BARITS APP: SMART ASSISTANT SYSTEM TO FACILITATE THE LABELLING OF GOODS FOR MSME PLAYERS IN THE ERA OF DIGITAL ECONOMIC TRANSFORMATION

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Abstract: The labelling system that occurs in various stores is currently running well. However, most still use a manual system and to meet the needs of information on the price of goods requires a lot of time until costs are wasted for the labelling process on goods (Azizah, 2020). which explains that innovation can provide positive value for MSME actors. Labelling can be done digitally based on smartphones using an innovative application created by researchers in the form of "BARITS" (Barcode, Items, Scanner). BARITS is an application used to label goods in stores with the condition of scanning barcodes on these items. This application can be an easy solution for store owners to be more effective in the labelling process using only a smartphone.

The method used by researchers to examine the process of using the BARITS application is quantitative. There were 20 respondents who used the BARITS application from the MSME sector, namely grocery stores and ATK (Stationery) stores. After the trial operation of the BARITS application, they filled out questionnaires regarding the perception of convenience, perception of usability, and perception of external controls that have an influence on the intention to use the application.

Keywords: BARITS, Digital Economy, Artifficial Intelligence, Barcode, Application

1. Introduction

Digitalization has now penetrated into various sectors, especially the economic system which is currently affected by the digitalization process. Indonesia's digital economy also increases productivity by up to 120 billion US dollars per year, especially in the financial sector by 1.8 billion US dollars (Aprillia et al, 2021). The development of the digital economy has a very positive impact, such as increasing 3.7 million new jobs by 2025 and providing an additional 2% per year in GDP growth when implemented by MSMEs (Kumala, 2018). MSMEs are greatly helped by the existence of a digital economy system as evidenced by an increase of 80% of their income compared to before using the digital economy (Kumala, 2018). If this continues to be improved, MSMEs in Indonesia can increasingly develop which leads to an increase in the country's economy. The majority of MSMEs in labeling their products still use conventional systems which take a long time and certainly increase product labeling costs. If there is a change in the price and name of the goods, of course the label will be discarded which eventually accumulates and can cause environmental pollution. The bad impact is that if there is a change in product labeling regulations from the government, then these labels must be completely remade. It would be better if there were efforts to replace conventional labels with

digital labels. Reasercher developed an innovation called BARITS (Barcode Item Scanner) which is an application to help MSME players in the process of labelling the names and prices of goods in a modern and free manner based on an Artificial Intelligence (AI) system. Thus, the presence of the BARITS application helps MSME players to carry out the process of labeling goods efficiently, modernly, automatically, and for free.

2. Literature Review

2.1 Applications

Advances in information and communication technology have "transported" humans into an era commonly called the digital era. In the digital era, people can get various information about the world in a short time. Today, scientific research is often carried out within the framework of technology, that is, in the development of selected artifacts and practical solutions to human problems. Therefore, the application is one of the systems of using or applying a concept that is the subject of discussion made to assist humans in carrying out certain tasks.

The presence of the BARITS (Barcode Items Scanner) application that can help MSME actors in carrying out the process of labeling / recording goods data in a modern manner and does not require any cost in accessing the application. In addition, this application is also equipped with an advanced calculator feature based on an Artificial Intelligence system, to speed up the calculation of the price of goods through human voice processing. Thus, this application will be accessible to all Android platform users and MSME players in Indonesia.

2.2 Artificial Intelligence

Artificial Intelligence (AI) is artificial intelligence that can act and think like and as well as humans. Artificial intelligence offers a medium and test theories of intelligence. This theory is stated in a programming language and proven through a computer (Sihombing and Wirapraja, 2018). The basic principles of creating AI include being able to behave like humans (acting humanly), being able to think like humans (thinking humanly), being able to think rationaly, and being able to behave rationally (acting rationaly) (Priowirjanto, 2022).

This 21st century technology has been widely applied in various fields, such as education, economics, business, manufacturing, and so on (Oke, 2018). The community and MSMEs benefit from each other with the application of AI in this field, because there is no need to list product prices conventionally but only look at the application. The application executes pre-programmed orders so that sellers and buyers can immediately find out the price listed on the product.

2.3 Barcode

Currently, barcodes have been used to identify information on goods data in each business sector. When barcode technology is applied in business processes, there are automated processes to increase productivity and reduce human error.

