

Consumer Behavior on Selection of Online Retail Stores

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Abstract

Online shopping has increased sharply during the COVID-19 pandemic. This condition is due to the limitation of physical contact for shopping offline. Four factors influence consumer perceptions of online shopping: the quality of information, convenience, price, and product quality. This paper aims to analyze customer behaviour based on the four variables to determine what type of online store is the most suitable for beginner online retail traders. The method used is multiple linear regression analysis, supported by statistical tests using the JASP 12.2 program. The results of this study indicate that partially the independent variables (quality of information, convenience, price and product quality) have a significant effect on the dependent variable (purchase of goods online). Simultaneously, the dependent variables have a significant effect on online purchasing decisions. Based on regression analysis, it is known that product quality has the most substantial influence and convenience has the lowest influence on consumer buying decisions. Therefore, the recommended online store recommendation is to use an online marketplace platform such as Shopee, Lazada, Tokopedia, etc. Based on regression analysis, it is known that product quality has the most substantial influence and convenience has the lowest influence on consumer buying decisions. Therefore, the recommended online store recommendation is to use an online marketplace platform such as Shopee, Lazada, Tokopedia, etc. Based on regression analysis, it is known that product quality has the most substantial influence and convenience has the lowest influence on consumer buying decisions. Therefore, the recommended online store recommendation is to use an online marketplace platform such as Shopee, Lazada, Tokopedia, etc.

Keywords

Online Shopping, Covid 19, Consumer Behavior, Product, and JASP.

1. Introduction

Shopping is an activity to buy in a store (KBBI, 2021). As technology develops, the definition of the store itself has changed a lot, especially with the online marketplace. The offline market requires a physical store to sell whose procurement costs are included in the business capital. In contrast to the online market, online stores can be obtained with a small administrative fee or even free. This feature makes the operational costs of online stores smaller than offline stores so that the selling price of products at online stores is also lower.

The share of the e-commerce market is also increasing from year to year. According to the UNCTAD (2021) report, the increase in e-commerce market share reached 2% in 2019 and 3% in 2020. This market share includes Business to Business (B2B) and Business to Consumer (B2C) online transactions. The graph of the increase in online retail market share is shown in Figure 1. This increase shows that there is a shift in the trend of public spending. This phenomenon has been accelerated by the COVID-19 pandemic, which has limited activities that require face-to-face meetings.



Source: UNCTAD Report 2021

Figure 1. Market share of global online retail

This phenomenon also occurs in Indonesia. People who are increasingly accustomed to using internet technology are starting to shop for their daily needs through online marketplaces. Currently, there are 202.6 million internet users in Indonesia (Kompas, 2021). Indonesia is one of the countries with the largest e-commerce growth in the world. The existence of a pandemic in 2020 increased e-commerce sales by 33% compared to 2019 to IDR 337 trillion. The transition from offline to online sales is still in the transition process and will continue to grow. Indonesia's e-commerce potential can still grow even more prominent, even predicted to reach USD 83 billion by 2025 (Indonesian Information Portal, 2021).

Ika (2020) researched the financial performance of retail companies in Indonesia before and after the E-commerce boom (2015) in Indonesia. It was found that retail companies with good performance after the e-commerce boom were retail companies with online and offline sales channels. This finding is in line with the current reality. Many giant retail stores in Indonesia have had to close their stores due to the impact of the pandemic. The existence of social distancing forced offline retail operations to be closed. This condition makes consumers inevitably have to shop online. As a result, many retail companies have to go bankrupt because they cannot adapt to changes in market behaviour that occur suddenly (Sembiring, 2021).

Switching sales methods from offline to online is not an easy thing. Many things must be set, such as determining the location of the online store, displaying product photos, creating promotional content, delivery services, and others. Another most important factor is consumer behaviour. The company must study the behaviour/tendency of its potential customers. The population of potential buyers, the considerations that prospective buyers make before deciding to buy at an online store, the features that attract them to shop, etc., need to be known by online merchants to increase competition. Therefore, research is needed on the variables that can influence consumers' decision to buy online, especially if the pandemic condition is also one condition.

