

User Experience Analysis on the Karanganyar People's Market (Semarak) Online System Website at the Karanganyar Regency Communication and Information Service Using the User Experience Questionnaire (Ueq) Approach

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ABSTRACT

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Technological developments have made government agencies at various levels start using e-Government services. The purpose of this study is to determine the application of e-government on websites. The method used in this study is a quantitative method using the User Experience Questionnaire (UEQ) with a data processing tool, namely the UEQ Data Analysis Tool software. available in the form of an Excel application. The results of the descriptive statistical analysis on each UEQ variable can be seen that the Karanganyar Online People's Market System (Semarak) website gets a positive rating value on the variables interestingness (mean 1.41), perspicuity (mean 1.41), efficiency (mean 1.69) ., dependence with (average 1.31), stimulation (average 1.08). While the novelty variable gets a neutral evaluation (mean 0.69).

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1 Introduction

Technological developments have made government agencies at various levels start to use e-Government services. The existence of e-Government also makes it easier for information from the government to be searched for and obtained from offices, homes without having to physically come to a government office. Information and communication technology (ICT) has changed processes, operations and public structures in both developed and developing countries (Wulansari & Inayati, 2019). By utilizing information and communication technology, a work system is created so that it is hoped that it can increase effectiveness in providing maximum public services to its citizens. Public services are all forms of public service activities carried out by central government agencies, in the regions and in the environment of state or regional owned enterprises, goods or services both in the context of efforts to meet community needs and in the context of implementing order and order. The successful implementation of e-Government in all its forms will be an important issue for the future. Enable central and local governments to cut costs, improve services, and be more responsive towards its citizens. It is very important that they build trust in the online services they provide or will provide.

E-Government itself was made by several countries with the aim of improving the quality of public services and improving relations between the government and stakeholders, both the general public, businesses, civil servants and between government internal organizations (Sofyani & Prayudi, 2018) and more simply, e -government can be interpreted as all activities carried out by the Government that use information technology assistance in providing excellent service to the community (Muhtar et al, 2017). Informing e-government in a service sector must be preceded by users who receive the e-government. In the influence of information technology can be influenced by 2 causes, because individuals are also influenced by the social causes in which they interact. Therefore, the government must look at the behavior of technology users, namely residents of Karanganyar Regency, especially

workers who are currently operating public services. Because what can affect people's trust that e-Government can be used easily and has benefits.

2 Theoretical Basis

2.1 Website

Website is a collection of web pages that are interrelated and connected with documents that are useful for displaying information and are used as a means or media for displaying text, images, multimedia, and others via the internet and are usually located on the same server which contains a collection of information provided by individuals, groups, or organizations (Kuswandi et al., 2018). A website is usually located on at least one web server that can be accessed by an internet network through an internet address. So it is also one of the information media whose existence is very important in the world of information. A website can be likened to a site where anyone can visit it easily or a website can help someone find the information they are looking for, ask questions to someone and provide input or even find out and buy products (Hsu et al., 2017).

2.2 *Electronic Government (E-Government)*

E-Government can be interpreted as the use of computing technology by the government in order to provide information and services to the community, business affairs and other matters relating to government (Jonar, 2017). E-Government is an applied field, covering many fields with direct practical implications, such as implementation of information technology systems, benefit realization, information security, digital divide, accountability, interoperability.

E-Government has three dimensions, including the democratic dimension, the service dimension and the administrative dimension while stakeholder relations can be grouped into four types including G2C (Government to Citizen) which is a government service for citizens, G2E (Government to Employee) a government service to employees, G2B (Government to Business) the role of government for business interests, and G2G (Government to Government) the role of government for government.

2.3 *User Experience*

User Experience (UX) is the process of creating interactive product designs to support how to interact in one's work or activities (Sharp et al., 2019). UX is an impression that is not limited to the span of time during which a person interacts with a product (Santoso & Schrepp, 2019). Basically UX is a perception, an impression from users resulting from the use of a system, product or service. UX is seen as a concept that includes all kinds of emotional, cognitive reactions or product use assumptions that are formed during and after use (Hinderks et al., 2019). Promoting a good UX is critical to the success and acceptance of an application, given that enticed users may be interested in repeating the interaction (Biduski et al., 2020). So to get a good UX, a system or product must have suitability for the user. For example, if the system is easy to use the first time, the user will feel happy about the system. UX does not only apply to mobile applications, but can also be applied to measure the quality of web services (Sabukunze & Arakaza, 2021).

