

The Effect of Social Commerce on the Purchasing Decision Process: A Conceptual Model

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Abstract: The interaction of shoppers and the posts they make on the web generates an enormous amount of information. Buying decisions through social commerce are influenced by the shoppers sharing of their experiences and expertise in buying online as well as learning from other's experiences. It is necessary to understand the nature of virtual societies, so that, companies operating through social commerce can determine the market and the type of shoppers, whether present or prospective in the market. With the rapid and successive developments in information technology, investors and consumers who represent the supply and demand sides are moving towards social commerce and this is what highlights the importance of social commerce in recent times. In social commerce, consumers base their purchasing decisions on gathering information across the web. Social commerce components include reviews and ratings, forums and virtual communities and recommendations. These components are a major source of information and important customer interaction tools for social commerce. This study aims to examine the relationship between the components of social commerce and the stages of online purchase decision-making. The research model contributes to a better understanding of the effect of the social commerce components on the stages of the purchasing decision process. The results showed the weak effect of the social commerce components on the need identification stage in the purchasing decision process. As for the rest of the decision-making stages, the results showed that the social commerce components have a positive effect on the information search stage, the alternatives evaluation stage, the purchase decision stage and the post-purchase stage in the purchasing decision process. Based on the results of the paper, reviews and ratings are the most influential component of social commerce in the purchasing decision process, followed by forums and virtual communities. Recommendations are the least influential component of social commerce in the purchasing decision process.

Key words: Social Commerce, Social platforms, Purchasing decisions, Reviews and ratings, Forums and virtual communities, Recommendations, Web 2.0

INTRODUCTION

Technological advances in the web, online payment systems and information security have increased the role of the internet as a vital sales outlet and major marketing channel. This has prompted many companies to increase the volume of their commercial transactions on the web to take advantage of social networks to attract more consumers and reduce advertising and selling costs.

At the same time, the advent of Web 2.0 technologies, wikis, blogs and social networks have led to massive advances in how we communicate and interact on the web and collaborate in commercial and other fields. Social commerce has become a critical success vehicle through which large global companies can provide high-value services and generate substantial income using Web 2.0 tools which allow consumers to share and exchange their purchasing experiences (Wang and Zhang, 2012).

Some considered social commerce to be one of the most prominent successes in the digital world in recent times, as it is expected to generate income from social

commerce of about \$ 90 billion at the global level in 2020 (Aladwani, 2018). Firms dealing through social commerce cannot establish their presence in this market without understanding the mechanisms that consumers rely on in making purchasing decisions (Baghdadi, 2013).

As a result of the characteristics of Web 2.0, social commerce has grown in conjunction with social networking marketing and this development has led to further building trust and reducing the number of fears or risks assumed in social commerce transactions. This has strengthened social support for the community across the Web.

Web 2.0 technologies have shed light on shoppers' interactions and contributions through social commerce which is a major source of information about consumer experiences about products and services obtained through social commerce (Liang and Turban, 2011).

It goes beyond encouraging the purchase of products and services as social networks have also contributed to building valuable content for both investors and consumers (Choi and Lee, 2017). Thus, consumers have shifted from negative to positive behavior for building

content that affects transactions on the web (Hajli, 2013). The advantages of social commerce are no longer in question, whether by investors or consumers, due to the fact that this type of trade has proven itself on the ground and therefore, the amazing power of business is the social commerce environment which means the need to understand the process of making purchasing decisions across Internet affected by social media.

However, the web's impact on social commerce is not always positive, given the various risks associated with fraud and electronic payment manipulation.

Social networks aren't always used to influence purchase only but sometimes they can even have the opposite effect of encouraging not to buy. "Minimalism", a trend that has a presence on social networks whose idea is to limit shopping and its strength increases in periods of economic depression.

Although, there is agreement about the clear influence of social media on consumer decisions across the web, there is no systematic analysis of this effect.

This study aims to study the components of social commerce and build a model that contributes to a better understanding of how social commerce affects the different stages of the consumer decision-making process.

It is expected that the results of this study will contribute to assisting companies operating in the field of social commerce to develop their business strategies based on a clear understanding of consumer behavior and the different stages that the purchasing decision-making process goes through.

Literature review: Social commerce is an important research area due to the increasing volume and expansion of that trade at the global level, necessitating the importance of understanding the information affecting consumers in making purchasing decisions.

This great development has attracted the interest of researchers to analyze this phenomenon and determine the success factors of social commerce and contribute to improving its use in business world.

To analyze the growing phenomenon of social commerce, the researchers focused on identifying the factors that affect this form of trade (Kim and Park 2013; Wang and Zhang, 2012; Zhang and Benyoucef, 2016; Zhou *et al.*, 2013).

Despite the significant influence of social media on the purchasing decisions that consumers make in social commerce, few studies have investigated its effects in detail on the different stages of purchasing decision making, because until recently the data on the effects of social interaction on sales was very limited and was not sufficiently analyzed. Referring to the literature, it has been found that some studies dealt with social commerce

from different perspectives. Some studies have tended towards understanding the links between Social commerce factors and consumer buying decisions.

Shaouf and Li (2016)'s study deals with factors that affect purchasing decisions in social commerce, with a focus on design factors, as well as factors related to local culture and environment and their role in the online buying process.