1.1 Objectives

This research was conducted using the perspective of online buyers. The research method is descriptive associative to provide guidance on customer behaviour in making decisions to shop online. Different purchasing methods will provide different user experiences. Therefore, this research was conducted to determine what type of online store is most suitable for consumer behaviour represented by the variables of information quality, convenience, price, and product quality.

2. Literature Review

There are many factors that can influence a buyer's decision to buy a product. There are four factor variables used in this study, namely Information Quality (KI), Ease (K), Price (H), and Product Quality (KP). The relationship between these four variables is depicted in Figure 2.

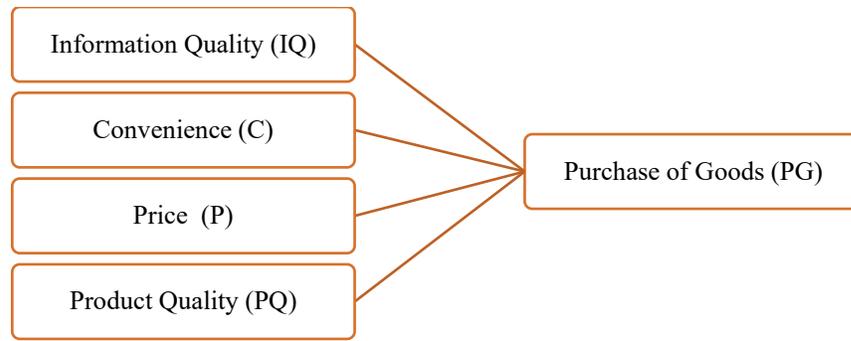


Figure 2. Relationship between variables of information quality, convenience, price, and product quality

Hatta (2016) mentions that the quality of the information provided by online businesses to consumers and the existence of virtual communities can allegedly influence consumers in making decisions to purchase Samsung Galaxy Tabs through e-commerce. In addition, Raymond and Matthew (1999) argue that accurate, precise and helpful information affects reliability in online trading. This statement is supported by Jaejin, Lee (2009). If the website operator provides valuable information to consumers, then consumers will begin to trust the information they receive from the website. The information that consumers receive when viewing an online store will provide stimuli that will support or hinder the intention of potential buyers to buy the product.

According to Kotler and Armstrong (2014), product quality is the ability of a product to perform its functions. These functions include overall durability, reliability, accuracy, ease of operation, product repair, and other product variables. According to Kotler and Keller (2016), there are nine dimensions of product quality that distinguish one product from another: shape, product characteristics, performance, accuracy or suitability, durability, reliability, style, and design.

The next factor is convenience. Ease of use is one of the things that are considered for online shoppers. The marketing strategy should satisfy customers by providing different additional value from competitors through e-services and the advantages of Information Technology (IT)-based innovation that provides convenience, efficiency, means of self-actualization, and self-actualization other added values. Suryani (2013) states that the convenience indicators in online shopping are: shopping does not need to leave the house, easy to use in transactions, easy to learn/operate based on desire, shopping is more secure with privacy, flexible shopping sites and time efficiency.

A product is anything that a consumer needs and wants to satisfy a perceived need. Consumers will survive when they are satisfied when making a purchase and are also satisfied with using the product. Price is an essential factor in customer satisfaction because consumers always direct their attention to price when assessing the value of products and services. From a consumer perspective, price is what is given up to get the product. Price can be a reason or indicator for someone to purchase the product or service offered. According to Vasić (2018), price indicators that affect online purchases are price variations, product price competitiveness (lower cost per transaction), promotions/discounts.

In determining the type of online store that should be used, it must be known in advance the types of online promotional media that can be used. There are three critical terms in online promotion media, namely marketplace, online store, and e-commerce. All three are promotional media places that can be an alternative to offline stores. The differences between the three are shown in Table 1.

