

## Content Analysis Of Consumer Reviews And Comments On E-Commerce

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### ABSTRACT

Online consumer review (OCR) is a type of E-WOM that may be utilized as a source of information and reference for potential consumers in making decisions. This study aims to analyze the content of consumer reviews and comments on e-commerce in Indonesia. This research utilized mix method design. The quantitative research was successfully conducted using a survey technique using a questionnaire instrument with voluntary sampling techniques. The criteria for respondents in quantitative research are Indonesian citizens, over 17 years old, using e-commerce applications, and have purchased fashion products in the last six months. Moreover, the qualitative research was conducted using content analysis techniques and in-depth interviews. The data obtained were comments that were involved in sentiment analysis. The population is a product review comment on two stores that sell fashion products in two different e-commerce. This research indicated that most consumers only provided ratings without being accompanied by reviews. The results also indicated that reviews related to product quality and price were the most discussed by consumers who purchased fashion products. Moreover, some consumers provided inappropriate comments and used repeated words or words that were extended. Further researchers are advised to be capable of collecting and comparing comment data from other e-commerce and adding the number of e-commerce commentary data taken.

## 1. INTRODUCTION

The growing popularity of online shopping trends has driven the e-commerce industry to grow. Regarding data generated by the Central Bureau of Statistics (locally known as BPS), there were 17,063 business actors engaged in the e-commerce industry in 2020. In regards to a survey conducted by iPrice in 2020, the five e-commerce companies with the most web visitors as of October 2020 were Shopee, Tokopedia, Bukalapak, Lazada, and Blibli. In addition, the most frequently purchased products online were fashion and beauty products, with a 25 percent gain (out of a total of 7,000 respondents), followed by household products (6.5%), electronic products (6.4%), and tickets (4.4%) (APJII, 2020).

The Covid-19 pandemic, which was confirmed to have spread in 2020, has greatly disrupted the trade sector. Before the Covid-19 pandemic, consumers usually purchased goods at physical/offline stores. However, after the pandemic has spread to nearly every country and the government has enacted stay-at-home regulations, consumers have increasingly changed their shopping habits through e-commerce. The results from the DBS Bank survey also indicated that the demand for respondents to purchase non-food products in e-commerce was extremely increasing from 24 percent to 66 percent (Lidwina, 2020).

In addition to the increasing use of e-commerce, there is also an increase in consumer complaints. For example, the e-commerce sector from 2017 to 2020 had been classified into the top 3 complaints received by BPKN (National Consumer Protection Agency). Furthermore, in October 2020, BPKN received a significant 1,176 complaints, 299 of which were about e-commerce (merdeka.com, 2020). These complaints were caused by the lack of transparency of business actors, which subsequently led to consumer disappointment due to inappropriate goods purchased (bpkn.go.id, 2020). In the previous study, it was stated that consumers complained the most regarding defective products, product returns, refunds, and call center employee behavior. There were the most prominent problems regarding order processing that experienced order cancellations and problems regarding non-delivery (Barutcu & Basak, 2018).

With the comment feature provided by e-commerce sites, consumers can make complaints about goods and services deemed unfavorable. Aisyiyah and Krisnatuti (2019) stated that the causes of complaint behavior in consumers shown by consumer dissatisfaction are defective products, delivery time, product delivery errors, product replacement without confirmation, products not sent. Meanwhile, dissatisfaction with buying and selling site services includes seller service, and discrepancies in description and appearance. The most important motivation for complaining is to vent emotions and anger. Meanwhile, the type of consumer complaint behavior is the act of consumers telling their disappointment to other consumers and also the people around them (Limantoro et al., 2015). These complaints can be submitted through social features provided by e-commerce. In addition, consumers can share experiences, comments, and opinions about products or services and sellers (Curty & Zhang, 2013). Feedback in the form of comments or reviews, which can also be referred to as online consumer reviews, is a form of E-WOM. Good information quality and a positive attitude toward E-WOM can influence the online purchasing behavior of consumers (Choi, 2018). Factors influencing online reviews on consumer purchasing behavior include positive reviews, rating descriptions, image reviews, additional reviews, and cumulative reviews (Mo & Fan, 2015). Online consumer reviews (OCR) are also an important source sought by consumers to determine the quality of a product (Zhu & Zhang, 2010). At the recognition stage, consumers will rely on the judgments of other consumers who have previously purchased. This is because consumers who have little experience of product features as a result, preference formation will be driven more by various contextual factors (Mukhopadhyay & Chung, 2015). Consumers who read comments from other consumers feel more able to control online shopping activities (Mulyati & Gesitera, 2020).

