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M-Bonk Based E-Participation in Street Infrastructure Development

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Abstract. M-Bonk is an Android-based e-participation media used by local governments to increase community participation in reporting road damage in Sidoarjo Regency. This explanation approach study aims to analyze and explain self-efficacy, assertiveness, acceptance of M-BONK application users, socialization of their use, and their effects on community participation in the development of road infrastructure in Sidoarjo Regency. The place of this study was in Sidoarjo Regency using a sample of 91 M-Bonk application users as respondents and eight informants. Analyzing techniques used for quantitative data are multiple linear regression and interactive analysis for qualitative data. The results showed that self-efficacy, assertiveness, socialization, and acceptance affected community participation in road infrastructure development. The influence of these four variables on community participation was 97.4%. The novelty of this research is, first, the use of information communication technology applications provides the value of benefits, convenience, and increased public trust and desire to apply it as a medium to participate in development. Second, the community participates in development because they feel confident in their ability to participate in it; have the courage to express feelings, expressions, and decisions to be involved in infrastructure development. Third, socialization is an important process between the government and the community in effective development interactions. Fourth, e-community participation in development has different levels. The levels of e-participation consist of e-information, e-consultation, e-dialogue, e-collaboration, and e-empowerment.

1. Introduction

M-Bonk (read: embong) in Javanese means road. The term is used by the Sidoarjo Regency Government to name an android-based application. The M-Bonk application is used to facilitate the people of Sidoarjo Regency in participating in sharing information about damaged road infrastructure in their surroundings. Although not as familiar as the Center for Community Service and Complaints (P3M), M-Bonk has received community appreciation as a medium of participation in road construction.

Since it was first launched by the Office of Public Works and Spatial Planning on January 23, 2016, the Pothole Service data shows that 87 reporters submitted information on the condition of damage to the surrounding roads. The information on the damaged roads accumulated from February



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to December 2016. Of these, 59 reports have received responses and handling road improvements, 18 reports are in the survey process, and the rest are still in the disposition test process [1]. Two years after launching, in 2018, 137 people reported damaged roads. Of the total reports that have received a response and handling only 36 complaints [1, 2] [3].

Over the past two years, from 2016 to 2018, the total complaints with M-Bonk did not show any significant growth in the number of reporters. Though conceptually, the use of the application is considered good. This is because, first, not many people are aware of the application of M-Bonk to increase community participation in the development of road infrastructure in Sidoarjo. Second, there is no socialization by the Department of Public Works and Spatial Planning related to the application [1] [4]. Third, the M-Bonk application is not integrated into the Sidoarjo Regency government website www.sidoarjokab.go.id. Fourth, the slow response of local governments in handling complaints.

Starting from the explanation, this study aims to analyze and explain self-efficacy, assertiveness, socialization, acceptance of the use of the M-Bonk application in its influence on community participation in the development of road infrastructure in Sidoarjo Regency. The hypothesis of this study states that self-efficacy, assertiveness, socialization, and acceptance have a positive and significant effect both simultaneously and partially on community participation in road infrastructure development in Sidoarjo Regency.

The theoretical framework used in this study is self-efficacy from Bandura [5] [6] [7] [8], assertiveness from Stewart [9], socialization from Berger [10], acceptance from Davis [11], and participation from Kim [12], Scherer [13], Sanford [14], and Abadi [15].

