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Determinant factors of online purchase decision process via social commerce: An empirical study of organic black rice in Indonesia

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A B S T R A C T

Organic black rice (OBR) is a healthy food that is environmentally friendly which is better than organic white rice and organic brown rice. However, the demand for OBR in Indonesia is still low. In addition, some people consider OBR as black sticky rice. Meanwhile, black rice has great potential to be developed in Indonesia because it has local varieties that are still rare, have a high selling value, and are suitable for cultivation based on the analysis of their farming. The rapid development of social media users in Indonesia causes organic black rice to be traded online via social commerce (s-commerce). There has been a lot of research on social commerce, but there is still very few social commerce research offering framework design. The purpose of this research is to develop a conceptual model (framework) of the online OBR purchasing decision process via s-commerce, and to identify the factors underlying consumer assessment of the process. As a result, the conceptual model shows consumers recognize the need for OBR through free platforms, namely Search Engine Optimization (SEO), Instagram, blogs, article sites, through friends, and through family. The factors underlying consumers' assessment of the online OBR purchasing decision process were security in purchasing decisions, Internet, friends, satisfaction with the results, Instagram and other social media, and family factor. These factors can be used as important considerations in online OBR marketing via s-commerce.

1. Introduction

Black rice is consumed as a functional food because it has high health benefits, which contain anthocyanin antioxidants (Dewi et al., 2017; Kristamtini et al., 2017; Lee, 2010; Qi et al., 2020; Stefani et al., 2017). Black rice can also prevent and treat various degenerative diseases (Dewi et al., 2017). However, based on interviews with producers, some Indonesians consider black rice to be black sticky rice, so it is less desirable as a healthy food. Only certain groups consume black rice. This community group is also aware of the importance of preserving the environment so that they consume organic black rice (OBR). There are many farmers who are reluctant to plant black rice. If they have already planted, they are hesitant to continue. This is due to the lack of demand for black rice and consumption patterns of white rice (Kusno et al., 2020). Even though black rice has great potential to be developed in Indonesia because it has local varieties that are still rare, have a high selling value, and are feasible to cultivate based on their farming analysis (Stefani et al., 2017). The rapid development of social media users in Indonesia causes organic black rice to be traded online through social commerce (s-commerce). There is no standard definition of social commerce, but s-commerce includes the characteristics of word of mouth (WoM), trusted advice, or buying with the help of friends (Liang & Turban, 2011). Even though Indonesia is one of the largest social media users in the world, internet use for business is still lagging behind, as shown by the Global Competitiveness Index for business sophistication which places Indonesia at 32nd and technology readiness at 80th (Deliana, 2020).

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Social commerce in Indonesia contributes about 40% of all Indonesian online trade, and is predicted to continue to grow (Das et al., 2018). However, our understanding of the buying decision process through s-commerce is still limited. This is because there are still few studies that offer framework designs for social commerce (Baghdadi, 2013). According to Han et al. (2018), only a few successful cases show that social media providers are able to bring commercial transactions to their social media platforms. Meanwhile, very few studies have focused on designing a comprehensive framework as a guide for implementing social commerce in the context of a particular company's business processes (Baghdadi, 2016). Therefore, future research should be carried out in this area (Han et al., 2018). The Internet-based (online) buying decision process model takes into account the external influence of website marketing, socio-cultural environment, and psychological problems on online consumer activities followed by purchase and post-purchase behavior (Smith & Rupp, 2003). According to Stankevich (2017), the online purchasing decision process is based on a traditional 5-stage decision process. The stages in the process consist of need recognition, information search, alternative evaluation, purchase decision and post-purchase evaluation (Hawkins & Mothersbaugh, 2010). Research on s-commerce based on the theory of the 5-stage online purchasing decision process has been carried out (e.g Huang & Benyoucef, 2017; Kang et al., 2014; Kang & Johnson, 2013). Respondents in the first article are students, and in the second and third articles are users of Social Network Services (SNS). Thus, the difference with this research is that they do not build a conceptual model or comprehensive framework as mentioned by Baghdadi (2013) above, but only based on the theory and also without a specific product. Based on the various descriptions mentioned above, it is necessary to study how consumers make online OBR purchasing decisions via s-commerce. Thus, the factors that consumers rely on in the decision-making process can be identified. Social commerce in this research refers to the definition of social commerce according to Das et al. (2018) namely online commerce of physical goods via social media and messaging platforms. The consideration is that they conduct research on how online trade in Indonesia drives Indonesia's economic development. Conceptual modelling of online OBR purchasing decision process via s-commerce has never been done. Similarly, the sampling method as in this study has never been done in previous s-commerce research.

