics on e-commerce use behaviour among youth in developing countries

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Abstract: Social media has influenced the e-commerce buying behaviours because of its capability to enhance customer's experiences. Social media can help in conveying ideas, shaping perceptions and modifying buying intentions of the targeted audience. This paper investigates the impact of social media on trust and willingness to buy through e-commerce context in developing nation's youth. We identified seven characteristics of social media which influence consumer's behaviour and motivate consumers to buy online. Convenience sampling technique was used to collect data from international students of Chinese universities. The respondents were from 34 developing countries. The findings showed that social media can serve as excellent tool to enhance trust for e-commerce use and increase the willingness to buy online in developing countries. Hierarchical multiple regression showed significant variance among the predictors. This study contributes to theoretical and managerial understanding of social media for building trust and willingness to buy online. The study includes a broad spectrum of social media characteristics and their influence on e-commerce.

Keywords: social media, e-commerce, buying willingness, social media characteristics, developing nations.

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1 Introduction

Social media is not only a medium to communicate and remain updated, but it is also playing a valuable role in defining behaviours and introducing new ideas in the society. Moreover, social media has emerged as a potential source of marketing and sales in the era of globalisation. Nowadays, social media is being used as an effective marketing tool to reach customers as well as to build trust for buying online. In psychological views, digital confidence increases the human intention to buy online.

Social media users generally have good technical skills and e-commerce experience; and they prefer looking into product details at different forums. Kwahk and Ge (2012) found a significant relationship between e-commerce and social media use, as well as various dimensions of social media. Growth of social media have created a supportive atmosphere for e-commerce through its characteristics which make the customers' outreach and engagement simpler, easier, and real time. Involvement of the customers on such platforms strengthen decision making and trust-building to use e-commerce among newbies (Curty and Zheng, 2011). According to Gatautis and Medziausene (2014) online social networking facilitates exchanging and transforming e-word of mouth in between customers. Social media communications have influential power to gain clients' attention and it is also a source of getting closer to the consumers for e-commerce companies (Bilal et al. 2014). Social media characteristics such as rating, recommendation, e-word

of mouth and live chat can influence buying intention through e-commerce sites (Hajli, 2014, 2015; McLean and Osei-Frimpong, 2017).

Owing to the rise of social shopping, online shops/auction managers are developing social shopping functions or launching social shopping networks on their websites. Social shopping networks entail “creating places where people can collaborate online, get advice from trusted individuals, find goods and services and then purchase them” (Schwartz and Rubel, 2005). Other people’s advice or recommendations about products play an important role in social shopping. Once consumers trust the product recommendations on the social shopping networks of websites, their intention to purchase the socially-recommended product is stimulated and thus they may buy from that website. In addition it has been found that people are more likely to trust the information provided by other shoppers like themselves more than that provided by companies (Smith and Chaffey, 2008). Therefore through consumers’ trust in the opinions or recommendations shared by other shoppers, websites may increase their sales volume. Recently trust has been studied as an important factor in e-commerce, and it was found that most consumers use trusted websites when purchasing online (Chen and Wang, 2016). Hence, social media is one of the major determinants affecting trust under e-commerce settings (Rohm and Milne, 1998). Many online businesses face significant challenges to build trust in e-commerce, especially in developing countries.

It appears that previous researchers have not fully explored the scope to which social media dimensions influence the online buying behaviour and e-commerce adoption. Previous researchers have not extensively explored the scope to which social media dimensions influence the online buying behaviour and e-commerce adoption (Liang and Turban, 2011; Bai et al., 2015; Ahmad and Mlaroche, 2017). Some of the studies have investigated the relationship between social media and e-commerce (Liang and Turban, 2011; Bai et al., 2015; Ahmad and Mlaroche, 2017). However, there had been little considerations on online buying intention and use of e-commerce in developing countries. It has also not been established as to how social media characteristics influence customers to buy online and use e-commerce in such locations. In this study, we investigated the use of social media as an emerging resource for e-commerce in developing nations. Second, this study observes trust and willingness as mediating factors which may stimulate social media users in their intentions to use e-commerce. Moreover, we also examined the impact of social media in dictating the trust factor for online business. It was also investigated that how effectively e-commerce trust transfers through social media as little research has been conducted so far in this regard, especially in developing nations.

