



Assessing User Experience of the Online Petition System in Indonesia based on UEQ

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Abstract—This study analyzes the user experience of online petition system Petisionline.com towards the participatory culture of Indonesian citizens. This participation can be in the form of citizens' individual opinions to involvement in communities or groups. The user experience analysis in this study refers to the assessment using modified long version of User Experience Questionnaire (UEQ) which consists of six experiences scales, namely attractiveness, perspicuity, efficiency, dependability, stimulation and novelty. Based on the scoring results of 26 items from UEQ, dependability and novelty scale scored the lowest among other scales. Petisionline.com needs to improve the aspects related to both scales to enhance its role in facilitating the participatory culture.

Keywords: Online Petition; User Experience; UEQ; Participatory Culture; Human-Computer Interaction

1. INTRODUCTION

Online-based technologies such as web 2.0 have the potential to increase user participation. Web 2.0 technology is a technology term that is able to facilitate user-generated content and participatory culture which includes four forms: affiliations, expressions, collaborative problem solving and circulation [1]. User participation in various online media in Indonesia continues to increase[2], as can be seen in formal and informal membership networks in various social media such as Instagram, Facebook, Youtube and Twitter. This participation can be in the form of individual opinions to involvement in communities or groups.

In the political context, the existence of petitions in Indonesia is not a new thing[3]. The creation of petitions to respond to political issues is still widely practiced today even though the platforms and ways in which people participate in petitions have changed. The online petition platform can be submitted by anyone to garner support through virtual petition signing and disseminated through other social media to bring demands to policy makers. Users or community participation in online petition sites provides citizens with greater opportunities for political participation. The online petition platform provides a space for people to participate in creating change[4]. The online petition platform as a form of updating the means of communication and information, makes it easy for individuals and groups to hold petitions online. This platform offers the public a wider range of access in a shorter period of time.

As an online tech-based product, currently there are several online petition systems offered by a number of developers. Petisionline.com is an online petition that first appeared in Indonesia in 2011 with around 300,000 users. Until 2019, there was an increase of up to 20,000 users. Judging from the increase in the number of users, this online petition platform is not used optimally among the public in Indonesia. One of the things that causes a lack of public interest in using technology is an unsatisfactory user experience.

Previous research has reviewed the implications of online petition media on government policy changes. The results show that online petitions are considered to have intermediate implications in advocating for public policies[5]. Furthermore, a number of studies tried to design prototypes of online petitions that were suitable for the needs and problems of Indonesian citizens[6]. However, previous studies have also stated that social inequality causes the level of public participation in Indonesia to be uneven[1]. This also affects the number of users on the online petition media.

To be able to reach a wider community, online petition platforms need to consider the quality of the system, especially in the aspect of user experience. This study aims to analyze user experience in Petisionline.com as the first online petition platform to enter Indonesia. Analysis was carried by implementing User Experience Questionnaire (UEQ) as a metrics for user experience assessments.

2. RESEARCH METHODOLOGY

This study uses two concepts to observe and quantitatively analyze online petitions on Petisionline.com site. Because this research relates to the field of human-computer interaction, the research was conducted fully involving the target users of the online petition platform (user-centered design). The methodology is divided into five stages which can be seen in Figure 1.

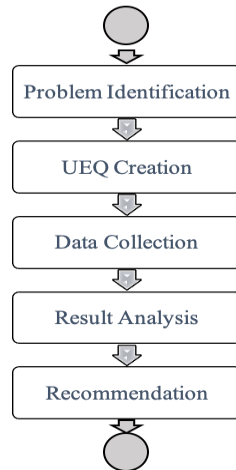


Figure 1. UEQ in research methodology

2.1 Problem Identification

The problem identification process is carried out by accessing and observing the use of the Petisionline.com platform. The CATWOE technique is used to understand the scope of the issues raised. CATWOE is one of the techniques in the Soft System Methodology (SSM) stage which functions as a structured disclosure of problem situations[7]. The implication is that several ideas are generated to produce improvements through a number of actions. Figure 2 presents the appearance of the Petisionline.com website as the online petition platform under study.