The aims of this research were to: 1). develop a conceptual model of the online OBR purchasing decision process via s-commerce, and 2). identify factors underlying the online OBR purchase decision process via s-commerce. The results of this study can contribute to producers and/or online marketers of organic black rice, namely knowing the factors that consumers rely on in the OBR purchasing decision process. Thus, these factors can be used as important considerations in online OBR marketing through s-commerce. The implication is that in the long term it is hoped that the number of consumers will increase, as a result the number of producers will also increase. Theoretically, the results of this research are expected to contribute to the theory of the online purchasing decision process via s-commerce and similar research methodologies. This paper consists of six sections: introduction, literature review, research methodology, result and discussion, conclusion, and appendices.

2. Literature Review

2.1. Organic Black Rice

Black rice (Oryza sativa L. Japonica) is a healthy rice. Even in its home country of China, black rice is known as medicinal rice which is used both for medicine and food, usually used to strengthen the kidneys in traditional Chinese medicine (Qi et al., 2020). In 100 grams of rice, the fiber content in black rice is 20.1 grams, while in white rice and brown rice it is 0.2 and 0.8 grams, respectively (Ihsan, 2012). The rapid development of the global economy, unhealthy lifestyles, such as a high-calorie diet and lack of exercise, have accelerated the spread of diabetes (Qi et al., 2020). Therefore, black rice is very well consumed in this modern era as stated by food nutritionists who consider black rice to be a modern superfood (Kushwaha, 2016). The Indonesian government is promoting organic agriculture again because it has better ecological benefits, where organic agriculture is able to avoid the health and ecological impacts of chemical pesticide residues, so as to create a healthy and quality Indonesian society (Kementan, 2020). One way to preserve the environment is to consume green products. Products that will not pollute the earth or damage natural resources, and can be recycled or conserved are called green products (Shamdasani et al., 1993). Thus, organic black rice is a green product because the treatment given in its cultivation uses non-chemical ingredients so that it is environmentally friendly and healthy for the human body. In West Java Province, which is the national rice barn, there are only a few black rice production centers, namely Tasikmalaya Regency, Subang Regency, Bandung City, Bogor City, Indramayu Regency and Garut Regency (Dewi et al., 2017). Meanwhile, organic black rice centers are located in Tasikmalaya Regency, Subang Regency and Indramayu Regency (Dinas Tanaman Pangan & Hortikultura Provinsi Jawa Barat, 2020).

2.2. Online Consumer Behavior

Online consumer behavior in shopping refers to the process of purchasing products or services on the internet, while online shopping attitudes refer to the psychological state of consumers in terms of making purchases on the internet (Li & Zhang, 2002). So, online consumers are not only buyers but also internet users. To fulfill online purchases, consumers do things related to purchases as they do with traditional (offline) merchants. In addition, consumers interact with the internet while directing the process itself. So their behavior is influenced by factors related to buying in general as well as their interaction with the internet environment. Therefore, it is very important to understand their needs and interests due to the nature of the online environment. This knowledge can then be used to improve the shopping experience and provide personalization based on consumer knowledge (Karimi, 2013).

2.3. Characteristics of Online Purchase Decision Process

Stankevich (2017) conducted a literature review on 11 conceptual models of offline to modern purchasing decision processes consisting of 5 stages, 4 stages, and even 3 stages. Stankevich concludes that the foundation of the 5-stage process has been heavily criticized but no one can deny its relevance. Therefore, this research refers to the basis of the 5-stage process. As we know, consumers use the internet not only to make purchases but also to research products, and even for electronic services. That is, the internet influences consumer behavior by enabling cross-channel purchases (Karimi, 2013) Therefore, the online purchasing decision-making process can be categorized as unstructured and highly dynamic. Unstructured because consumers do not follow pre-defined procedures. Internet choice behavior is dynamic and consists of a series of interrelated choices, where consumers and marketers can play a role in shaping the context of subsequent choice events depending on the results of previous encounters (Bucklin et al., 2002). All of these characteristics contribute to the complexity of the decision process.

2.4. Model Development

The process of making purchasing decisions on the internet is a complex, dynamic and unstructured activity, including a number of interrelated activities (Bucklin et al., 2002). Therefore, to understand this complex and dynamic phenomenon, the best approach is to model it. A model is a simplified representation of reality (Caine & Robson, 1993). Thus, the model is a quantitative or qualitative representation of a real system, both concrete and conceptual, with other simpler systems. To determine whether the developed model can describe the real system, verification and validation tests need to be carried out. Verification basically checks whether the model solution matches the theoretical solution. In other words, verification is checking the internal consistency and logic of the model (Caine & Robson, 1993). Validation is the examination of a model to determine how effectively the model represents reality and how accurately it can reproduce known results. So, validation is a system analysis test, which is comparing the model solution with the real system. In more detail, the validation process includes 1) postulating the model, 2) testing the model by measuring/observing, and 3) modifying the model to reduce the mismatch between the model and the real system (Blanchard & Fabrycky, 1990). Validation has a greater weight than verification, especially for conceptual models.