Liang *et al.* (2011) discussed the role of information, platform technology and social network user relationships through social commerce separately, while the analysis of shopping operations on social media platforms is done in a unified manner. The study also discussed the theory of social support and its use in explaining the making of buying decisions via the web, where consumers collect information Associated with purchases through a social media platform, they also collect other relevant information such as the reputation of the selling company, the quality of products and transactions security provided by the third party.

Wang and Chang (2013) study evaluated information on high-risk products and concluded that recommendations from strong social contacts have a greater impact on purchasing decisions than recommendations made by weak social contacts.

As for study of Gross (2014), it examined the factors related to the decision-making model to buy through social commerce, as it presented purchase decision-making models for consumers across the web. The study showed that buying via intermediaries online is a process affected by the interaction between social media users and also affected by the availability of sufficient information to make purchasing decisions. The study indicated that decision-making models are important in terms of information flow and consumer awareness. The study demonstrated the possibility of increasing social commerce sales by providing large amounts of information suitable for making purchasing decisions via the web, reducing the risks of electronic purchases and benefiting from the positive interaction between participants in social networks.

Prasad and Jha (2014)'s study shows that the main indicators of making online purchasing decisions through consumer buying behavior models are similar in their outcomes, some differences may result from different needs towards a particular product or service. The study also indicated that consumer decision-making across the web largely depends on facilities and information derived from reviews of others, regardless of other factors such as quality, price, etc.

The study of Bai *et al.* (2015) examined the factors affecting making decisions about buying via the web and used a model to research this form of commerce. The model includes the relationships between the intent to buy

via the web and the following factors: uncertainty in product quality, uncertainty in the reputation of the seller, mediators in commercial transactions and the strength of social support. The study determined that social support is the most powerful factor in shaping purchase intent and that social support is highly dependent on informational content that consumers create through social networks. The study also found that uncertainty about product quality has a weak effect on consumers' reluctance to buy. Regarding information mediators on social networks, the study found that they influence the uncertainty about product quality and the uncertainty of the seller.

As for a Huang and Benyoucef (2015) study, it examined the relationship between the different factors that affect purchasing decisions, giving greater importance to the relationship between different age groups and decisions related to the buying process in social commerce.

Hall *et al.* (2017) concluded that social media can be used to collect buyer's opinions and this interaction plays an essential role in the buying decision process.

Abed (2018) asserted that the impact of social interaction and the confidence generated by it are two complementary components that lead to the development of positive behavior towards social commerce.

Choi and Lee (2017) found that content based on cognitive trust is more customer-generated than content marketers generate.

Bashir *et al.* (2018) assert that the potential financial risks of web buyers determine their degree of confidence in retailers and their intent to buy. He also stressed that the intent of buyers to buy through the web depends on the extent of their confidence in online retailers, as the degree of confidence of buyers ultimately determines the level of their intentions in terms of searching for and buying goods from stores through social commerce, with a positive interaction between buyers and potential customers.

Mou and Cohen (2017) suggest that explanations of system and information quality can be understood through trust which, along with customer satisfaction, creates a positive sentiment towards continuous consumption.

Izogo and Jayawardhena (2018) assert that the ethical aspect and the good reputation build trust in social commerce.

Chen *et al.* (2017) concluded that retailers can create strong relationships with consumers through the support of mutual trust, appreciation and cooperation which is considered an intangible capital for that social commerce. Sullivan and Kim (2018) emphasized that expected value affects confidence experiences in social commerce transactions, as well as consumers' purchasing decisions and their willingness to repeat purchases from the same location.

The study by Oliveira *et al.* (2017) showed that trust has a significant impact on customer's intentions to buy as the degree of consumer confidence in the online retailer depends on the degree of trustworthiness of the sellers and thus consumers who have high confidence show a high willingness to buy through the social media business.

As is evident from the literature review, a very limited number of research deals with trying to understand the process of making decisions related to purchasing through social commerce, reflecting the existence of a gap between literature and the reality of social commerce. Most of them have attempted to assess the role of social commerce, only a few have touched upon an attempt to relate social commerce to purchasing decisions. For example see: (Wang and Yu, 2017; Osei and Abenyin, 2016).

Previous studies covered various aspects of social commerce, many of which focused on the consumer behavior approach but given the Informational vision and the relationship of social commerce components to the stages of purchasing decision-making, the previous studies did not address that in sufficient detail. Therefore, this paper seeks to study the effect of social commerce on purchasing decision-making by designing a model through which the relationship between the components of social commerce and the stages of decision-making can be measured.

Social commerce and its effective components: The successive developments in social media networks have transformed e-commerce into a social environment consisting of a network of customers and directed towards them. This method allows companies to understand their customers and the nature of their needs, provide them with an idea of their products, give them a clear picture of the buying experiences of current consumers and their future expectations and work to create successful business strategies on the web.

Since, the concept of social commerce is still a relatively recent concept, the use of this term has not always been consistent.

Social commerce can be defined as the use of social networks in the effective participation of investors in selling and marketing various goods and services over the web. The expanded use of social media tools such as social networks and forums in e-commerce websites has led to the development of e-commerce through Web 2.0 technologies and the increase in the popularity of online transactions (Hajli, 2015; Liang and Turban, 2011).

Through social commerce, buyers can interact socially in all activities associated with purchasing via the web, such as sharing information, comparing product specifications and collaboratively making purchasing decisions.

