



USABILITY TESTING OF THE ONLINE PLATFORM FOR SELLING FOODSTUFFS IN INDONESIA

Rizqa Amelia Zunaidi¹, Adek Dhea Resmi Purbantari², Hawwin Mardhiana³

^{1,2}Teknik Industri, Fakultas Teknologi Informasi dan Industri, Institut Teknologi Telkom Surabaya

³Sistem Informasi, Fakultas Teknologi Informasi dan Industri, Institut Teknologi Telkom Surabaya

Jl. Ketintang No.156, Kota Surabaya, 60231

E-mail: rizqazunaidi@ittelkom-sby.ac.id, adekpurbantari04@student.ittelkom-sby.ac.id, hawwin@ittelkom-sby.ac.id

ABSTRACT

Along with the increasing number of internet users in Indonesia, online product buying and selling transactions have also increased, including one through electronic trading platforms. Currently, various kinds of products have also started to be marketed online, one of which is raw food ingredients, such as basic necessities, vegetables, fruit, and others. The pandemic is also one of the reasons people choose not to shop for these daily necessities offline at the market. Various platforms have been developed to support online buying and selling of raw food, both web-based and mobile applications.

The usability of the online platform is an important factor to support the quality of online buying and selling services. Currently, there are not many studies related to usability evaluation of online food buying and selling platforms. Therefore, this research is needed on the usability of the application platform for buying and selling raw food ingredients. This study measures the gap between expectations and reality perceived by respondents using six dimensions of site or application quality, namely Web Appearance, Entertainment, Informational Fit-To-Task, Transaction Capability, Response Time, Trust, and one additional dimension, namely Government Policy required in a site or application. From this study, it was found that of the seven dimensions, there are six dimensions that show a significant gap between expectations and reality perceived by respondents, with the largest gap shown by the dimensions of Government Policy with the gap between expectancy and reality until 21,89%, Web Appearance with the gap until 18,07%, and Informational Fit-To-Task with the gap until 17,71%. The existence of gaps in the six research dimensions with the three largest gaps indicates consumer dissatisfaction with the usability of online food buying and selling platforms, especially in the dimensions of Government Policy, Web Appearance and Informational Fit-To-Task.

Keywords: Evaluation, Usability, Online Platform, Online Transaction,
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Address :

Jl. Urip Sumoharjo Km. 5 (Kampus II UMI)
Makassar Sulawesi Selatan.

Email :

Jiem@umi.ac.id

Phone :

+6281341717729
+6281247526640

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1. Introduction

Currently, information technology has developed very rapidly so that it increasingly provides convenience in accessing the internet. The internet is not only accessible via a personal computer (PC) but can also be accessed via a cellular phone (HP). According to data from the Association of Indonesian Internet Service Providers, in 2019-2020, around 73.7% of Indonesia's population or 196.71 million people are internet users and of them access the internet through their cell phones. This number increased compared to 2018 which was around 64.8%. The increasing number of internet users also increases the use of virtual friendship sites through social media. The widespread use of social media sites can be proven from the data, namely as many as 87.4% of internet users use the internet to access social media sites (Association of Indonesian Internet Service Providers, 2020).

Along with the increasing number of internet users in Indonesia, online transactions, including online buying and selling transactions, have also increased. Based on a survey conducted by APJII in 2019-2020, online buying and selling transactions have grown to 56.8% of the total population of Indonesia and is expected to continue to grow in the following years with most online transactions carried out through online platforms or e-commerce. (Association of Indonesian Internet Service Providers, 2020).

Currently, online buying and selling activities also cover many products, one of which is raw food, such as vegetables, fruit, staples, and other kitchen necessities. 2.7% of the Indonesian population or around 7.2 million people have shopped for food products through online buying and selling platforms (Association of Indonesian Internet Service Providers, 2020). The pandemic is also one of the reasons people don't shop for raw food offline at the market. Various online platforms also support online buying and selling of raw food, both website platforms and mobile applications. Examples of service providers for buying and selling raw food online are Tanihub, Sayurbox, and many more.