2.5. Social Commerce

Recent developments of the internet, smartphones and online social networks have contributed to the rapid growth of electronic commerce (e-commerce), which is becoming increasingly important in economic development and is gradually changing our society (Lin, 2019). E-commerce is narrowly defined as shopping through the internet electronically (Walsh & Godfrey, 2000). In more detail, Huseynov & Yildirim (2016) define e-commerce as conducting, transacting and facilitating business activities through computer networks. One part of e-commerce is social commerce (Liang & Turban, 2011). Social commerce is still a relatively new field and even the most established brands are still testing and learning it (Llewellyn, 2019). Like e-commerce, s-commerce is defined differently. In previous studies, social commerce was defined differently. Therefore, social commerce still does not have a standard definition (Busalim et al., 2021; Liang & Turban, 2011), however, its essence is a combination of commercial and social activities (Liang & Turban, 2011). S-commerce is a business activity; social media platforms such as Facebook, Twitter, Instagram, and Pinterest mediate such business activities and enable people to participate in marketing, selling, comparing, purchasing, and sharing products and services (Zhou et al., 2013). Other definition, social commerce gives rise to business transactions by connecting producers and consumers through social media (Sohn & Kim, 2020). So, the keyword in social commerce is social media.

2.5.1. Conceptual Model and Factors Underlying Online Purchase Decision Process Via S-commerce

Efforts to conceptually model the process of purchasing decisions for products and services that are not specific to e-commerce have been carried out by several previous researchers, (e.g Kanade & Kulkarni, 2018; Karimi et al., 2018; Petcharat & Leelasantitham, 2021). However, our understanding of online consumer behavior is still limited (Karimi et al., 2015; Stankevich, 2017).

Considering so many variables in the online purchasing decision process via s-commerce, consumers must rely on a number of factors to make their decision in purchasing products. These factors are related to the implicit attitude of consumers. According to Posavac et al. (2012), explicit attitude is deliberative, based on consumers' introspection of their evaluation, and then self-reporting the evaluation. While implicit attitudes are much more automatic than explicit attitudes and are based on associations in memory that are not always conscious.

Implicit attitudes can be interpreted as dimensions or constructs or factors that are not measurable (latent) which consumers use as the basis for their opinions regarding all stages of the decision process to purchase product online through s-commerce. Thus, studying how consumers who vary on several theoretical dimensions respond differently in a particular consumption context can help us to understand the processes that underlie such behavior (Posavac et al., 2012).

2.6. Theoretical Framework

The research framework (Fig.1.) was modified from the 5-stage online buying process model for e-commerce developed from Karimi et al. (2018) and the variables in each stage derived from Kanade & Kulkarni (2018). The model was then explored based on literature study for s-commerce platform.

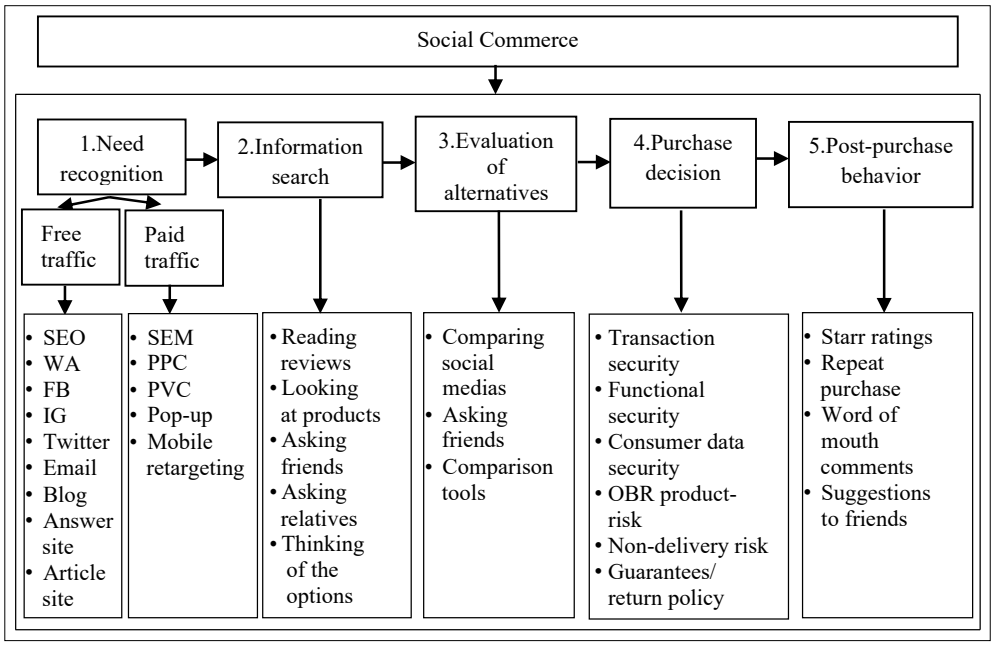

Fig. 1. Research Framework
Source: Modified from (Kanade & Kulkarni, 2018; Karimi et al., 2018)