3. Methods

The research was conducted by surveying 404 respondents. The number of respondents is the number of samples from the population of the city of Medan in 2020 of 1,701,879 people obtained by the Slovin formula (Sinulingga, 2007). This population was chosen to facilitate data collection because the researcher is also domiciled in Medan. In selecting respondents, three criteria must be met: residents of Medan City, at least 15 years old, and purchased goods online. Data on respondents who took part in the survey are shown in Table 2.

Table 1. Differences in marketplace, online store, and e-commerce (Dewaweb, 2021)

Media Name	Definition	Advantages	Deficiency
Online Marketplace	The concept of a marketplace is the same as a traditional market where the market provides stalls for shop owners to sell and online marketplaces. The difference is that online marketplaces are all done digitally. Example: Ebay, Amazon, Shopee, Tokopedia, Bukalapak, Lazada, etc	<ul style="list-style-type: none"> • A lot of visitor traffic, so it is easier to find buyers • There are no stall rental fees because, generally, online marketplace service providers benefit from advertising 	<ul style="list-style-type: none"> • It is difficult to get a high-profit margin due to high competition. However, this obstacle can still be overcome with a good marketing strategy
Online Shop	An online shop refers to the place where a sales transaction occurs on the internet. Online shop does not have to be on the website, but can also be through social media such as Facebook and Instagram.	<ul style="list-style-type: none"> • Merchants can more easily get consumer data to be used for further promotion in developing the business. • There is no fee to rent a stall. 	<ul style="list-style-type: none"> • Merchants must take care of all purchasing transactions themselves, from product display settings, purchasing policies, shipping issues, etc.
E-commerce	E-commerce is an online shop but managed more professionally like a marketplace. Marketplace and e-commerce both have unique websites, shopping carts and payment gateway systems.	<ul style="list-style-type: none"> • Same with online shop • Buyers feel more convinced because the website looks professional 	<ul style="list-style-type: none"> • Merchants must provide website creation and maintenance fees, cybersecurity, shipping arrangements, and others that require fees.

Table 2. Survey data

Information	Category	Frequency	Percentage (%)
Gender	Men	136	34
	Woman	268	66
Age	15-19 years old	80	20
	20 – 24 years	247	61
	25 – 29 years old	48	12
	30 – 34 years	20	5
	35 – 39 years old	7	2
	40 – 44 years old	2	0
Profession	Student / Student	278	69
	Civil Servants (PNS)	13	3
	Private employees	73	18
	Etc	40	10
Online Purchase Frequency	At a certain time	292	72
	1 x month	49	12
	More than once a month	63	16

The questionnaire was conducted online using Google Form media on a Likert scale to be quantified. The questionnaire is divided into five variables, as shown in Figure 1.

1. Variable 1 is Purchase of Goods (PG) online. The PB variable is the dependent variable in this study. This variable contains 12 questions; the tendency to buy goods online, buying out of necessity, buying online because they are afraid of running out, buying online for valuable products, buying online because they are worried about COVID-19, buying online because of a recommendation, buying online because of a habit, buying online with repeat order, buying online after reading the information, evaluating the brand before buying, and evaluating the online site before buying.
2. The second variable is Information Quality (IQ) which consists of 3 questions consisting of the accuracy of the information, the relevance of the information and the accuracy of the information provided by the online seller. This variable is an independent variable.
3. The third Convenience (C) which consists of seven questions, namely buying online because there is no need to leave the house, ease of ordering and payment, easy-to-understand menus, easy product search, more secure privacy, more flexible online shop sites, and cost and time-saving. This variable is an independent variable.
4. The fourth variable is Price (P) which consists of three questions, namely price affordability, promotions on both discounts and postage discounts provided by online sellers and competitive pricing. This variable is an independent variable.
5. The fifth variable is Product Quality (PQ), which consists of three questions: product quality with catalogues, quality is the same as offline stores, and products have many designs and models. This variable is an independent variable.