2.4 User Experience Questionnaire (UEQ)

The most efficient way of measuring user experience is by conducting a questionnaire survey. UEQ is a tool that can assist in processing user experience survey data that is easy to implement, valid, and can be used as a complement to data from other evaluation methods with objective quality assessments. UEQ has been applied in studies such as the evaluation of enterprise software, websites, web services as well as social networks. The main aim of UEQ is to enable a quick assessment by the user which includes a comprehensive impression of the user experience. UEQ is used to test the user experience of a system, product or service and determine which parts require improvement (Schrepp et al., 2017). The UEQ questionnaire format supports participants in being able to express feelings, impressions, and attitudes that arise when using a product (Kushendriawan et al., 2021; Somrak et al., 2019). Each question in the UEQ questionnaire has six variables, then includes 26 question attributes (Schrepp, 2019).

- 1) Attractiveness: The user's impression of the product as a whole. Do users like or dislike it? Items: bothersome/pleasant, good/bad, disliked/enjoyable, uncomfortable/convenient, attractive/unattractive, user friendly/unfriendly.
- 2) Efficiency: Is it possible to use the product quickly and efficiently? Items: fast/slow, inefficient/efficient, impractical/practical, organized/messy.
- 3) Perspicuity: Is it easy to get to know a product? Is it easy to understand in using the product? Items: unintelligible/understandable, easy to learn/difficult to learn, complicated/simple, clear/confusing.
- 4) Dependability: The user's feelings towards interaction control. Does the user feel in control of the interaction with the product? Items: Unpredictable/predictable, obstructive/supportive, safe/unsafe, met expectations/didn't meet expectations.
- 5) Stimulation: Is it interesting and motivating when using the product? Is it fun to use? Items: useful/not useful, boring/fun, not interesting/interesting, motivating/not motivating.
- 6) Novelty: Is the product innovative and creative? Does the product catch the user's attention? Items: creative/monotonous, inventive/conventional, conventional/leading, conservative/innovative.

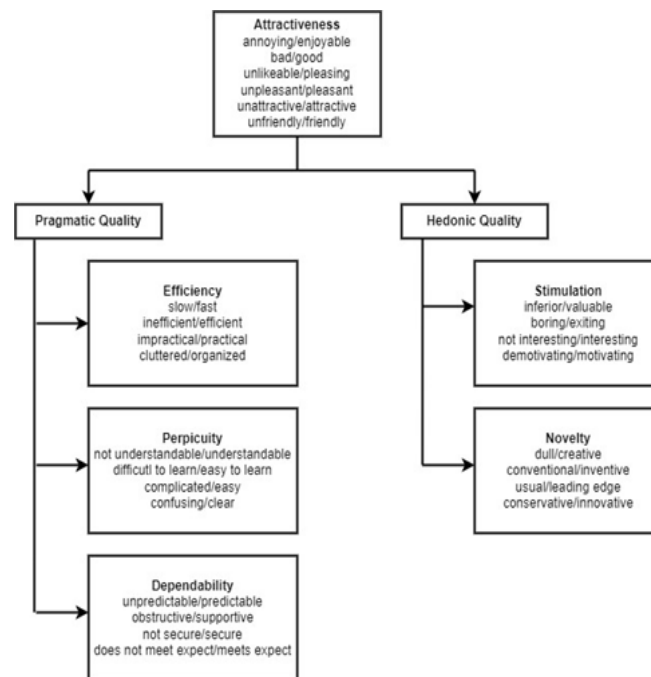


Figure 1. Structure of scala UEQ (Schrepp, 2019)

2.5 UEQ Data Analyst Tool

UEQ is used to simplify the processing of user experience survey data (Schrepp, 2019). The UEQ Data Analysis Tool is available as an Excel application. In the data processing process, users simply enter data from the results of the user experience survey that has been collected into an Excel worksheet. The data is then processed automatically by the UEQ Data Analysis Tool which will display the results of the questionnaire. The UEQ Data Analysis Tool also contains graphs of the results of data processing.

2.6 Karanganyar People's Market Online System (Semarak)

Semarak is a web-based public service that was just created by the Karanganyar regency government in collaboration with Diskominfo to provide services regarding micro-enterprises for the people of Karanganyar Regency, especially micro-business actors. This application is focused on connecting providers and potential users and does not provide a bank account for joint transactions.

3 Method

The discussion in this chapter is expected to provide an overview of how to analyze e-Government using qualitative methods. The qualitative method is research conducted on observing a natural object by aligning the object of knowledge as it is and not being manipulated by the presence of researchers (Aspers & Corte, 2019).

