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TAM and IPA model approach In analyzing jamsostek mobile applications (JMO)

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ABSTRACT

Previously, BP Jamsostek actually had an application called BPJSTKU. However, applications have been transferred to JMO to cater to the needs of participants. The purpose of this application is to give participants access to the JHT and JKK programs. We hope that participants can download this application in accordance with existing guidelines. This means that it will lead to digital systems in the future. This JMO application has many features. Can be used not only as a payment method, but also to update data, service partners, program information, reports, branches and complaints. The JMO application has never been found by any author discussing the overall acceptance of the technology. The measurements made are only related to the effectiveness and comfort of the community when using the BPJSTKU mobile application with the BPJS Employment KC Cilacap, in the sense that the JMO application has not measured the degree of strength of this application. The method used in this measurement uses the TAM and IPA methods. The results showed that the JMO application still has to be improved and developed.

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1. Introduction

Previously, BPJamsostek actually had an application called BPJSTKU. However, to meet the needs of the participants, the application was transferred to JMO. The purpose of this application is to make the JHT and JKK programs accessible to participants, we hope that participants can download this application in accordance with existing guidelines. This means that in the future we will lead to a digital system. This JMO application has many features. Not only as a fee payment method, but also updating data, service partners, program info, reporting, branch offices and complaints. The application of JMO has never been found by a writer who discusses the level of acceptance of the technology as a whole. In the sense that the JMO application has not yet measured the extent of the strength of this application, but the measurements that have been made are only on the effectiveness of the convenience of the community in using the BPJSTKU Mobile application at the BPJS Ketenagakerjaan KC Cilacap.

To see how effective the comfort of the working community is in using the BPJSTKU mobile application with BPJS Employment KC Cilacap. This study used a quantitative study, measuring the

Guttman scale, a sample of 50 people using targeted sampling techniques, and data collection techniques using questionnaires and observation. The method of data analysis in this study uses quantitative explanation. The results of this survey, the BPJSTKU mobile application has succeeded in providing convenience to the working community, and most participants use the BPJSTKU mobile application to access information on BPJS Ketenagakerjaan KC Cilacap (Aisyah, S., & Novianti, D., 2019). The problems that are the focus of this research include that so far there has been no research evaluating the Jamsostek Mobile Application (JMO) with the TAM and IPA approach and providing suggestions or recommendations for developers to improve the quality of the Jamsostek Mobile Application (JMO) with TAM and IPA based on test results.
In preparing this research, the authors limit the problem to the scope of the problem under study, namely the Jamsostek Mobile Application (JMO) with the TAM and IPA Model approaches. This study discusses the indicators of Perceived Ease of Use, Perceived Usefulness and Acceptance of IT. In addition, the data is processed using statistical software to find out which parts must be repaired and which must be maintained in the Social Security Mobile Application (JMO).

2. Methods

Social security is a form of social protection to ensure that all people can meet their basic needs for a decent life. Social security is a system to realize prosperity and provide a sense of security throughout life. The meaning of welfare is the existence of income to finance life when a person experiences risks that have a financial impact. For example, when you lose your job, have an accident, enter old age, get sick, and even die. All of these events affect the financial condition or can even cause someone to lose their regular income. To avoid these risks, social security is present in state life. That is, social security was indeed initiated by the state with the aim of providing welfare for its people (Fandy, T., 2011).

Technology Acceptance Model (TAM)

The TAM model originates from psychological theory to explain information technology user behavior based on beliefs, attitudes, intentions and user behavior relationships. The purpose of this model is to be able to explain the main factors of the behavior of information technology users towards the acceptance of the use of information technology itself. This model will illustrate that the use of IS will be influenced by the usefulness variable and the ease of use variable, both of which have high determinants and empirically tested validity (Setyaji, 2017).
In research (Nurfiyah et al., 2019) Initially Davis used as many as 14 initial scale items as indicators in Perceived Usefulness and Perceived Ease of Use. Then start with the 1st study which is an initial trial/pre-test study conducted to determine reliability and validity and obtain results in the form of 10 kinds of indicators.

Prerequisite Testing

Prerequisite testing is a test carried out to test the level of validity and reliability of the instrument to be used during the data collection process. The validity and reliability of research instruments is an absolute requirement to obtain valid and reliable data, which will ultimately affect the quality of research results.