In order to fill the existing knowledge gaps, we dissected the user’s engagement on social media, and employed novel efforts and analysis to evaluate the social media characteristics and their impact on user behaviour for e-commerce, theoretically and empirically. Additionally, the study was also purposed to analyse how social media can be used for building trust in developing countries to enhance e-commerce business of online markets. This paper comprises of five sections. The first section briefly discusses social media and introduces the seven factors of social media that influence e-commerce use behaviour. The second section presents the literature review and the theories supporting the study whereas the third section covers methodology and results of the

empirical study. In section four, we have analysed the collected data using appropriate statistical tools. Finally, we discussed the findings, limitations, and future research directions in section five.

2 Literature review and hypotheses development

2.1 Social media and e-commerce

Social media is not just a source of connecting people but it also influences the lives of the users in various other aspects. The connected state of social media allows you to connect with many people around the world who may share common interests. This allows people to increase their diverseness.

As such, it allows seamless connection with different people to share views and experiences with online friends and followers. Therefore, through social media, shoppers can easily share information with the community about products and services (Constantinides and Fountain, 2008). Hence, social media is a tool for spreading information, recommendations, and experiences of one's purchases. It is assisting the customers searching for products on one hand, and helping the suppliers constantly reach out customers through social media pages and targeted ads on the other. Such social media communications help in introducing as well as promoting new products (Vakratsas and Ambler, 1999; Dekimpe and Hanssens, 2007). Moreover, social media helps build trust and willingness to buy online because of readily available rankings, reviews and customer comments. Customers generally believe endorsements by other customers, as they are not able to feel or touch the product on an e-commerce site (Senecal and Nantel, 2004). Hajli (2013, 2015) reported that social media enhances customer trust through ratings, reviews, recommendations, and referrals. Later studies have shown that social media helps in three forms: cerebral, concrete, and informational (Zimet et al., 1988). When customers become members of bigger online groups, they tend to believe on people in the group and accept new products reviewed positively (Baptista and Oliveira, 2016). Customers collect information in the process of buying a product online; they explore social media platforms and forums where people have shared their experiences and views about the product. Mazaheri et al. (2011) agreed that customers try to find several facts and carefully collect information in order to reduce the insecurity and chances of loss involved in their future buying through e-commerce sources. Baptista and Oliveira (2015) also argued that if consumers are members of online selling forums, they are more likely to accept advanced products and new concepts like online buying through communication with other members. In e-commerce selling, vendors may not deliver enough product information such as product quality and related details of interest to particular customers moreover the supplier's own product descriptions are trusted less as compared to the endorsement by other users. In such cases, social media plays a vital role as the customer can look for such information in other consumers' reviews or directly seek information on such forums by interacting with other consumers on social pages and blogs.

Similar suppositions have been presented by Liang and Turban (2011) who found that product information symmetry among traders and consumers stimulates buying intent in e-commerce. E-commerce is changing from core product activities to a consumer-concerned atmosphere, in order to get closer to the customer (Yan et al., 2015). In the modern era, consumers are shifting their manners radically in connection with the use of technologies towards buying situation. Guo and Barnes (2011) pointed out such aggregate buyer involvement. Moreover, Sadovykh et al. (2015) and Huang and Benyoucef (2013) also discussed that social media is giving rise to new commercial opportunities and helping in promotion and brand image development. Customers now have access to an unlimited mass of online information about products and thus do not depend so much on traditional advertisements for selecting products and services. On social media blogs, customers can use information, share know-how's, and deliver experiences which are helpful to other consumers – supporting them in their purchasing decisions (Hajli, 2015). Consequently, many businesses have to adjust and change their promotion plans to handle the shifting customer engagements. Many studies have discussed social commerce in relation to e-commerce (Huang and Benyoucef, 2013). However, there are a few empirical studies discussing the impact of social media characteristics on e-commerce use behaviour in developing countries.

2.2 Supporting theories

Social media is an internet-based source of communication dramatically being adopted in developing countries. Social media or social networking sites like Facebook, Twitter, Instagram and YouTube are new source of ideas and information. Lal (2017) analysed that social media is helpful in exchanging and understanding the individual's behaviour in connection with sharing information. Trust transfer theory and word of mouth theory are the bases to build a theoretical ground in this regard.