Currently, there are not many studies that discuss usability testing or customer satisfaction of online food buying and selling platforms. Previous research has only discussed about consumer buying intention on online food buying and selling

platforms. The fact, usability is an important aspect in the development of an online transaction platform because a good usability value indicates the achievement of the platform's objectives effectively, efficiently, and satisfies users of the platform (Daryanto, Hina Khan, & Chakrabarti, 2013). Usability is also used as an assessment attribute of how easy the application can be used by its users (Nielsen, 2012). A good interface design will have an impact on ease of interaction and increase user satisfaction. Parameters that become aspects of usability measurement according to ISO 9241-11 are effectiveness, efficiency, and satisfaction (Hadi, Az-Zahra, & Fanani, 2018).

The effectiveness aspect measures the accuracy of the user in achieving a certain goal and being able to complete the task. The efficient aspect measures the effort or power the user puts into achieving certain goals. While satisfaction measures how comfortable or uncomfortable the positive behavior of a product is. Usability assessment is based on the user's experience when using an application, both site-based and application-based. Usability quality can be based on five components, namely Learnability, Efficiency, Memorability, Errors, and Satisfaction (Nielsen, 2012). Learnability is used to measure the ease with which users of an application learn and use the application for the first time. Efficiency measures how quickly a user can use an application to do a task after knowing the interface of the application. Memorability measures whether an application that has not been used for a long time or an application that has only been used once can be remembered by the user. Errors measures the level of user error when using an application and the ease with which the user resolves the error. Satisfaction is a subjective aspect because it measures the user's feelings when using an application (Nielsen, 2012).

One way to evaluate a product is to use usability testing techniques. The product evaluation process with usability testing involves direct testing on a sample of users (Sriwulandari, Hidayati, & Pudjoatmojo, 2014). One way to measure usability is to use usability metrics. Usability metrics can be used to select the most appropriate decisions and provide an assessment of product usability aspects, such as effectiveness, efficiency, and user satisfaction (Hadi, Az-Zahra, & Fanani, 2018).

Therefore, this research is needed on the convenience of consumers in using an online

buying and selling application platform for raw foods. This study will evaluate the performance of the existing raw food buying and selling platform using the concept of site quality with six dimensions and one added dimension due to government regulations that must exist in a site, namely Web Appearance, Entertainment, Informational Fit-To-Task, Transaction Capability, Response Time, Trust, and Government Policy (Kim & Stoel, 2004).

2. Research Method

The research stages in this study are arranged in the form of a flow chart that is able to describe the stages used in this study. The flow chart can be seen in Figure 1. The stages of this research will be used as a guide for researchers when conducting research so that research can be carried out systematically and measurably.

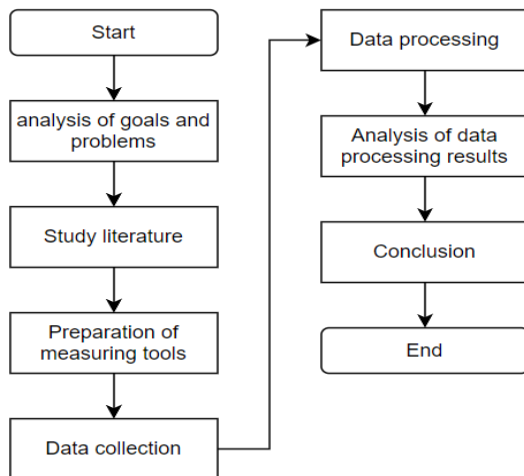


Figure 1 Research Flowchart

Table 1 Research Dimension

Dimension	Description
<i>Web appearance</i>	Factors that emphasize the appearance of the site in guiding users so that it is easy to follow
<i>Entertainment</i>	Factors that emphasize fun, memorable, and entertaining experiences
<i>Informational fit-to-task</i>	Factors that represent the suitability of the information provided with user expectations
<i>Transaction Capability</i>	Factors that emphasize the site's ability to support its business functions
<i>Response Time</i>	Emphasizing factors in the speed of the site loading pages
<i>Trust</i>	Factors that measure the level of customer trust in the site
<i>Government Policy</i>	Factors that ensure government requirements are on the site