The barcodes are in the form of lines and are black and white contain a collection of combinations of different sizes, and are arranged in such a way according to certain rules so that they can be translated by the machine reader. Panuntun, B., &; Kuncoro, A. A. (2019). Barcodes can be obtained from collecting data in width (lines) and parallel line spacing called barcodes or linear symbols. Fauziah, Z. (2021).

2.4 Digital Economy

The role of the digital economy offers hope in difficult conditions and strong resilience in times of recession. Digital economic transformation is important today. Mckinsey (2016), said that if Indonesia can take advantage of digitalization, the country is expected to reach around $150

billion by 2025, with GDP growing by 10% per year. With the development of the digital economy, it will have an impact on the emergence of new business models and the development of business models in existing sectors.

McKinsey (2016) adds that to capture and seize opportunities in the digital age, governments and business sectors must act innovatively to create value in three dimensions, namely: 1) Products and services. Innovating to meet unmet or partially met customer needs, by creating new products or services using digital technology; 2) Business model. Transforming customer experiences, delivery models, and value propositions, enabled by digital technologies; 3) Business processes.

3. Method

3.1 Analysis Methods Used

This study used a quantitative approach. According to Emzir, the quantitative approach is a research approach that mainly uses a positivist model to develop knowledge and uses research strategies such as survey activities that require statistical data (Coal, 2016). Quantitative research pays attention to the collection and analysis of data both in numerical and objective form. Quantitative research variables can be identified and correlations between variables can be measured (Abdullah, M. R. 2015).

The quantitative approach we use is Quantitative Data Analysis Techniques based on *Structural Equation Modeling* (SEM-PLS) using SmartPLS3 software in collaboration with a google website called Google Forms to conduct data collection surveys. SmartPLS3 is very accurate in analyzing and concluding a data grouped in percentage numbers on google forms. The analysis method of this research is carried out by, namely:

1. Grouping data that has been *exported* from google forms in the form of Microsoft Excel, then respondents' answers are inputted into SmartPLS3 software.
2. Calculate respondent data using the bootstrapping system in the SmartPLS3 application.
3. Interpreting the results of data calculations, then descriptive analysis of the level of respondents' interest in using the BARITS application.

3.2 Time and Place of Research

1. Filling out a research questionnaire on the perception of external control, perception of usefulness, perception of ease, and behavioral intentions was carried out on July 30, 2022 until the required data was sufficient.
2. The distribution and filling of research questionnaires were carried out for MSME actors in various regions of Indonesia, one of which is: Kediri, Probolinggo, Malang, Cilacap, and Jombang through online and offline google forms (online and offline).

3.3 Data Sources

This research data was obtained through Google Form filled out by respondents. The number of respondents who are willing to be used as a research sample is 20 micro MSME actors consisting of grocery stores and ATK (Office Stationery) stores. In this study, respondents were asked to try the BARITS application first.

Then, respondents were given several statements and asked to vote for agree or disagree in the form of a 5-point Likert scale. Of the 20 total respondents who have participated in this study, the results of their answers are summarized in the answer table below.

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Table 1

Statement	Disagree	Neutral	Agree
MSME players are able to control the BARITS application	15%	40%	45%
MSME actors have sufficient ability to use BARITS app	20%	35%	40%
Using the BARITS application increases the acceleration of the process of data collection / labelling of goods	0%	10%	90%
Using the BARITS application increases the effectiveness of MSME actors in processing goods data up to the number of goods	5%	10%	85%
The BARITS application is useful in the effectiveness of the work of MSME actors in implementing His duties	5%	20%	75%
Interacting with the BARITS application does not drain the minds of MSME players too much	15%	35%	50%
The BARITS application is easily accessible on various media electronics	0%	15%	85%
MSME players intend to use the BARITS application in the future	5%	35%	60%
MSME players plan to continue using the BARITS application as often as possible to support Work Efficiency	0%	40%	60%

3.4 Data Collection Techniques

The data collection technique for this study was carried out by questionnaire through google form. Questionnaire is one method of data collection or survey in conducting research used to collect large amounts of data (Pranatawijaya, V. H, 2019). After collecting questionnaire data from respondents, data processing techniques will be carried out through SEM-PLS 3. Then, the accumulation of calculations based on algorithms is carried out, giving rise to several levels or acquisition of perception analysis through the level of respondent values.

4. Result and Discussion

The form of plans and delineations of how the BARITS application operates has been carried out by the research team, including about how the physical form of the application itself. The BARITS application has been successfully created by the research team as an application to replace manual labels, which will later help MSME players in carrying out daily sales activities easily, effectively and do not need to spend money to buy the application. applying BARITS contains 5 main features, namely calculators, input goods, view item data, about applications and *app developers*. The Calculator feature will help users to perform fast and precise calculations based on the sophistication of the *Artificial Intelligence* system.