3. Methodology

The research design was mixed methods; in accordance with what Han et al. (2018) suggested. Han found that s-commerce research mostly used quantitative methods, and only a few qualitative methods. Therefore, Han suggests adopting mixed methods in order to minimize general method bias and provide more thorough and convincing findings in social commerce research. In this study, qualitative method was carried out by studying and analyzing previous research on e-commerce and s-commerce which is based on the theory of the purchasing decision process. Furthermore, interviews and Focus Group Discussion (FGD) with informants (6 producers and 7 resellers) were conducted. Interviews were conducted offline while FGDs were via the Zoom application. The results were analyzed using textual analysis. The quantitative method was carried out by surveying 200 end consumer respondents. The results were analyzed using descriptive statistical methods: Frequency distribution and inferential statistics: Exploratory Factor Analysis.

3.1. Population and Sample

In general, s-commerce research uses convenience or systematic sampling. In this study, the sampling used a combination of stratified random and convenience sampling. At first, the population of this research was the end consumers who bought OBR online via s-commerce produced by Tasikmalaya Regency, Subang, and Indramayu Regency. The three regencies were chosen because they are centers of OBR production in West Java, Indonesia. The sample was taken by proportional stratified random sampling. However, the initial population size was small (N = 42). This is because the majority of consumers from producers in Tasikmalaya are supermarkets where consumers of supermarkets buy OBR offline so that it is not in accordance with the topic of this research. The initial sample size n was determined equal to 50% of the population size (Parel et al., 1973), so that n = 21.

The initial population size is known by calculating the number of consumers of OBR produced by each regency. For this reason, a preliminary survey was conducted on 2 producers in Tasikmalaya Regency, 2 producers in Subang Regency, and 2 producers in Indramayu Regency which were selected purposively to find out the type of consumer and their WhatsApp number. The result is that the types of OBR consumers consist of end consumers (individual consumers who buy for their own consumption), individual consumers who buy for resale (resellers), and organizational/retail consumers. Only the end consumers were investigated. Initial population size N was done by: 1). collected consumer WA numbers from each producer, so that the number and types of OBR consumers in each regency were known, 2). collected the end consumer WA number from each reseller collected in the first step, and 3). calculated the number of OBR end consumers in each regency. The

number of end consumers obtained in step 3) is the size of the population in each regency. Then the population size N is known by adding up the population sizes in the three regencies. The shape of black rice grains varies between regencies in West Java (Dewi et al., 2017), therefore sampling of end consumers (respondents) can be done using the stratified random sampling method with the regency as the stratum. Furthermore, respondents were selected randomly from each regency proportionally using the formula:

$n_h = (N_h/N)$. n
n = sample size of end consumer
n_h = sample size allocated to the h-th regency; h = 1 (Tasikmalaya), 2 (Subang), 3 (Indramayu)
N_h = sub population size of the the h-th regency
N = population size = $N_1 + N_2 + N_3$

Table 1
Distribution of Sample Size from Initial Population

Regency	Size of Initial Population N_h	Initial sample size n_h
Tasikmalaya	6	3
Subang	28	14
Indramayu	8	4
Total	42 = N	21 = n

Source: Author's Calculations

The distribution of sample size is presented in Table 1. To be validly analyzed by parametric inferential statistics, the data must be from a random sample or justified as random and the sample size must be ≥ 30. For this reason, the sample was added with a convenience sample from a new population (Hedt & Pagano, 2011). The new (final) population is infinite, namely end consumers who buy OBR online via s-commerce who are domiciled in West Java, DKI Jakarta, and Banten Province. The consideration is that the majority of consumers of organic products in Indonesia are domiciled in the three regions (Institute et al., 2019). The final sample size was determined = 200. Thus, convenience sample size = 200 - 21 = 179.

3.2. Data Collection

Data collection was carried out in August - December 2021. Data of informants were collected through open questionnaires and interviews. Interviews with producers were conducted in their respective homes offline. Meanwhile, interviews with resellers via zoom were carried out after they filled out the questionnaire (google form) first which was sent via their personal WA. Data of respondents were collected through google forms which were sent to personal WA and personal IG. The Google form contains closed questions and a few open questions. When answers to open-ended questions need to be clarified, interviews were conducted via IG or WA.

3.3. Variable and Measurement

The operationalization of the concept into its variables and the measurement is presented in Table A1 (See Appendix 1).

3.4. Data Analysis

3.4.1. Conceptual Model Development

Model (1) in Fig. 2 is the 5-stage online OBR purchase decision process model via s-commerce (Fig. 1). Furthermore, Model process (2) was carried out by exploring the variables in Need recognition in Fig. 1 using textual analysis of the data of 13 informants, to identify what platforms were used for online OBR marketing. The analysis was using NVivo 12 Plus application.