Trust transfer theory is a classic theory in psychology and economics. Moorman et al. (1993) defined it as “a willingness to rely on an exchange partner in whom one has confidence.” McKnight et al. (2000) opined that trust plays an important role in the purchase decision and that one often trusts the people he/she frequently interacts with them. Strub and Priest (1976) found that trust is transferable from one person to another person or group. In the online context, trust becomes more critical because of the digital environment and the uncertainty of the web world (Pavlou, 2003). Chen and Wang (2016) found that shoppers would seek advice from online communities' members who have experience in purchasing and using the product before doing online purchases. Many previous studies also examined the effect of social media on the intention of online purchase of goods (McKnight et al., 2000; Gefen et al., 2003; Lal, 2017). Many of the large businesses are adopting e-commerce in developing countries. However, e-commerce business does face customers' trust problems in such location. This study investigates the role of social media characteristics in trust transfer in e-commerce use behaviour in developing countries.

Word of mouth theory assumes that word of mouth is a capable source of information for new costumers (Arndt, 1967; Engel et al., 1969). Therefore, social media has become the new word of mouth (Hajli, 2014). Chen and Wang (2016), Liu et al. (2018), and Cheung et al. (2014) argued previous customer purchase information on social media play an important role in new customer buying intention. Social media users share their past experiences about products which are available to all community members.

E-commerce has impressively developed in recent years. Yet e-commerce has trust issues in developing nations because of their past buying behaviours. Present study explores the impact of social media characteristics as a new e-word of mouth on trust and willingness to buy online. This study also anticipated explaining the role of social media in creating the intention of e-commerce use behaviour and building trust to buy online in developing nations.

2.3 Social media characteristics

Social media characteristics have gained a unique value in e-commerce, especially in developing nations there is huge unexplored potential for e-businesses to occupy the market place as new start-ups. The users of social media post their experiences on online platforms which become a source of information for others. Direct communication and users' views about products become e-word of mouth to help prospective customers make decisions. Moreover, e-business pages serve as live broadcasts and real time information sources. Businesses publicise the details of their existing and upcoming products and give recommendation to customers through online, so that customers do not have to wait for the latest information. Keeping all these facts in view, our hypotheses targeted an exploration of the extent to which social media characteristics can impact online buying behaviours of youth from developing nations.

2.3.1 The impact of e-word of mouth on trust and willingness to buy online

Nowadays, social media is the easiest way to communicate with the business community. Customers interact with other consumers through social media and get information about a product before purchase (Ahmad and Laroche, 2017). According to Hajli (2015), e-word of mouth on social media has the potential to reduce insecurity and build customer trust. Customers share their experience about new products on social media which serves as new word of mouth (Kozinets et al., 2010). Liu et al. (2010) found that e-word of mouth plays a vital role in purchasing decisions. When a customer finds useful information through e-word of mouth, it increases trust level and increases willingness towards e-commerce use behaviour. The positive e-word of mouth influences consumers' product assessment positively (Standing et al., 2016). Sales volume significantly enhanced because of e-word of mouth acceptance in e-commerce (Yan et al., 2016). However, it will be interesting to find how e-word of mouth effect on insecurity of e-commerce and how positively influence of customer's trust.

Following hypothesis were tested in the study in reference to the impact of e-word of mouth on trust and willingness to buy online.

H_{1a} e-word of mouth positively influences trust level to buy online and fill the gap of insecurity of e-commerce.

H_{1b} e-word of mouth positively influences the willingness to buy online.

2.3.2 Impact of increased visibility of product on social media creates an intention to buy online

Presently, social media has become a major channel for e-marketing and even big brands are switching from traditional advertisement to social media advertisement. Social media

has helped companies increase the visibility of their products. These days marketing of products on social media is very popular. Social media content find in two different kinds one is sponsored content and second is original content (Stubb and Colliander, 2019). It is not only growing customer observation but also supporting in product growth (Guo and Barnes, 2011). According to Yadav and Rahman (2017) 39% of the consumers use social media to increase info about numerous products and services, due to visibility of different companies' products on social media.

Visibility is important in influencing customers' buying decisions and repeat purchase behaviours. In this study, we also explored the impact of visibility on trust and willingness to buy online, that is, the role of visibility in increasing trust and willingness to buy online.

H_{2a} Increase in product visibility on social media increases trust in e-commerce and creates an intention to buy online.

H_{2b} Increase in product visibility on social media increases willingness to use e-commerce and adopt online buying behaviour.