1. Testing With Validity

According to Sugiyono, validity indicates the degree of accuracy between data that actually occurs on an object and data that can be collected by researchers. The validity test was taken based on the data obtained from the results of the questionnaire, using the Pearson Product Moment correlation, namely the correlation between items with a total score in one variable, and measurements obtained using SPSS software with a significance level (α) = 0.05 (Zahra & Rina, 2018).

2. Testing With Reliability

Reliability is related to the level of trust, dependability, consistency, or stability of the results of a measurement (Zahra & Rina, 2018). Test the reliability of the research instrument using the Cronbach's Alpha formula. Cronbach's Alpha is a mathematical formula used to test the reliability level of a measure, where an instrument can be said to be reliable if it has a reliability coefficient or alpha of 0.6 or more (Zahra & Rina, 2018).

3. Analysis Technique with Importance Performance Analysis (IPA) Method

According to Martinez in (Napitupulu, 2016) The Importance Performance Analysis (IPA) method was first introduced by Martilla and James (1977) with the aim of measuring the relationship between consumer perceptions and product/service quality improvement priorities, also known as quadrant analysis. IPA has been generally accepted and used in various fields of study because of its ease of application and the display of analysis results which makes it easy to propose performance improvements.
IPA has the main function of displaying information related to service factors which according to consumers greatly affect their satisfaction and loyalty, and service factors which according to consumers need to be improved because the current conditions are not satisfactory. IPA combines the measurement of importance (expectation) and performance (perception) factors in a two-dimensional graph that makes it easy to explain data and get practical suggestions. In this technique, respondents are asked to assess the level of interest and performance level and then the average value of the level of interest and performance is analyzed on the Importance Performance Matrix, where the x-axis represents performance (perception) while the y-axis represents interest (expectations). The dimension of service quality used is the quality of service developed (Fandy, 2011).

Research Process

The stages of the research process in this research are as follows:

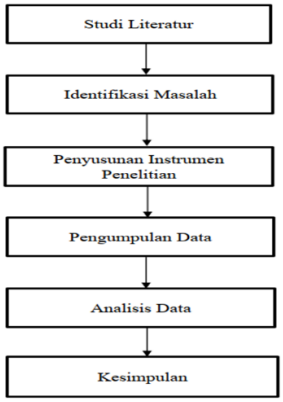

FIGURE 1. RESEARCH PROCESS

Research Instruments

Based on the model that has been determined, research instruments are then made that will be used in a questionnaire that contains a number of structured written questions to obtain information from respondents that will be conveyed to users of the Jamsostek Mobile Application (JMO). In this research, two types of data are needed where the data is the level of performance (performance) and the level of importance (importance) of the Jamsostek Mobile Application (JMO) users.

3. RESULTS AND DISCUSSIONS

In this chapter, we will start with descriptive statistics related to survey data, including general explanations of respondents, validity tests, data reliability tests and analysis with Importance Performance Analysis (IPA), and test results with Importance Performance Analysis (IPA) viewed based on the hypothesis study. All tests were carried out using the SPSS data processing program version 21.
The data that was processed based on the results of the questionnaires that had been collected and recapitulated, the results of collecting the questionnaires that were successfully collected and worthy of analysis can be shown in the table below:

Table 1. Questionnaire Collection Results

No	Number of Questionnaires	Questionnaire Percentage	Questionnaire Description
1.	60	100 %	Complete questionnaire
2.	0	0 %	Questionnaires whose filling is incomplete
3.	0	0 %	Unqualified questionnaire

From the table above it is shown that the number of questionnaires that were filled in completely was 60 (100%), the questionnaires that were incomplete were 0 (0%), and those that did not fulfill the requirements were 0 (0%).
Distribution of questionnaires touserSocial Security Mobile Application (JMO)selected as respondents. The number of respondents who were successfully recruited in this study was 60 respondents. All data in this study were then processed using software.

Data analysis

In analyzing the data analysis techniques are needed to test the data. By re-examining all the questionnaires returned by the respondents, the data tabulation was then carried out which produced the data needed for the purpose of analyzing research variables. Tests carried out are validity test and reliability test.