Then there is an item input feature that is based on scanning barcodes first, so that the application will help users to carry out a modern and accurate item recording system. Thus, the acquisition of goods data recording through the application will be stored permanently. The view item data feature provides information to users about item data that has been recorded through the item input feature. Then the feature about the application that provides information about the origin of making BARITS. And the last feature is an *app developer*, this feature is a display of the BARITS application maker that has been running to date to help economic effectiveness for MSME actors.

Testing was carried out by the research team on the validity and performance of the application through the distribution of questionnaires filled out by MSME actors from grocery stores and ATK (Office Stationery). The questionnaire contains 9 questions related to the use of the

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BARITS application. The hope is that after filling out the questionnaire, researchers can find out whether the BARITS application is indeed feasible to be developed in the future.

When viewed from the answers of the respondents in the questionnaire, the system of the BARITS application used is relatively easy to operate. This convenience is obtained because the use of this application system is simple and complete with clear information in every feature in the application.

The BARITS application is very influential on the effectiveness performance of MSME actors in the era of digital economic transformationResearchers use quantitative systems through questionnaire surveys that are distributed online and offline (*online and offline*) with the help of Google Forms. The results of this study were obtained from a sample of respondents in the form of excel data exported from the Google Form. The research questionnaire has been responded to by as many as 33 respondents. Of the 33 respondents, only 20 were eligible to get valid data to be sampled in the study. Researchers used a 5-point Likert scale to measure respondents' level of judgment from strongly disagree to strongly agree.

With the research data presented below, it can be obtained that with various perceptions provided by researchers for respondents to be able to find out the level of respondents' intention to use this BARITS application. The following data from the survey is divided into several perceptions that respondents consider in using the application.
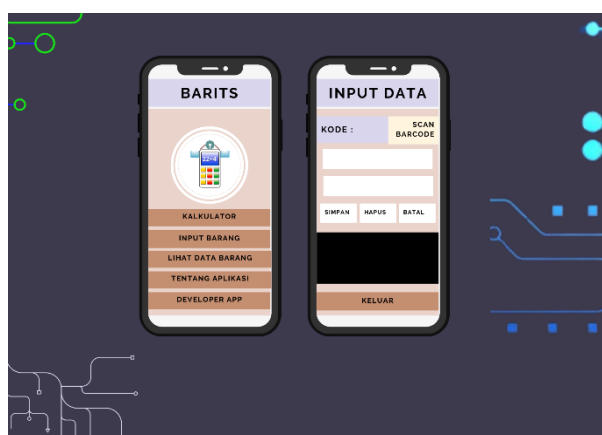
Figure 1. BARITS Application Display

4.1 Research Results

1. Perception of external control

The perception of external control is the respondent's point of view on the assessment of the BARITS application regarding whether or not the new application is acceptable. With the perception of external control, we can find out in advance the level of acceptance of MSME actors towards this BARITS application. Of course, if the acceptance of MSME actors is very good, then this application can continue to be developed until it can really be used and accepted by these MSME actors in the process of supporting the performance of economic effectiveness in terms of recording goods / labeling and calculating goods quickly and accurately.

In questionnaires distributed online and *offline*, the perception of external control contains statements stating that respondents are able to control and operate this BARITS application. Of the number of respondents whose data deserves to be used as a research sample, almost 50% stated that they were able to use this BARITS, while the remaining 50% were divided between neutral answers and some stated that they were less capable. using this app. The following data from external control perception research can be seen from table 2:

Table 2. External Control Perception Data

Statement	Responds	Sum
Respondents were able to control the BARITS application	Very Disagree	-
	Disagree	3
	Neutral	8
	Agree	8
	Very Agree	1
Respondents have sufficient ability to use the BARITS application	Very Disagree	-
	Disagree	4
	Neutral	7
	Agree	7
	Very Agree	7

2. Perception of Usability

The perception of usability is the respondent's response to the level of usefulness of the BARITS application in carrying out its duties to support the performance system of MSME actors in terms of recording goods/labeling and calculating goods quickly and accurately. With the assessment through the perception of usefulness, it can be known that whether the application developed and tested by researchers is useful or not in the modern labelling system for MSME actors. The following data from usability perception research can be seen from table 3:

Table 3 Usability Perception Data

Statement	Responds	Sum
Using the BARITS application increases performance effectiveness for MSME actors	Very Disagree	-
	Disagree	-
	Neutral	2
	Agree	12
	Very Agree	6
Using the BARITS application improves respondents' ability to record and count goods quickly and precisely	Very Disagree	1
	Neutral	2
	Agree	10
	Very Agree	7
Respondents felt that the BARITS application was useful in their work as MSME actors	Strongly disapproving	-
	Disagree	1
	Neutral	4
	Agree	8
	Very Agree	7

3. Perception of Convenience

The perception of convenience is a respondent's assessment of the level of ease in operating the BARITS application system which is in this stage of development. With the perception of convenience presented in the form of questionnaires and distributed to respondents to collect research sample data, researchers can find out whether the application developed is easy or not when operated by ordinary people who have just learned about the audit system. A total of 85%

of respondents stated that this application has an aspect of convenience in the form of being accessible anywhere and in various electronic media. The following data from the research on convenience perception, can be seen from table 4.3.

Table 4. Ease Perception Data

Statement	Responds	Sum
Interacting with the BARITS app is very clear and understandable	Very Disagree	-
	Disagree	1
	Neutral	7
	Agree	7
	Very Agree	5
Interacting with the BARITS app does not require much effort of the respondent's mind.	Strongly disapproving	-
	Disagree	3
	Neutral	7
	Agree	6
	Very Agree	4
Respondents found the BARITS application easily accessible on various electronic media.	Strongly disapproving	-
	Disagree	-
	Neutral	3
	Agree	12
	Very Agree	5

4. Intention of Use

The intention of use is a thought from respondents to use this application in the future because of the match in a perception that has been stated previously. With the data on the intention to use the BARITS application from respondents, it can be seen that this application can be developed for the better so that in the future the application can be widely used in terms of recording and counting goods for MSME actors. This usage intention can be seen from the questionnaire data which almost 90% stated that they would use this application in the future. The following data on the results of use intention research, can be seen from table 4.4

Table 5. Intent of Use Data

Statement	Responds	Sum
Respondents intend to use the BARITS App in the future	Very Disagree	-
	Disagree	1
	Nuetral	7
	Agree	6
	Very Agree	6
Respondents will always try to use the BARITS Application in work effectiveness	Strongly disapproving	-
	Disagree	1
	Neutral	7
	Agree	6
	Very Agree	6
Respondents plan to continue using the BARITS App as often as possible	Strongly disapproving	-
	Disagree	-
	Neutral	8
	Agree	8
	Very Agree	4

4.2 Discussion

Therefore, researchers present the BARITS application to provide alternative records to modern and accurate counting of goods for MSME actors on various android media platforms.

Researchers analyzed the data samples using the SmartPLS3 data processing application. SmartPLS3 data processing application is computer software used to analyze data through a Variance Based SEM approach or commonly referred to as Partial Least Square or better known as PLS. First, the test carried out is Outer Loading testing. Outer Loading is a test that produces a loading factor value to show the magnitude of the correlation between indicators and latent variables. With the data from the Outer Loading analysis, it can be known the level of correlation or relationship between perceptions with one another. Outer Loading has a threshold that meets the range of 0.3-0.7 as a consideration for researchers, while more than 0.7 can be said to be very fulfilling. However, if it is less than 0.3, the question indicator is not accepted. Here is the data from Outer Loading.

Table 6 Outer Loading

	Intention Use	Perceived Usability	Perception of Convenience	Perception of External Control
NP1	0.789			
NP2	0.913			
NP3	0.823			
PKE1				0.942
PKE2				0.875
PKG1		0.869		
PKG2		0.823		
PKG3		0.680		
PKM1			0.890	
PKM2			0.846	
PKM3			0.722	

Based on the table above, the results of the Outer Loading test show that all question indicators can be accepted so that variables can be reflected by existing indicators. The PKG3 indicator with a value of 0.680 is maintained because it helps to increase the Average Extracted Variance (AVE) value. Second, testing Construct Validity and Reliability. Validity is the accuracy or accuracy of an instrument in measurement. While reliability tests are used to determine the consistency of measuring instruments, whether the measuring instruments used are reliable and remain consistent if the measurements are repeated. Construct Validity and Reliability is a pattern of accuracy or accuracy in an instrument in measuring activities on objects and to assess the consistency of the application (Dewi, 2018). The following data is analyzed through this feature.