2.3.3 Impact of recommendations on trust and willingness to buy online in developing countries

Recommendation is the one of the most important features of social media. Facebook and YouTube recommend new posts and new people to engage their users. Deng et al. (2017) argue that through a recommendation system, customers had better understand their potential concern. Li (2019) recommended that receiving uncover information from others decreases uncertainty and upturns a sense of awareness with them. Mutually, recommendation and referrals are facilities provided by social media sites to improve a sense of awareness in social connections between consumers. Ryu et al. (2012) suggested that the recommendation system increases trust and customer relationship and customers get benefits through recommended information. Recommendation systems have developed as valuable tools to absorb the personalised likings of customers and make personalised offers (Mao et al., 2019). Users favour those recommendations that match their needs and prefer similar recommendations (Deng et al., 2017). Recommendation system increases the sense of involvement in product and reduces the distance between no opinion and option (Deng et al., 2017). Recommendations surge trust to buy online.

H_{3a} Recommendations positively increase trust to buy online and create e-commerce use intention.

H_{3b} Recommendations positively increase willingness to buy online and create e-commerce use intention.

2.3.4 Impact of direct communication/live chat on trust and willingness to buy online

Social media provides options to be in touch with the customers. Thus, e-commerce companies can engage with their customers in live chat sessions. Using such customer care options, companies can earn good reputation and trust. Iyengar and Schotter (2008) observed that live chat has a great influence on the decision making process. Moreover,

Ding and Schotter (2017) argued that live chat and communication has a great impact on the school matching mechanism that improves welfare and immovability. Live chat, also called commercial chat, has many types in the business world like corporate chat, costumer live chat and customer advisory group chat (Akman and Mishra, 2017). Xu (2016) found that live chat reduces website anxiety, improves customer experience and makes the customer feel less anxious. Therefore, live chat has a positive influence on customers who want to buy from online retailers (Akman and Mishra, 2017).

H_{4a} Live chat improves the level of trust in e-commerce and creates an intention to buy online.

H_{4b} Live chat improves the level of willingness to buy online and the intention to use e-commerce.

2.3.5 Ratings and reviews impact on trust and willingness to buy online

Online ratings and reviews of products on e-commerce sites are playing a great role in online business. Before customers buy online through an e-commerce platform, the customers would check the reviews and ratings of products prior to placing an order. Many previous studies found that online reviews and ratings play a helpful role in the decision-making process (Cao et al., 2018; Hu and Chen, 2016). Online ratings and reviews make a firm more trustworthy and increase reputation (Hu and Chen, 2016). Online reviews also improve the trust level in online buying process (Park and Nicolau, 2015).

H_{5a} Online rating and reviews, both positive and negative, help customers to understand products more comprehensively and positively influence trust to buy online.

H_{5b} Online rating and reviews, both positive and negative, help customers to understand product more comprehensively and positively influence willingness to buy online.

2.3.6 Trust influence on e-commerce use behaviour

This study examines how the trust on social media influence e-commerce uses behaviour in developing countries, and to establish the relationship between trust and user behaviour. E-commerce has moved the business from the traditional way of doing business to the digital way (Esmacili et al., 2015). According to social exchange theory, customers share experiences on the basis of trust (Esmacili et al., 2015). Trust is an important factor determining online transactions especially when it comes to developing nations (Ahn et al., 2014). Tariq et al. (2017) also believe that the trust is a main element in online buying.

H₆ Social media characteristics increase trust to buy online and enhanced trust positively influence e-commerce use behaviour.

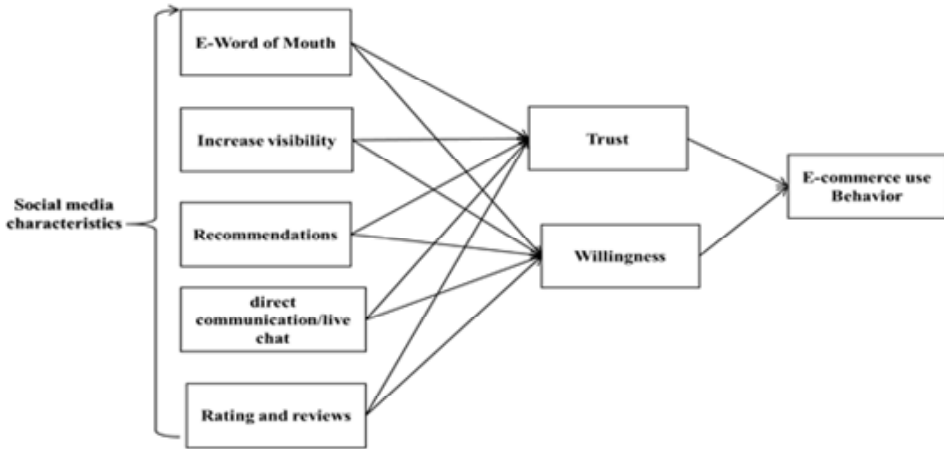
2.3.7 Willingness influence the e-commerce use behaviour