Validity test

The validity test is used to determine the validity or suitability of the questionnaire that researchers use to obtain data from respondents. Product Moment Validity Test Pearson Correlation uses the principle of correlating or connecting between each item score with the total score obtained in the study. Each test in statistics certainly has a basis for making decisions as a reference for making conclusions, as well as the Pearson Correlation Product Moment Validity Test, in this validity test, the basis for making decisions is as follows:
a. If the rcount value is greater than the rtable value, then the questionnaire is declared valid
b. If the rcount value is less than the rtable value, then the questionnaire is declared invalid
Before testing the validity, the real level (α) is determined first, namely 5% or 0.05 and the test statistic used is (rho-Spearman), Critical value = table value where n = 60. r table = rα;(n-2) = r0.05;(58) = 0.259

Table 2. Comparison of Test Results r Count with r Test TablePerformance Level Perceived Ease of

Variable	r Count	r Table	Decision
X1.1	0.822	0.259	*Valid*
X1.2	0.620	0.259	*Valid*
X1.3	0.319	0.259	*Valid*

X1.4	0.755	0.259	*Valid*
X1.5	0.753	0.259	*Valid*
X1.6	0.385	0.259	*Valid*
X1.7	0.365	0.259	*Valid*

Based on the results of the research instrument trials obtained from the table above, it can be concluded that the 7 (seven) question items were declared valid, so this research was continued.

Reliability Test

Reliability is a tool for measuring a questionnaire which is an indicator of a variable or construct. A questionnaire is said to be reliable or reliable if one's answers to statements are consistent or stable from time to time. SPSS provides a facility to measure reliability with the Cronbach Alpha statistical test.
From the test results above can be compared in the table below:

Table 3. Comparison of the Reliability Test Results for Each Variable

Variable	Croanbach's Alpha value	r Table	Information
Performance Level Reliability Test Results (Performance)Perceived Ease of Use/X1	0.652	0.60	*reliable*
Performance Level Reliability Test Results (Performance)Perceived Usefulness (Perceived Usefulness)/X2	0.796	0.60	*reliable*
Performance Level Variable Reliability Test Results (Performance)Perception of Acceptance (Acceptance of IT)/X3	0.641	0.60	*reliable*
Importance Level Reliability Test ResultsPerceived Ease of Use/Y1	0.672	0.60	*reliable*
Importance Level Reliability Test ResultsPerceived Usefulness (Perceived Usefulness)/Y2	0.733	0.60	*reliable*
Importance Level Reliability Test ResultsPerception of Acceptance (Acceptance of IT)/Y3	0.893	0.60	*reliable*

Usefulness (Perceived Usefulness)/X2for 0.7396 alpha value forPerformance Level Variable Reliability Test Results (Performance)Perception of Acceptance (Acceptance of IT)/X3of 0.641, the alpha value forImportance Level Reliability Test ResultsPerceived Ease of Use/Y1of 0.672, the alpha value forImportance Level Reliability Test ResultsPerceived Usefulness (Perceived Usefulness)/Y2of 0.733 and alpha valueImportance Level Reliability Test ResultsPerception of Acceptance (Acceptance of IT)/Y3of 0.893. All variables show a value that is greater than r table, which is equal to 0.60 so that all variables arereliable.

Data Analysis Using Importance Performance Analysis (IPA)

After testing the validity and reliability of the research instrument and it was found that the instrument was valid and reliable, then the gap between the Performance Level and the Importance Level of the user was analyzed.touserSocial Security Mobile Application (JMO)currently available are shown below:

Table 4. Gap Analysis of Performance and Importance Levels

No	Measured Variables	Performance Level	Importance Level	Satisfaction Score
		Perceived Ease of Use		
1.	I can easily learn how to use the Jamsostek Mobile	4.2167	4.2667	-0.0500