3.1 Outer Model

With the user experience, it can show how to evaluate or assess through the user experience after using the system. To facilitate the use of the Karanganyar People's Market Online System website (Semarak) and to reduce problems that arise, an analysis and evaluation of the user experience is carried out. To measure and determine the level or level of user experience, the authors use the User Experience Questionnaire (UEQ) method developed by Laugwitz.

Then provide recommendations on parts or elements that require improvement or improvement based on the results of the evaluation assessment. UEQ has six variables which are then translated into 26 question attributes. The UEQ method was chosen because it is very easy to use, efficient and very accurate compared to using other methods.

Research design is a work method that is used to obtain results in a certain way which includes observation, sources, and searching for data or phenomena that are happening (Jaelani, 2020). The flow of the research method is the steps of the procedure for carrying out research that begins with the existence of certain phenomena then develops into ideas, theories, conceptualization, selection of appropriate research methods, data processing, until in-depth results are obtained in accordance with making conclusions (Trisliantanto, 2020).

3.2 Inner Model

Researchers look for data as objects in research experiments. After conducting research on the Karanganyar People's Market Online System (Semarak) which is available publicly, the researcher finally decided to use UEQ Data Analysis. Researchers chose to use the UEQ Data Analysis Tool because the UEQ Data Analysis Tool has a method that is quite easy so that it is sufficient to be used to calculate research data.

Literature study was conducted to get a complete picture of the problems that exist in the implementation of UEQ in the Karanganyar People's Market Online System (Semarak). At this stage, information, datasets, and references from journals, books, articles, and other scientific works related to UEQ are compiled. The reference materials used include modifications or discoveries to the implementation of the UEQ for the Karanganyar People's Market Online System (Semarak). While the descriptive statistical analysis on each UEQ variable can be seen that the website of the Karanganyar People's Market Online System (Semarak) gets a positive evaluation value on the variables attractiveness (mean 1.41), perspicuity (mean 1.41), efficiency (mean 1.69), dependability with (mean 1.31), stimulation (mean 1.08). While the novelty variable gets a neutral evaluation (mean 0.69).

4 Results and Discussion

This chapter contains a discussion of the criteria for test participants (respondents), reliability and validity test scenarios, testing checklist tables, analysis of results, and discussion. Data collection was carried out by testing scenarios on several respondents including the UEQ questionnaire and the results of the Focus Group Discussion (FGD), as well as the results of the questionnaires given to a number of respondents.

4.1 Results

Results of questionnaires and observations that have been made to assess the website of the Karanganyar People's Market Online System (Semarak), the average value of the results of Field Research at the Karanganyar Regency Communication and Information Service (Diskominfo) includes evaluations and recommendations regarding user experience of the Online Market System website People of Karanganyar (Vivid) which the author has done using questionnaires to users of the Karanganyar People's Market Online System website (Vivid). In this case it serves to determine the level of user experience for all functions, features, information contained in the Karanganyar People's Market Online System website (Semarak). This can also be used as material for evaluation and recommendations for the company to be even better in the future.

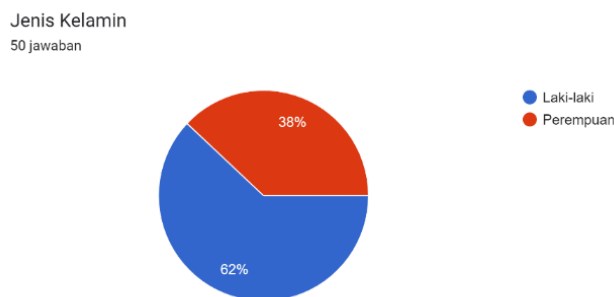
In this study, data collection began with conducting tests on the website being tested, namely the Karanganyar People's Online Market System (Vivid). Each respondent was given the task of filling out a questionnaire for them to work on on the website being tested without giving directions or instructions for doing it. Then the results of filling in will be entered into the checklist table according to the testing instrument. Table 1 shows the number of respondent data.