Based on Ullal's et al. (2021) research in India, consumer reviews have a positive influence on purchasing decisions. However, other studies state that there is no influence between ewom and purchasing decisions (Badir & Andjarwati, 2020). This shows that ewom provided by other consumers cannot influence purchasing decisions. In addition, previous research states that ewom has a significant positive influence on purchasing decisions at Tokopedia (Nurhasanah et al., 2021).

This research was intended to analyze the content of consumer comments or reviews on the two highest-ranking e-commerce sites in Indonesia according to the iPrice (2020) survey, specifically Shopee and Tokopedia. The two e-commerce sites were examined to determine the diversity and distribution of online comments and reviews on each e-commerce. This research was highly required to be carried out because it was considered a novelty from previous research in the consumer field. Research that focuses on analyzing the content of comments or reviews and identifying seller responses regarding reviews or comments on two e-commerce platforms is still not widely carried out in Indonesia. The specific objectives of this research are to 1) identify online purchasing behavior in e-commerce, 2) identify online consumer reviews on fashion products, and 3) classify and analyze consumer review content.

## 2. LITERATURE REVIEW

### *Complaint Behavior*

Consumer complaint behavior is closely related to past experiences, pre-purchase processes, purchases, uses post-purchase evaluations, and some responses to post-purchase experiences (Day, 1980). In the context of consumer behavior, complaints arise when the perceived dissatisfaction exceeds the consumer's tolerance limit. In other words, consumers with high dissatisfaction are more likely to complain than consumers with a neutral or positive experience when making a purchase (Goetzinger et al., 2006).

### ***Consumer Purchase Decision Making***

An action to make a decision made by consumers in purchasing a product is called a purchase decision (Lengkawati, 2021). Purchase decision is a consumer process in making decisions in making transactions in the form of goods or services offered in the market (Ansari et al., 2019). Consumer purchasing decisions are initiated by recognizing needs and seeking information. The purchasing decision process comprises five stages: recognition, information gathering, evaluating solutions, purchasing phase, and post-purchase behavior (Kotler & Armstrong, 2008).

### ***Consumer Behavior***

Consumer behavior is a psychological process and activity that encourages action in choosing a product or service before the purchase phase when purchasing, using, and spending on products and services after evaluating activities. In addition to product quality, consumer behavior includes product prices, promotions, and the place goods are sold (Firmansyah, 2018). The role of consumer behavior cannot be separated in making consumer purchasing decisions (Rahman et al., 2020). There are factors that influence consumer behavior, namely cultural factors, social factors, and personal factors (Kotler and Armstrong, 2008). The most dominant factor in influencing online purchasing decisions is social factors (Nofri and Hafifah, 2018).

### ***Online Shopping***

Online shopping is an electronic transaction carried out by consumers through online stores through devices connected to the internet through various media such as computers, mobile phones, and others (Harahap & Amanah, 2018). Katawetawaraks and Wang (2011) stated that there are four consumer motivations in shopping online: information, available products and services, convenience, and cost and time efficiency. Amanah and Harahap (2018) found that various products are factors that influence online purchases. In addition, Semuel (2020) research found that website display in online stores affects consumer interest in buying products.

### ***E-commerce***

E-commerce is considered an activity of purchasing and selling goods and services or sending funds or data through the internet. E-commerce also includes all other activities related to any transaction, such as delivery, payment facilitation, and supply chain and service management (Anuj et al., 2018). Pradana (2015) classified e-commerce businesses in Indonesia into six types, namely listing/ classified ads, online marketplace, shopping mall, online store, online store on social media, and types of crowdsourcing and crowdfunding websites. Nowadays, with the development of technology, the term M-commerce or mobile ecommerce has emerged. M-commerce is the process of buying and selling goods and services through wireless technology, namely devices such as cell phones and personal digital assistants (Anuj et al., 2018). M-commerce is often referred to as m-business or pervasive computing. M-commerce is the development of e-commerce that uses wireless networks or mobile telecommunication (Yulianto and Wijaya, 2014).

