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Integrating Social Commerce Constructs into Mobile Application Service; A Structural Equation Model

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Abstract. The emergence and accelerated rise of digital computing and smartphones have rendered the advent of social commerce (S-commerce). The S-commerce models such as location-based apps , and social media are founded on mobile commerce. According to many professionals and academics, social commerce has a major influence on e-commerce firms and organisations. Although social commerce provides enterprises many benefits, its implementation may entail some potential risks and complex issues, such as the integration of new and existing e-commerce application systems. To confirmed the issues, this study adopted Hajli (2015) social commerce construct (including rating and review, forum and community, recommendation and referral) and tested how it affects consumers' purchase intention. It also proposed social support construct as moderator to obtain a new findings. In addition, to collect primary data, an online survey method was used and distributed to Shopee customers via electronic questionnaire. PLS-SEM analysis using the SmartPLS 3.0 program tool was implemented to evaluate the measurement and structural models. The result revealed that the social commerce construct (including ratings and reviews, forums and communities, and recommendations and referrals) had different effects on consumer purchase intentions through the Shopee mobile application. Furthermore, the role of social supprt as a moderator was confirmed to be significant. The discussion, implications, and suggestions for future study are discussed further.

1. Introduction

The fame and growth of social buying in recent years have been driven by sharing consumer-product information [1] [2], [3]. The increased bargaining power among consumers has led to a noticeable shift in the relationship between the company and the current consumer, as well as potential consumers [4]. In an e-commerce standpoint, the above phenomenon has spawned a new trading paradigm, i.e. social commerce (s-commerce) [5], [6]. S-commerce is used individually to review opinions of other individuals, communicate with other individuals, assess products, share positive feelings, recommend products or services, as well as participate in online forums [2] [7]. In Indonesia, Statista stated that Indonesia has occupied the fourth position of the world's largest social media user. From the intensity of usage aspect, the average spends approximately 6 hours and 33 minutes a day on mainstream platforms such as Facebook, Instagram, and so on [8]. This figure, of course, has vital implications on shifting everyday behaviour of people on the Internet, including online transaction activity. The change indirectly demanded that companies develop new methods or approaches to social value.

The social technology feature can be recognized by how e-commerce companies offer more opportunities (confidence) to communicate with other consumers than regularly before. This social interactions enable them to gain more information, knowledge and experience that can increase their purchase intent on e-commerce platforms [9]. E-commerce comapny created a platform that allows e-vendors to participate in consumer social interactions by benefitting social technology [10]. Social commerce, along with the assist of Web 2.0 and social media technologies has facilitates ratings and reviews, as well as recommendations and referrals in the website [11]. The other important aspect of s-commerce is ratings and reviews [12], [13], which enable customers to access and if possible, analyze other users' reviews. Consequently, eliciting an emotional feeling

that express a personal touch to the purchase intention process. In several situations, consumers can switch to an online recommendation system, which seems to have a noteworthy impact on the buyer. However, the quality and quantity collected from multiple sources is a separate issue in influencing purchase intent [14]. When e-commerce platforms have a social presence and pertinence, consumers feel safer, and also by welcoming other users to join and offer positive support could lead to consumers satisfaction and trust. With this intercommunication, the confidence level will be higher, and eventually sales will also increase in the future [15].

Social technology and web technology utilisation can affect social perception [16]. Everyone have an oppurtunity to participate in forums and communities, share their experiences and knowledge and give their suggestions for other users. Genuine connections and experiences with others can affect customer behavior on the online market with innovations in e-commerce technology, including online discussion forums and groups, advising systems and chat rooms [7]. Social support is a social resource that is felt by individuals; for example, the information generated by supporters and informal assistance relationships [17], [18]. Therefore, the existence of social support makes individuals feel that other people care about, love, and respect the individual. The more support consumers received, their willingness to behave accordingly will get higher. Several scholars [7], [19], [20] have explained that social support arose when individuals were communicating through a powerful feature in such e-commerce applications. It also needs a supportive environment that builds communication between users through a platform and the ability for contributing social support while in the online community [11]. Social support can evolve further when individuals listen, show sympathy, or believe in other individuals. The power of social support in social commerce contexts is found to differ in every context [11], [12], and thus there is a need for future resrach to measure social support in different measurement, such as moderation.

