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# TECHNOLOGY ACCEPTANCE MODEL IN SHIP NAVIGATION OF YOGYAKARTA'S TRADITIONAL FISHERMEN

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## ABSTRACT

*This research tries to explore the characteristics of fishermen related to the model of technology usage and technology acceptance. The acceptance model developed here is a traditional fisherman ship navigation technology model. The benefits of this study are for a basis in the design and manufacture of appropriate communication technology (TTG) products that will be utilized in order to increase the catches of traditional fishermen. By using this technology, fishermen can find out the fish area and cover further range which then affects the results of caught fish. This research was conducted in Depok Beach, Bantul, Yogyakarta, with traditional fisherman respondents who also members of the Mina Bahari Fishermen Cooperative. The number of respondents was 31 traditional fishermen. The survey method is used as data collection technique. Data analysis was done using SmartPLS. The research findings show that the model of receiving ship navigation technology in traditional fishermen includes: ease of use affects their interest in the technology continuity; ease of use affects the sense of innovation; interest in continuing to use influences innovative feelings; and an assessment of the benefits affecting technology acceptance; and the discomfort factor influences the insecurity factor.*

**Key words:** Model of technology acceptance, users, interest, traditional fishermen

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# 1. INTRODUCTION

In order to support the regional government blueprint to increase the economy and welfare of fishermen in coastal areas of Depok, Kretek, Bantul Regency, the concept of institutional development and strengthening in accordance with the potentials and opportunities of the region is needed. The use of human resources (HR) and marine science and technology to support the improvement and strengthening of human resources and the development of science and technology in the field of marine affairs, so that optimal national fishing requires accurate data and technology that is appropriate to the characteristics of fishermen.

The successful implementation of technology is influenced by the acceptance of the technology by its users. On the other hand, the user's readiness for the technology application will affect its acceptance. However, the condition of fishermen in the coastal area of Depok, Kretek, Bantul Regency currently shows that (1) there are still many fishermen who do not want to accept new technological innovations, (2) the low number of fish catches because fishermen still use traditional vessels that are not equipped with navigation systems and information, (3) the low level of education and knowledge of the traditional fishermen community causes limited access to information. The navigation system used by traditional fishermen is a navigation system by combining nature, feeling, and instinct. Usually fishermen use the star function at night and use land position on daytime, meaning that using the known land position, fishermen can see the range, mean while they used the sun to see the time.

This research tries to clarify the characteristics of fishermen related to model of technology usage and acceptance. The technology acceptance model that was developed is a traditional fishing boat navigation technology model. The expected benefits of the results of this study are for a basis in the design and manufacture of appropriate communication technology products that will be utilized in increasing the catches of traditional fishermen. By using this technology: (1) fishermen can find out the area / certainty of finding the fishes; and (2) further coverage range, which eventually increases the fish catch.

Technology acceptance model can be explained using the Theory Acceptance Model (TAM) developed by Davis, Bagozzi, and Warshaw (1989) [1]. This model is an information systems theory that models how users accept and use technology. This model also shows that when users are presented with new technology, a number of factors will influence users' decisions about how and when to use them. There are three main factors that influence technology use behavior: 1) attitude towards use, 2) perception of usefulness, and 3) perceived ease of use. The concept of perceived usefulness refers to the tendency of people (fishermen) to use or not to use an application depending on one's belief that with the application will be able to help someone become better. Mean while, the concept of perceived ease of use refers to the application even though someone feels that the application can improve the quality of life but they feel the technology used is too heavy to use and the benefits of using the application are very difficult.

# 2. METHOD

## 2.1. Data Collection Technique

This research was conducted on Depok Beach, Bantul – Yogyakarta, Indonesia, with respondents from traditional fishermen who are members of the Mina Bahari Fishermen Cooperative. The number of respondents are 31 people. The survey method was used as a data collection technique. There are 39 statements that represent indicators in the survey. Each respondent gives an answer at the level of agreement for each statement. The degree of agreement is based on Likert scale [2] 5-point equidistance expressed ordinally in the choice of strongly disagree (1), disagree (2) neutral (3), agree (4) and strongly disagree (5). Each indicator is a reflexive indicator that determines one aspect of latent variables.