Table 1. Results of Cleaning Data

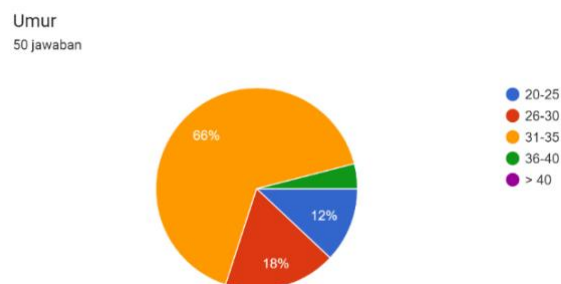
| Description | Data |
|-------------------|-----------|
| Total data | 60 |
| Not eligible data | 2 |
| Data error | 8 |
| Total | 50 |

So that the total valid data obtained to be able to do model analysis is as much as 50 data. After cleaning the data using Excel Macro, then analyzed using Microsoft Excel for demographic analysis, and analysis of research models.

Demographic analysis aims to analyze answers from respondents' demographic information data that has been distributed previously. The questionnaire in this case study was 50 respondents. The characteristics of the respondents were grouped based on the gender, age and occupation of the respondents. The results of the demographic analysis are shown in Table2.

**Figure 2.** Outer Loading Result

At the outer loading calculation stage, there are several indicators that do not meet the minimum value, which is 0.7 according to the opinion of previous researchers. The invalid indicators include PBC4, PEU2, PEU5, and PU3. Indicators that do not meet the requirements at this stage will be deleted, leaving valid indicators. The following is the result of the outer loading calculation after deleting the indicators that do not match the ones listed in Figure 3.

**Figure 3.** Revised Outer Loading Result

After deleting indicators that do not match, the following calculation is carried out that is average variance extracted (AVE). This calculation describes the magnitude of the variable variance contained in the latent construct. In this calculation, all variables meet the minimum value of 0.5. The results of the AVE calculation are shown in Table 2.

Pekerjaan
50 jawaban

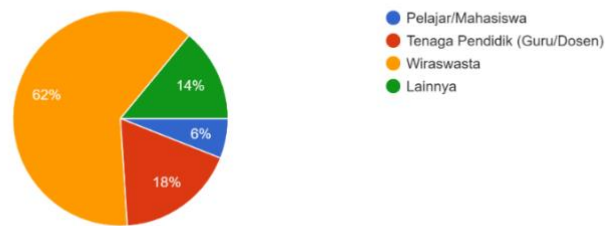


Figure 4. Revised Outer Loading Result

Instrument testing was carried out by testing the validity and reliability of the results of the questionnaire data using the UEQ Data Analysis Tool. This test aims to see how valid and reliable the questionnaire instrument that has been distributed is.

1) Reliability Test

The reliability test aims to determine whether the instrument can be trusted as a data collection tool. Data is considered reliable if each variable has a cronbach's alpha of more than 0.6 (Laugwitz). This test is carried out by examining the outer loading value of each variable which shows the correlation between each item and the variable. 50 An indicator or item is declared valid if the outer loading value is above 0.7 (Hair et al., 2017). Table 4.5 shows the results of the reliability test for each variable using the UEQ Data Analysis Tool.

Table 2. Reliability Test Results

| Variabel | Nilai Cronbach's Alpha (α) | Keterangan |
|-----------------------|-------------------------------------|------------|
| <i>Attractiveness</i> | 0,87 | Reliabel |
| <i>Perspiciuity</i> | 0,95 | Reliabel |
| <i>Efficiency</i> | 0,79 | Reliabel |
| <i>Dependability</i> | 0,82 | Reliabel |
| <i>Stimulation</i> | 0,86 | Reliabel |
| <i>Novelty</i> | 0,88 | Reliabel |

2) Validity Test

The validity test aims to evaluate how valid the instrument or question item is. In this validity test using the Pearson product moment correlation coefficient, which means correlating each item with the total score of each item. The value of r table with a total of 50 respondents and a significance of 5% is 0.312 (Raharjo, 2021). Then the instrument is said to be valid if the Pearson correlation value is more than 0.3. **Table 3** is a description of the items from the UEQ for each variable.

Table 3. Validity Test Results for Each Variable

| Variabel | Pearson Correlation | Nilai r tabel | Keterangan |
|----------------|------------------------|---------------|------------|
| Attractiveness | 0,53 | 0,312 | Valid |
| Perspicuity | 0,83 | 0,312 | Valid |
| Efficiency | 0,48 | 0,312 | Valid |
| Dependability | 0,54 | 0,312 | Valid |
| Stimulation | 0,61 | 0,312 | Valid |
| Novelty | 0,65 | 0,312 | Valid |

4.2 Results of the UEQ Questionnaire Analysis

Descriptive statistical analysis was carried out using the average value of each variable or question item on the questionnaire. The mean rating scale is shown in **Table 4**.