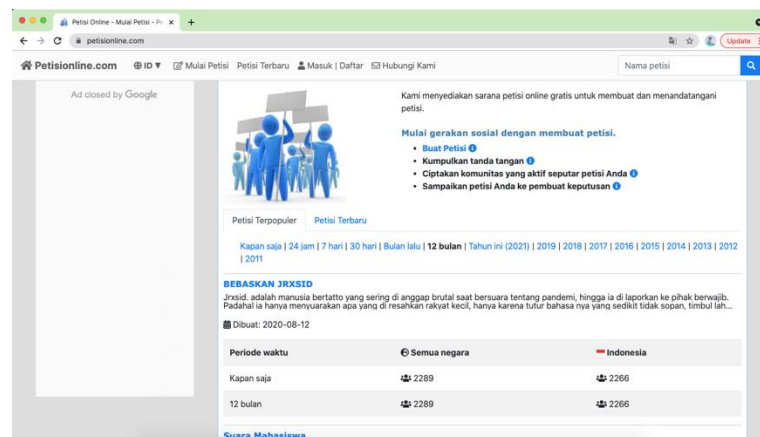


Figure 2. Interface of Petisionline.com site

The results of the CATWOE analysis are presented in table 1 as follows. Because the clients and actors in this petition are all Indonesian citizens who are expected to have an active participation in democracy, this is used as a respondent's limit in the next stage.

Table 1. CATWOE for Petisionline.com

Model	Description	Petisionline.com
C	Clients	Indonesian citizens
A	Actor	Indonesian citizens
T	Transformation	Increase political participations towards government and policy makers.
W	Weltanschauung/Worldview	Participatory culture in democracy
O	Owner	Developers of Petisionline.com
E	Environment	Government regulations and laws

2.2 UEQ Creation

To get a more targeted evaluation of user experience, this research adopted UEQ (User Experience Questionnaire) as an easy and efficient tool or questionnaire to measure User Experience (UX). This UEQ makes it easy for us to measure UX in an application design[8]. UEQ contains 6 experience scales[9], namely:

- a. Attractiveness: Do users like or dislike the system?
- b. Perspicuity: Is it easy to get to know the system? Is it easy to learn how to use the system?

- c. Efficiency: Can users complete their tasks without simple effort?
- d. Dependability: Does the user feel in control of the interaction?
- e. Stimulation: Is it interesting and motivating to use the system
- f. Novelty: Is the system innovative and creative? Does the system capture user interest?

UEQ can be accessed via <https://www.ueq-online.org> which provides questionnaires in various languages. There are two types of UEQ, namely the short version (consisting of 6 items) and the long version (consisting of 26 items) provided by the official website.

Table 2. Long version of UEQ

Item	Left	Right	Scale	Item	Left	Right	Scale
UE1	Annoying	Enjoyable	Attractiveness	UE14	Unlikeable	Pleasing	Attractiveness
UE2	Not Understandable	Understandable	Perspicuity	UE15	Usual	Leading edge	Novelty
UE3	Dull	Creative	Novelty	UE16	Unpleasant	Pleasant	Attractiveness
UE4	Difficult to learn	Easy to learn	Perspicuity	UE17	Not secure	Secure	Dependability
UE5	Inferior	Valuable	Stimulation	UE18	Demotivating	Motivating	Stimulation
UE6	Boring	Exciting	Stimulation	UE19	Does not meet expectations	Meets expectations	Dependability
UE7	Not interesting	Interesting	Stimulation	UE20	Inefficient	Efficient	Efficiency
UE8	Unpredictable	Predictable	Dependability	UE21	Confusing	Clear	Perspicuity
UE9	Slow	Fast	Efficiency	UE22	Impractical	Practical	Efficiency
UE10	Conventional	Inventive	Novelty	UE23	Cluttered	Organized	Efficiency
UE11	Obstructive	Supportive	Dependability	UE24	Unattractive	Attractive	Attractiveness
UE12	Bad	Good	Attractiveness	UE25	Unfriendly	Friendly	Attractiveness
UE13	Complicated	Easy	Perspicuity	UE26	Conservative	Innovative	Novelty

The questionnaire for respondents was formed using the modified long version of the UEQ in Indonesian containing 26 items which can be seen in table 2 above. Modification was done by changing all negative aspects to the left. Each item is categorized in an experience scale which will be calculated as a whole. The questionnaire was then distributed using the Google Form.