The first stage in this research is determining the goals and problems that will be discussed in this study so that the research runs more systematically and directed. The problems and objectives of this research have been discussed in the introductory subchapter. The next research stage is a literature study which is one of the preparatory stages that must be carried out so that researchers get a strong and crucial theoretical foundation in each stage of the research process. Literature study aims to determine the concepts that will be used as the basis for solving problems in this study. Based on the results of the literature study, this study uses the concept of site quality with six dimensions and one dimension is added because of government regulations that must exist in a site (Kim & Stoel, 2004). The 7 dimensions are: Web Appearance, Entertainment, Informational Fit-To-Task, Transaction Capability, Response Time, Trust, and Government Policy with the explanation in Table 1

Next, the seven dimensions are reduced to 36 indicators that will be used as a measuring tool in this study. The measuring instrument that will be used in this research is a questionnaire. Questionnaire is a list of written questions that are arranged according to the required data. The questionnaire that will be designed in this study contains closed questions so that the data obtained can be more easily measured and processed. In addition, by using closed questions, respondents will answer the questions more quickly and the chances of the questionnaire being filled out are greater than open questions. The questionnaire compiled in this study consisted of two parts. The first part of the questionnaire contains respondent's assessment of the expectations of the online food transaction platform, while the second part contains the respondent's assessment of the reality that respondents feel when using the platform.

The scaling technique used for this questionnaire is the Likert scale. The Likert type scale was chosen because it is sufficient to provide clear and equal distances between intervals and can be neutral. The questionnaire was used to provide the expected value and the value felt by the respondent so that there were two Likert scales used. The Likert scale used to provide the expected and perceived value by respondents has a scale of 1-5 starting from 1 for very unimportant/strongly disagree to 5 for very important or strongly agree.

The next stage in this research is data collection. The source of the data used in this research is primary data, namely questionnaires which are directly distributed to respondents. The respondents of this study were users of online buying and selling applications in Indonesia in the age range of 18-39 years because most users of online buying and selling applications were in that age range (Association of Indonesian Internet Service Providers, 2020). Researchers collected data by distributing questionnaires online via electronic mail and the internet to respondents in Indonesia. In this study, the sample that we will use is a minimum of 100 respondents because the sample size is more than 30 appropriate for most research types (Sekaran, 2003). The sampling technique that will be used in this research is non-probability sampling, to be precise, judgmental sampling. That sampling technique is used because of the

limited duration of the study than using a random sampling technique (Malholtra, 2019).

Processing and analysis used in this research is quantitative analysis. Quantitative analysis is an analysis carried out on data in the form of numbers, by adding up, classifying, tabulating, and then conducting a descriptive analysis of the results of the questionnaire. The data obtained from the questionnaire will be cleaned first of outliers before being processed using descriptive statistics and inference. The cleaning aims to increase the validity and reliability of the measuring instruments used. The next data processing is to test the validity and reliability of measuring instruments so that the information obtained is in accordance with research needs and can achieve research objectives. The last data processing stage is statistical inference using Paired T Test. Paired T-test was used to see the significance of the difference between expectations and reality felt by respondents regarding the online food transaction platform. Paired T-test was chosen because the data are assumed to be normally distributed from one sample group (Walpole, Myers, Myers, & Y, 2012). The last stage in this research is drawing conclusions from the results of data processing and analysis.