Social media networks and web technologies are two of the main pillars of social commerce because they are a major source in providing information to consumers and sharing it with others. It can be said without exaggeration that social commerce platforms have become an important learning platform in the trading world.

Social Commerce addresses clients through social media networks such as Facebook and Instagram. This reflects the evolution of the relationship between sales and social media. Sellers found a large audience willing to buy via social networks and on the other hand, consumers were happy to share their buying experiences with others.

The social information that buyers provide from their trading experiences across the web is the source of customer learning as new consumers learn from what other consumers post.

Customer purchasing decisions over the web are influenced by factors such as web design, ease of interaction with the technology used, how information flows about past experiences, confidence in the name of the supplier company, clarity of product specifications, etc. (Lin *et al.*, 2012; Wu *et al.*, 2016).

Developing well-designed interfaces will lead to easier access for consumers to information which in turn leads to better purchasing decisions and successful social commerce transactions (Lin and Lo, 2016).

Buyers may feel the pleasure that accompanies a sense of comfort and confidence while shopping and this can be explained by the ease of surfing the web, social networking and navigating between different product information, consequently, consumers' confidence in their ability to use their online skills to meet the difficulties and risks of online shopping will ultimately lead to feelings of satisfaction and confidence leading to further interactions (Wu *et al.* 2016).

Social commerce represents an environment rich in information and experiences that enhance consumers' abilities to learn in the various areas of commerce available through the web and in light of understanding this perception, consumers seek to make rational purchasing decisions by making use of the components of the social commerce environment and learning from the participation of others (Chen, 2017).

Social commerce is active through communities and forums where sellers and consumers review feedback about their business transaction experiences, notable examples include Groupon, Pinterest and Living Social. It can be said that social commerce has radically changed the way reliable information is gathered about different products and services, as consumers want to know the opinions and reviews of buyers about their experiences, as previous consumers have a great influence in making the purchase decision.

Key components of an effective social commerce: Social commerce contains several key components which can be reviewed as follows:

Forums and virtual communities: Forums and Virtual communities are used as platforms that contain informational content that increases through user interactions in a way that can lead to increased sales (Bronner and Hoog, 2014).

Chen *et al.* (2017) indicate that consumer interaction via the web provides social support which will have a positive effect on user's confidence in the commercial information they obtain through social networks. Forums and virtual communities enhance consumer confidence and ease of use which is reflected in increased purchasing interest.

One of the most important advantages of forums and virtual communities is that their informational content is richer than recommendations and social reviews. The rationale for this is that forums and virtual communities use multimedia such as images, text, audio and video.

Through virtual communities and forums, users can contribute their experience and knowledge resulting from their business transactions across the web. Consumers also receive social support and media assistance from forums and virtual communities (Chen *et al.*, 2017). Consumer participation in forums and virtual communities is related to their area of interest and the type of demand. Generally, customers can obtain commercial information through forums and virtual communities.

As a result of the uncertainty of the volume of demand, the role of learning from forums and virtual communities appears, as the flow of information through forums and virtual communities reduces uncertainty about the size of customer demand. Customers can easily collect data about products and their characteristics through forums and communities which indicates that forums and virtual communities have a positive effect on consumers who make online purchasing decisions.

Since, there is clear diversity in virtual communities and forums, it is important to distinguish between them as they differ in terms of their composition, objectives and the nature of interactions. This distinction is very important to know the effect of each of them on the purchasing decision process.

Reviews and ratings: Reviews and ratings are among the most prominent social commerce tools through which users interact in their comments on goods and services offered on the web and provide their experiences and perspectives on trading deals.

Comments are usually made using short texts and can sometimes be supplemented with images (Chen *et al.*, 2017). Ratings are usually in digital form with the lowest

being number one (very low) and the highest being number five (very high) (Hajli, 2015). From a business perspective, reviews and ratings help investors learn about customer opinions through the E-business community platform, it is also possible to incorporate consumer reviews into their seller sites directly through social media tools.

Reviews increase consumer interest and increase information processing capacity. From a customer perspective, the information provided by actual consumers and real shoppers through reviews and ratings is highly credible and is essential for making purchasing decisions (Kim and Park, 2013).

Learning through reviews and ratings has the advantage of reducing uncertainty about the demand side. Users can learn about product specifications and quality through consumer reviews and ratings.

An important observation regarding reviews and ratings is that it has a great role in attracting customer interest in goods and increasing the ability to analyze business information (Chen *et al.*, 2017).

Social commerce platform: The Social Commerce platform provides social commerce solutions that allow business owners to take advantage of its diverse capabilities in marketing products and services. The social commerce platform allows business owners to take advantage of premium social ads and storefronts as well as reward programs that are used to motivate customers by making use of past experiences in social commerce.

The social commerce platform has huge potential for sales, social promotion and rewards, as well as a host of rigorous analytics to measure effectiveness. By leveraging the potential of social commerce platforms, investors and entrepreneurs can build long-term business visions while consumers become more confident in making purchasing decisions through social commerce.

Social commerce platforms connect customers with sellers online. However, these platforms (such as Instagram and Facebook) differ based on many aspects such as privacy policies, how information is shared, the manner of interaction and the type of content that users post.

Liang and Turban (2011) developed a framework for social commerce consisting of six perspectives covering research themes, methods, primary theories and outcomes in addition to two major components: business activities and social media.