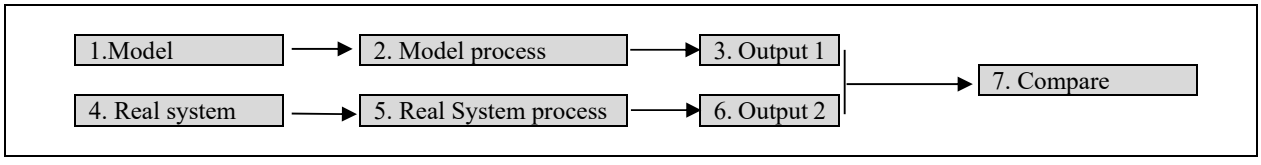

Fig. 2. Validation of The Model

Source: Caine & Robson (1993)

The search information stage to post-purchase behavior was explored based on a literature study. The result of the Model process is Output 1 (3). Real system (4) is the respondent's real activity in buying OBR online through s-commerce. The real system process was carried out to find out whether the platforms identified in Output 1 are in accordance with those used by respondents. For this reason, a non-starred google form questionnaire containing 28 items was made. Then distributed it to 20 respondents who were selected purposively for pretest (= Output 2 (6)). The questionnaire was then revised and distributed to 200 respondents. The data were analyzed by frequency distribution using SPSS version 26, to find out what items the respondents did not do (= Compare (7)). The measurement used an ordinal scale (Likert 5 values) as shown in Table A2 (See Appendix

2). Then the data was transformed to an interval scale so that it is valid to be analyzed by statistical inferential methods. Transformation using Successive Interval Method with Macro application in Excel.

3.4.2. Factors Underlying the Online OBR Purchase Decision Process via S-commerce

A number of variables in the conceptual model that have been obtained were reduced using the Exploratory Factor Analysis (EFA) method. As a result, new variables are formed called latent variables which can also be called factors or constructs. These factors are no longer correlated with each other.

4. Results and Discussion

In general, if consumers buy OBR from resellers, they use IG, WA or marketplace. After consumers communicated with sellers via IG, they were directed to WA or the marketplace. It could also be that without communicating first, consumers directly open the WA number or marketplace link listed on the seller's IG profile. The next process was through WA or the marketplace. If consumers buy OBR from producers, generally they order directly via WA. Likewise, if consumers have repeatedly bought from a reseller, they usually order directly via WA or via the marketplace if the reseller also sells via marketplace.

4.1. Demographic Characteristics

The majority of respondents were female (60.5%). The age ranged from 16 to 69 years with an average of 29.88 years. The high age range = 69 - 16 = 53 years indicating that OBR is in demand by all age groups. Age in this research is differentiated based on the categorization of the Ministry of Health of the Republic of Indonesia (Team Muamala, 2018). The majority of respondents were late teens (17-25 years) = 52.5%. This is not in line with previous organic food research (Deliana, 2012; Hermansyah & Kusno, 2022; Kusno et al., 2021a; Sumarwan et al., 2013). The reason is that late teens consume OBR for a diet due to obesity (Kusno et al., 2021b). Furthermore, early adulthood (26-35 years) = 21.5%, late adulthood (36-45 years) = 11%, early elderly (46-55 years) = 10%, late elderly (56-65) = 4%, seniors (> 65 years) = 0.5%, and early adolescence (12 - 16 years) = 0.5%. The majority of respondents had high school education = 42%. This finding is not in line with previous research on organic food (Deliana, 2012; Hermansyah & Kusno, 2022; Kusno et al., 2021a; Sumarwan et al., 2013). The rest had junior high school = 0.5%, diploma = 8.5%, graduate = 39.5% and post-graduate = 9.5%. The occupation of the head of the respondent's family were entrepreneur = 35%, civil servant = 16.5%, private = 24.5%, unemployment = 3%, pension = 6.5%, BUMN employee = 5%, students = 5%, and others (lecturers and teachers) = 4 %. Income classification in this study follows the world bank classification (Kementrian Keuangan, 2015). The majority of respondents who have income > IDR 6 million (upper middle) = 48.5%, between IDR 2.6 million - IDR 6 million (middle) = 39.5%, and < IDR 2.6 million (lower middle) = 12%. This finding is in accordance with the results of previous studies (Deliana, 2012; Hermansyah & Kusno, 2022; Kusno et al., 2021a; Sumarwan et al., 2013). In online purchases, whether through s-commerce or online shopping in general, people who make purchases can be different from those who consume. A person can act as a decision maker, buyer, and/or user. For example, the wife decides, the husband buys, the child uses (Jacoby & Morrin, 2015). The characteristics of respondents who buy and who consume OBR can be seen in the articles by Kusno et al. (2021b).