Willingness is an important factor in user's purchasing behaviour as it plays an important role in psychology of the customer. Social media and social sites provide information

about companies and products that increase customer’s willingness to buy online (Gatautis and Medziausiene, 2014). The use of e-commerce has boosted in recent years due to interconnected to social applications (Cao et al., 2018). Customers are able to find all essential information about products and services through the social media platforms and such information make customers use e-commerce (Gatautis and Medziausiene, 2014). Social media members’ opinions, views, and suggestions help create a willingness to buy online on the part of potential customers (Chen and Wang, 2016).

H₇ Social media characteristics increase the willingness to buy online and influence e-commerce use behaviour in developing counties.

Figure 1 Conceptual model of the study



3 Methodology

3.1 Survey data collection

The data used for the study was collected from international students in some selected Chinese universities using a structured questionnaire. We used the convenience sampling technique for selecting the sample. Respondents were selected using the following criteria: the respondent must be an international student and belong to a developing nation, be fluent in English language, be a social media user, and must have an online buying experience. Furthermore, we considered first year students who have just arrived in China. This was to make sure that their cultures and perceptions are intact and not crossbred/mixed with that in China. Even this, we believe that a person’s psychological construct is based on their accumulated schemata constituting their mental knowledge structures. Gentner et al. (2003) explain that schemata facilitate far transfer allowing

unconscious anticipation of an indefinitely large number of situations. As such, the respondents are more likely to make interpretations that fit into their schema. This has a tendency to remain unchanged even when faced with contradictions. A total sample of 192 respondents from 34 developing countries was used. Survey was conducted during November 2017–March 2018.

3.2 Measurement and study design

The questionnaire used contained two sections: the first section contained information about the demographics of the respondents (gender, age, income, education, and nationality) while the second section contained information about social media characteristics and their impact on e-commerce use behaviour. The variables were e-commerce use behaviour, trust, willingness to use e-commerce, e-word of mouth, increased visibility, recommendations, direct communication/live chat, ratings, and reviews. We developed this section with the help of existing literature. Participation in the study was voluntary. Before the questionnaires were administered, we first explained the concept and objective of the study for the understanding of the respondents. After collection and coding, the data was entered into the SPSS Statistics 22 for analysis of the results. The five-point Likert scale was used to measure all the items in the survey.

3.3 Reliability and sampling adequacy

We conducted reliability and sampling adequacy tests of the scales and samples using the Cronbach's alpha and the Kaiser-Meyer-Olkin (KMO), respectively. In reliability tests, Cronbach's Alpha values above 0.7 are considered acceptable (Fornell and Larcker, 1981; Hair et al., 2006). From Table 1, the Cronbach's alpha for the variables ranged from 0.7 to 0.851, suggesting very good internal consistency and reliability for the scale with this sample. The KMO values ranged from 0.739 to 0.819 exceeding the recommended value of 0.6 (Kaiser, 1974).

Table 1 Reliability and KMO test

<i>Variable name</i>	<i>KMO values</i>	<i>Cronbach's alpha</i>
E-word of mouth	0.76	0.78
Increased visibility	0.82	0.85
Recommendations	0.76	0.79
Direct communication/live chat	0.79	0.85
Rating and reviews	0.82	0.86
Trust	0.71	0.72
Willingness	0.77	0.77
E-commerce use behaviour	0.74	0.70

4 Data analysis and results

4.1 Demographic information

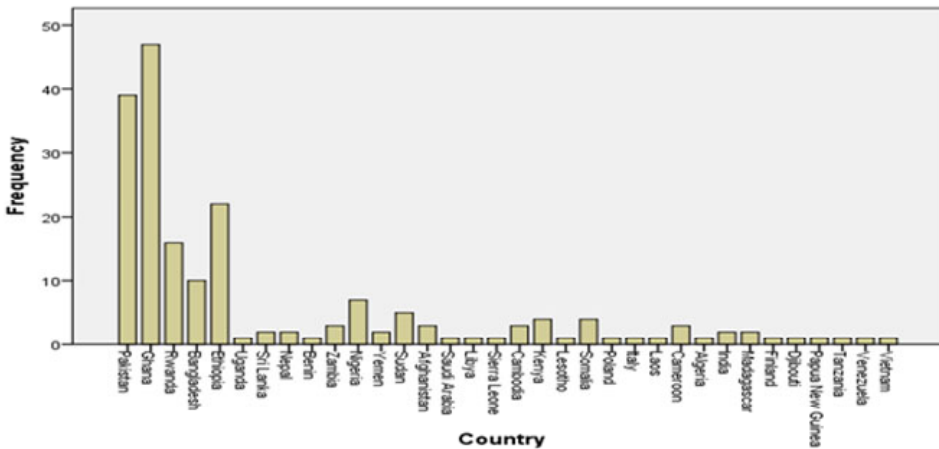
As shown in Table 2, 62.0% of the respondents were between the ages of 25 and 35 years. This confirms Kwahk and Kim’s study which showed that social media sites are visited more by young people (Kwahk and Kim, 2016). More males (81.3%) than females (18.3%) took part in the study. Males were more than females because males have higher ratio to study abroad than females especially in developing nations. In terms of