	Application (JMO)			
2.	I am skilled in using the Jamsostek Mobile Application (JMO) easily	4,3000	4.2333	0.0667
3.	I can use the Jamsostek Mobile Application (JMO) to make my work easier	4.1833	4.1667	0.0167
4.	I can interact with the Jamsostek Mobile Application (JMO) clearly	4.2667	4.2167	0.0500
5.	I can understand very well how to interact with the Jamsostek Mobile Application (JMO)	4.1833	4,1500	0.0333
6.	I think that the Jamsostek Mobile Application (JMO) is a flexible program	4,2000	4,3000	-0.1000
7.	I can use the Jamsostek Mobile Application (JMO) easily	4.3667	4,1500	0.2167
	Perceived Usefulness (Perceived Usefulness)			
8.	I am able to do work faster with the Jamsostek Mobile Application (JMO)	4.2167	4.1833	0.0333
9.	I think that my work will be easier by using the Jamsostek Mobile Application (JMO)	4.1833	4.1833	0.0000
10.	I can increase work productivity with the Jamsostek Mobile Application (JMO)	4.1667	4,1000	0.0667
11.	I can increase work effectiveness with the Jamsostek Mobile Application (JMO)	4.1667	4.1667	0.0000
12.	I think that the Jamsostek Mobile Application (JMO) can be useful to me	4.1833	4.2167	-0.0333
13.	I am helped by getting information through the Jamsostek Mobile Application (JMO)	4.1833	4.2833	-0.1000
14.	I am helped by getting information on cooperation with other colleagues through the Jamsostek Mobile Application (JMO)	4.1833	4.1333	0.0500
	Aspects of Interaction (Interaction)			
15.	I am comfortable using the Jamsostek Mobile Application (JMO)	4.2333	4.6333	-0.4000
16.	I enjoy using the Jamsostek Mobile Application (JMO)	4.1833	4.6167	-0.4333
17.	I think that the Social Security Mobile Application (JMO) is not boring	4.2333	4.4833	-0.2500
18.	The Jamsostek Mobile Application (JMO)	4.4667	4,5000	-0.0333

	provides the information I need			
19.	I work with reference to the information provided by the Jamsostek Mobile Application (JMO)	4.1667	4.5167	-0.3500
20.	The Jamsostek Mobile Application (JMO) provides accurate information	4.2167	4.5500	-0.3333
21.	I use the Jamsostek Mobile Application (JMO) for a long time	4,1000	4.6167	-0.5167

In the table it can be seen that the Performance Level column is generally lower than the Importance column, thus the satisfaction score column uses the Performance Level – Importance = Satisfaction Score formula. The application of this formula is applied to the satisfaction score column and it can be seen that the value in that column is negative, with the understanding that the variables tested on the respondents are still not in accordance with the expectations of the respondents.
To find out the scale of improvement prioritiesSocial Security Mobile Application (JMO)further analysis was carried out with IPA (Importance Performance Analysis) tools whereThe items are mapped into the IPA chart which is divided into four quadrants as follows:

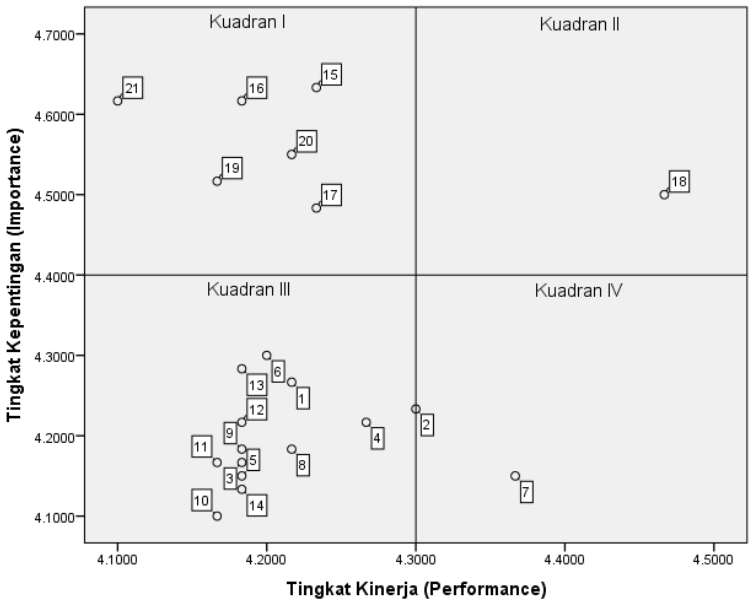

Figure 2. IPA Graph of Mapping Results

Based on the above, it can be seen that all items have been mapped into four quadrants with the following priority scale:
A. Quadrant I

Items included in this quadrant are the top priority for improvementSocial Security Mobile Application (JMO)which consists of:
[15]I am comfortable using the Jamsostek Mobile Application (JMO).
[16] I enjoy using the Jamsostek Mobile Application (JMO).
[17] I think that the Jamsostek Mobile Application (JMO) is not boring.
[19] I work with reference to the information provided by the Jamsostek Mobile Application (JMO).
[20] The Jamsostek Mobile (JMO) application provides accurate information.
[21] I used the Jamsostek Mobile Application (JMO) for an extended period of time.

ItemsThe above includes areas that are important according to user perception but have not met user expectations/expectations, so they need to be corrected immediately to meet user expectations.