### ***E-WOM***

E-WOM is a positive or negative statement made by a potential customer, actual customer, or former customer regarding a product or company. Many people or agencies can access or view E-WOM via the internet (Hennig-Thurau et al., 2004). E-WOM consists of positive and negative reviews of products sold in online shopping centers (e-commerce) (Park & Lee, 2009).

### ***Online Consumer Review and Rating***

Consumer reviews or online consumer reviews are recognized as one type of E-WOM communication utilized to provide information to help understand and evaluate the quality and performance of a product (Filiari, 2014). Online consumer review is derived directly from the consumer's experience, specifically the experience of consuming or using the product, the experience of the service provided by the seller, or may be related to the speed of product delivery (Astiarini, 2017). Hong, Zulkiffli, and Amran (2021) found that reviews and ratings on online shops affect consumer purchases. In addition, Madhani and Rayjaguru (2020) state that discount prices or rewards influence consumer reviews.

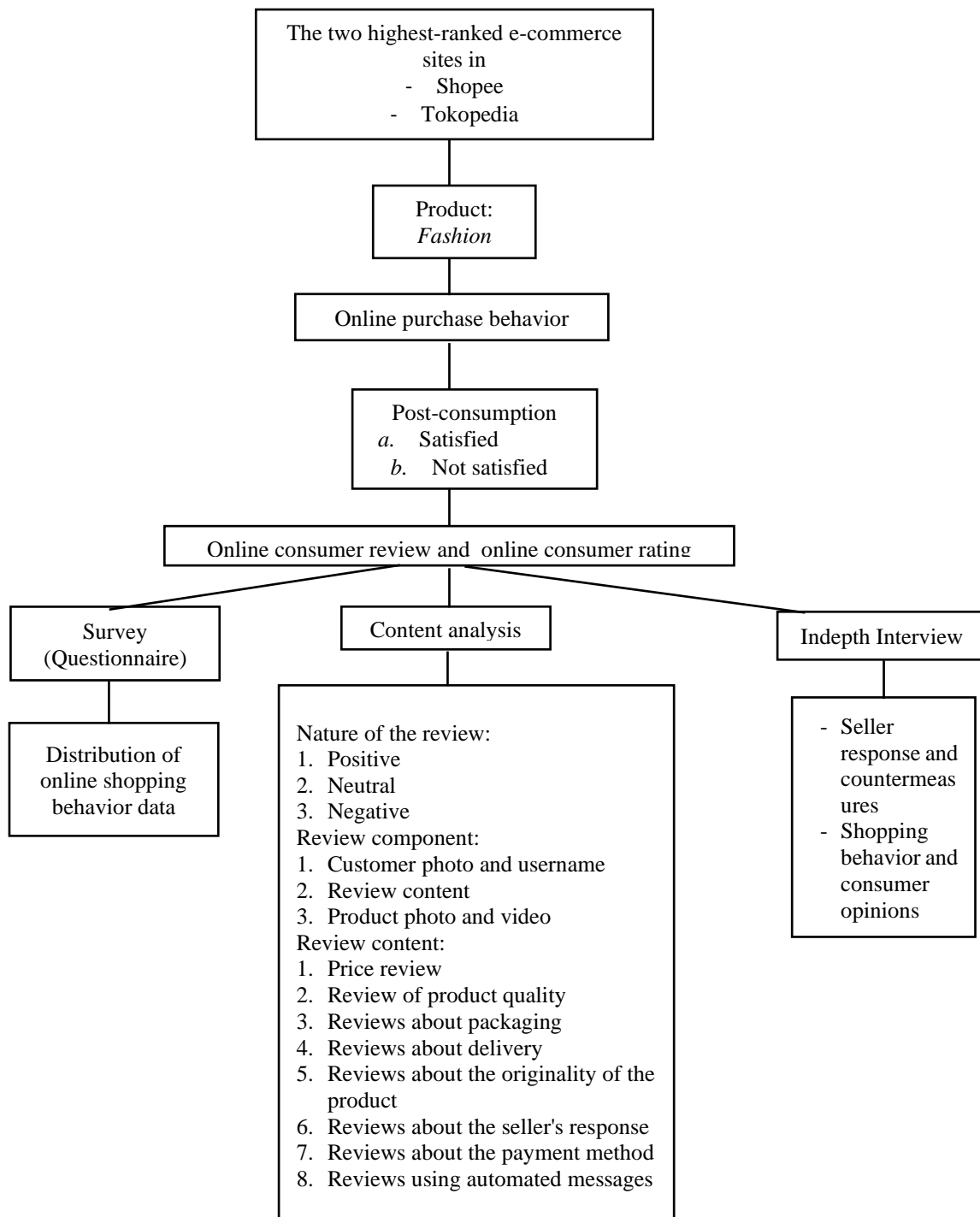
### ***Content Analysis***

Content analysis is a research technique for making systematic, credible, valid, and replicable conclusions from text and other forms of communication, such as images, art, sounds, maps, signs, symbols, and even numerical records (Drisko & Maschi, 2016; Krippendorff, 2018). Krippendorff (2018) submitted that content analysis could also be in the

form of statements about a phenomenon that individuals can perceive and observe. As a research technique, content analysis can provide new insights, increase the researcher's understanding of certain phenomena, or inform practical actions.

**Research Framework**

Online shopping can be done on e-commerce platforms. Of the various e-commerce in Indonesia, there are two e-commerce with the highest ranking, namely Shopee and Tokopedia. In e-commerce, there are various types of products, but this study focuses more on fashion products. In the consumer purchasing decision process, consumers will go through the post-purchase process. In this process, consumers can feel satisfied or dissatisfied with the products they buy (Sumarwan 2017). As a result, if consumers are satisfied, they will provide positive comments or reviews, and if consumers are not satisfied, they will provide negative comments or complaints (Richins 1983; Halstead 2002). Online complaint behavior in e-commerce platforms can be found in online consumer reviews and online consumer ratings. This research was conducted by surveying consumers online, to find out the distribution of data regarding