Each question on each variable will be weighted based on the questions with the following formula:

$$\text{Value of weight} = (\text{Number of Strongly Agree} \times 5) + (\text{Number of Agree} \times 4) + (\text{Number of Disagree} \times 3) + (\text{Number of Disagree} \times 2) + (\text{Number of Strong Disagree} \times 1) \quad (1)$$

The data were statistically tested for validity, classical assumption test (normality, heteroscedasticity, multicollinearity). This test is done using JASP 12.2 software. The normality test of the data was carried out using a graphical approach, namely the normal probability plot. The method to detect the presence of heteroscedasticity is to see whether there is a certain pattern in the scatter plot that shows the relationship between Studentized Residual Regression and Standardized Predicted Value Regression. While a good regression model does not have multicollinearity problems where the Variance Inflation Factor (VIF) value is less than ten and the tolerance value is 0.1.

Further analysis was carried out using multiple linear regression statistical tests to measure the effect of each variable on purchasing decisions. Multiple linear regression coefficient tests include t, F, determination, multiple linear regression analysis. A partial test (T-test) was carried out with a 95% confidence level (significant level 5%) and $df = n-5$, then the t table obtained was 1.966. The hypotheses used are:

Ho = There is no significant effect of each variable IQ/C/P/PQ (X) on purchasing goods (PG) online (Y)

Hi = There is a significant influence of each variable IQ/C/P/PQ (X) on purchasing goods (PG) online (Y)

Simultaneous Test (Test F) is used to determine whether the independent variables have a simultaneous (together) effect on the dependent variable of purchasing goods online (PB).

4. Data Collection

The results of the 404-respondent questionnaire are not fully presented in this paper. In this paper, voting results are explained based on the results of the 3-largest ranking of the weighting of each variable, as shown in Table 3.

Table 2 shows the results of the five questionnaire variables that have been sorted by weight. Based on Table 2, it is known that questions 11, 12, and 2 have the highest weight in the variable of purchasing goods online. Question 11 evaluates goods before buying, Question 12 evaluates existing online stores before buying, and question 2 is buying as needed. This finding shows that consumers tend to like the variety of brand choices in online stores, and many shops can be accessed, and respondents are not people who like to shop and only buy when needed.

The information quality variable is sorted from the highest to the lowest weight; accurate and relevant information influences buyers to shop online. This finding shows that buyers tend to acquire accurate and precise information

before buying to not be disappointed because there is information that is not in accordance with the product received.

On the convenience variable, the ease of finding products, ease of payment, and flexibility of use are the most influential variables. Product searches can be done automatically using a search engine to access the database on the online marketplace platform used. The displayed data can also be sorted according to consumer needs so that specific products can be displayed quickly.

Table 3. Questionnaire results for all variables (top 3 weights)

Question points	Strongly Agree (5)	Agree (4)	Disagree (3)	Disagree (2)	Strongly Disagree (1)	Total Weight	Average
PB11	182	162	35	16	9	1704	4.22
PB12	179	163	41	10	11	1701	4.21
PB2	139	180	50	18	17	1618	4.00
KP3	134	208	57	4	1	1682	4.16
KP2	58	168	139	31	8	1449	3.59
KP1	58	173	130	32	11	1447	3.58
K4	213	167	18	6	0	1799	4.45
K2	184	169	43	6	2	1739	4.30
K6	171	186	39	4	4	1728	4.28
H3	193	145	49	15	2	1724	4.27
H1	167	183	46	7	1	1720	4.26
H2	149	198	50	5	2	1699	4.21
KI1	177	187	30	8	2	1741	4.31
KI2	162	198	35	8	1	1724	4.27
KI3	163	179	51	8	3	1703	4.22

Information: Information Quality (KI), Ease (K), Price (H), Product Quality (KP) and Online Purchase of Goods (PB)

The price variable has three questions. Question weights are sorted from highest to lowest, namely discounts/promotions, price variations, and competitive prices. The availability of promotions such as free shipping, discounts, and cashback are the main features of the online shopping platform. These promotions also make consumers happy to shop online because the final price to be paid is generally cheaper than offline stores.