S-commerce research from a wide variety of viewpoints and disciplines has gained attention in developed countries such as China, US, UK, Korea, and others [10], [21]–[23]. Nevertheless, this concept still lacks substantial attention from Indonesian researchers if the number is being reviewed. It is very ironic, considering that the country is one of the most numbers of social media users around the global. Besides, s-commerce practice in purchasing through the application has not been much confirmed by previous research. Moderation testing is also applied to estimate how social support variables strengthen the influence between social commerce and purchase intention. Hence, the research aims to investigated the relationship between the integrated social commerce features towards consumers' purchase intention in mobile application services context in Indonesia.

2. Methodology
Research Design
This research type is a hypothesized testing research that aims to test the effect of s-commerce constructs on purchase intention. The sampling method is by non-probability with purposive sampling technique. The non-probability method is selected because the population number is unknown. Meanwhile, the purposive sampling technique was chosen based on its consideration of a specific research analysis unit with certain criteria, and aimed at directing the selected samples according to the research purpose [24]. Samples are selected based on several criteria, i.e. (1) The consumer who already installed the Shopee mobile application; (2) The consumer who has registered and has an account as a user (not just a visitor); (3) The consumer has an understanding and experience regarding social commerce construct; and (4) The consumer has made purchases through Shopee mobile app at least two times between January and March 2020. The above considerations are set to obtain the respondents who can provide the most accurate outcomes in elucidating the research questions.

To collect the data, it is highly recommended to take advantage of web-based surveys because of their cost efficiency, greater reach of respondents, and ease of use [25]. The survey tool used is an electronic questionanire (e-form) compiled from Google Forms. The dissemination process is carried out by sharing the e-form link with the mail and social media. After primary data collected, the total responses received in the e-form database were 290 Shopee customers. However, there were 48 responses that were rejected in the verification process due to several reasons such as not fulfilled the sample criteria, not filling an entire profile data, and not completing the questionnaire. Thus, the number of responses defined as respondents were 242 customers.

Data Analysis
This study employs the PLS-SEM analytical method. [26] assert that multivariate data analysis involves the implementation of statistical methods that simultaneously analyze the variables represent measurements relating to individuals, companies, events, activities, situations, etc. SEM is applied both for exploration and confirmation; however, experts strongly suggested using PLS-SEM when it comes to build or develop a theory purpose. The advantage of PLS-SEM is to develop theories on exploratory research where the focus aimed at exporting variances independent variables is highly relevant for researching social commerce contraction. [27] also added down the base of elections located on research objectives and data characteristics. If the

research objectives are exploratory and if the large sample becomes the basis of consideration (where the sample is relatively few), then the most appropriate approach chosen in PLS-SEM.
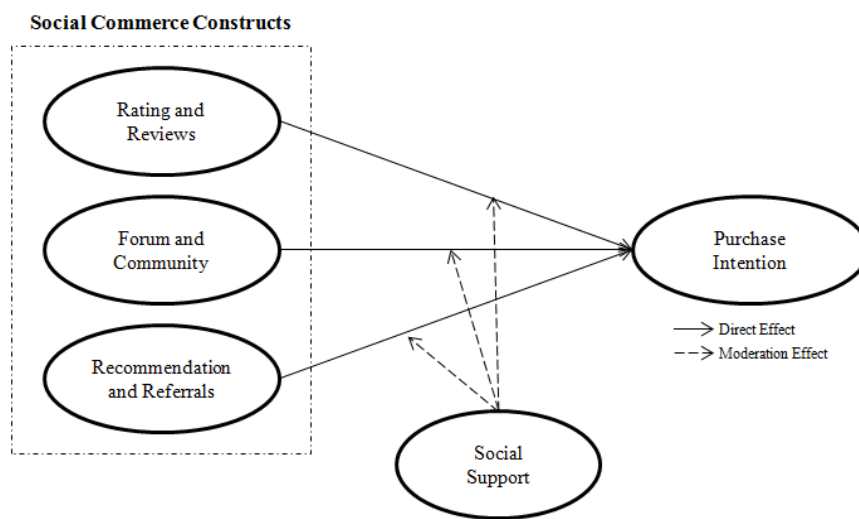