## 2.2 Data Analysis

Data analysis was performed by SmartPLS [3]. The reason for using SmartPLS is that it can be applied at all data scales, it does not require a lot of assumptions, the sample size does not have to be large and can be used to build relationships that do not have a theoretical basis, or for testing propositions can also be used for structural modeling with reflexive indicators [4]. Table 1 shows the relationship of statements, indicators and latent variables. Latent constructs affect the measurement variation and the assumption of causality relationships from latent constructs to indicators.

**Table 1** Relation of Statements, Indicators and Latent Variables

| NO | Statement | Indicator | Code for Latent Variables |
|---|---|---|---|
| 1 | The use of systems / tools contributes to the better quality of my work | work contribution (ID01 L1) | L1 |
| 2 | The use of systems / tools facilitates access to work | ease of access (ID02 L1) | L1 |
| 3 | Using a system / tool gives me better control over my work | better control (ID03 L1) | L1 |
| 4 | Using the system makes me more productive at work | work productivity (ID04 L1) | L1 |
| 5 | I can explain the use of the system to my coworkers | usage explanation (ID01 L2) | L2 |
| 6 | I quickly mastered the system within the scope of work | system mastery (ID02 L2) | L2 |
| 7 | I am able to understand the use of systems that are used independently | system understanding (ID03 L2) | L2 |
| 8 | I follow the development of a system that suits my line of work | following updates (ID04 L2) | L2 |
| 9 | I feel confused when facing problems with the system used | confused by the system (ID01 L3) | L3 |
| 10 | I feel the technical support provided is not very helpful and difficult to understand | limited technical assistant (ID02 L3) | L3 |
| 11 | I feel insecure about using the system | not confident (ID03 L3) | L3 |
| 12 | I have difficulty understanding the system guidelines used | difficult to understand the manual (ID04 L3) | L3 |
| 13 | I am too dependent on the system in my work | dependency on the system (ID01 L4) | L4 |
| 14 | I feel that the overall use of the system to work tends to be dangerous | dangerous system (ID02 L4) | L4 |

| | | | |
|---|---|---|---|
| 15 | I feel the use of a system decreases the quality of relationships because it reduces interaction between individuals | decreasing individual interaction (ID03 L4) | L4 |
| 16 | I feel unsure if doing work with the system online | disbelieve on the online system (ID04 L4) | L4 |
| 17 | The use of the system makes my work completed faster | The work done in short time or fast (ID01 L5) | L5 |
| 18 | Using the system improves my performance at work | Increasing performance (ID02 L5) | L5 |
| 19 | Using the system makes me more productive | system productivity (ID03 L5) | L5 |
| 20 | The use of the system provides effectiveness at work | work effectivity (ID04 L5) | L5 |
| 21 | The use of the system provides convenience in work | easy to work (ID05 L5) | L5 |
| 22 | Overall, the current system is useful and beneficial for you | useful system (ID06 L5) | L5 |
| 23 | The system used today is easy to learn | easy to be learn (ID01 L6) | L6 |
| 24 | The system used today is easy to control | easy to control (ID02 L6) | L6 |
| 25 | The system used today is easy to understand | easy to understand (ID03 L6) | L6 |
| 26 | The system used today makes work more flexible | work flexibility (ID04 L6) | L6 |
| 27 | The system used today provides convenience in work | ease of work (ID05 L6) | L6 |
| 28 | Overall, the system used today is easy to use | easy to use (ID06 L6) | L6 |
| 29 | Overall, you are interested in continuing to use the system in your work | interest to use continuosly (ID01 L7) | L7 |
| 30 | Overall, you are interested in updating (upgarade) the system to support the work | interest in upgrading the system (ID02 L7) | L7 |
| 31 | I feel comfortable with the fishing gear you have now | comfortable (ID01 L8) | L8 |
| 32 | I have mastered the use of fishing gear that you currently have | mastering usage (ID02 L8) | L8 |
| 33 | Technological innovation can encourage updates in society | encourage updates (ID03 L8) | L8 |
| 34 | Technological innovation can encourage the level of welfare of fishermen | welfare increase (ID04 L8) | L8 |
| 35 | I have the desire to learn more about something related to the technology offered | curiousity (ID05 L8) | L8 |
| 36 | I accept / apply tenology with confidence based on assessments and trials that have been carried out and observed by myself. | assessment and trial (ID06 L8) | L8 |
| 37 | Local governments play a role in helping, encouraging, sharing and facilitating fishermen in adopting technological innovations | government role on technology adoption (ID07 L8) | L8 |
| 38 | Fellow fishermen who have applied innovation, the role of technology is to help get information about new technological innovations | inovation of new technology (ID08 L8) | L8 |
| 39 | Fisherman organizations play a role in helping to apply innovations that are profitable and affordable to fishermen. | role of fishermen organisation (ID09 L8) | L8 |