The question weights are ordered from highest to lowest in the quality variable, namely product quality according to the catalogue, the same quality as offline stores, and products with various designs and models. The suitability of the original product with the catalogue description is a variable that will determine customer satisfaction. This description includes images, sizes, and product features.

5. Results and Discussion

5.1 Numerical Results

Testing the validity and reliability of the questionnaire data shows that the calculated f value is bigger than the f table, and the Cronbach Alpha value is greater than 0.60. This result means that the data is stable and consistent.

Then the data passed the classical assumption test, namely the normality test, heteroscedasticity, and Multicollinearity. The results of the normality test calculation show that most of the data are normal. The heteroscedasticity test showed that the data did not show symptoms of heteroscedasticity. The multicollinearity test shows that there is no multicollinearity between the independent variables in the regression model.

A partial test was carried out to determine the effect of each variable separately. The results of the partial test (t-test) of the online purchase regression model are shown in Table 4.

Table 4. Results of partial test (t-Test) of online purchase regression model

Model		t	P
H1	(Intercept)		
	IQ	2,532	0.012
	C	2.076	0.039
	P	2.441	0.015
	PQ	4,562	<.001

Information Quality (IQ); Convinience (C) ; Price (P); Product Quality (PQ)

Ho = There is no significant effect on the variables (X) on purchasing goods online (Y)

Hi = There is a significant influence on the variables (X) on purchasing goods online (Y)

All values of t count > t table (1.966), which means Ho is rejected, and Hi is accepted. All variables separately, information quality, convenience, price, and product quality, significantly influence online product purchasing decisions.

Simultaneous testing is conducted to see whether these variables also affect the decision to buy simultaneously (together) as seen in Table 5.

Table 5. Simultaneous test results (Test F) online purchase regression model

Model		t	P	F	p
H1	Regression	7788,514	4	34,523	<.001
	Residual	22504.285	399		
	Total	30292,800	403		

The significance value is $0.000 < 0.05$, and the calculated F value is $> F$ table ($34.523 > 2.394$), so it can be concluded that the variables of information quality, convenience, price and product quality have a simultaneous (simultaneous) effect on purchasing goods online.

The coefficient of determination is carried out to see how much influence the variables simultaneously have on the decision to buy online in Table 6.

Table 6. Results of the determination coefficient of online purchase regression model

Model	R	R2	Adjusted R2	RMSE
H1	0.507	0.257	0.250	7.510

The value of $R^2 = 0.257$ indicates that the effect of the variables simultaneously on online purchasing decisions is 25.7%. Meanwhile, the remaining 74.3% is the percentage of the influence of other variables outside the scope of this study. The results of the multiple linear analysis are shown in Table 7.

Table 7. Regression test results (regression coefficient)

Model		Unstandardized	Standard Error	Standardized	t	P	Collinearity Statistics	
							Tolerance	VIF
H1	(Intercept)	8,587	3.253		2.640	0.009		
	IQ	0.594	0.234	0.132	2,532	0.012	0.686	1.457
	C	0.275	0.133	0.120	2.076	0.039	0.560	1,786
	P	0.659	0.270	0.141	2.441	0.015	0.554	1,804
	PQ	1.010	0.221	0.246	4,562	<.001	0.642	1,559

Information Quality (IQ); Convinience (C) ; Price (P); Product Quality (PQ)