2.3 Data Collection

Data collection is carried out through Google Forms for one month by targeting respondents aged 20-50 years who are considered to be the age group of active technology users and can actively participate in politics. 81 Indonesian citizens participated in filling out the questionnaire (39 men and 42 women). As many as 81% of the total respondents came from the 20-30 year age segment of Indonesian citizens.

2.4 Result Analysis

The output generated from the data collection process is then processed by statistical analysis. Descriptive statistics are used to analyze user demographics. Furthermore, the quality of the data from the questionnaires was processed to test the validity and reliability. Validity test was conducted using Pearson correlation and reliability test based on Cronbach's Alpha.

After the quality of the data is confirmed to be good, then the six UEQ scales are processed by calculating the total mean of items from the same scale. The calculation results of all scales are then compared to form the results of the assessment and recommendations on the Petisionline.com site.

2.5 Recommendations

Visualization of the calculation results of each UEQ scale shows aspects that need to be improved on the system. Recommendations are given by reviewing the average score on the items from the lowest scale. Suggestions will be given for further system development in the future.

3. RESULT AND DISCUSSION

This section contains Analysis of research results is directed at reviewing data quality with statistical calculation methods and calculations based on UEQ metrics.

3.1 Data Quality

The questionnaire is an efficient data collection method if the researcher knows exactly what data or information is needed and how the variables that state the required information are measured. In statistics, validity is an index that shows the measuring instrument actually measures what it intends to measure. The questionnaire as a measuring tool must be able to measure what it wants to measure[9]. To find out whether the questionnaire that we have compiled is able to measure

what we want to measure, it is necessary to test the correlation between the score (value) of each item (variable) and the total score of the questionnaire.

Reliability is an index that shows the extent to which a measuring instrument can be trusted or relied on. This shows the extent to which the measurement results remain consistent when carried out twice or more on the same symptom, using the same measuring instrument. A measuring instrument is said to be reliable if it produces the same result even though it is measured many times. The method used to measure the reliability of the questionnaire in this study is the Cronbach's Alpha method.

3.1.1 Validity test

Testing the validity of each questionnaire item in the SPSS program using the product moment correlation technique between the scores of each questionnaire item and the total score (sum of each questionnaire score). The instrument is said to be valid if the correlation value (pearson's correlation score) is positive and greater than the value of r table according to the degree of freedom (df). It can be concluded in table 3, that all questionnaire items are valid because all of them have a value greater than r table based on the df value of 79 (r table = 0.2185; sig. 2-tailed = 0.05).

Table 3. Item validity test result

Item	Pearson's Correlation Score	Scale	Item	Pearson's Correlation Score	Scale
UE1	0.760	Attractiveness	UE14	0.824	Attractiveness
UE2	0.721	Perspicuity	UE15	0.703	Novelty
UE3	0.702	Novelty	UE16	0.863	Attractiveness
UE4	0.665	Perspicuity	UE17	0.253	Dependability
UE5	0.646	Stimulation	UE18	0.804	Stimulation
UE6	0.818	Stimulation	UE19	0.812	Dependability
UE7	0.819	Stimulation	UE20	0.791	Efficiency
UE8	0.510	Dependability	UE21	0.807	Perspicuity
UE9	0.541	Efficiency	UE22	0.794	Efficiency
UE10	0.757	Novelty	UE23	0.767	Efficiency
UE11	0.715	Dependability	UE24	0.762	Attractiveness
UE12	0.782	Attractiveness	UE25	0.744	Attractiveness
UE13	0.702	Perspicuity	UE26	0.843	Novelty

3.1.2 Reliability test

A questionnaire is said to be reliable if the answers to the questionnaire are consistent or stable over time. The questionnaire is said to be reliable, if the Cronbach Alpha value is greater than 0.7. The results of the SPSS calculation in table 4 show Cronbach's Alpha of 0.759 so that the research data is declared reliable.