**Table 2** Latent Variables

| No | Latent Variables | Code |
|---|---|---|
| 1 | Sense of optimism | L1 |
| 2 | Sense of innovation | L2 |
| 3 | Discomfortability factor | L3 |
| 4 | Insecurity factor | L4 |
| 5 | Assessment of the benefits | L5 |
| 6 | Easy to use | L6 |
| 7 | Interest to use continuously | L7 |
| 8 | Technology acceptance | L8 |

The 39 reflexive indicator statements form 8 latent variables, which are the number indirectly observed, to construct hypotheses (Table 2). This model hypothesizes that changes in latent constructs affect changes in indicators [5].

### *2.1.1 Hypothesis*

Hypothesis is a statement that contains smart guess or educated guess [6]. Based on the latent variables that are formed (Table 2) there are 10 research hypotheses that will be tested against the effect between latent variables.

H1: The ease of use of tools influences your interest to continue using

H2: Interest in using has an effect on optimism

H3: The ease of use of influential tools comes with an innovative taste

H4: Interest in using has an effect on innovative sense

H5: The ease of use of tools influences the assessment of benefits

H6: Innovative sense affects the assessment of benefits

H7: Innovative taste influences optimism

H8: The assessment of benefits affects the acceptance of technology

H9: Discomfort factor influences the insecurity factor

H10: The insecurity factor influences the technology acceptance factor

### *2.1.2 Outer Model*

Anaylsis of outer model was used to study the relationship between latent variables and its indicators. The outer model defines the connection between each indicator and the latent variables. Three criteria were used in data analysis using SmartPLS to evaluate the model, namely convergent validity [7], reliability test (Composite reliability dan Chronbach Alpha) [8], and Discriminant validity [9].

## 3. RESULT AND DISCUSSION

### 3.1 Convergent validity

An indicator is valid if the factor loading value is above 0.5 (the original sample value). After applying the convergent validity (multistep validity test and multistep deletion of invalid item), total of 10 items were deleted, namely speed, easy of access, work productivity, government's role on technology adoption, understanding the way of using the technology, comfortable, encouraging updates, understanding the system, easy to learn, and easy to control. These items have loading factor below 0.5, some of them were lower than 0.7 but with lower AVE values. The outer loading output is presented in table 3.