Figure 1. Proposed Conceptual Model

3. Result

Respondents are Shopee customers who have chosen based on the criteria of purposive sampling technique. After conducting the collecting data process by an online survey, respondents who were netted in this study numbered 242 consumers. In terms of gender, female respondents recorded a dominance of 63.4%, and the rest were male. Most consumers are also classified as young (millennial) with an age range between 21-25 years (56.2%). The frequency of purchases through the Shopee mobile application is performed twice, and this indicates that respondents have a reasonably good level of experience and knowledge of social commerce practices through the application.

In PLS-SEM, the measurement model (outer model) aims to test the construct validity and instrument reliability which includes convergent validity, discriminant validity, and discriminant reliability. The test results show that the rule of thumb value of the social commerce construct indicator and purchase intention has a value of more than 0.7, and the AVE value is greater than 0.5. Meanwhile, the results of discriminant validity testing (cross-loading) also show that the value of the outer loadings of an indicator variable is higher than all the values of the outer loadings of that indicator variable against other constructs. Thus, all items can be said to be valid and reliable in measuring their respective constructs.
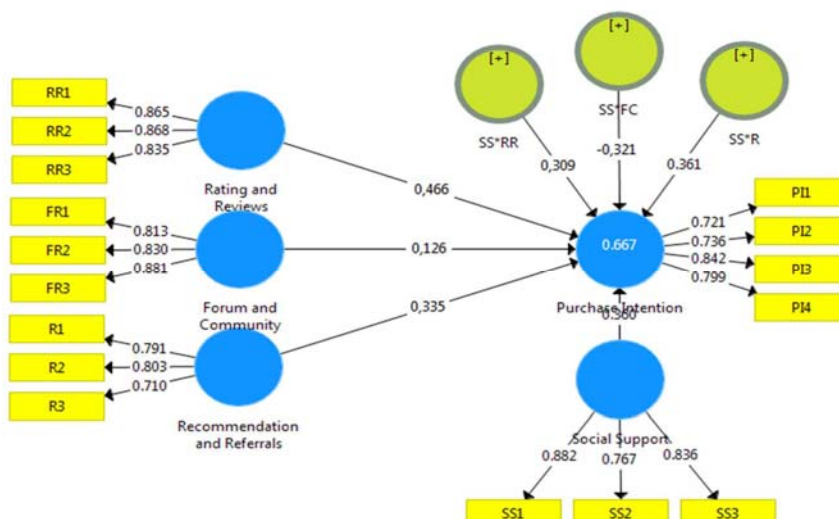

Figure 2. Bootstrapping Result with Moderation Path

Table 1. Structural Model Test (Bootstraping)

Direct Effect	Loading	S.E.	T Statistics	P-value	Sig.
Rating and Reviews → Purchase Intention	0.466	0.089	5.236	0.000	**
Forum and Community → Purchase Intention	0.126	0.084	1.500	0.140	NS
Recommendation and Referral → Purchase Intention	0.335	0101	3.317	0.002	*
Social Support → Purchase Intention	0.360	0.097	3.722	0.000	**
Moderation Effect	**Loading**	**S.E.**	**T Statistics**	**P-value**	**Sig.**
SS*RR → Purchase Intention	0.309	0.108	2,861	0.006	*
SS*FR → Purchase Intention	-0.220	0.129	1.713	0.093	NS
SS*R → Purchase Intention	0.361	0.103	3.505	0.000	**

Noted that the symbol indicates the level of significance; ** $\alpha < 0.01$, * $\alpha < 0.05$ and NS $\alpha > 0.05$

The structural model (inner model) is evaluated in several steps, explicitly measuring the value of R^2 (adjusted R-square) and testing the significance of the influence between variables. Based on the test, the adjustment model obtained has a determination coefficient of 0.667 or 66.7% (Figure 1). The number explains that the prediction accuracy model of the relationship between social commerce constructs and purchase intentions is quite high. Furthermore, the results of the bootstrapping test of s-commerce constructs, social support and purchase intentions show that of the four hypotheses proposed three path measurement have a significant effect, and one has no significant effect. Each hypothesis will be discussed subsequently.