2. Methods

This research was designed using an explanatory quantitative approach. The sample of this research is the user of the M-BONK application both of whom have made a complaint of 91 respondents. Respondents were taken from the names of the reporters who were in the M-Bonk application porthole system between February 2016 - June 2018. Sampling was done through a simple random sampling technique with the location of the Sidoarjo Regency. This location is based on the fact that M-BONK is the first Android-based application in Sidoarjo and East Java Primary data collection in this study was obtained through a questionnaire distribution that was distributed to M-BONK application users who had made complaints and entered into the M-BONK application porthole system. The questionnaire was arranged using five variables, namely self-efficacy (X1), assertiveness (X2), acceptance (X3), socialization (X4), and participation (Y). Each variable has an indicator. Indicators of self-efficacy include the level of confidence to complete the task (magnitude/level), the level of perfection (generality), the level of confidence endurance (strength). Assertiveness includes several indicators, namely the expression of positive feelings (give and receive compliment), being able to make and believe in one's own decisions (make requests), respond to behaviors that violate the rights of yourself or others (stand up for your legitimate right), express personal expressions without unfair criticism of others (express personal opinions, including disagreement). Socialization includes communicators, messages and media. Indicators of acceptance include perceived usefulness, behavioral intention to use, ease of use and trust in technology. Participation indicators consist of participation indicators consisting of e-information, e-consultation, e-dialogue, e-collaboration, and empowerment.

The quantitative data collected is then coded and tested for the level of validity, reliability, normality, and linearity of the data, as well as free / absence of classical assumptions such as autocorrelation, multicollinearity, and heteroscedasticity. The results of testing the validity of the data show that all statement items on the variables X1, X2, X3, X4, and Y are valid (the score is more than 0.650). The reliability test results show that there are very reliable data as listed in Table 1.

Table 1. Results of Data Reliability Testing

Variable	Alpha	Standard	Description
Self-efficacy	0,934	> 0.60	Very Reliable
Assertiveness	0,927	> 0.60	Very Reliable
Socialization	0,951	> 0.60	Very Reliable
Acceptance	0,931	> 0.60	Very Reliable
Community Participation in development	0,923	>0.60	Very Reliable

Source: Test Results with SPSS 20, 2018

The results of testing the classic assumptions, linearity, and normality show the existence of data that is normally distributed, linear, and free from classical assumptions both multicollinearity, heteroscedasticity, and autocorrelation. After all of these requirements are fulfilled, the analysis is continued by using multiple regression analysis based on SPSS 20. This analysis aims to examine the influence of the variables of self-efficacy, assertiveness, socialization, and acceptance of M- BONK application users on community participation in road infrastructure development in the Sidoarjo Regency.

3. Results and Discussion

E-Participation is community involvement in development that is mediated by e-government with an Android application (M-BONK). Community involvement includes several dimensions, namely e-information, e-consultation, e-dialogue, e-collaboration, and e-empowerment. E-information is information that the government conveys to the public in response to information, suggestions, and criticism given by the public on the condition of damaged roads in the Sidoarjo regency. This e-information is also used by local governments to socialize the use of the M-Bonk application to the public. E-consultation is a stage of consultation or discussion between the government and the community related to the handling of road damage to be repaired immediately. E-dialog is the delivery of plans for improving and improving road infrastructure by the government that allows it to be repaired or changed through discussion forums. E-collaboration is a partnership of the government and the private sector in the development of road infrastructure. The partnership can take the form of implementing policies, contributing power and funds, and maintaining private investment. E-empowerment is community involvement in providing criticism, suggestions, recommendations, objections, and support for the development of existing roads so far

To participate in development, community members need to have confidence [16], willingness, ability, opportunity [17], media that can be used easily, and sufficient information obtained through socialization. Without these factors, it is difficult for community members to actively participate in road construction. Without community participation, the development program implemented by the government will never run properly. The results of this study indicate that community participation in development is influenced by self-efficacy, assertiveness, socialization, and acceptance of the use of media applications.

In this study, the variables that are thought to influence community participation in the development of road infrastructure in the Sidoarjo Regency include, self-efficacy, assertiveness, socialization and acceptance of application users together and partially on community participation in the development of road infrastructure in the Sidoarjo Regency.