Table 4. Mean Rating Scale in the Questionnaire (Schrepp, 2019)

| Rentang mean | Keterangan |
|-------------------------------|------------|
| $\bar{x} > 0,8$ | Positif |
| $- 0,8 \leq \bar{x} \leq 0,8$ | Netral |
| $\bar{x} < - 0,8$ | Negatif |

From **Table 4** it is found that there is no negative response to each variable, the most positive evaluation is found in the efficiency variable with an average value of 1.69. The variable that has a neutral assessment evaluation is the novelty variable with an average value of 0.69. The variables are attractiveness (mean 1.41), perspicuity (mean 1.41), efficiency (mean 1.69), dependability with (mean 1.31), stimulation (mean 1.08). Overall, there are 19 items that have positive evaluations and five items have neutral evaluations. Some items that still have neutral values are user-friendly/not user-friendly, unpredictable/predictable, boring/fun, inventive/conventional, common/leading.

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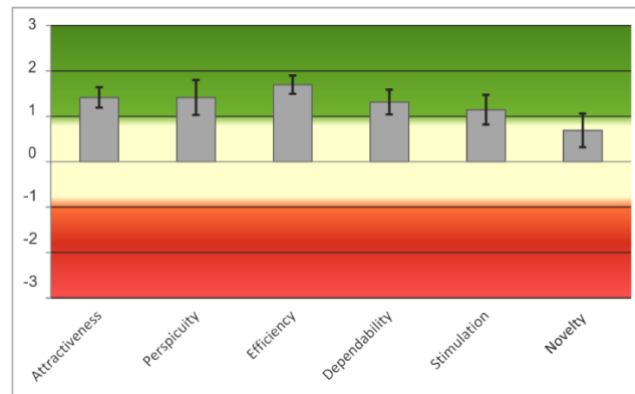


Figure 5. The UEQ Scale Value of the Karanganyar People's Market Online System Website (Semarak)

Figure 5 shows the evaluation results for each variable measuring user experience using UEQ on the Karanganyar People's Market Online System website (Semarak) resulting from questionnaire answers to 50 respondents. The variables attractiveness (mean 1.41), perspicuity (mean 1.41), efficiency (mean 1.69), dependability (mean 1.31), and stimulation (mean 1.14) managed to get an average value above 0, 8 which means it has a positive evaluation value which is marked with a green area. The novelty variable (mean 0.69) gets an average value between -0.8 – 0.8 which means it has a neutral evaluation which is marked with a yellow area.

After that, a comparison of the average values in the benchmark data set is carried out. Benchmark results are used to determine the relative quality of the Karanganyar People's Market Online System website (Semarak) compared to other products. The results of the benchmark process using the UEQ Data Analysis Tool are shown in **Figure 6**.

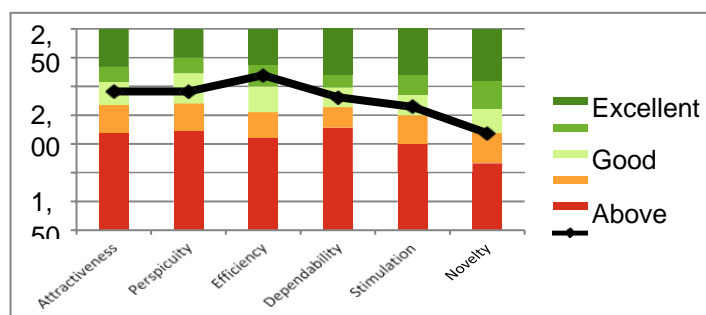


Figure 6. UEQ Scale Value Benchmark Results

In **Figure 6** it can be seen that the Karanganyar People's Market Online System website (Semarak) gets a good score on the efficiency variables, the attractiveness variables, perspicuity, dependability, stimulation get above average values. Whereas the novelty variable gets a below average value (below the average).

a. Attractiveness variable

The attractiveness variable is a variable for measuring user experience that emphasizes the user's overall impression of the Karanganyar People's Market Online System website (lively), namely users like or dislike the Karanganyar People's Market Online System website (lively). Based on the results of the analysis, overall the website of the Karanganyar People's Market Online System (Semarak) is a good product and almost all of it has a positive evaluation. Users feel that the Karanganyar People's Market Online System

website (Semarak) is a product that is fun, kind, uplifting, comfortable to use, and attractive or interesting. However, for user-friendly/non-user-friendly items, they still give a neutral response, which means they don't give positive or negative ratings.