consumer behavior in online shopping. Furthermore, a content analysis of online consumer reviews and online consumer ratings was conducted to identify the content, nature, and components of the reviews and comments provided by consumers. Comments and reviews are categorized into positive, neutral, and negative. Furthermore, to find out about complaints in e-commerce, an in-depth interview was conducted with one seller and one consumer. The research framework is presented in Figure 1.



**Figure 1.** Research Framework

### **3. METHOD**

This research utilized a mixed-method research design. The method used was the concurrent embedded strategy. This method combines data from both methods to integrate information and compare one data source with another (Creswell, 2009). In this quantitative research, a descriptive design was used with a survey technique using a questionnaire instrument compiled by the researcher. Online purchasing behavior variables have a reliability value of 0.636. The questionnaire contains questions about the characteristics of respondents, online shopping behavior, and online purchasing behavior with a total of 22 question items. Samples of quantitative data were determined utilizing the voluntary sampling technique. Regarding the results of the online survey, 112 data were successfully obtained, but due to 7 duplicate data, only 105 respondents' data were involved in this research.

Qualitative research was conducted using experimental design, content analysis techniques, and in-depth interviews. Content analysis was carried out by observing consumers' comments, reviews, and ratings of fashion products in online stores located in Shopee and Tokopedia e-commerce. The ratings and reviews obtained have amounted to 600, specifically 300 on the Shopee application and another 300 on the Tokopedia application. Review and complaint data were sampled using a judgment sampling technique, which is commonly regarded as a sampling technique based on subjective considerations with certain characteristics. The researcher actively selected the most productive sample to answer research questions (Marshall, 1996). Reviews were taken on store profiles that sell fashion products with a star seller sign on the Shopee application or shops with a power merchant sign on the Tokopedia application. Data from comments and reviews were selected based on the top 300 comments as of March 2021 on the selected store. The data obtained from comments were involved in sentiment analysis to determine the contents of negative, neutral, and positive reviews. The comments data obtained were also grouped according to the review component and the content of the review.