4.2. Conceptual Model of Online OBR Purchase Decision Process via S-commerce

Textual analysis produces word cloud visualization (Fig. 3). It can be seen that the online marketing tools used were 8: WA, IG, FB, blogs, websites, word of mouth (WoM), Search Engine Optimization (SEO), and Search Engine Marketing (SEM). The words that appear in large sizes are IG, WA, and FB. This means that the majority of producers and resellers used these platforms to conduct online OBR marketing via s-commerce. This result is in line with the findings of SIRCLO (2020) for non-specific products. Producers and resellers who used IG and FB = 15.4%, IG, WA, FB = 38.5%, IG, WA, FB, Website = 7.7%, IG, WA, FB, Website, SEO, SEM = 7.7%, IG, WA = 23.1% and WoM, Blog = 7.7%.

Fig. 3. Visualization of Online Marketing Tools on OBR S-commerce
Source: NVivo 12 plus output

Field facts showed that the communication carried out in OBR social commerce is directly between sellers and buyers through conversations or live streaming. It is one of the three main types of social commerce in Southeast Asia which is called Conversational Commerce (Facebook & Bain & Co., 2021). In general consumers buy OBR via Instagram, WhatsApp or marketplace. When they buy from a producer, they order directly through WA. However, when they buy from a reseller, they buy via IG which is then directed to WA or the marketplace. The results of the pretest were 90% of the respondents did not answer the items in Need Recognition so that the respondents were interviewed. It turns out that they recognize the need for OBR through friends or family. So, the questionnaire was revised from 28 to 30 items as shown in Table A1 (See Appendix 1).

The measurement of the thirty items begins with 6 options, namely the 5 Likert scale mentioned above plus the option of "not doing" which is given a value of = 0. Questionnaires were distributed to 200 respondents. Then the frequency distribution analysis was carried out toward Need Recognition to find out what items were not done. If the frequency of respondents who do not do an item > 30% then the item is excluded from the analysis. The results are presented in Table A2 (See Appendix 2). Thus, of the 30 items in the online OBR purchase decision process via s-commerce (or of the 12 items in the Need Recognition stage), 6 items were not done, namely, N2, N3, N5, N6, N8, and N10. Therefore, the online OBR purchase decision process model via s-commerce consists of 30 items – 6 items = 24 items (variables) as presented in Fig. 4. It appears that there is no paid traffic as in the purchasing decision process through e-commerce according to Kanade & Kulkarni (2018).

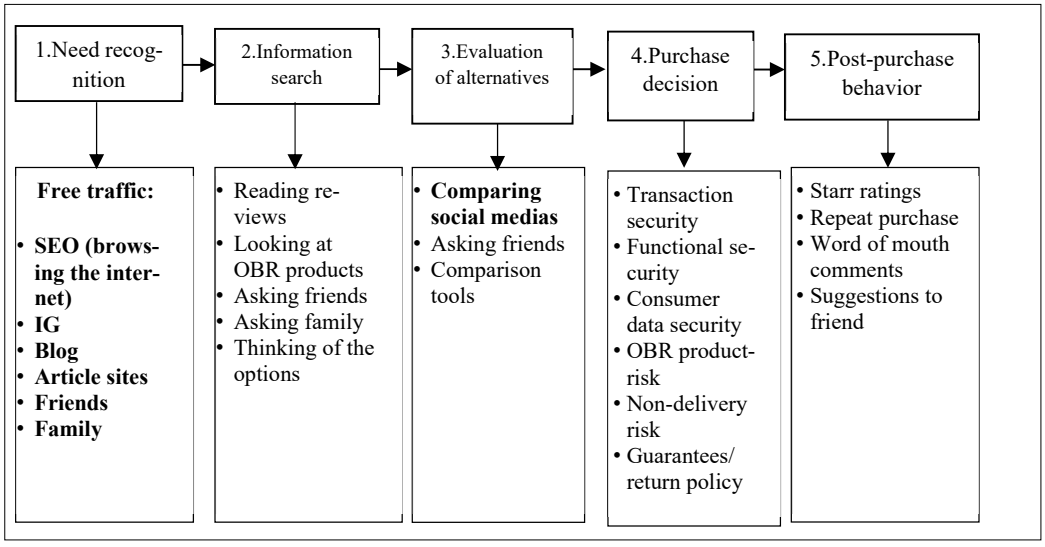

Fig. 4. Conceptual Model of Online OBR Purchase Decision Process via s-commerce

Source: Author's Calculations

4.3. Factors Underlying the Online OBR Purchase Decision Process Via S-commerce

EFA on 24 variables resulted in the communality value of variable N7 = 0.379 < 0.5. This means that only 37.9% of the N7 variance can be explained by all the factors formed so that the N7 is excluded from the analysis (Hair et al., 2010). Therefore, the EFA was repeated for 23 variables. Previously, the questionnaire reliability test was conducted using Cronbach's Alpha method (Table 2). It can be seen that all Cronbach's Alpha values are > 0.7, so the questionnaire is reliable (Taber, 2018).