The first hypothesis bootstrapping test shows that the t-statistic value (5.236)> 1.97 and p-value (0,000) <0.05, then it can be stated that the rating and reviews variable has a positive and significant effect on purchase intention. The higher the level of rating and reviews, the customers' purchase intention through the Shopee app will also increase. This decision is in line with several previous studies [10] [12] which reported the significant role of reviews and ratings. It can improve them decide on products or services to be purchased in an e-commerce app such as Shopee. Reviews not only can affect consumer choices, but they also strengthen a company's credibility and trustworthiness. Additionally, the product and service rating provides by e-commerce apps also assist the customer in gaining trust. In some cases, the rating will become a piece of valuable information to choose the most suitable goods and ultimately leads to increased profits for the business. The reviews also help producers to find out what customers think. Criticism and suggestions from customers can also be seen from reviews. However, a product certainly needs to get a response or input from its customers. This is certainly beneficial for producers or business people in terms of innovating their products and can be a marketing campaign on a micro scale because customer voices and their feedback can increase the crown behavior of their business.

The second hypothesis testing shows that the t-statistic value (1.500) <1.97 and p-value (0,000)> 0.05, then the forum and the community have a positive but insignificant effect on consumer purchase intentions on the Shopee mobile application. This result is undoubtedly opposed to previous studies which first mentioned that activity in forums and communities could increase the will to buy. This result may be caused by the respondents' demographic condition who are relatively young and tend to be less active in a forum or community. Also, e-commerce company such Shopee does not provide an official forum on mainstream social media such as Instagram or Tiktok, so consumers do not rely on the information contained in forums or communities. Another factor is the difference of platforms used in this study which also influences consumer behaviour.

The third hypothesis presents that the t-statistic value (3,317)> 1.97 and p-value (0.002)> 0.02, then recommendations and referrals variable have a positive and significant impact on consumer purchase intentions. The higher the recommendations and referrals, the higher the purchase intention of the customer through the Shopee application. These results also confirm a previous study [7], [13], [15] which explained the importance of recommendations and referrals in stimulating consumers willingness to buy at each stage of the buying cycle. E-commerce companies are required to generate genuine communication moments between consumers, which can carry other prospective customers to visit online stores. Such activity (directly or indirectly) increase the

possibility of higher spending for new customers. FurthemoreRecommendations from friends and other consumers product review in Shopee apps can be easily reached. Recommendations offer consumers more confidence and trust in purchasing products and services. In the case of application-based e-commerce, one example of a recommended practice is the company gives rewards to customers who can lead new customers to visit the application or even buy.

The last hypothesis in this study shows that the social support variable has a t-statistic value (3,722) > 1.97 and p-value (0,000) < 0.005, then it can be stated that social support has a significant as a moderating variable in the relationship between s-commerce construct and consumer purchase intention through the Shopee mobile application. The results of the interaction of social support, ratings and reviews as well as recommendations and referrals show a positive and significant direction. In contrast, the interaction of social support with forums and communities is not significant. These results once again reinforce the notion that social support creates an interconnectivity between individuals and other individuals who are on a social commerce platform, and the form of social support can increase when social commerce constructs occur.

CONCLUSION

The social commerce construct consisting of ratings and reviews, forums and communities, and recommendations and referrals has found different effects on consumer purchase intentions through the Shopee mobile application. Besides, social support strengthen the relationship between s-commerce features and purchase intention, and this is consistent with previous studies. These findings contribute to the development of better s-commerce concepts and testing methods. However, this study also has several limitations, especially the lack of predictor variables that are tested to answer the research problem. Future research can adapt other e-commerce constructs that have not been tested in s-commerce study to overcome the limitation.

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