Based on Table 7, it can be concluded that the regression equation obtained is:

$$PG = 8.587 + 0.594 IQ + 0.275 C + 0.659 P + 1.010 PQ + e \quad (2)$$

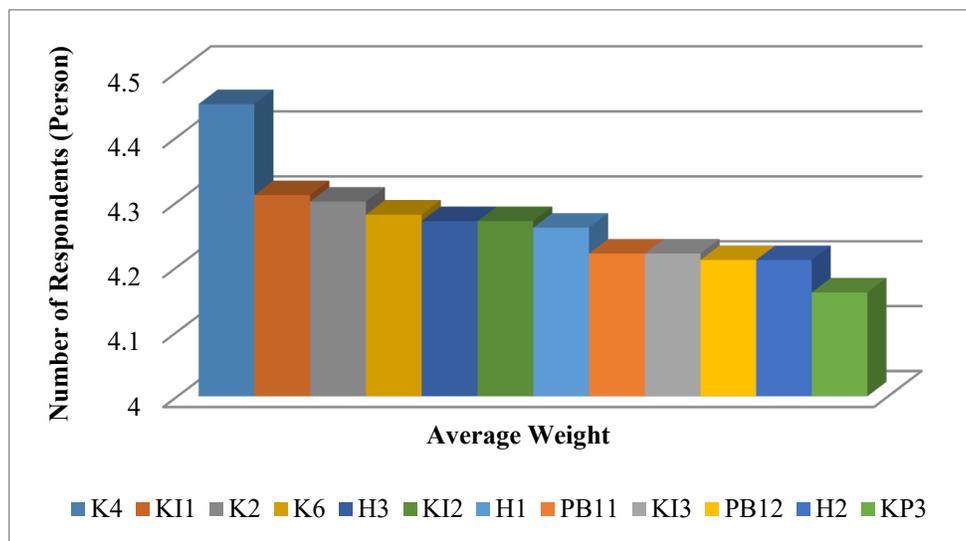
Where:

- PG = dependent variable (purchase of goods online)
- IQ = independent variable (quality of information)
- C = independent variable (convenience)
- P = independent variable (price)
- PQ = independent variable (product quality)
- e = residual variable

The above equation means that each percentage increase/decrease in the value of each variable will affect the percentage of buyers' decisions to shop online. Even without the four variables, there is an 8.587% chance that buyers will shop online. The magnitude of the influence of each variable depends on the value of the coefficient on each variable. The variable with the highest effect is product quality (1.010), and the lowest is convenience (0.275).

5.2 Graphical Results

Characteristics of respondents indicate that 66% of respondents are women. This result shows that most online product buyers are women. Most of the respondents (72%) also only buy online at certain times; it could be only when they need it or when there is a specific event. This peculiar situation shows that most of the respondents are not people who like to shop.



Information Quality (IQ); Convenience (C) ; Price (P); Product Quality (PQ)

Figure 3. Graph of the Three Highest Weights of Each Questionnaire Variable

Figure 3 shows the average weight of the three questions with the highest weight on each variable. It can be seen that the questions with the highest average weights are C4, IQ1, C2, C6, P3, IQ2, P1, PQ11, IQ3, PQ12, P2, PQ3, PG2, PQ2, and PQ1.

In the order in Figure 3, the contents of the top six questions are convenience search (C4), ease of interesting, accurate information (IQ1), ease of ordering and payment (C2), ease of online shop flexibility that can be used anywhere (C6), promotions and discounts (P3), and relevant information (IQ2). There are three questions from the convenience variable: the convenience variable and one question from the price variable.

This result shows that respondents tend to prefer to shop online because of the main features offered in online shopping. In contrast to online shopping, where the buyer has to come to the store to find the product he wants, online shopping can be done only at home, only by using a device. Although the products in the online catalogue are

many and varied, there is a filterable search feature to make it easier to find specific products. Plus, there are many promotional features and discounts provided by online shops so that online prices can be much cheaper than offline prices.

It can be concluded that in managing an online store, the main features that merchants must optimize are; easy-to-search catalogue settings, accurate and relevant product information, easy and system-controlled ordering and payment arrangements, as well as promotions and discounts.