**Table 3** Outer Loading

| Code | Indicator | Value | Latent Variable |
|---|---|---|---|
| ID01 L1 | Work contribution | 0.85 | Sense of optimism |
| ID03 L1 | Better control | 0.894 | Sense of optimism |
| ID01 L2 | Usage explaination | 0.663 | Sense of innovation |
| ID03 L2 | Understanding of the system | 0.771 | Sense of innovation |
| ID04 L2 | Following updates | 0.802 | Sense of innovation |
| ID01 L3 | Confused by the system | 0.689 | Discomfort factor |
| ID02 L3 | Limited technical assistant | 0.865 | Discomfort factor |
| ID03 L3 | Not confident | 0.735 | Discomfort factor |
| ID04 L3 | Difficult to understand the manual | 0.77 | Discomfort factor |
| ID01 L4 | System dependency | 0.83 | Insecurity factor |
| ID02 L4 | Dangerous system | 0.864 | Insecurity factor |
| ID03 L4 | Decreasing indivual interaction | 0.553 | Insecurity factor |
| ID04 L4 | Disbelieve on online system | 0.592 | Insecurity factor |
| ID01 L5 | Fast or quick | 0.836 | Assessment of the benefits |
| ID02 L5 | Increasing the performance | 0.873 | Assessment of the benefits |
| ID03 L5 | System productivity | 0.878 | Assessment of the benefits |
| ID04 L5 | Work efficiency | 0.591 | Assessment of the benefits |
| ID05 L5 | Easy to work | 0.942 | Assessment of the benefits |
| ID02 L6 | Easy to control | 0.69 | Ease of use of the tools |
| ID03 L6 | Easy to understand | 0.827 | Ease of use of the tools |
| ID04 L6 | Work flexibility | 0.631 | Ease of use of the tools |
| ID05 L6 | Facilitate the work | 0.805 | Ease of use of the tools |
| ID06 L6 | Easy to use | 0.707 | Ease of use of the tools |
| ID01 L7 | Interest to use continuosly | 0.939 | Interest to use continuosly |
| ID02 L7 | Interest to do upgrading | 0.789 | Interest to use continuously |
| ID01 L8 | Assessment and trial | 0.784 | Technology acceptance |
| ID04 L8 | Role of fishermen organization | 0.805 | Technology acceptance |
| ID07 L8 | Curiousity | 0.727 | Technology acceptance |