Table 2
Results of Reliability Test

No.	Item	Cronbach's Alpha	No.	Item	Cronbach's Alpha
	All items (N1-B4)	.896	12.	E2	.894
1.	N1	.894	13.	E3	.890
2.	N4	.894	14.	D1	.893
3.	N9	.891	15.	D2	.889
4.	N11	.892	16.	D3	.889
5.	N12	.895	17.	D4	.890
6.	I1	.890	18.	D5	.893
7.	I2	.888	19.	D6	.891
8.	I3	.892	20.	B1	.890
9.	I4	.895	21.	B2	.888
10.	I5	.889	22.	B3	.891
11.	E1	.888	23.	B4	.892

Source: Author's Calculations

To find out the extent to which the 23 variables truly reflect the consumer's purchasing decision process, a validity test was conducted (Table 3). KMO value = 0.848 > 0.5 then EFA can be done (Malhotra, 2019). The significance value = 0.000 < 0.05 meaning that the correlation between 23 variables is significant. In conclusion, the 23 variables are valid.

Table 3
Results of Validity Test

Description		
Kaiser-Mayer-Okin of Sampling Adequacy (KMO)		0.848
Bartlett's Test of Sphericity	Approximate Chi-square	2153.533
	degree of freedom	253
	Significance	0.000

Source: Author's Calculations

Furthermore, it can be seen in Table 4 that the EFA of 23 variables was reduced to 6 factors. The values in Table 4 are factor loading values, namely the correlation between each variable and its factors. For example, the correlation between item D1 and Factor 1 = 0.715. All loading factor values > 0.4, as required by Hair et al. (2010). Afterwards, the formed factors were named. The naming of this factor is adjusted from the sentence of the questions that are grouped on one factor (Hair et al., 2010).

Table 4
Result of Exploratory Factor Analysis of 23 variables

Factor name	Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6
Security in purchasing decisions	D1	.715					
	D2	.826					
	D3	.767					
	D4	.727					
	D5	.771					
Internet	N1		.777				
	N9		.643				
	I1		.747				
	I2		.555				
	I5		.624				
Friends	N11			.715			
	I3			.862			
	E2			.723			
Satisfaction with the results	D6				.571		
	B1				.426		
	B2				.473		
	B3				.714		
	B4				.666		
Instagram and other social media	N4					.611	
	E1					.723	
	E3					.632	
Family	N12						.876
	I4						.847

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
Rotation converged in 9 iterations.

Source: Author's Calculations

Based on Table 4, the factors that underlie consumer assessments in the online OBR purchase decision process through s-commerce are the following factors: security in purchasing decisions, Internet, friends, satisfaction with the results, Instagram and other social media, and family. Field findings show that some consumers recognize the need for OBR, seek information about OBR and decide to buy OBR through the advice of friends or family. This is in line with the statement of (Liang & Turban, 2011; Marsden, 2011) that purchase decisions are made by potential customers based on suggestions or help from friends and family, not from strangers they don't know or trust.

5. Conclusions

Consumers buy OBR via Instagram, WhatsApp or marketplace. When they buy from producer, they order directly through WA. However, when they buy from a reseller, they buy via IG which is then directed to WA or the marketplace. The main objective of this research is to develop a conceptual model of the online OBR purchasing decision process through s-commerce based on the theory of 5 stages of the online purchasing decision process through e-commerce. This is done because of the scarcity of the conceptual model in previous studies, both for specific and non-specific products. Result of this research makes it easier for us to understand the process of purchasing OBR online via social commerce. The results show what various activities were carried out by OBR consumers. Recognizing the needs of OBR through friends and family is an activity found in this study, which differs from the buying decision process through e-commerce. Furthermore, what respondents did not do were 6 items, namely need recognition via WhatsApp, Facebook, Twitter, Email, question and answer sites, and advertising on Google. So, the conceptual model of the online OBR purchasing decision process via s-commerce consists of 24 variables as shown in Fig. 4. The model can be modified by decision makers and model users according to the conditions they faced. From the conceptual model in Fig. 4, the underlying or determinant factors of consumers in making the OBR purchasing decision process were analyzed. The results were the security in purchasing decisions factor, the internet factor, the friend factor, the satisfaction factor with the results, the Instagram and other social media factor, and the family factor. These factors can be used as important considerations in online OBR marketing via s-commerce. The limitation of the study is that it was conducted for the scope of West Java only, so there may be bias if generalized to the scope of Indonesia. Therefore, for further research, samples of producers, resellers and consumers from more provinces in Indonesia are needed. In addition, due to the COVID-19 pandemic, consumer data collection is only done through the google form, so there can be a perception bias towards the questionnaire. Moreover, for further research, it is necessary to conduct research on consumer satisfaction with the process of purchasing decision, with OBR product, and satisfaction with OBR attributes purchased via s-commerce based

on the conceptual model. By knowing this satisfaction, producers, resellers and online marketers can improve their performance so that in turn it can be expected that the number of OBR consumers will increase.