Hui and Silvana (2017) proposed a social commerce framework in which the platform is considered as a connecting element. The platform contains four elements:

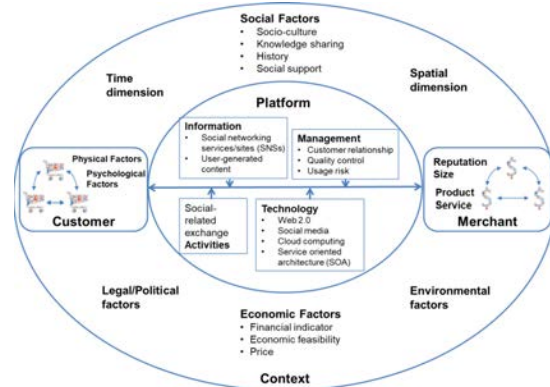


Fig. 1: Social commerce Framework (Hui and Silvana, 2017)

- Activities
- Information
- Administration
- Technology

From Fig. 1, the relationships between the four components of the framework are as follows: the first and second components, the customer and the merchant, are the basis for information sharing and thus business development. Elements of empowerment include personal aspects such as physical and psychological factors and organizational factors such as reputation and quality of production. The third component is the platform which is the communication link, through which the first and second components, the customer and the merchant, communicate and cooperate through four aspects: activities, information, Administration and technology. The fourth component, context, includes temporal and spatial dimensions, in addition to physical dimensions such as social, economic, legal, political and environmental factors.

Social commerce and purchase decision-making process:

A consumer's decision to buy is closely related to the consumer's buying behavior. Like any decision-making process, making a purchase decision usually passes through a decision-making model that consists of five stages, starting with identifying a need, then searching for information, evaluating various alternatives, then making a decision and ending with the post-purchase stage, see for example: (Kotler and Armstrong, 2013; Kotler and Keller, 2016) (Fig. 2).

Social commerce and the need identification stage: The need to buy arises either through internal desire or through external stimulation (Kotler and Armstrong, 2013). Social media networks provide information about

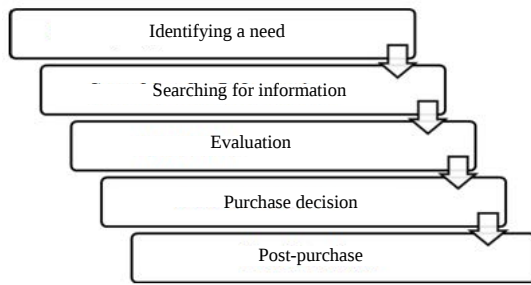


Fig. 2: Purchase decision-making process

specific products and services and this information can inspire and create a sense of need among consumers (Yadav *et al.*, 2013).

The steps in making a purchase decision on the web begin with a sense of need, as the customer identifies the problem or need clearly.

For the customer, if the need is great and it is easy to obtain the product or service that meets the need, or he used to buy the same product before, he can make the purchase decision immediately but if this is not the case, then the data collection stage will begin. The following hypothesis was made:

- H_1 : the social commerce components have a positive effect on the need identification stage in the purchasing decision

Social commerce and the information search stage: In the event that a consumer has a need accompanied by a lack of information about the product, the consumer begins to search for more information. Sources of information include commercial sources, information from other consumers, etc.

In this stage, the influence of the information sources varies according to the importance of the product and the consumer behavior. Information from other consumers has a clear influence on purchasing decisions as consumers consider the data to be more reliable (Kotler and Armstrong, 2016).

The increased use of social networks has led to increased consumer engagement and information enrichment, as well as lower costs of gathering information.

Consumer's trust in user interactions information on social networks more than information gleaned from commercial sources is the challenge that companies face in order to satisfy consumers in a more competitive environment. The following hypothesis was made:

- H_2 : the social commerce components have a positive effect on the information search stage in the purchasing decision process

Social commerce and the alternatives evaluation stage:

Clients analyze all the information available on social networks about different products and alternatives that can meet their needs (Kotler and Armstrong, 2016). The information that consumers obtain through the interactions of others on social networks has a direct impact on consumer decisions.

The influence of social networks in the stage of evaluating alternatives is important in the purchase decision-making process, as consumers can access recommendations, reviews and ratings from the contributions of other consumers in the virtual community. The following hypothesis was made:

- H_3 : the social commerce components have a positive effect on the alternatives evaluation stage in the purchasing decision process

Social commerce and the purchase decision stage: The presence of the consumer's buying intention can lead to an actual buying decision (Wang *et al.*, 2012).

Consumers make important decisions at this stage such as choosing the product with the required specifications, choosing the seller and determining the timing of purchase.

Social networks are a source of information that helps customers in deciding which products are required, Social networks are a source of information that helps customers determine what products are needed, who is the best seller and when to buy (Yadav *et al.*, 2013).

Social media interactions strongly influence purchasing decisions; statistics indicate that sales volume has been heavily influenced by socially supported media activities. Components of social commerce can provide useful information through social networks that contribute to reducing effort in purchasing decision making and increasing the probability of making an appropriate purchase decision (Yadav *et al.*, 2013). The following hypothesis was made:

- H_4 : the social commerce components have a positive effect on the purchase decision stage in the purchasing decision process

Social commerce and the post-purchase stage: The smaller the gap between consumer expectations and product quality, the more satisfied is the consumer, because consumer satisfaction is the cornerstone of ongoing business relationships (Kotler and Armstrong, 2016).