## 3.2 The Developed Model of Technology Acceptance

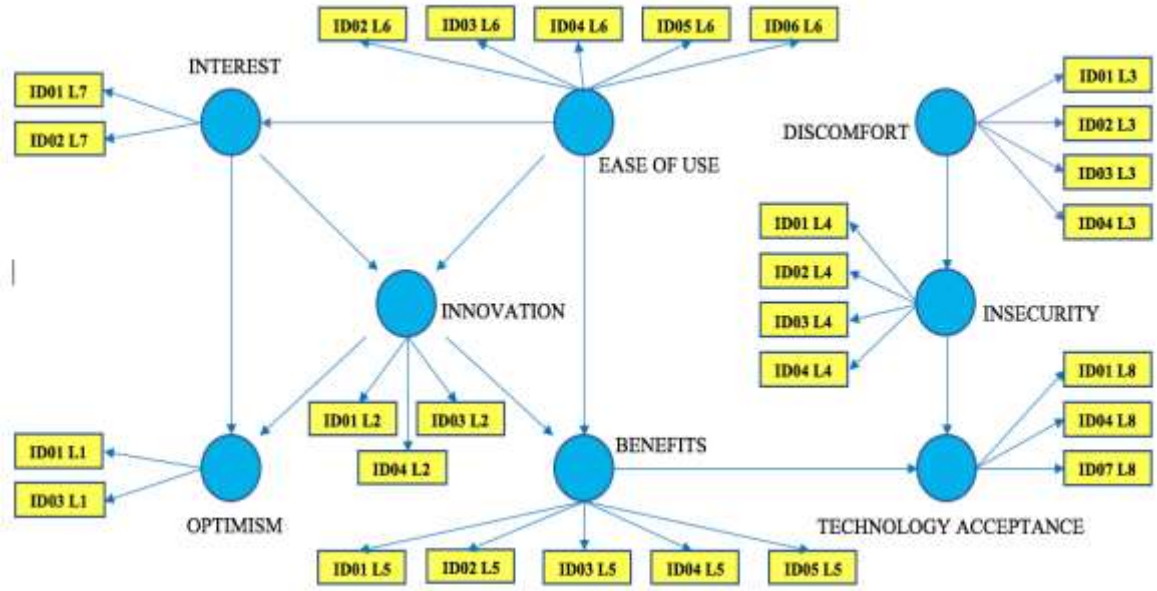


**Figure 1** Path diagram using SmartPLS

## 3.3 Reliability Test (Composite Reliability and Cronbach Alpha) and Average Variance Extracted (AVE) Test

Reliability test is a tool to measure a questionnaire which is an indicator of a variable or construct. A measuring instrument or instrument in the form of a questionnaire is said to be able to provide stable or constant measurement results, if the measuring instrument is reliable. The reliability of the research instrument in this study was tested using composite reliability and Cronbach's Alpha coefficient. A construct is said to be reliable if the composite reliability and Cronbach alpha values are above 0.70 [10]. In other studies, the instrument is said to be reliable if the Composite reliability value ≥ 0.6 and Cronbach alpha ≥ 0.6 for exploratory research [11]. Table 4 shows the result of data analysis from composite reliability and Cronbach alpha testing.

**Table 4** Reliability Test

| No | Latent Variable | Cronbachs Alpha | rho_A | Composite Reliability | Average Variance Extracted (AVE) |
|---|---|---|---|---|---|
| 1 | Sense of optimism | 0.687 | 0.700 | 0.864 | 0.761 |
| 2 | Sense of innovation | 0.604 | 0.618 | 0.791 | 0.559 |
| 3 | Discomfort factor | 0.776 | 0.817 | 0.851 | 0.589 |
| 4 | Insecurity factor | 0.706 | 0.747 | 0.809 | 0.523 |
| 5 | Assessment of the benefits | 0.882 | 0.893 | 0.917 | 0.693 |
| 6 | Ease of use of the tools | 0.785 | 0.794 | 0.854 | 0.541 |
| 7 | Interest to use continuosly | 0.693 | 0.859 | 0.858 | 0.752 |

Test results based on the above output indicate that the results of composite reliability and Cronbach alpha show satisfactory values, in which the value of each variable is above the minimum value of 0.600. This shows the consistency and stability of the instruments that was used are high. In other words, all the constructs or variables of this study have become a fit measurement tool, and all the questions used to measure each construct have good reliability.

## 3.4 Average Variance Extracted (AVE) Test

AVE values can describe the magnitude of variance or diversity of manifest variables that can be contained by latent constructs. Ideally, AVE is 0.5 which means that the convergent validity is good, meaning that the latent variable can explain an average of more than half the variants of the indicators. Mean while, AVE criteria for a valid variable must be above 0.50 [12]. The results of SmartPLS output can be seen in the above output (see column Average Variance Extracted (AVE)). From the output, it can be seen that all variables have a AVE value of more than 0.5, so that the variable has good validity.

## 3.5 Discriminant Validity Test

Discriminant Validity shows that latent constructs predict whether certain construct values are better than other construct values by looking at construct correlation values in cross loadings. The way to assess the Discriminant validity is to check the Cross loading value or to compare the root values of AVE.

## 3.6 Cross Loading

Discriminant validity can be measured by looking at the value of Cross loading [13]. If all indicators have a greater correlation coefficient with each construct than the indicative correlation coefficient value in the construct block in the other column, then it is concluded

that each indicator in the block is the constructor of the construct in that column. From this output (Table 5), it can be seen that all indicators have a greater correlation coefficient with each construct compared to the value of the indicator correlation coefficient on the construct block in the other column. Thus, it is concluded that each indicator in the block is the constructor of the construct in the column.