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Appendices

Table A1.

Variable and Measurement of Online Purchase Decision Process via S-commerce

Concept	Stage	Variable	Indicator
Factors underlying the OBR online purchase decision process via s-commerce	Need recognition	I realized the need for OBR by browsing the internet (N1)	SD, D, N, A, SA
		I realized the need for OBR via WA (N2)	SD, D, N, A, SA
		I realized the need for OBR via FB (N3)	SD, D, N, A, SA
		I realized the need for OBR via IG (N4)	SD, D, N, A, SA
		I realized the need for OBR via Twitter (N5)	SD, D, N, A, SA
		I realized the need for OBR via Email (N6)	SD, D, N, A, SA
		I realized the need for OBR via Blog (N7)	SD, D, N, A, SA
		I realized the need for OBR via Q and A site (N8)	SD, D, N, A, SA
		I realized the need for OBR via Article site (N9)	SD, D, N, A, SA
		I realized the need for OBR via Google ads (N10)	SD, D, N, A, SA
		I realized the need for OBR from friend (N11)	SD, D, N, A, SA
		I realized the need for OBR from family (N12)	SD, D, N, A, SA
	Information search	I searched for information about OBR by reading reviews (I1)	SD, D, N, A, SA
		I searched for information about OBR by looking at the product on the internet (I2)	SD, D, N, A, SA
		I searched for information about OBR by asking friends (I3)	SD, D, N, A, SA
		I searched for information about OBR by asking family (I4)	SD, D, N, A, SA
		I searched for information about OBR by considering various OBR options on the internet (I5)	SD, D, N, A, SA
	Evaluation of alternatives	I evaluated OBR options by comparing social media of various sellers (E1)	SD, D, N, A, SA
		I evaluated OBR options by asking friends (E2)	SD, D, N, A, SA
		I evaluated OBR options using a specific website that provides benchmarking (E3)	SD, D, N, A, SA
	Purchase decision	I feel secure transacting when buying OBR online (D1)	SD, D, N, A, SA
		I feel secure that OBR purchased online fits its function (D2)	SD, D, N, A, SA
		I feel my data is safe when buying OBR online (D3)	SD, D, N, A, SA
		Risk of damage to the OBR product is small (D4)	SD, D, N, A, SA
		Risk of the OBR not being delivered is small (D5)	SD, D, N, A, SA
		If the OBR doesn't match what I ordered, the return is guaranteed (D6)	SD, D, N, A, SA
	Post-purchase behaviour	I give a star rating after the OBR is received (B1)	SD, D, N, A, SA
		I made a repeat purchase of OBR (B2)	SD, D, N, A, SA
		I evaluate my satisfaction with the OBR by paying attention to word of mouth comment (B3)	SD, D, N, A, SA
		I suggest friends to buy OBR (B4)	SD, D, N, A, SA

Note: SD = Strongly disagree, D = Disagree, N = Neutral, A = Agree, SA = Strongly agree

Source: Developed from Kanade & Kulkarni (2018)

Table A2
Frequency of Items which Not Carried Out by Respondents

	Measurement													
	0		1		2		3		4		5		Total	
Item	Fr	%	Fr	%	Fr	%	Fr	%	Fr	%	Fr	%	Fr	%
N1	17	8.5	0	0	2	1.0	29	14.5	106	0.53	46	23.0	200	100
N2	**71**	**35.5**	7	3.5	12	6.0	43	21.5	49	0.25	18	9.0	200	100
N3	**93**	**46.5**	10	5.0	27	13.5	31	15.5	25	0.13	14	7.0	200	100
N4	52	26.0	5	2.5	11	5.5	28	14.0	74	0.37	30	15.0	200	100
N5	**102**	**51.0**	11	5,5	27	13.5	26	13.0	22	0.11	12	6.0	200	100
N6	**108**	**54.0**	15	7.5	38	19.0	15	7.5	17	0.09	7	3.5	200	100
N7	56	28.0	8	4.0	16	8.0	27	13.5	76	0.38	17	8.5	200	100
N8	**85**	**42.5**	9	4.5	20	10.0	29	14.5	38	0.19	19	9.5	200	100
N9	40	20.0	5	2.5	8	4.0	33	16.5	84	0.42	30	15.0	200	100
N10	**68**	**34.0**	11	5.5	20	10.0	38	19.0	43	0.22	20	10.0	200	100
N11	29	14.5	6	3.0	7	3.5	40	20.0	75	0.38	43	21.5	200	100
N12	44	22.0	7	3.5	7	3.5	30	15.0	67	0.34	45	22.5	200	100

Note: Items written in bold indicate items that have a frequency of "not doing" > 30% so they were excluded from the conceptual model. In other words, the items not written in bold, namely N1, N4, N7, N9, N11, and N12 are items that were included in the conceptual model so that they were included in the next analysis, namely EFA.
Source: Author's Calculations