B. Quadrant II

Items included in this quadrant are achievements or advantages of the Jamsostek Mobile Application (JMO) which must be maintained because it meets user expectations. According to user perception this item is in:

[18] The Jamsostek Mobile (JMO) application provided the information I needed.

C. Quadrant III

ItemsThose included in this quadrant are a low priority scale for managers of the Social Security Mobile Application (JMO) because they are not considered important by users, namely:

[1] It was easy for me to learn how to use the Jamsostek Mobile Application (JMO).
[2] I am skilled in using the Jamsostek Mobile Application (JMO) easily.
[3] I can use the Jamsostek Mobile Application (JMO) to make my work easier.
[4] I can interact with the Jamsostek Mobile Application (JMO) clearly.
[5] I can understand very well how to interact with the Jamsostek Mobile Application (JMO).
[6] I think that the Jamsostek Mobile Application (JMO) is a flexible program.
[8] I am able to do my work faster with the Jamsostek Mobile Application (JMO).
[9] I think that my job is made easier by using the Jamsostek Mobile Application (JMO).
[10] I can increase work productivity with the Jamsostek Mobile Application (JMO).
[11] I can increase work effectiveness with the Jamsostek Mobile Application (JMO).
[12] I think that the Jamsostek Mobile Application (JMO) can be useful to me.
[13] It helps me to get information through the Jamsostek Mobile Application (JMO).
[14] It helps me to get information on cooperation with other colleagues through the Jamsostek Mobile Application (JMO).

The two 13 items above are areas that are considered unimportant by users so that they are of low priority and can be ignored by managers.

D. Quadrant IV

ItemsIncluded in this quadrant are areas that are considered redundant because they are not considered important by users but have high perception/performance, namely:

[2]I am skilled in using the Jamsostek Mobile Application (JMO) easily.
[7]I can use the Jamsostek Mobile Application (JMO) easily.

The above items need to be transferred to a higher priority scale, namely quadrant I or quadrant II.

Based on the gap analysis it was found that in general the usersSocial Security Mobile Application (JMO)not satisfied yetSocial Security Mobile Application (JMO)that exists today.From the explanation above it can be concluded in generalSocial Security Mobile Application (JMO)need to be repaired again.

4. CONCLUSION

From the previous explanation in chapter four, the following conclusions can be drawn:
(a). The significant level (α) is determined as 5% or 0.05 and the test statistic used is (rho-Spearman). Critical value = table value where n = 60. r table = rα;(n-2) = r0.05; (58) = 0.259 (b). The results of the research instrument validity test obtained can be concluded that all question items are declared valid, so this research is continued. (c). Alpha value forPerformance Level Reliability Test Results (Performance)Perceived Ease of Use/X1of 0.652, the alpha value forPerformance Level Reliability Test Results (Performance)Perceived Usefulness (Perceived Usefulness)/X2for 0.7396 alpha value forPerformance Level Variable Reliability Test Results (Performance)Perception of Acceptance (Acceptance of IT)/X3of 0.641, the alpha value forImportance Level Reliability Test ResultsPerceived Ease of Use/Y1of 0.672, the alpha value forImportance Level Reliability Test ResultsPerceived Usefulness (Perceived Usefulness)/Y2of 0.733 and alpha valueImportance Level Reliability Test ResultsPerception of Acceptance (Acceptance of IT)/Y3of 0.893. All variables show a value that is greater than r table, which is equal to 0.60 so that all variables arereliable. (d). The gep analysis

produces a negative value, with the understanding that the variables tested on the respondents still do not meet the expectations of the respondents. (e). Based on the IPA analysis, the main priorities for improvement can be mappedSocial Security Mobile Application (JMO)variable [15],[16], [17], [19], [20] and[21]. (f). Areas of achievement or excellenceSocial Security Mobile Application (JMO)that must be maintained lies in quadrant II, and this area is in the variable [18]. (g). Which is a low priority scale for managers because it is not considered important by users, namely [1] and [7]. (h). Items included in this quadrant are areas that are considered redundant because they are not considered important by users but have high perception/performance, namely [1], [2], [3], [4], [5], [6], [8], [9], [10], [11], [12], [13] and [14]. Based on the gap analysis it was found that in general the usersSocial Security Mobile Application (JMO)feel satisfied withSocial Security Mobile Application (JMO)that exists today.

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