3. Result and Discussion

3.1 Descriptive Analysis

The respondents in this study were 305 respondents. The respondents consisted of 76.5% female respondents and 23.5% male respondents. The respondents also came from various ages ranging from 18 to 39 years and from various professions and education levels. Most of the respondents were 96.4% of the respondents who had made online transactions, including the purchase of raw food, while the rest had never made online buying and selling transactions.

Before processing the data, the researcher pre-processed the data by eliminating outliers. This outlier elimination step is carried out so that the processed data has a better validity and reliability value. After eliminating outliers, 250 data met the requirements and could be used for further data processing in this study.

3.2 Validity and Reliability Test

After pre-processing the data, the data is tested for validity and reliability. The validity test of the measuring instrument is carried out to

assess whether the measuring instrument used can measure the concept under study correctly. The construct validity test carried out in this study was a convergent validity test using the Spearman test with a significance level of 0.05. Reliability testing aims to measure the level of reliability or confidence of the measuring instrument. The higher the reliability value of the measuring instrument, the smaller the possibility of measurement error, to be able to provide consistent data so that the measuring instrument can be used at different research times. The reliability value of the measuring instrument can be shown by the reliability coefficient, one of which is the Cronbach Alpha coefficient. The limit value of the reliability coefficient of the

measuring instrument that can be accepted is 0.60 (Hair, Babin, Anderson, & Black, 2010).

Table 2 and Table 3 are the results of testing the validity and reliability of the measuring instrument or questionnaire used in this study. It can be seen from the two tables, that all dimensions and indicators meet the requirements of convergent validity, or these indicators can explain well the dimensions, which have an alpha (α) below 0.05, and the measuring instrument of this study also meets the reliability requirements, namely all dimensions have Cronbach's alpha value is above 0.60. Therefore, the data generated by the measuring instrument in this study can be further processed using statistical inference testing.

Table 2 Validity Test Result

Validity Test							
Dimension	Indicator	Sig.	Status	Dimension	Indicator	Sig.	Status
Web Appearance (Expectation)	WH1	<0,000	VALID	Web Appearance (Reality)	WR1	<0,000	VALID
	WH2	<0,000	VALID		WR2	<0,000	VALID
	WH3	<0,000	VALID		WR3	<0,000	VALID
	WH4	<0,000	VALID		WR4	<0,000	VALID
	WH5	<0,000	VALID		WR5	<0,000	VALID
	WH6	<0,000	VALID		WR6	<0,000	VALID
	WH7	<0,000	VALID		WR7	<0,000	VALID
	WH8	<0,000	VALID		WR8	<0,000	VALID
Entertainment (Expectation)	EH1	<0,000	VALID	Entertainment (Reality)	ER1	<0,000	VALID
	EH2	<0,000	VALID		ER2	<0,000	VALID
	EH3	<0,000	VALID		ER3	<0,000	VALID
	EH4	<0,000	VALID		ER4	<0,000	VALID
	EH5	<0,000	VALID		ER5	<0,000	VALID
	EH6	<0,000	VALID		ER6	<0,000	VALID
Informational Fit-To-Task (Expectation)	IH1	<0,000	VALID	Informational Fit-To-Task (Reality)	IR1	<0,000	VALID
	IH2	<0,000	VALID		IR2	<0,000	VALID
	IH3	<0,000	VALID		IR3	<0,000	VALID
	IH4	<0,000	VALID		IR4	<0,000	VALID
	IH5	<0,000	VALID		IR5	<0,000	VALID
Transaction Capability (Expectation)	TH1	<0,000	VALID	Transaction Capability (Reality)	TR1	<0,000	VALID
	TH2	<0,000	VALID		TR2	<0,000	VALID
	TH3	<0,000	VALID		TR3	<0,000	VALID
	TH4	<0,000	VALID		TR4	<0,000	VALID
	TH5	<0,000	VALID		TR5	<0,000	VALID
	RH1	<0,000	VALID		RR1	<0,000	VALID