**Table 5** Cross Loading

| Code | Indicators | L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 |
|---|---|---|---|---|---|---|---|---|---|
| ID01 L1 | Work contribution | **0.85** | -0.22 | -0.23 | -0.34 | -0.13 | -0.04 | 0.25 | 0.53 |
| ID03 L1 | Better control | **0.89** | 0.03 | -0.31 | -0.09 | -0.07 | 0.25 | 0.31 | 0.31 |
| ID01 L2 | Usage explanation | 0.12 | **0.66** | -0.14 | 0.32 | -0.02 | 0.29 | -0.20 | 0.03 |
| ID03 L2 | System understanding | -0.26 | **0.77** | 0.05 | 0.30 | 0.26 | 0.11 | -0.32 | -0.02 |
| ID04 L2 | Following updates | -0.05 | **0.80** | 0.32 | 0.38 | 0.31 | 0.43 | -0.05 | 0.26 |
| ID01 L3 | Confused by the system | -0.12 | -0.22 | **0.69** | 0.27 | -0.10 | -0.19 | 0.05 | -0.17 |
| ID02 L3 | Limited technical assistant | -0.32 | 0.24 | **0.87** | 0.70 | 0.12 | 0.04 | -0.11 | 0.04 |
| ID03 L3 | Not confident | -0.26 | 0.11 | **0.74** | 0.59 | -0.06 | -0.26 | -0.11 | -0.12 |
| ID04 L3 | Difficult to understand the manual | -0.20 | 0.09 | **0.77** | 0.46 | -0.25 | -0.28 | -0.26 | -0.16 |
| ID01 L4 | System dependency | -0.37 | 0.49 | 0.59 | **0.83** | 0.12 | 0.09 | -0.19 | -0.15 |
| ID02 L4 | Dangerous system | -0.19 | 0.39 | 0.61 | **0.86** | -0.09 | 0.15 | -0.19 | -0.23 |
| ID03 L4 | Decreasing individual interaction | 0.28 | 0.30 | 0.15 | **0.55** | -0.20 | 0.16 | -0.05 | -0.09 |
| ID04 L4 | Disbelieve on online system | -0.06 | 0.08 | 0.50 | **0.59** | 0.15 | -0.03 | -0.04 | 0.22 |
| ID01 L5 | Fast or quick | -0.26 | 0.30 | 0.05 | 0.08 | **0.84** | 0.41 | 0.31 | 0.39 |
| ID02 L5 | Incresing the performance | -0.04 | 0.24 | -0.15 | -0.01 | **0.87** | 0.61 | 0.50 | 0.40 |
| ID03 L5 | System productivity | -0.15 | 0.19 | -0.08 | 0.00 | **0.88** | 0.43 | 0.42 | 0.54 |
| ID04 L5 | Work efficiency | 0.08 | 0.17 | 0.04 | 0.13 | **0.69** | 0.67 | 0.65 | 0.22 |
| ID05 L5 | Easy to work | -0.11 | 0.21 | -0.08 | -0.02 | **0.94** | 0.54 | 0.50 | 0.59 |
| ID02 L6 | Easy to control | 0.03 | 0.65 | -0.10 | 0.31 | 0.46 | **0.69** | 0.14 | 0.27 |
| ID03 L6 | Easy to understand | 0.00 | 0.20 | -0.17 | 0.02 | 0.49 | **0.83** | 0.47 | 0.35 |
| ID04 L6 | Work flexibility | 0.51 | -0.04 | -0.30 | -0.16 | 0.39 | **0.63** | 0.62 | 0.28 |
| ID05 L6 | Facilitate the work | 0.02 | 0.21 | -0.01 | 0.14 | 0.55 | **0.81** | 0.57 | 0.29 |
| ID06 L6 | Easy to use | -0.03 | 0.39 | -0.17 | 0.12 | 0.47 | **0.71** | 0.25 | 0.17 |
| ID01 L7 | Interest to use continuosly | 0.46 | -0.26 | -0.10 | -0.08 | 0.45 | 0.53 | **0.94** | 0.40 |
| DI02 L7 | Interest to do upgrading | -0.03 | -0.15 | -0.20 | -0.32 | 0.63 | 0.46 | **0.79** | 0.20 |
| ID01 L8 | Assessment and trial | 0.18 | 0.19 | 0.13 | 0.07 | 0.44 | 0.07 | 0.12 | **0.78** |
| ID04 L8 | Role of fishermen organization | 0.31 | 0.13 | -0.07 | -0.06 | 0.49 | 0.46 | 0.30 | **0.81** |
| ID07 L8 | Curiousity | 0.72 | -0.07 | -0.39 | -0.34 | 0.21 | 0.31 | 0.52 | **0.73** |

## 3.7. Comparing the root value of AVE

Discriminant Validity is then measured by comparing the AVE values of each construct with the correlation between constructs and other constructs in the model. If the AVE square value of each construct is greater than the correlation value between constructs and other constructs in the model, then it has a good discriminant validity value. The root value of AVE can be seen in Fornell Larcker Criterion. Based on these results (Table 6), the root value of AVE for each construct is higher than the correlation value between constructs and other constructs in the model. Thus, it can be said that according to the test with AVE roots, this model has good discriminant validity.