It is normal for satisfied consumers to repeat purchases, praise the positive aspects of products and services, reduce interest in alternative products and other promotions; this indicates the emergence of loyalty

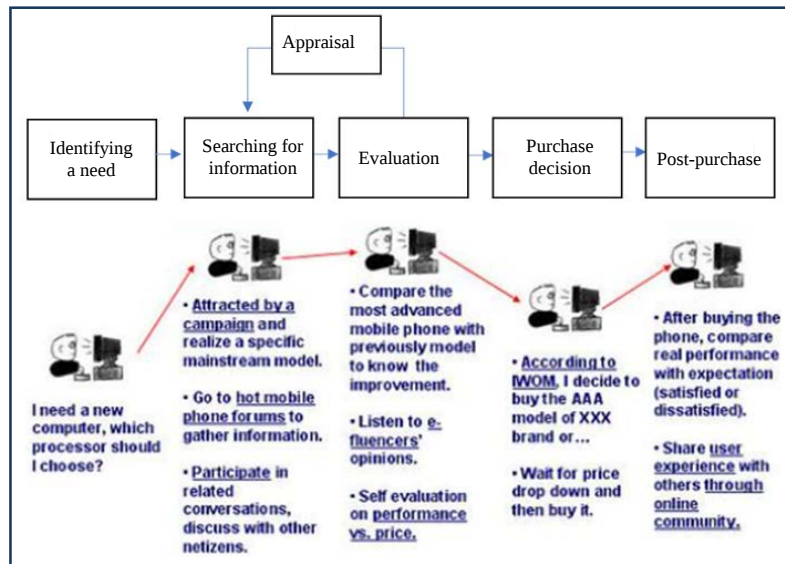


Fig. 3: The influence of social networks on purchasing decision

towards the brand. Also, consumers who are satisfied with the brand may prefer to purchase other products sold by the same company.

On the other hand, consumers who are dissatisfied with the product express their anger which may raise concerns of potential consumers towards those products and may lead to their reluctance to buy. By comparing consumers' real experiences with their expectations, they can use social networks to communicate their levels of satisfaction to other consumers.

Interactions on social networks are usually larger and more widespread than traditional interactions. Therefore, post-purchase activities in social networks increase. The following hypothesis was made:

- H_5 : the social commerce components have a positive effect on the post-purchase stage in the purchasing decision process

To make wise purchasing decisions, one should focus on the five stages of decision-making and not be confined to the stage of the purchase decision alone.

In general, social networks influence web-based purchasing decisions, either positively or negatively. In this context, Lin *et al.* (2017) indicates that social commerce includes a number of commercial activities that can assist customers in evaluating their pre-purchase decision phase, the purchasing phase and the post-purchase phase.

Figure 3 shows a visualization of the influence of social networks on purchasing decision at different decision-making stages.

Some researchers have emphasized that the success of social commerce depends on the ability to persuade the consumer to make a purchase decision, by integrating social interactions at every stage of the purchase decision-making process, for example: (Huang and Benyouce, 2012, 2017; Yadav *et al.*, 2013; Zhou *et al.*, 2013).

The model was created to investigate the effect of social commerce components on purchasing decision at each stage of the process.

The conceptual model: This study covers all stages of the decision-making process to buy in social commerce, as the research is concerned with studying the effect of social commerce with its various components on the stages of the purchasing decision via the internet.

The independent variables of the study are the components of social commerce: forums and virtual communities, reviews and ratings and recommendations. The dependent variables are the stages of the purchasing decision process: identifying a need, information search, alternative evaluation, purchase decision and post-purchase.

In light of the previous theoretical framework, we propose a model to link the key components of social commerce with the stages of purchasing decision-making. The proposed model can be presented as follows: Based on Fig. 4, the hypothesis that this study tests include:

- H_1 : the social commerce components have a positive effect on the need identification stage in the purchasing decision

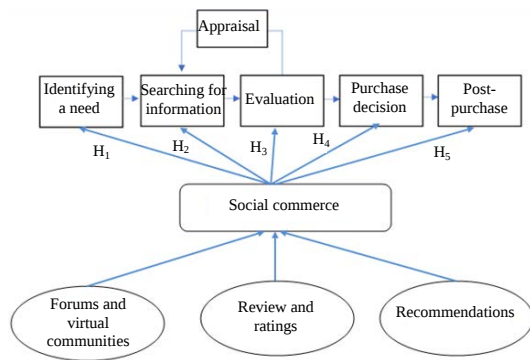


Fig. 4: Proposed research model

- H₂: the social commerce components have a positive effect on the information search stage in the purchasing decision process
- H₃: the social commerce components have a positive effect on the alternatives evaluation stage in the purchasing decision process
- H₄: the social commerce components have a positive effect on the purchase decision stage in the purchasing decision process
- H₅: the social commerce components have a positive effect on the post-purchase stage in the purchasing decision process

Data collection: Instagram was chosen as the target platform for this study, since, its content attracts a large number of consumers across the web.

The questionnaire was posted online; about 92 individuals completed the questionnaire. 17 of them submitted an incomplete questionnaire, resulting in 75 complete and ready-to-use questionnaire (effective response rate 81.52%). The participants came from 7 cities in the Arab Republic of Egypt (Cairo, Alexandria, Ismailia, Menoufia, Mansoura, Minya, Assiut). The participants work in different professions, as they work in local private companies, some of them are employees in multinational companies, some of them are students, etc. The ages of the respondents ranged from 21 to 56 years, with an average of 28 years.