Validity Test							
Dimension	Indicator	Sig.	Status	Dimension	Indicator	Sig.	Status
Response Time (Expectation)	RH2	<0,000	VALID	Response Time (Reality)	RR2	<0,000	VALID
	TRH1	<0,000	VALID		TRR1	<0,000	VALID
Trust (Expectation)	TRH2	<0,000	VALID	Trust (Reality)	TRR2	<0,000	VALID
	TRH3	<0,000	VALID		TRR3	<0,000	VALID
	GH1	<0,000	VALID		GR1	<0,000	VALID
	GH2	<0,000	VALID		GR2	<0,000	VALID
Government Policy (Expectation)	GH3	<0,000	VALID	Government Policy (Reality)	GR3	<0,000	VALID
	GH4	<0,000	VALID		GR4	<0,000	VALID
	GH5	<0,000	VALID		GR5	<0,000	VALID
	GH6	<0,000	VALID		GR6	<0,000	VALID
	GH7	<0,000	VALID		GR7	<0,000	VALID

Table 3 Reliability Test Result

Reliability Test					
Dimension	Cronbach's Alpha	Status	Dimension	Cronbach's Alpha	Status
Web			Web		
Appearance (Expectation)	0,814	RELIABLE	Appearance (Reality)	0,908	RELIABLE
Entertainment (Expectation)	0,784	RELIABLE	Entertainment (Reality)	0,888	RELIABLE
Informational fit-to-task (Expectation)	0,918	RELIABLE	Informational fit-to-task (Reality)	0,935	RELIABLE
Transaction Capability (Expectation)	0,845	RELIABLE	Transaction Capability (Reality)	0,927	RELIABLE
Response Time (Expectation)	0,726	RELIABLE	Response Time (Reality)	0,838	RELIABLE
Trust (Expectation)	0,937	RELIABLE	Trust (Reality)	0,939	RELIABLE
Government Policy (Expectation)	0,893	RELIABLE	Government Policy (Reality)	0,947	RELIABLE

3.3 Gap Analysis

The statistical inference analysis used in this study is to measure the gap in the quality of the online food sales platform using a different test to see the significance of the gap. The data used in this study is assumed to be normally distributed, so that the different tests on the data use the T distribution. The measurement of the quality gap of the platform is based on the value expected by the respondent to the platform with the value felt by the respondent when trying to use the platform.

As explained in the previous subchapter, there are seven dimensions used in this study. Six dimensions based on the site quality dimension with one additional dimension. Then the seven dimensions are translated into 36 indicators arranged in statements and assessed using a Likert scale. The gap values and the significance of the seven-dimensional gaps in this study are summarized in Table 4.

Table 4 Results of the Differences in Research Dimensions Between Expectations and Realities Perceived by Respondents

Uji T						
Dimension	Gap	% Gap	T value	df	Sig.	Description
Web Appearance	1,832	18,07%	6,444	249	< 0,000	H0 Rejected
Entertainment	1,292	12,74%	5,543	249	< 0,000	H0 Rejected
Informational Fit-To-Task	1,796	17,71%	8,455	249	< 0,000	H0 Rejected
Transaction Capability	1,248	12,31%	6,125	249	< 0,000	H0 Rejected
Response Time	0,136	1,34%	1,146	249	0,253	H0 Accepted
Trust	1,616	15,94%	10,695	249	< 0,000	H0 Rejected
Government Policy	2,220	21,89%	7,420	249	< 0,000	H0 Rejected