In-depth interviews were conducted three times, particularly with two consumers who had purchased fashion products in the last six months and had provided ratings and reviews. The third in-depth interview was conducted with one seller who sold fashion products on e-commerce. In-depth interviews were conducted using a list of questions successfully compiled previously. In-depth interviews with consumers were conducted offline on Thursday, March 18, 2021, at the Raindeer cafe in Bogor and on June 16, 2021, at the Labuan Senja cafe in Bogor. Furthermore, in-depth interviews with the sellers were conducted online on Monday, March 22, 2021, utilizing the Google Meet application. The data obtained from the online survey results and the collection of comments, reviews, and ratings were successfully processed and analyzed using the Microsoft Excel application and the Statistical Package for Social Science (SPSS) 25.0. Moreover, the results of in-depth interviews were then analyzed descriptively and compiled narratively.

### **4. RESULT AND DISCUSSION**

#### ***Characteristics of Respondents***

The respondents involved in this research were mostly women (76.2%) in the age range of 17 to 24 years (73.4%) who came from West Java Province (67.6%) and did not currently have an occupation (69.5%). In addition, the average respondents had the last education level of high school (64.8%), with income/pocket money earned during the Covid-19 pandemic of less than IDR 1,000,000 (50.5%).

#### ***Online Shopping Behavior***

Most of the 86 respondents (81.9%) chose Shopee as the most frequently used online shopping platform, followed by Tokopedia, which amounted to 15 respondents (14.3%). Moreover, 69.5 percent of respondents were likely to choose an online shopping platform because of its convenience, simplicity, popularity, and many promos. In the last six months during the Covid-19 pandemic, 52 respondents (49.5%) had made online purchases more than six times. Furthermore, more than half of the respondents (51.4%) had shopped for fashion products only once or twice.

Most respondents (91.4%) chose cost and time efficiency as the reason for shopping online. As many as 81 percent of respondents chose to shop for fashion products online due to convenience in transactions, and 73.3 percent of respondents chose lower prices as their reason for shopping for fashion products online. Convenience and price positively affect online purchasing decisions (Ristania & Justianto, 2013; Sudjarmika, 2017). The in-depth interviews indicated that online shopping was influenced by lower prices, a large selection of products, the Covid-19 pandemic, and more updated fashion products. 46.7 percent of respondents spent less than IDR 500,000, and another 29.5 percent spent IDR 500,001 to IDR 1,000,000 for online shopping. Meanwhile, seven out of ten respondents (70.5%) spent less than IDR 500,000 to purchase fashion products online. The most purchased fashion products by 68.6 percent of

respondents were clothes, while the least (2.9%) were in other categories, namely bags and shoes. Regarding the results of in-depth consumer interviews, many clothing products had been purchased because sleepwear or T-shirts were likely to be needed more during this pandemic, considering that activities were restricted to being carried out at home.

### **Online Purchasing Behavior**

Based on the data presented in Table 1, about 8 out of 10 respondents (80%) tended to initially read reviews in the comments column before purchasing fashion products. Referring to the results of in-depth interviews, consumers would check the ratings, reviews, and product photos attached to the review column before deciding to purchase fashion products other than those shown. Furthermore, 64.8 percent would discourage purchasing a product if they encountered a negative review about the product. According to in-depth consumer interviews, bad reviews and ratings could influence consumers to discourage purchasing products at the store. Consumers prefer to shift to another store or product with a better rating and review. Therefore, consumers would discourage purchasing products with negative reviews and look for similar products with positive reviews. This study also states that consumer confidence can have a positive effect on buying interest (Hidayat et al., 2021). In addition, convenience and price have a positive effect on online purchasing decisions (Ristania & Justianto, 2013; Sudjarmika, 2017).

**Table 1.** Online purchasing behavior

<b>Characteristic/Category</b>	<b>Total</b>	<b>Percentage (%)</b>
See reviews in the comment section before buying fashion products online		
Never	0	0.0
Seldom	3	2.9
Often	18	17.1
Always	84	80.0
Total	105	100
Discourage purchasing a product if there is a negative review		
Never	1	1.0
Seldom	11	10.5
Often	68	64.8
Always	25	23.8
Total	105	100
Give a bad rating when the purchased fashion product does not match the product photo in the online store		
Never	17	16.2
Seldom	45	42.9
Often	26	24.8
Always	17	16.2
Total	105	100
Leave a review after the product arrives		
Never	9	8.6
Seldom	40	38.1
Often	26	24.8
Always	30	28.6
Total	105	100
Give a rating to the seller after the product arrives		
Never	4	3.8
Seldom	15	14.3
Often	41	39.0
Always	45	42.9
Total	105	100
Make a complaint if the product does not match the photo		
Never	12	11.4
Seldom	45	42.9
Often	29	27.6
Always	19	18.1
Total	105	100
Make a complaint if the products obtained are not following what was ordered		
Never	9	8.6