It should be noted that about 77% of the respondents are in the age group between 24 and 35 years which is the most recorded category in online purchases according to some relevant statistics. Respondents were 41 female and 34 male.

About 83% of respondents have a bachelor's degree, 9% have postgraduate studies and 8% are students. Around 70% of respondents have at least two years of experience buying online. They spent an average of 15.5 h a week on instagram. com and each of them was spending an average of EGP 2550 a month buying online.

The questionnaire content was checked and evaluated by five of judges who are faculty members (two from MIS and three from marketing), all of whom are good users of social networks and familiar with social commerce.

The questionnaire has been modified in light of the few comments made by judges; the questionnaire's content was proven to have validity. Most of the measurement elements of proposed model were adopted from the current literature on social commerce.

Items were measured using a Likert scale which consists of five points (where 1 = strongly disagree, moving till to 5 = strongly agree).

Data analysis: Data analysis is the process of systematic application of statistical methods to describe, clarify, condense and evaluate data. The data were analyzed as follows:

Validity test: To ensure that the questionnaire list measures what it was created to measure; that is, determining the extent of the correlation of the questions to each other and the correlation of those questions to the research topic, the Pearson correlation coefficient was used to measure the extent of the correlation of the question to the axis to which this question belongs. Table 1 shows the validity test to the questionnaire axes.

Table 1 shows the questionnaire list measures what it was designed to measure, where there is a correlation between each question and the all correlations significant at 1%. The highest correlation coefficient in the questionnaire axes 94.7% (q2), 94.9% (q4), 91.9% (q7), 91.9% (q12) and 91.9% (q13) respectively. The lowest correlation coefficient of questionnaire axes 69.6% (q3), 73.9% (q5), 71.9% (q8), 63% (q11) and 76.3% (q14).

Reliability test: The reliability test is used to determine the consistency of the questionnaire responses. It is the degree to which an assessment tool produces stable and consistent results. Cronbach's alpha is the most famous and commonly used test for reliability and how closely related a set of items are. Cronbach's Alpha value for the total questionnaire items is 74.9% (15 items), this implies there is consistency in responses because the value is >70%.

Hypothesis testing: To test the five study hypotheses, the SPSS package was used. The following tests will be conducted for each hypothesis from hypotheses: mean, standard deviation, variation coefficient and One-sample t-test. The last test is used to determine whether the responses mean is >3 or not which is a constant reference value that describes the neutral opinion. The null hypothesis to this test indicates the sample mean is equal to the fixed value (3) and is accepted if the significant

Table 1: Validity test to questionnaire axes

Qes.	The first axis	Qes.	The second axis	Qes. 7	The third axis
Q1		Q4		Q7	
Pearson correlation	0.942**	Pearson correlation	0.949**	Pearson correlation	0.919**
Sig. (2-tailed)	0.000	Sig. (2-tailed)	0.000	Sig. (2-tailed)	0.000
Q2		Q5		Q8	
Pearson correlation	0.947**	Pearson correlation	0.739**	Pearson correlation	0.719**
Sig. (2-tailed)	0.000	Sig. (2-tailed)	0.000	Sig. (2-tailed)	0.000
Q3		Q6		Q9	
Pearson correlation	0.696**	Pearson correlation	0.892**	Pearson correlation	0.893**
Sig. (2-tailed)	0.000	Sig. (2-tailed)	0.000	Sig. (2-tailed)	.000
Qes.	The fourth axis	Qes.	The fifth axis		
Q10		Q13			
Pearson correlation	0.872**	Pearson correlation	0.919**		
Sig. (2-tailed)	0.000	Sig. (2-tailed)	0.000		
Q11		Q14			
Pearson correlation	0.630**	Pearson correlation	0.763**		
Sig. (2-tailed)	0.000	Sig. (2-tailed)	0.000		
Q12		Q15			
Pearson correlation	0.919**	Pearson correlation	0.864**		
Sig. (2-tailed)	0.000	Sig. (2-tailed)	0.000		

** . Correlation is significant at the 0.01 level (2-tailed)

Table 2: Descriptive statistics and one sample t test results (First Hypothesis)

Number	Mean	SD	Variation coefficient (%)	t-values	Sig. (2-tailed)
Q1	1.55	0.874	56	-14.393	0.000
Q2	1.57	0.888	57	-13.914	0.000
Q3	1.49	0.742	50	-17.584	0.000
The need identification	1.54	0.727	47	-17.424	0.000

Table 3: Descriptive statistics and one sample t test results (Second hypothesis)

Number	Mean	SD	Variation coefficient (%)	t-values	Sig. (2-tailed)
Q4	4.15	1.036	25	9.588	0.000
Q5	4.69	0.615	13	23.863	0.000
Q6	3.91	1.129	29	6.954	0.000
Information search	4.25	0.815	19	13.274	0.000

level is greater than 5%. The alternative hypothesis of this test indicates that the sample mean is not equal to the fixed value (3) and is accepted if the significant level less than 5%.

The first hypothesis: Table 2 shows the mean, standard deviation and variation coefficient of the first axis questions and the one sample t-test results for the first hypothesis.