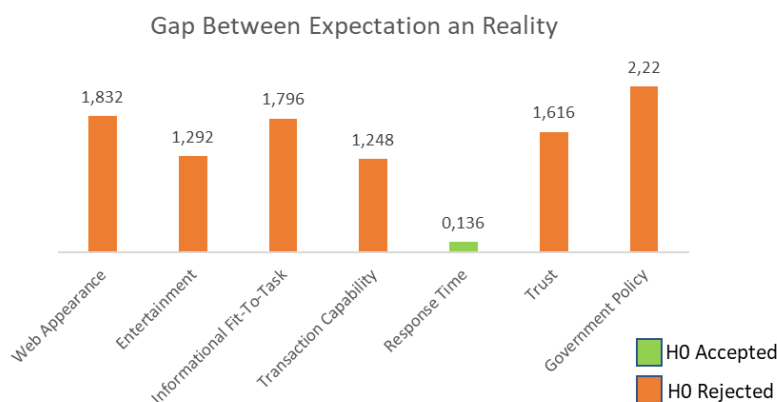


Figure 2 Gap Analysis

From Table 4 the six dimensions show significant differences or gaps at the 95% confidence level. Only one dimension, namely Response Time, which shows the difference between expectations and reality which is not significant. This insignificant difference indicates that respondents are satisfied with the reaction time or platform speed in displaying their pages. The other six dimensions that show a significant difference between expectations and reality

indicate that respondents are dissatisfied with the performance of the online grocery sales platform, especially on the easy-to-follow page display, memorable experiences when using the platform, the suitability of the information displayed and what users expect, the ability of the platform to carry out transactions as the main function, the level of trust in the platform and the fulfillment of government requirements in the platform.

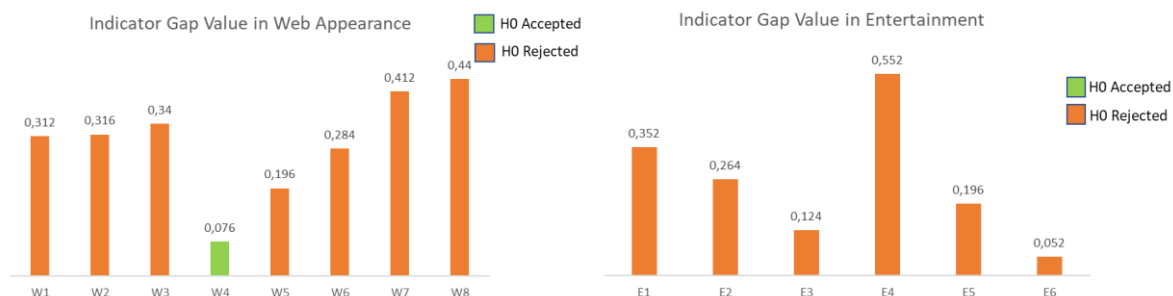




Figure 3 Indicator Gap Value

From Figure 1, we can see that the largest gap value is indicated by the Government Policy dimension. **Figure 3** shows the description of the gap between expectations and reality for each indicator in the Government Policy dimension. It can also be seen that all indicators in the Government Policy dimension show significant differences with the three biggest gaps or differences indicated by the existence of legality of business actors, existence of prices of goods and existence of identity of business actors. This significant difference indicates that respondents are dissatisfied or do not find the existence of requirements from the government on the platform, especially the existence of the three indicators with the largest gap. Therefore, the current online food sales platform needs to add or clarify the legality of business actors, prices of goods and the identity of business actors which are also important factors for customer confidence in the quality of platform services and transactions in it (Sahetapy, 2018).

The next largest gap value is indicated by the Web Appearance dimension or page display on an easy-to-follow platform. **Figure 3** shows the description of the gap between expectations and reality for each indicator in the Web Appearance dimension. It can also be seen that seven of the eight indicators in the Web Appearance dimension show significant differences. Only one indicator, namely the footer of the page is clearly visible, so that it can be ascertained that respondents are easy to find the footer on the food sales platform. The three biggest gaps are found in indicators of attractive content composition, easy-to-find ordering navigation buttons and the presence of a clearly visible logo, so it can be ascertained that users are not satisfied with the performance of these indicators. Platform owners need to improve the appearance of the page, especially on the navigation buttons, platform logo and content composition. Customer satisfaction with the content displayed on the old platform, because

the content can affect customer shopping patterns (Kim & Stoel, 2004). A logo is the most powerful element to have an impact on customer knowledge of the brand (Keller, 2008). Logo is also a tool for communicating images, increasing recognition, gaining attention, and generating emotional responses from consumers of the brand (Pittard & Ewing, 2007). Navigation system is one of the critical characteristics of online platforms and is a mandatory component of digital platforms (Tarafdar & Zhang, 2005; Nayak, Priest, Stuart-hamilton, & White, 2006). Platform owners should focus more on improvements to the navigation system so that users are more efficient in using the platform (Ahmed, 2008).