Characteristic/Category	Total	Percentage (%)
Seldom	39	37.1
Often	29	27.6
Always	28	26.7
Total	105	100
Type of complaint		
Contact seller directly	50	47.6
Give a bad rating with an explanation of dissatisfaction	40	38.1
Only give a bad rating	9	8.6
Other	6	5.7
Total	105	100

About 4 out of 10 respondents (42.9%) were found to rarely give a bad rating and complain when the purchased fashion product did not match the product photo in the online store. After the goods arrived, 38.1 percent of respondents were encountered to provide reviews on the products purchased rarely. Moreover, 45 respondents (42.9%) were likely to give a rating to the seller after the goods arrived. Around 37 percent of respondents were indicated to rarely complain about goods that were not in accordance with the product ordered (size or color).

Previous research has stated that consumer satisfaction can contribute to the influence of e-WOM (Harris, 2017; Oktaviani et al., 2019). If consumers are satisfied with the product purchased, then the consumer will provide a good rating and review with positive sentences. On the other hand, if the consumer is dissatisfied with a certain product or service, the consumer will likely give a rating with minimal stars and a review with negative words. Based on Ilham's et al. (2023) research, digital marketing and product quality have an influence on customer satisfaction and purchasing decisions. The most complaints made by consumers (47.6%) were by contacting the seller directly, followed by giving a bad rating accompanied by an explanation of dissatisfaction, which amounted to 38.1 percent.

### ***Ratings and Reviews on E-commerce***

Reviews on Tokopedia comments were obtained from store A, which joined the Tokopedia app in 2016. The store had 18,543 reviews as of March 15, 2021, for a total of 13,436 5-star ratings, 2,739 4-stars, 15,26 3-stars, 375 2-stars, and 467 1-star. Meanwhile, the store's rating amounted to 4.8 out of a total of 5 stars.

On Shopee, comments were obtained from store B, which started joining in 2015 on Shopee. During six years of sales, the store had 393,969 reviews as of March 10, 2021, with 333,765 5-stars, 48,874 4-stars, 8,885 3-stars, 1,503 2-stars, and 942 1-star. Moreover, the overall store rating amounted to 4.8 out of a total of 5 stars.

Based on Table 2, it can be seen that a total of 68 percent of accounts on Tokopedia and 76.3 percent of accounts on Shopee used a valid username. Furthermore, as many as 227 (75.7%) on Tokopedia did not upload profile photos, while 64.3% of accounts on Shopee did upload profile photos. Referring to 600 ratings and reviews, 60 percent of stores on Tokopedia and 86.7 percent on Shopee were stores rated with five stars. A total of 202 accounts (67.3%) on Tokopedia and 65 percent of accounts on Shopee did not provide product photos that were attached with the rating or reviews. Meanwhile, there were four accounts on Tokopedia and 25 on Shopee attaching inappropriate photos (not product photos). The review feature with video attachments was only available on Shopee by 14.3 percent. The photo and video facilities were useful for other consumers in gathering information and making purchasing decisions. Based on in-depth interviews, consumers took several considerations before purchasing a product, particularly examining product photos displayed by sellers, comments, ratings, and photos and videos provided by consumers who had made previous transactions.

Given the important role of photo and video features in reviews, consumers still minimally use these facilities. To increase consumer motivation in providing reviews accompanied by product photos and videos, Shopee presents a reward in the form of coins that can be reused for shopping. The reward will be given to consumers if they meet the requirements: giving a rating, writing a review of 100 letters, and attaching photos and videos of purchased products.

The award is certainly expected to increase consumer motivation to write reviews accompanied by photos and videos. Based on the data results of comments, reviews containing photos and videos of products were not significantly different between Shopee (which gives rewards) and Tokopedia (which does not provide rewards). On the other hand, it was considered capable of creating a new phenomenon for consumers to write reviews. Consumers were found to enter words using extended letters or write reviews irrelevant to purchased products. The reward also led to several consumers inserting photos and videos unrelated to the product that should be displayed, but only black images, abstract images, and even self-portrait images.