It is evident from Table 2 that the trends of the study sample responses tend to disagree on the positive effect of the social commerce components on the need identification stage in the purchasing decision process, with a total mean of (1.54) and a standard deviation of (42.7%). The third question is considered one of the most important questions that express the first axis, as it obtained the lowest variation coefficient of 50%, while the second question is considered one of the least expressive questions about the first axis, as it obtained the highest variation coefficient of 57%.

Also based on the results in Table 2, the alternative hypothesis is accepted, as the significance level of all

questions is <5%, this implies that the mean is not equal to 3 but is less than 3 because the t-values are negative. In addition, the negative values of t indicate respondents' confirmation that the social commerce components have no effect on the need identification stage in the purchasing decision process.

The second hypothesis: Table 3 shows the mean, standard deviation and variation coefficient of the first axis questions and the one sample t-test results for the second hypothesis.

It is evident from Table 3 that the trends of the study sample responses tend to agree on the positive effect of the social commerce components on the information search stage in the purchasing decision process, with a total mean of (4.25) and a standard deviation of (81.5%). The fifth question is considered one of the most important questions that express the second axis, as it obtained the lowest variation coefficient of 13%, while the sixth question is considered one of the least expressive questions about the second axis, as it obtained the highest variation coefficient of 29%.

Table 4: Descriptive statistics and one sample t test results (Third hypothesis)

Number	Mean	SD	Variation coefficient (%)	t-values	Sig. (2-tailed)
Q7	4.03	1.078	27	8.250	0.000
Q8	4.55	0.703	15	19.049	0.000
Q9	3.79	1.233	33	5.523	0.000
Alternatives evaluation	4.12	0.866	21	11.202	0.000

Table 5: Descriptive statistics and one sample t-test results (Fourth hypothesis)

Number	Mean	SD	Variation coefficient (%)	t-values	Sig. (2-tailed)
Q10	4.55	0.776	17	17.256	0.000
Q11	4.88	0.366	8	44.468	0.000
Q12	4.31	0.900	21	12.573	0.000
Purchase decision	4.58	0.578	13	23.631	0.000

Table 6: Descriptive statistics and one sample t-test results (Fifth hypothesis)

Number	Mean	SD	Variation coefficient (%)	t-values	Sig. (2-tailed)
Q13	3.61	1.207	33	4.401	0.000
Q14	4.08	0.955	23	9.792	0.000
Q15	3.83	1.132	30	6.327	0.000
Post purchase	3.84	.939	24	7.751	0.000

Also based on the results in Table 3, the alternative hypothesis is accepted, as the significance level of all questions is less than 5%, this implies that the mean is not equal to 3 but is greater than 3 because the t-values are positive. In addition, the positive values of t indicate respondent's confirmation that the social commerce components have a positive effect on the information search stage in the purchasing decision process.

The third hypothesis: Table 4 shows the mean, standard deviation and variation coefficient of the first axis questions and the one sample t-test results for the third hypothesis.

It is evident from Table 4 that the trends of the study sample responses tend to agree on the positive effect of the social commerce components on the alternatives evaluation stage in the purchasing decision process, with a total mean of (4.12) and a standard deviation of (0.866%). The eighth question is considered one of the most important questions that express the third axis, as it obtained the lowest variation coefficient of 15%, while the ninth question is considered one of the least expressive questions about the third axis, as it obtained the highest variation coefficient of 33%.

Also based on the results in Table 4, the alternative hypothesis is accepted, as the significance level of all questions is less than 5%, this implies that the mean is not equal to 3 but is greater than 3 because the t-values are positive. In addition, the positive values of t indicate respondents' confirmation that the social commerce components have a positive effect on the alternatives evaluation stage in the purchasing decision process.

The fourth hypothesis: Table 5 shows the mean, standard deviation and variation coefficient of the first

axis questions and the one sample t-test results for the fourth hypothesis. It is evident from Table 5 that the trends of the study sample responses tend to agree on the positive effect of the social commerce components on the purchase decision stage in the purchasing decision process, with a total mean of (4.58) and a standard deviation of (0.578%). The eleventh question is considered one of the most important questions that express the fourth axis, as it obtained the lowest variation coefficient of 8%, while the twelfth question is considered one of the least expressive questions about the fourth axis, as it obtained the highest variation coefficient of 21%.

Also based on the results in Table 5, the alternative hypothesis is accepted, as the significance level of all questions is less than 5%, this implies that the mean is not equal to 3 but is greater than 3 because the t-values are positive. In addition, positive values of t indicate respondent's confirmation that the social commerce components have a positive effect on the purchase decision stage in the purchasing decision process.

The fifth hypothesis: Table 6 shows the mean, standard deviation and variation coefficient of the first axis questions and the one sample t-test results for the fifth hypothesis.

It is evident from Table 6 that the trends of the study sample responses tend to agree on the positive effect of the social commerce components on the post-purchase stage in the purchasing decision process, with a total mean of (3.84) and a standard deviation of (0.939%). The fourteenth question is considered one of the most important questions that express the fifth axis, as it obtained the lowest variation coefficient of 23%, while the thirteenth question is considered one of the least expressive questions about the fifth axis, as it obtained the

Table 7: Variation coefficient and mean for social commerce components

Social commerce components	Mean	SD	Variation coefficient (%)
Forums and virtual communities	3.58	0.541	15
Reviews and Ratings	3.95	0.417	11
Recommendations	3.46	0.543	16
	10.99		

Table 8: The effect of each social commerce component on the purchasing decision process

Social commerce components	Mean	Influence (%)
Forums and virtual communities	3.58	33
Reviews and ratings	3.95	36
Recommendations	3.46	31
	10.99	

highest variation coefficient of 33%. Also based on the results in Table 6, the alternative hypothesis is accepted, as the significance level of all questions is less than 5%, this implies that the mean is not equal to 3 but is greater than 3 because the t-values are positive. In addition, positive values of t indicate respondent's confirmation that the social commerce components have a positive effect on the post-purchase stage in the purchasing decision process.