nationality, the majority of the respondents are from three countries vis. Ghana 47 (24.45%); Pakistan 39 (20.31%); and Ethiopia 22 (11.46%). Together, they constituted 56.25% of the respondents. 45 (23.4%) of the respondents were non-degree program students, whereas 101 (52.60%) were master students; moreover, 46 (24.0%) doctoral candidates also participated in the study.

Table 2 Demographic information

<i>Variables</i>	<i>Category</i>	<i>Frequency</i>	<i>Percentage</i>
Gender	Male	156	81.3
	Female	36	18.8
Age	Below 25	54	28.1
	25–35	119	62.0
	36–46	19	9.9
Education	Non-degree program	27	14.1
	Undergraduate	18	9.4
	Master	101	52.6
	PhD	46	24.0

Figure 2 Nationality of respondents (see online version for colours)



4.2 Correlation analysis

Bivariate correlations for the independent and dependent variables are presented in Table 3. All of the predictors (variables) were significantly and positively correlated with the intention for e-commerce use behaviour. The strength of the relation was positive and all the variables were significantly positively correlated, with a p -value less than 0.01, which indicating the results were not due to chance. The coefficient determination for each variable is well explained.

Table 3 Bivariate correlations between various variables (n = 192)

Variable name	1	2	3	4	5	6	7	8
1 E-word of mouth	1							
2 Increased visibility	0.61**	1						
3 Recommendations	0.59**	0.63**	1					
4 Direct communication/live chat	0.52**	0.49**	0.54**	1				
5 Rating and reviews	0.57**	0.63**	0.68**	0.49**	1			
6 Trust	0.58**	0.58**	0.58**	0.52**	0.61**	1		
7 Willingness	0.66**	0.61**	0.61**	0.55**	0.57**	0.57**	1	
8 E-commerce use behaviour	0.58**	0.62**	0.59**	0.51**	0.65**	0.84**	0.79**	1

Note: * $p < 0.05$, ** $p < 0.01$ and *** $p < 0.001$.

4.3 Hierarchical multiple regression analyses

In social sciences research, hierarchical regression is an exceptionally useful technique for analysing the effect of predictors. Yanovitzky et al. (2006) used hierarchal regression to predict peer influence on college student's behaviours. In this study, we assessed the unique proportion of variance of social media characteristics to use e-commerce behaviour in developing nations. Proceeding to running the regression analyses in SPSS Statistics 22, descriptive statistics were computed to confirm that there was good enough variance on the dependent variable and predictors. Checking for multicollinearity also revealed no cause for concern, with correlations between the predictors (Table 3). Multicollinearity was also tested during the regression analyses and all VIF values were quite low (< 3).

Three separate hierarchical multiple regressions were conducted to identify model ability and strength. The results are shown in Table 4. In the first step, constructs of social media characteristics predicted intentions to use of e-commerce as well as the extent to which the extended variables predicted intention over and above in the construct. In step 1, e-word of mouth, increased visibility, recommendations, direct communication/live chat, rating, and reviews were entered; while the extended variables like increase in trust, and willingness to buy online through social media, were entered in to step 2 and 3.