b. Perspicuity Variable

The perspicuity variable is a variable for measuring user experience regarding whether the user can easily understand how to use the product, namely whether the user can learn and understand the Karanganyar People's Market Online System website (Semarak) or can get used to using the Karanganyar People's Market Online System website (Semarak) easily. Based on the results of the analysis, all items showed positive responses and no items showed neutral and negative responses so that it can be interpreted that users feel that the Karanganyar People's Market Online System website (Semarak) is a website product that is easy to understand, easy to learn, functions or website features that are simple and clear.

c. Efficiency Variable

Efficiency variable is a variable to measure user experience regarding whether the product can help complete the job (buying flowers) efficiently. Based on the results of the analysis, users feel that the Karanganyar People's Market Online System (Semarak) website can assist in the process of buying flowers efficiently, website response is fast, website appearance and functions are practical and the appearance of website features is organized. Overall the items showed a positive response and no items showed a neutral or negative response.

d. Dependability Variable

The dependability variable is a variable for measuring the user experience of the Karanganyar People's Market Online System (Semarak) website. The dependability variable contains the possible level of user control when interacting with the Karanganyar People's Market Online System website (Semarak). Based on the results of the analysis, users feel that the Karanganyar People's Market Online System website (Semarak) supports the process of buying flowers and is safe. And users feel that the features or functions on the Karanganyar People's Market Online System website (Semarak) meet their expectations. Almost all items received positive evaluations, but predictable/unpredictable items still gave a neutral response.

e. Stimulation variable

The stimulation variable is a variable for measuring user experience at the level of pleasure and user motivation when using the Karanganyar People's Market Online System website (Semarak). Based on the results of the analysis, users feel that the Karanganyar People's Market Online System website (Semarak) provides direct benefits in the process of buying flowers, website appearance is attractive and motivates users to buy flowers. Almost all items get positive evaluations, but for boring/fun items users give neutral responses.

f. Novelty Variables

The novelty variable is a variable for measuring user experience which contains whether the Karanganyar People's Market Online System website (Semarak) attracts user interest as well as creative and innovative levels. Based on the results of the analysis, the novelty variable gets the lowest average score and has a neutral evaluation where users feel that the Karanganyar People's Market Online System website (Semarak) is a creative and innovative product. But for creative/conventional and common/advanced items, they still receive neutral evaluations from users of the Karanganyar People's Market Online System (Semarak) website.

4.3 Discussion

This section describes the discussion and recommendations on the factors for the intention to continue using e-government services on the Karanganyar People's Market Online System website (Semarak). Based on the results of descriptive statistical analysis on each UEQ variable, it can be seen that the Karanganyar People's Market online system website (Semarak) gets a positive evaluation value on the variables attractiveness (mean 1.41), perspicuity (mean 1.41), efficiency (mean 1, 69), dependability with (mean 1.31), stimulation (mean 1.08). While the novelty variable gets a neutral evaluation (mean 0.69).

These results are relevant to previous research that indicators or items are declared valid if the outer loading value is above 0.7 (Hair et al., 2017).

Based on these results, it shows that when users feel satisfied and happy with e-government services, they have more intention to continue using e-government services. The author assumes that the feeling of satisfaction in using e-government services is partly due to the existence of promos so that users feel happy and interested in continuing to use e-government services. However, users may stop using e-government services if they are dissatisfied with e-government services (Kumar et al., 2018). This is what developers and e-government service providers need to pay attention to, that customer satisfaction is inherent in the success of a technology product. Satisfaction is an important factor in increasing the intention to continue using financial services (Susanto et al., 2016).

5 Conclusion

Based on the results of the analysis described earlier, then regarding the factors that influence the user experience in using website services for the Karanganyar People's Market online system (Semarak), it can be concluded that:

- a. Based on the results of the analysis of the user experience website of the Karanganyar People's Market Online System (Vivid) on 50 respondents using descriptive statistical analysis on each UEQ variable, it can be seen that the Karanganyar People's Market online system website (Vivid) gets a positive evaluation value on the attractiveness variable (mean 1, 41), perspicuity (mean 1.41), efficiency (mean 1.69), dependability with (mean 1.31), stimulation (mean 1.08). While the novelty variable gets a neutral evaluation (mean 0.69).
- b. Based on the benchmark results for each UEQ variable using the UEQ Data Analysis Tool, it was found that the efficiency variable with a mean of 1.69 got a good value. attractiveness (mean 1.41), perspicuity (mean 1.41), dependability (mean 1.31) and stimulation with a mean of 1.08 get a value above average (above average) and novelty with a mean of 0.69 get a value below average (below average).

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