Table 4. Overall items reliability test result

N	N of items	Cronbach's Alpha
81	27	0.759

3.2 UEQ Score Results

UEQ has 6 experience scales which will be analyzed further. Based on the analysis of the mean of all items on each experience scale, it is known that the novelty and dependability scales get the lowest scores. The graphic visualization of the score from 6 scales is presented in Figure 3 below.

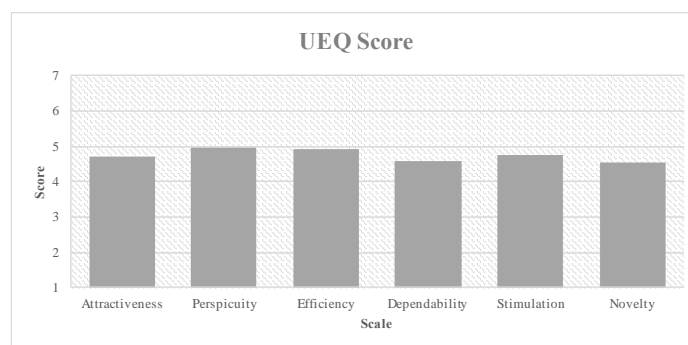


Figure 3. Comparison of each scale's score

To find out how the two experience scales affect users, further analysis is carried out on the mean scores of each related questionnaire item. All questionnaire items related to the novelty and dependability scales can be seen in table 5.

Table 5. Scales with lowest score

Scale	Item	Item mean score
Novelty	UE3	4.21
	UE10	4.83
	UE15	4.74
	UE26	4.70
Dependability	UE8	4.39
	UE11	5.27
	UE17	4.23
	UE19	4.41

The novelty and dependability scales each have 4 related questionnaire items. UE3 is the item with the lowest mean score on the novelty scale, while UE17 is the item with the lowest mean score on the dependability scale. For further analysis, the following is an explanation of the two items.

- a. Based on UE3 which consists of 'Dull' (left) and 'Creative' (right), there are as many as 56% of respondents who give a score of 4 and below.
- b. Based on UE17 which consists of 'Not secure' (left) vs 'Secure' (right), there are as many as 71% of respondents who give a score of 4 and below.

The UEQ uses a scale that ranges from 1 to 7. The smaller the scale, the score will indicate the item on the left that is negative (indicating a deficiency). On the other hand, the higher the score (closer to 7) the results will indicate the item on the right which means a good user experience.

In the novelty aspect, Petisionline.com has not made many updates, both in terms of features and appearance. Based on interviews conducted with respondents, it is known that users feel that the Petisionline.com site has an unattractive appearance. Currently, there are many interesting and interactive platforms emerging for users. Platforms that are not reviewed according to demand will tend to be less attractive to users.

Furthermore, security issues are found in the dependability aspect that is still felt by users (as evidenced by 71% of users who are more likely to rate the system as 'not secure'). This item relates to the barriers to implementing the online petition platform in the context of participatory culture. One part of participatory culture is the concept of affiliations which are generally related to membership registration, both formal and informal in online communities. In using the Petisionline.com site, users must register to be able to create or sign a petition. If the system is still considered not secure, the authors would argue that the concept of participatory culture has not been fully realized with the implementation of the Petisionline.com site.

4. CONCLUSION

By applying the CATWOE technique to analyze the Petisionline.com petition system, it is hoped that a 'transformation' (T) related to participatory culture will be formed which will increase political participations towards government and policy makers. By applying the long version of the User Experience Questionnaire (UEQ), which consists of 26 items, this study concludes that the Petisionline.com system has the lowest score on the novelty (mean = 4.55) and dependability (mean = 4.58) user experience aspects. Based on item UE3 from novelty aspect, it can be concluded that this online petition system is less innovative and creative, also does not capture user interest. To optimize Petisionline.com's role as an online petition platform in Indonesia, improvements can be made in terms of creativity in presenting features and user experience. In addition, users do not feel in control of the interaction based on item UE17. The security aspect is also very important to ensure users register to the site and use all the features to the fullest.

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