Table 4 Regression coefficients of hierarchical multiple regression

Predictors	Model 1				Model 2				Model 3			
	<i>b</i>	SE	β	Sr^2	<i>b</i>	SE	β	Sr^2	<i>b</i>	SE	β	Sr^2
E-word of mouth	0.139	0.060	0.16	0.027	0.036	0.046	0.04	0.004	-0.104	0.035	-0.12	-0.007
Increase visibility	0.185	0.059	0.22	0.049	0.103	0.045	0.12	0.028	0.036	0.033	0.044	0.0009
Recommendations	0.070	0.065	0.08	0.0062	0.001	0.049	0.001	0.00	-0.061	0.036	-0.071	-0.002
Live chat	0.099	0.051	0.12	0.019	0.010	0.039	0.012	0.0004	-0.055	0.029	-0.06	-0.002
Rating and reviews	0.253	0.062	0.29	0.081	0.128	0.048	0.15	0.038	0.099	0.035	0.11	0.006
Trust					0.636	0.052	0.64	0.45	0.584	0.039	0.58	0.18
Willingness									0.463	0.037	0.52	0.12
R ²	0.535				0.742				0.861			
ΔR^2	0.535				0.207				0.119			
F value	42.727				148.519				158.380			
Sig. ΔF	0.000				0.000				0.000			

Notes: *b* = unstandardised regression coefficient; β = standardised regression coefficient; Sr^2 = squared semi-partial correlations and Δ = change in value.

For starting behaviour, results of the regression analysis showed that social media characteristics' variables entered at step 1 accounted for a significant percentage (54%) of the variance in intention to buy online ($R^2 = 0.535$, $F = 42.727$, $p < 0.001$). At step 2, introduced social media trait i.e. increase in trust to buy online represented as 'trust' was significant at $\Delta R^2 = 0.207$ depicting 20% change in this model ($\Delta F = 106.519$). Overall, step 2 containing both the constructs, was significant with $R^2 = 0.742$; F value = 148.519 at $p < 0.001$. In step 2 capture all had significant, positive effect. In step 3, increase in willingness to buy online because of social media was added as 'willingness'. The model showed significant $\Delta R^2 = 0.119$ representing 11% change in step 3. Overall, this model was also significant and had a positive effect. All constructs were significant on $R^2 = 0.861$, F value = 158.380 and $p < 0.001$. The R^2 change resulted in statistical significance of each model. The predictors were statistically significant on the e-commerce use behaviour. Therefore, the final model explained a total of 86% of the variance ($R^2 = 0.861$).

Results indicated that model 1 including social media characteristics explained 54% of the variance in e-commerce use behaviour, $R^2 = 0.535$, $F = 42.727$, $p < 0.001$, depicting that social media characteristics cause 54% increase in intention to buy online in developing nations. Trust added in model 2 explained an incremental 20% of the variance in the dependent variable score recording $R^2 = 0.742$, F value = 148.519, at $p < 0.001$; above and beyond the variance accounted for by social media characteristics and showed 20% boost in trust to buy online in developing countries. Willingness added in model 3 explained an incremental 11% variance of the dependent variable score ($R^2 = 0.861$, F value = 158.380 at $p < 0.001$); above and beyond the variance accounted for by trust and social media characteristics. Therefore, the final model explained a total of 86% of the variance ($R^2 = 0.861$, F value = 158.380 $p < 0.001$) whereas R^2 change resulted in statistically significance change at each step. The analysed predictors were statistically significant as presented in Table 4.

4.4 Mediation analysis

The model exemplified in Figure 1 shows mediation in which social media characteristics influence in the direction of trust and willingness to use e-commerce. In this study, more use of social media and social media characteristics were seen to develop trust and willingness to buy online and use e-commerce, especially with reference to developing nations. We used Baron and Kenny (1986) causal steps for mediation method. Baron and Kenny mediation analysis is a classical and most cited approach in social sciences and psychology. For the start behaviour, we established three steps in the guidelines of Baron and Kenny method. The results are shown in Table 5.

Analysis 1 Social media characteristics predict e-commerce use behaviour.

Analysis 2 Social media characteristics predict trust and willingness.

Analysis 3 Trust and willingness predict e-commerce use behaviour when social media characteristics were controlled (used multiple regression)

Regression analysis was used to examine the hypothesis that trust and willingness mediate the effect of social media characteristics on e-commerce use behaviour. Results indicated that social media characteristics were significant predictors of trust and

willingness ($R = 0.731$, $R^2 = 0.535$, $p < 0.001$). Moreover, trust and willingness were seen to be significant predictors of e-commerce use behaviour with $R = 0.704$, $R^2 = 0.496$ at $p < 0.001$ and $R = 0.746$, and $R^2 = 0.556$, at $p < 0.001$. These results support the mediational hypothesis. In analysis 3, we used multiple regression and observed that social media characteristics were no longer significant predictors of e-commerce after controlling for the mediators' trust and willingness ($R = 0.928$, $R^2 = 0.861$ and $\Delta R^2 = 0.327$). Almost 32% of the variance in e-commerce use behaviour was noted for the predictors ($\Delta R^2 = 0.327$). These results indicated that the indirect effect was significant. Social media characteristics were allied with around 0.32 point's higher e-commerce use behaviour as mediated by trust and willingness.