**Table 2.** Tokopedia And Shopee Comment Data

Characteristic/ Category	Tokopedia		Shopee	
	Number (n)	Percentage (%)	Number (n)	Percentage (%)
Account name				
Uncensored	204	68.0	229	76.3
Censored	96	32.0	71	23.7
Profile photo				
With photo	73	24.3	193	64.3
Without photo	227	75.7	107	35.7
Rating				
5	180	60.0	260	86.7
4	63	21.0	24	8.0
3	23	7.7	8	2.7
2	21	7.0	0	0.0
1	13	4.3	8	2.7
Product photo				
No	202	67.3	195	65.0
Yes	94	31.3	80	26.7
Not relevant	4	1.3	25	8.3
Product video				
No	300	100.0	242	80.7
Yes	0	0.0	43	14.3
Not relevant	0	0.0	15	5.0
Content review				
No	16	5.3	178	59.3
Yes	284	94.7	120	40.0
Not relevant	0	0.0	2	0.7
Seller response				
No	57	19.0	298	99.3
Yes	243	81.0	2	0.7
Content review				
Product quality review	117	39.0	109	36.3
Review using automatic message	0	0.0	63	21.0
Product originality review	8	2.7	55	18.3
Delivery review	19	6.3	53	17.7
Price review	58	19.3	48	16.0
Seller response review	14	4.7	28	9.3
Packaging review	11	3.7	5	1.7
Payment method review	0	0.0	0	0.0
Product Type				
Jacket	50	14.3	138	37.7
Clothes	212	60.7	127	34.7
Pants	19	5.4	81	22.1
Accessories	20	5.7	10	2.7
Other	4	1.1	4	1.1
Shoe	0	0.0	4	1.1
Veil	0	0.0	2	0.5
Pajama	44	12.6	0	0.0

More than half of the reviews (59.3%) on Shopee only consisted of ratings without reviews. In addition, on Tokopedia, almost all reviews (94.7%) contained ratings along with reviews. On Tokopedia, most reviews (81%) provided by consumers were responded to by stores. Comments were answered using an automated message stating, "Thank you for shopping at LV.co Tanah Abang. Share our store link <https://www.tokopedia.com/lvco> with your friends and favorite our store to keep updated on the latest stock and products". Automatic comments were only accepted for consumers who provided a rating of 4 and a rating of 5, while comments with a rating of 3 and below would not get any reply.

Meanwhile, only 0.7 percent of reviews on Shopee received responses. Based on the in-depth interviews, the seller would not follow up or respond to negative comments and ratings provided by consumers when the number of



positive ratings and reviews was likely to appear more than negative ratings and reviews. The most reviewed content discussed on the Shopee and Tokopedia applications was a review of product quality. Consumers most frequently purchased two products in both applications, particularly jackets and clothes.

### Review Sentiment Analysis

The sentiment is categorized into three categories: positive, negative, and neutral. The positive category includes positive emotions or good words, while the negative category contains negative emotions or bad words (Wilson et al., 2005). Meanwhile, the neutral category is divided into negative and positive emotions (Li & Liu, 2013). Referring to Table 3, from a total of 404 reviews from Shopee and Tokopedia, 255 reviews had been successfully categorized as having positive emotions. Most positive emotions were found in reviews on the Tokopedia application. The most neutral and negative reviews were found on the Tokopedia application. Negative complaints and ratings would greatly affect the overall store rating. However, based on the seller's statement, negative reviews and ratings would provide an insignificant impact on the overall rating of the store if positive reviews and ratings were likely to be found.

**Table 3.** E-Commerce Review Sentiment Analysis

E-commerce	Sentiment category		
	Positive	Neutral	Negative
Shopee	93 (23.0%)	21 (5.2%)	6 (1.5%)
Tokopedia	162 (40.1%)	62 (15.3%)	60 (14.8%)
Total	255 (63.1%)	83 (20.5%)	66 (16.3%)

According to the results of in-depth interviews with consumers, the existence of bad reviews and ratings makes consumers discourage buying products at that store. Consumers will prefer to switch to other stores or other products that have better ratings and reviews. This is in line with research conducted (Dzulqarnain, 2019), consumers will discourage buying products that have negative reviews and look for similar products that have positive reviews. If there are more negative reviews and ratings than positive ratings, the seller must immediately fix it by improving his service, one of which is providing a response. Astiarini (2017) states that positive reviews are more helpful to consumers than negative reviews. Of course, this also has a positive impact on the seller for the overall rating of his shop.