**Table 6** Discriminant Validity

| Latent Variables | L1 | L2 | L3 | L4 | L5 | L6 | L7 | L8 |
|---|---|---|---|---|---|---|---|---|
| L1 | 0.75 | | | | | | | |
| L2 | 0.45 | 0.72 | | | | | | |
| L3 | 0.13 | 0.71 | 0.77 | | | | | |
| L4 | 0.26 | 0.04 | -0.06 | 0.83 | | | | |
| L5 | -0.25 | -0.19 | -0.16 | 0.58 | 0.87 | | | |
| L6 | 0.38 | 0.12 | -0.20 | 0.65 | 0.57 | 0.74 | | |
| L7 | -0.09 | -0.23 | -0.32 | -0.11 | 0.32 | 0.13 | 0.87 | |
| L8 | 0.13 | -0.11 | -0.10 | 0.52 | 0.37 | 0.37 | 0.47 | |

## 3.8 Inner Model Test

Testing the inner model or structural model was conducted to find the relationship between constructs, the significance value and the R-square of the research model. Based on the inner model in Table 7, several information were obtained, as follows:

- The R-square value of the sense of optimism in the use of tools is 0.105. This means that the variability of constructs of *optimism in the use of tools* can be explained by the variability of *sense of innovation* constructs and *interest in continuing to use* by 10.5%, while the rest is explained by other variables outside the model under study.
- The R-square value of the *sense of innovatiion* is 0.454. This means that the construct variability of *sense of innovation* can be explained by the construct variability of *ease of use of tools* and *interest in continuing to use* by 45.4%, while the rest is explained by other variables outside the model under study.
- The R-square value of the *insecurity factor* is 0.499. This means that the *insecurity factor* construct variability can be explained by the *inconvenience* construct variability of 49.9%, while the rest is explained by other variables outside the model studied.
- R-square value of the *assessment of the benefits* of 0.418. This means that the construct variability of the *assessment of the benefits* can be explained by the variability of *sense of innovation* constructs and *ease of use* by 41.8%, while the rest is explained by other variables outside the model under study.
- R-square value of *interest to use continuosly* is 0.32. This means that the construct variability of *interest to use continuosly* can be explained by the constructability variability of *ease of use* by 32%, while the rest is explained by other variables outside the model under study.
- R-square value of *technology acceptance* is 0.291. This means that the variability of the construct of *technology acceptance* can be explained by the *insecurity* construct variability factor and the *assessment of the benefits* of 29.1%, while the rest is explained by other variables outside the model studied.

**Table 7** Inner Model

| Indicators | Value |
|---|---|
| Sense of optimism | 0.105 |
| Sense of innovation | 0.454 |
| Insecurity factor | 0.499 |
| Assessment of the benefits | 0.418 |
| Interest to use continuosly | 0.32 |
| Technology acceptance | 0.291 |

## 3.9 Hypothesis Test (Effect between variables)

In hypothesis test, the significant influence between the independent variables on the dependent variable are analysed. Testing the proposed hypothesis was conducted by looking at the path coefficients which show the parameter coefficient and the statistical significance value *t*. The significance of the estimated parameters can provide information about the relationship between the research variables. The limit for rejecting and accepting the proposed hypothesis is to use a probability of 0.05. Table 8 presents the estimated output for testing structural models:

**Table 8** Hypothesis Test Result

| Hypothesis | Original Sample (O) | Sample Mean (M) | Standard Deviation (STDEV) | T Statistics (\|O/STDEV\|) | P Values |
|---|---|---|---|---|---|
| H1: Easy of use → interest to use continuously | 0.565 | 0.453 | 0.403 | 1.401 | 0.162 |
| H2: Interest to use continuously → sense of optimism | 0.32 | 0.239 | 0.324 | 0.99 | 0.323 |
| H3: Ease of use → sense of innovation | 0.761 | 0.782 | 0.233 | 3.27 | 0.001 |
| H4: Interest to use continuously → sense of innovation | -0.675 | -0.614 | 0.292 | 2.315 | 0.021 |
| H5: Ease of use → assessment of the benefits | 0.638 | 0.569 | 0.346 | 1.847 | 0.065 |
| H6: sense of innovation → assessment of the benefits | 0.022 | 0.073 | 0.262 | 0.083 | 0.934 |
| H7: sense of innovation → sense of optimism | -0.015 | 0.088 | 0.373 | 0.039 | 0.969 |
| H8: Assessment of the benefits → technology acceptance | 0.529 | 0.544 | 0.181 | 2.917 | 0.004 |
| H9: Discomfort factor → insecurity factor | 0.706 | 0.74 | 0.081 | 8.735 | 0.0 |
| H10: Insecurity factor → technology acceptance | -0.127 | -0.146 | 0.254 | 0.499 | 0.618 |

## Explanation

H1: Ease of use affects the interest to use continuosly. This can be seen from the Path Coefficient output obtained $t_{count} > t_{table}$ (1.401 > 1.96) or P values < 0.05 (0.162 < 0.05), hence H0 is rejected.

H2: Interest to use continusly has no effect on sense of optimism. This can be seen from the Path Coefficient output obtained by $t_{count} < t_{table}$ (0.999 < 1.96) or P values > 0.05 (0.323 > 0.05), hence H0 is accepted.

H3: Ease of use affects the sense of innovation. This can be seen from the Path Coefficient output obtained $t_{count} > t_{table}$ (3.27 > 1.96) or P values < 0.05 (0.001 < 0.05), hence H0 is rejected.

H4: Interest to use continuosly influences the sense of innovation. This can be seen from the Path Coefficient output obtained $t_{count} > t_{table}$ (2.315 > 1.96) or P values < 0.05 (0.021 < 0.05), hence H0 is rejected.

H5: Ease of use affects the assessment of benefits. This can be seen from the Path Coefficient output obtained $t_{count} > t_{table}$ (2.425 > 1.96) or P values < 0.05 (0.016 < 0.05), hence H0 is rejected.

H6: Sense of innovation has no effect on assessment of benefits. This can be seen from the Path Coefficient output obtained $t_{count} < t_{table}$ (0.083 < 1.96) or P values > 0.05 (0.934 > 0.05), hence H0 is accepted.

H7: Sense of innovation does not affect the sense of optimism in the use of tools. This can be seen from the Path Coefficient output obtained $t_{count} < t_{table}$ (0.039 < 1.96) or P values > 0.05 (0.969 > 0.05), hence H0 is accepted.

H8: Assessment of the benefits influences technology acceptance. This can be seen from the Path Coefficient output obtained $t_{count} > t_{table}$ (2.5741 > 1.96) or P values < 0.05 (0.010 < 0.05), hence H0 is rejected.

H9: The discomfort factor influences the insecurity factor. This can be seen from the Path Coefficient output obtained $t_{count} > t_{table}$ (8.735 > 1.96) or P values < 0.05 (0.000 < 0.05), hence Ho is rejected.

H10: Insecurity factor has no effect on technology acceptance. This can be seen from the Path Coefficient output obtained by the value of $t_{count} < t_{table}$ (0.499 < 1.96) or P values > 0.05 (0.618 > 0.05), hence H0 is accepted.

## 4. CONCLUSION

The technology acceptance model of ship navigation in Yogyakarta's traditional fishermen are as follow: (1) ease of use affects the interest in using continuously, (2) ease of use affects the sense of innovation, (3) interest in using continuously influences the sence of innovation, and (4) assessment of the benefits influences technology acceptance, and (5) the discomfort factor influences the insecurity factor.

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