To understand the importance of each component of social commerce in the purchasing decision process, an analysis was added at the level of each component, where the forums and virtual communities component (Q1, Q4, Q7, Q10, Q13), the reviews and ratings component (Q2, Q5, Q8, Q11, Q14) and the recommendations component (Q3, Q6, Q9, Q12, Q15).

To determine the degree to which each of the three components of social commerce affected the purchasing stages, a variation coefficient and mean were used (Table 7). Table 8 shows the effect of each social commerce component on the purchasing decision process. The relative weight of the influence of each component of social commerce (Forums and virtual communities: Reviews and Ratings: Recommendations) on the purchasing decision stages was (3.3: 3.6: 3.1), respectively.

Reviews and ratings are the most influential component of social commerce in the purchasing decision process, followed by forums and virtual communities. Recommendations are the least influential component of social commerce in the purchasing decision process.

RESULTS AND DISCUSSION

This study aims mainly to study the relationship between the components of social commerce and the stages of making an online purchase decision, by developing a model that contributes to a better understanding of the impact of the components of social commerce on all stages of the purchasing decision. To achieve this, a set of hypotheses were developed

according to the research model. The results of the hypothesis test showed a surprise which is the negative effect of social commerce components on the need-identification stage in the purchasing decision-making process.

The negative effect of the components of social commerce on the need identification stage can be explained by the fact that the consumer, when he has a need, usually begins to search through the various components of social commerce to support him in making the purchase decision. In other words, the consumer begins the search journey after feeling the need.

Having a weak relationship means that the consumer during the search process through the components of social commerce may be affected by reviews or comments on social media which contributes to creating a purchasing need that did not exist before. This aligns with Yadav *et al.* (2013) explanation that information provided by social media may inspire and create a sense of need among consumers.

The results also showed that the social commerce components have a positive effect on the information search stage, the alternatives evaluation stage, the purchase decision stage and the post-purchase stage in the purchasing decision process.

Based on the search results, reviews and ratings are the most influential component of social commerce in the purchasing decision process, followed by virtual forums and communities. Recommendations are the least influential component of social commerce in the purchasing decision process. This means that a thorough study of reviews and ratings is beneficial to both sales parties through social commerce to make better and informed decisions.

CONCLUSION

Social media has a clear influence on the purchasing decisions made by social commerce merchants and despite its importance, a limited number of studies have investigated these effects because data on the effects of social interaction on sales were limited until recently and have not been analyzed extensively. Since web buyers tend to reduce the effort and time involved in making a purchase decision, interactions on social networks help buyers rationalize purchasing decisions.

The components of social commerce are tools of customer interaction across the web and the sum of those interactions greatly influences customers' decision-making. The paper discussed social commerce and its relationship to making purchasing decisions through a model that combines the components of social commerce and the stages of purchasing decision making. The model explored different social commerce tools, as

developers of a social commerce system can use the model to improve existing technologies. According to the proposed model, the components of social commerce which include forums and virtual communities, reviews and ratings ,and recommendations are the independent variables, the stages of purchasing decision making are the dependent variables.

The results showed the weak effect of the social commerce components on the need identification stage in the purchasing decision process. As for the rest of the decision-making stages, the results showed that the social commerce components have a positive effect on the information search stage, the alternatives evaluation stage, the purchase decision stage and the post-purchase stage in the purchasing decision process. The results also show showed the main factor in the success of social commerce is customers' interaction and their participation, so more interaction should be encouraged.

Based on the results of the paper, reviews and ratings are the most influential component of social commerce in the purchasing decision process, followed by forums and virtual communities. Recommendations are the least influential component of social commerce in the purchasing decision process.

By using the appropriate tools for positive interaction between parties in business processes across the web, social commerce can develop on a larger scale that can be measured through increased sales and reduced marketing and selling costs.

For future work, it should also be noted that buyer confidence is largely related to learning from the components of social commerce. Therefore, it is suggested that future research use data mining to investigate how reviews and ratings influence customers' decisions regardless of their prior knowledge of products available on the web.

RECOMMENDATIONS

Recommendations in social commerce refer to the use of social media to obtain recommendations about what to buy, as satisfied consumers tend to recommend a product or service to potential customers. Consumer recommendations are essential inputs to information on social networks. In this regard, Wang and Chang (2013) have indicated that by adding the recommendation feature to electronic applications, it will help customers make the appropriate decision about the different alternatives.

Recommendations related to social commerce are presented by consumers through social networks, where they make their recommendations, whether positive or negative, based on their actual experiences with products available on the web. Customers tend to share their experience regarding a product in social networks, with

detailed descriptions of their experiences (Chen et al., 2017) which is considered a means of learning for potential customers through which they get more information about the product, accompanied by a summary of the experiences of others.

This study seeks to measure the role of each component of social commerce at every stage of the purchase decision.

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