The F test results in Table 2 show that the variables of self-efficacy (X1), assertiveness (X2), socialization (X3), and acceptance (X4) positively and together affect the community participation with a significance of F count (0,000) smaller of alpha (0,05). The coefficient (R2) of the influence of these four variables on community participation was 0,974. This means that self- efficacy, assertiveness, socialization and acceptance of M-BONK application users on community participation in road infrastructure development in the Sidoarjo Regency are 97.4% and 2.6% are influenced by other factors that are not modeled.

Table 2. F and t-test results on variables that affect community participation

No	Variables	Regression Coefficient	t-count	Sig.
1	constant	-,108	-1,420	,159
2	Self-Efficacy	0,346	7,361	,0000
3	(X1)	0,213	5,312	,0000
4	Assertiveness	0,102	3,585	,0001
5	(X2)	0,365	8,390	,0000
	Socialization (X3)			
	Acceptance (X4)			

Information:
 N: 91 Respondents R : 0,987 R Square:0,975 Adjusted R Square: 0,974
 F count : 827,903 df = 4 Sig F : 0,000 Sig α : 0,05
 Data distribution: normal
 Durbin – Watson: DW>DU = 2,573 > 1,611 (no autocorrelation)
 Model equation: Y= -0,108 + 0,346 X1 + 0,213 X2 + 0,102X3 + 0,365X4
 Predictors: (constant), Self-efficacy (X1), Assertiveness (X2), Socialization (X3), Acceptance (X4)

Source: Primary Data Processing, 2018

Partially, the variables which have a significant influence on participation are acceptance and self-efficacy of 36.5% and 34.6% with a significance value of 0.000. Assertiveness has an influential contribution to participation of 21.3% with a significance of 0,000. Such is the case with socialization. Its influence on participation was 10.2% with a significance of 0.001.

E-Participation in the M-Bonk application has different levels ranging from e-information, e-consultation, e-dialog, e-collaboration, and e-empowerment. The quality of e-participation is influenced by several factors. Among them is community acceptance of the M-Bonk application. Public acceptance of m-Bonk's application to participate in development is reasonable. The reason people use the M-Bonk application as a medium of participation is because of the value of benefits, trust, positive behavior, and the easy use of Android-based applications. The effect of community acceptance on participation was 36.5% and the significance level of t-count was 0,000. Secondly, participation is also influenced by one's belief in his perfection and resilience to participate in development through the M-Bonk application media. The effect of self-efficacy on participation was 34.6% with a significance level of t-count 0,000.

Assertiveness is the ability to express thoughts, feelings, and beliefs that are believed to be true to participate directly, honestly, respectfully, and not interfere with the interests of others in road construction. The effect of assertiveness on participation in this study was 21.3% with a significance level of t-count 0,000. The same research also said that assertiveness can influence community participation based on e-government [17], [15], [16].

Socialization is the process of delivering information about the Android-based m-Bonk application as a medium of participation by the Sidoarjo regional government to a group of people either directly or using a successful development program including the use of the M-Bonk application depending on the socialization that has been carried out. The higher the frequency of socialization the more successful the development program implemented by the government. The results showed that socialization influenced M-Bonk media participation by 10.2% with a significance level of 0.001.

4. Conclusion

The conclusion that can be explained from the results of this research is that e-participation based on m-Bonk is influenced by people's acceptance of the application of m-Bonk as a medium of participation. Public acceptance of Android-based m-Bonk is because the application has a value of benefits, convenience, and an increase in people's trust and desire to apply it. The second factor influencing e-participation is self-efficacy. The effect is 34.6%. The third factor is assertiveness, which is 21.3%. And the last is socialization. The effect of m-Bonk's socialization on e-community

participation was 10.2%. These four factors simultaneously had an influential contribution to the participation of 97.4%. Therefore, it is recommended to local governments to always encourage and build community participation in the development of road infrastructure not only from the aspect of information communication technology, but also to build awareness, belief, knowledge, and community assertiveness. The local government also needs to conduct intensive socialization to the public about programs that are relevant to development.

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