5.3 Proposed Improvements

Respondents selected in this study are people who have done online shopping. Based on the analysis of the weight of the variable Purchase of Goods (PG), they buy the most because of the wide choice of brands and stores on the online platform. The quality they want in the products they buy must match what they see in online catalogues. The price of the product must also be competitive (adjusting the price with the promised quality). Quality information, including images and product descriptions, must be accurate, relevant, and up-to-date. The ease of using online store applications must also be considered to improve user experience and not create confusion that can cancel shopping activities.

These variable features refer to online marketplace applications such as Shopee, Tokopedia, Bukalapak, Lazada, GoMart or Gofood services, etc. This recommendation was chosen because the level of convenience is the variable with the lowest coefficient value, so it does not require close attention. The use of the online market space application can reduce the work of traders in preparing online store applications compared to creating their online store through the website or social media, or WhatsApp marketing.

The choice to open a store on this online marketplace platform will bring problems of price and quality competition. This choice is related to the quality of information. On the online marketplace platform, the product will be displayed in the search along with products from other store owners. Of course, the first information that is most influential is the keyword specific product name, attractive product photos, and competitive prices. Furthermore, the quality of the product becomes the most important because the quality of this product determines whether the consumer is satisfied with the product he receives. This consumer satisfaction can make consumers willing to re-order or even recommend merchant shops to others. Online stores on online marketplaces are recommended for beginner online retail businesses. The number of visitors for each platform is shown in Figure 4.

Toko Online	Pengunjung Web Bulanan	Ranking AppStore	Ranking PlayStore	Twitter	Instagram	Facebook	Jumlah Karyawan
1 Shopee	93,440,300	#1	#1	320,800	4,851,200	17,841,400	5,100
2 Tokopedia	86,103,300	#2	#3	445,100	1,780,500	6,377,800	4,100
3 Bukalapak	35,288,100	#4	#4	188,600	1,060,900	2,482,800	2,400
4 Lazada	22,021,800	#3	#2	391,800	2,014,000	29,880,700	3,100
5 Blibli	18,307,500	#6	#6	501,600	1,255,600	8,591,600	1,800
6 JD ID	9,301,000	#8	#7	30,900	476,300	763,200	1,000
7 Orami	4,176,300	#33	#25	6,000	n/a	354,400	168
8 Bhinneka	3,804,800	#20	#21	69,400	41,400	1,053,200	603
9 Zalora	2,334,400	#5	#8	n/a	557,200	7,827,800	535
10 Matahari	2,197,200	#9	n/a	96,200	140,000	1,599,100	698

Source: www.konsumendigital.com, 2020

Figure 4. Number of Online Marketplace Visitors in Indonesia

Figure 4 shows that the marketplace with the most visitors in 2020 is Shopee, followed by Tokopedia, Bukalapak, Lazada, and so on. Shopee is famous for its free shipping feature that can be used for shipping throughout Indonesia. This feature is very interesting for users outside Java because the postage is quite expensive if the delivery is made from Java island. Tokopedia has nine million sellers from MSMEs, even as External Communications Senior Lead Tokopedia Ekhel Chandra Wijaya said that 1% of Indonesia's economy occurs on the Tokopedia platform. Tokopedia has many assistance programs to help MSMEs in developing their business on the Tokopedia platform. Lazada has the advantage in terms of LazadaMall and LazadaGlobal.

5.4 Validation

Because this study did not use an online store optimization condition simulation, no validation actions were carried out for the research results. However, the data used in the study (questionnaire data) has gone through the classical assumption test, namely the normality, heteroscedasticity, and multicollinearity-test, as mentioned in section 5.5. It should be noted that the respondents in this study came from the population of the city of Medan, and most of the respondents were students. Therefore, the results of the questionnaire may not be relevant for specific conditions.

6. Conclusion

This study aims to analyze consumer behaviour to obtain simple guidelines for retail traders who are new to e-commerce. Four variables that influence consumer buying decisions are used to assess consumer behaviour. Based on the results of multiple linear regression analysis, it is known that the most influential variable on purchasing decisions is product quality, and the lowest is convenience. The recommendation given according to these findings is to use an online marketplace platform for new retail traders to make the work of traders easier.

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