The third largest gap value is the Informational Fit-To-Task dimension. This dimension describes the suitability of the information provided with user expectations. It can be seen in **Figure 3** that all indicators on this dimension have significant differences between expectations and reality with the three biggest gaps being that payment and delivery processes are displayed and easy to track, as well as complete descriptions of product information. The main features on an online sales platform such as completeness of information, payment and delivery tracking features greatly affect user satisfaction and become the most important part that must be the focus of the development process (Sastika, 2017).

The next dimension that has the fourth largest gap value is the Trust dimension or the level of customer trust in the online transaction platform. It can be seen in **Figure 3** that the three indicators that explain this dimension have a significant gap value. User trust in the security of payment processes, delivery of goods, and users' personal information is an important issue in the development of an online transaction platform information system (Kim & Stoel, 2004). User trust is also one of the dimensions that has a significant effect on the intention to buy products online (Ling, Lau, & Piew, 2010).

The last two dimensions that have the smallest and most significant gap are Entertainment and Transaction Capability. The Entertainment dimension describes a memorable user experience when using the platform. Meanwhile, Transaction Capability describes the platform's ability to support its business functions. Five of the six indicators on the

Entertainment dimension have significant differences, with the three biggest differences being indicators of ease of zooming in or out of images, content composition is not excessive and color selection is pleasing to the eye. These findings prove that the current platform has not been sufficient to satisfy users of these indicators. Platform developers need to also focus on the entertainment dimension because the level of user satisfaction is strongly influenced by the pleasant experience's users experience when using online transaction platforms (Kim & Stoel, 2004; Hidayatuloh & Aziati, 2020). A pleasant experience when using an online transaction platform also increases the interest of users to shop again through the platform (Foster, 2017). The five indicators on the Transaction Capability dimension have significant differences between expectations and reality with the three biggest gaps in the indicators of ease of ordering products, purchasing products and payments. These three indicators are the main function of an online transaction platform and become one of the priorities in the development of an online transaction platform (Sastika, 2017). The Ease to Use dimension also has a positive and significant effect on purchasing decisions on online transaction platforms (Ayuningtyas & Gunawan, 2018; Pudjihardjo & Wijaya, 2015).

4. Conclusion and Suggestion

4.1. Conclusion

From this research, it can be concluded that six of the seven dimensions of online transaction platform quality have significant differences between the expectations and reality experienced by respondents. Only one dimension, namely Response Time, which has an insignificant difference, or it can be said that the respondents of this study who represent users of the online transaction platform on food products are satisfied with the time it takes for the platform to perform its main functions. However, respondents were not satisfied with the other six dimensions, with the order of the largest gap being the largest gap indicated by Government Policy, Web Appearance, Informational Fit-To-Task, Trust, Entertainment and Transaction Capability. Today's online transaction platform developers should focus on developing an easy-to-follow page display, a memorable experience when using the platform, the compatibility between the information displayed and what

users expect the platform's ability to carry out transactions as the main function, the level of trust in the platform and government compliance with platform

4.2. Suggestion

For developers of online food buying and selling platforms, it is advisable to consider the results of research in determining the focus of developing their platform so that they can better answer the needs of users of the platform.

For further research, it is recommended to measure the usability of the platform by separating users who have already shopped for groceries online from those who have not. In addition, this study still assumes that the data is normally distributed, it is better for the next research to test the normality of the data first to get more valid and reliable data.

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