## 5. CONCLUSIONS, SUGGESTIONS, AND LIMITATIONS

This research indicated that most respondents tended to check reviews before purchasing products online. Moreover, less than half of the respondents were likely to provide a rating to the seller. The results also found that about six out of ten respondents had to cancel their intention to purchase a product if they encountered a negative review. In addition, about one in ten respondents were found to provide a bad rating if the product purchased did not match the photo shown. On the other hand, only two out of ten respondents complained when the goods purchased did not show any similarity with the photos. Moreover, about three out of ten respondents complained if the goods obtained did not match the products ordered. The results also showed that the type of complaint most provided by respondents was by contacting the seller directly.

Having regard to the results of sentiment analysis, it was found that 255 reviews consisted of positive emotions. Only less than half of consumers had been found to provide reviews accompanied by product photos on both applications. About one in ten percent of respondents only used the video feature. Not all consumers were likely to utilize the review feature because some only intended to provide ratings. The results also showed that reviews about product quality and prices were the most discussed by consumers who purchased fashion products. The rating and review columns could contain stars, content, automatic reviews, photos, and video reviews. Automated reviews were only used by less than half of consumers.

The e-commerce party could improve the rating and review facilities to prevent errors that consumers will likely provide in purchasing decisions. Sellers should pay more attention to complaints in the rating and review columns by providing a fast response. Moreover, sellers or online shop owners in e-commerce are also expected to be capable of responding to all columns, particularly ratings and reviews. Positive ratings and reviews would receive a "thank you" response from shop owners that can be provided through the automatic message reply feature. On the other hand, bad reviews and ratings should be responded to immediately by asking about the dissatisfaction felt by consumers.

Furthermore, consumers are also expected to provide appropriate comments, and can be accompanied by pictures and video product reviews. These are highly required to protect consumers in online shopping. In addition, consumers are expected to be capable of making complaints or writing reviews if dissatisfaction arises with the product or service from the store. This can encourage other consumers to be more careful in purchasing decisions or online transactions. The existence of a negative review can also be an evaluation material for sellers to improve the service and

quality of the products sold.

The National Consumer Protection Agency (BPKN) can immediately realize the development of online dispute resolution (ODR) to resolve disputes and complaints in the e-commerce sector. The application development is expected to be capable of addressing the problem of complaints more effectively and efficiently. Moreover, BPKN can more easily educate and socialize with consumers about making complaints on e-commerce media. BPKN is also capable of socializing consumer rights, specifically the right of consumers to complain if they feel disappointed with the products they have purchased. This should be conducted to stimulate more consumers who intend to complain, particularly complaints in the review column in e-commerce.

Furthermore, parents and children can access their rights and obligations as consumers, particularly in transactions through e-commerce. This is carried out to commemorate each other for being good and smart consumers in online transactions. In addition, the government must be capable of clarifying regulations for the settlement of dispute rights. The Indonesian E-commerce Association (idEA) can supervise sellers and e-commerce industry players in Indonesia employing conducting sales ethics and resolving complaints. This is required to create a safe and comfortable e-commerce shopping environment for consumers and sellers.

This research only collected data from two e-commerce sites, Tokopedia and Shopee. In addition, the number of reviews obtained only amounted to 300 from each e-commerce. Comment data was processed manually to prevent errors in the final result. Sentiment analysis reviews were grouped based on the researcher's point of view, without using any sentiment analysis app or program. This was likely to bias the researcher's emotional understanding of the review. Furthermore, the in-depth interview respondents of this research were limited, particularly to only two consumers and one seller. This caused the research to be based on only one point of view from both consumers and sellers.

Further researchers are advised to be capable of collecting and comparing comment data from other e-commerce and adding the number of e-commerce commentary data taken. Further research is expected to take more comments and collaborate with e-commerce parties to collect comment data. Moreover, further research is expected to be able to use applications or programs to conduct sentiment analysis to produce more accurate sentiment groupings.

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