Table 5 Mediation analysis

	<i>R</i>	<i>R</i> ²	<i>R</i> ² change	<i>P</i> value
Analysis 1				
Social media characteristics on e-commerce	0.73	0.54		0.000
Analysis 2				
Social media characteristics on trust	0.71	0.49		0.000
Social media characteristics on willingness	0.75	0.56		0.000
Analysis 3				
Multiple regression				
Step 1	0.73	0.54		0.000
Step 2	0.93	0.86	0.33	0.000

5 Discussion and conclusions

This research study provided a conceptual understanding of online buying through social media and showed the impact of social media characteristics on e-commerce usage in developing countries. Results from the analysis support theories and findings that social media has a positive significant impact on e-commerce buying behaviour. E-commerce research has increased extensively over the past decade and has produced a large volume of academic literature on the effect of social media on various dimensions. However, there is a gap in the literature about the effect of social media characteristics and its impact on trust and willingness to buy online, particularly with reference to developing countries. Trust is a key element when it comes to buy online. Multitudinous firms are adopting e-commerce in developing countries but customers have trust issues to purchase online. Existing study strives to solve this issue. There are numerous variables unique to social media characteristics that have not been gaged in the existing e-commerce literature.

Present study has acknowledged seven factors that potentially affect e-commerce adaptation behaviour. The variables included were, e-word of mouth on social media, higher visibility of products on social media, recommendations of products by YouTube and social media sites, direct communication/ live chat with customer care representatives, rating and reviews by customers on social media, and trust and

willingness to buy online. All these variables were found to have a significant impact on e-commerce use behaviour. Our findings support the position of Bai et al. (2015) who mentioned that social media and social provision plays important role in influencing purchase intentions through online.

All the hypotheses of this study were found to be significant and reinforced ideas. Hierarchical multiple regression showed significant variance among the predictors, showing that a positive relationship exists among the predictors. The relationship between social media characteristics and the dependent variable of e-commerce use behaviour was seen to be positive and strong. Results from bivariate correlations showed high and positive associations among the predictors. We used the Baron and Kenny (1986) causal steps for mediation analysis. Results of Mediation test were observed to be highly significant ($p < 0.001$). These findings corroborate several previous studies (e.g., Amblee and Bui, 2011; Cheung et al., 2014; Wang and Yu, 2017). This study provides empirical support for the concept of social media's impact on e-commerce use behaviour especially with reference to developing nation's youth.

6 Implications, limitations and future work

The findings of this study with respect to previous studies show that incorporating new design features of social media into e-commerce can facilitate in enhancing the consumers' intention to buy a product on e-commerce platforms. We observed that the use of different social media sites in e-commerce can positively impact on consumers' e-commerce use intention in developing countries. Additionally, we find social media users are more willing to buy online, so businesses should adjust their strategies according to customer's engagement on social media. Vendors use social media as trust building and motivating tool to adopt e-commerce in developing countries. This study is a new model with new additional constructs. According to Darke et al. (2016) social media help vendors to engage their prospect consumers. There is, therefore, need for online businesses to design e-commerce strategies based on the targeted consumers' social media needs and preferences. Consequently, businesses can adjust their advertising plans according to customers' concords on social media. Hence, it is very important for website managers in e-commerce platforms such as eBay, Amazon, and Taobao to update their online marketing strategies regularly in tandem with changing social media users' frequently varying needs. Vendors can use social media as trust building and motivating tool for new customers. Moreover, managers of new companies should use social media as a marketing tool to attract more commercial and promotional activities to help customers in their brand image development in developing countries. E-commerce firms should pay more attention to the informational aspects that help users make the right decisions.

This research is on consumers' social media use behaviour in an e-commerce context. In this study, we only surveyed university students for collecting data. University students are more educated consumers and heavy users of the internet and social media sites. There is need of further studies that would include other categories of consumers as it would be interesting to explore that how the results vary in less educated communities of the developing nations. This study also uses age and education in intervals that could

have an emotional impact on the usage of social media and online purchases. Another limitation, is the small sample size used, future research may test our model using a larger sample of respondents from several cultural, social and age groups in developing nations.

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