Table 7. Construct Validity and Reliability

	Cronbach's Alpha	Rho_A	Composite Reliability	Average Variance Extracted (AVE)
Intention Use	0.808	0.870	0.881	0.771
Perception Uses	0.744	0.830	0.836	0.632
Perception Facilities	0.778	0.846	0.862	0.676
Control Perception External	0.797	0.874	0.905	0.827

From the table above, the overall variables show good results. The validity threshold limit of each variable in the AVE column is to indicate a value above 0.5. Therefore, the entire variable is worthy of testing. Third, testing the Coefficient of Determination. R Square or coefficient of determination is a number that shows the amount of contribution of influence given by exogenous latent variables to endogenous latent variables (Trenggonowati &; Kulsum, 2018). Exogenous latent variables are variables whose variability is assumed to be determined by

causes that are outside the model. Meanwhile, endogenous latent variables are variables whose variations can be applied by exogenous and endogenous variables in the system. With this data, it can be known how much the level of influence between variables. The following are the test results using the Coefficient of Determination or R Square.

Table 8. R Square or Coefficient of Determination

	R Square	Adjusted R Square
Intent of Use	0.336	0.212

From the table of test results above, it can be seen that the influence of each variable on the intention to use is 21.2%. This value is quite good because in the context of social research the 25% limit becomes an acceptable or reasonable thing.

Table 9 Validity of the discriminant

	Intent of Use	Perceived Usability	Perception of Convenience	Control Perception External
Intention Use	0.843			
Perception Uses	0.382	0.795		
Perception Facilities	0.599	0.570	0.822	
Control Perception External	0.379	0.501	0.435	0.909

The final analysis for Outer Model or Measurement Testing is Discriminant Validity. Discriminant validity is an analysis used to ensure that each concept of each construct or latent variable is different from other variables. The table below shows the results of discriminant validity from the research model by looking at its cross loading value. The following data is analyzed through the Discriminant Validity feature. From the table of Discriminant Validity test results, the output shows that the cross loading value has the highest value against other variables. This means that one variable from another variable can be distinguished. Therefore, the test variable can be declared valid.

The next test is hypothesis testing through the Bootstrapping feature. Bootstrapping is a process to assess the level of significance or probability of direct impact, indirect impact, and overall impact. Path coefficient is an analysis that describes the strengths of relationships between perceptions. (Ghozali, I. (2016). With the results of the data below, researchers can see the variables tested and accepted by respondents based on the perception of ease of operation of the BARITS application.

If the advantages of this application are known, then researchers or developers can fix the shortcomings contained in the BARITS application so as to minimize the error rate. If the application has a minimal level of deficiency, then the application can be accepted as a whole by the community, especially MSME actors. The following is the analysis data from Bootstrapping with the Path Coefficient feature.

Table 10 Path Coefficients in Bootstrapping

	Original Sample (O)	Sample mean (M)	Standard Deviation (STDEV)	T Statistics (O /STDEV)	P Values
Perception of Use – > Intent of Use	0.035	0.115	0.342	0.102	0.459

Perception of Convenience - > Intent of Use	0.471	0.446	0.301	1.568	0.058
Perception of External Control - > Intention Use	0.156	0.112	0.288	0.543	0.249

From the table of test results above, researchers can analyze that the perception of usability does not affect the intention to use respondents to use BARITS in the future. This can be seen based on the P Values column of 0.459. Then, the perception of convenience turned out to have a positive effect on the intention to use the BARITS application. The result obtained is 0.058. Lastly, the perception of external control has little effect on intent to use. The result shown was 0.249. This path coefficient in bootstrapping uses a threshold of 0.1 for the measurement baseline. This causes perceptions of usability and external control to be unacceptable.

5. Conclusions

First, researchers present the BARITS application which is still in this development stage with the aim of making MSME actors can be helped in carrying out work to manage goods data to calculate the price of goods. This application is still in the development stage, but BARITS (Barcode Item Scan) has very good potential for the future and there are many useful features for MSME players to manage calculating goods data quickly and accurately.

The features contained in this application are in the form of processes for input of goods, view item data, and calculators based on the Artifical Intelligence system. Second, the BARITS application has been intended for supporting application facilities from the beginning with the main targets being grocery stores and ATK (Office Stationery) stores. Third, based on the results of the analysis of the SEM-PLS system, it can be seen that the various variables tested are very influential on the development of this BARITS application in the future. The most dominant variable in influencing respondents' intention to use the BARITS application in the future turned out to be in terms of ease of operating the application.

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