

## **EXPLORATION OF USER ACCEPTANCE LEVEL OF I-BONTANG MOBILE APPLICATION TECHNOLOGY WITH TECHNOLOGY ACCEPTANCE MODEL (TAM) APPROACH AT BONTANG CITY REGIONAL LIBRARY**

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### **ABSTRACT**

In the era of globalization, people are increasingly demanding to always want to get fast, cheap, comfortable, and precise services. As a service that runs library affairs, this phenomenon is a challenge for libraries to always make transformations in a better direction to maintain regional literacy levels. Therefore, this research was conducted to assess the factors of user acceptance of the application of the i-Bontang digital library system to users of Perpustakaan Daerah Kota Bontang. Based on the Technology Acceptance Model (TAM) framework, researchers analyzed the locus of perceived ease of use and perceived usefulness of various latent variables including behavior intention to use, actual system to use, relevance, subjective norms, screen design, mobility, trust in content, library assistance, computer literacy, trust in content, and level of infrastructure. Not only that, measurements were also carried out using Structural Equation Modeling (SEM) through the overall model fit test, validity test, and reliability test with a t-value > 1.96. The results of this study indicate that perceived ease of use is influenced by several variables such as screen design, mobility, librarian assistance, and computer literacy, while perceived usefulness is influenced by variables perceived ease of use, relevance, subjective norms, trust in content, and level of infrastructure. From this research it is proven that the actual system to use variable shows the strongest influence on the behavioral intention to use variable. In the end, the TAM model has helped assess the components in digital library acceptance with the hope that management in implementing systems such as i-Bontang can develop further.

**Keywords:** *Library Users; Digital Library; TAM; SEM; Bontang*

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### **INTRODUCTION**

The rapid development of technology and communication, causing the interaction of individuals or groups of people to grow faster and wider (Zhang et al., 2016). That is, the form of interaction is no longer limited by space and time. This requires the community to be able to adapt to the development of technology and information in all aspects of people's lives. One form of use of technology and information is known as Information and Communication Technology (ICT) or more familiarly known as Information and Communication Technology (ICT) (Uska, 2017). ICT consists of various aspects involving technology, engineering and processing techniques used in the control and processing of information and its use, the relationship of computers with humans and matters related to social, economic and cultural activities (Nurdiyansyah, 2017; Schröter et al., 2017).

In this era of globalization, almost all activities are based on technology and computerization, so people demand to always want to get fast, cheap, convenient and appropriate services (Makridakis, 2017). As an office that runs library affairs, demands like this are a challenge for the Bontang City Regional Library to always improve itself and transform in a more and sustainable direction, so that service users are always comfortable and return to visit the library to enjoy hommy (comfortable), up to date library services (contemporary), and according to the expectations of users who come from various ages. One of the efforts made is to provide online library facilities that can be accessed anywhere, anytime, and by anyone easily, cheaply, quickly, and precisely known as "i-Bontang" (Krismayani, 2018).

i-Bontang has 578 members and has been visited by around 3,645 i-Bontang users. It turns out that this number, when compared to the number of members and the number of user visits who come directly to the Regional Library, is still far behind. Meanwhile, when viewed from the achievements in the RENSTRA of the Library and Archives Office as stated in the

Performance Report of the Library and Archives Office in 2020 and 2021, the achievement of user visits consisting of the number of on-site users and on-line users did not meet the target. In 2020, the achievement of the number of user visits to the target can only reach 99.39% while in 2021 it is only 12.69%. This shows that within a period of 2 (two) years, the achievement of the number of user visits to the Regional Library has not been achieved. This finding is contrary to the condition of Bontang City which is experiencing the Covid-19 pandemic with a lockdown policy, where users who should tend to access online services, including library services but in reality it is not done, so it is necessary to investigate by researchers on this phenomenon (Anzaeni & Latifah, 2017; Easton & Wells, 2020).

According to the manager of the i-Bontang database Perpustakaan (regional library) Bontang city, Muslih, Wednesday, February 23, 2022, 10:23, most users of i-Bontang services are people aged 15-34 years. The community with an age range of 15-34 years is students, students and productive workers, who in their daily lives are very active in interacting with the use of devices, both to complete school and college assignments, as well as for other activities. According to BPS Bontang data (2021) The population in that age range is approximately 60,369 people. This figure indicates that there is considerable potential as a consumer of i-Bontang now and in the future. But on the other hand, the number of i-Bontang members to date is only 440 people, meaning that when compared to the population of Bontang City in that age range is still very low at around 0.73%.

Meanwhile, when compared to Library visitors who come directly offline, it shows a considerable number and when compared to i-Bontang visitors is still very far away. Clearly can be seen in table 1 below.

**Table 1** Comparison Between i-Bontang (online) and offline users in the last 3 (three) years

No	Year	Number of Members		Number of Visitors	
		i Bontang	Offline	i-Bontang	Offline
1	2019	135	12.972	834	58.115
2	2020	84	800	717	28.940
3	2021	221	283	384	6.240
	Total	440	14.055	1.935	105.815

Furthermore, data was obtained from the Balikpapan Regional Library to be able to describe the condition of other online libraries in the East Kalimantan Province region where the number of members and the number of online visitors through i-Balikpapan has increased rapidly during the pandemic since 2020. The number of members registered online at i-Balikpapan is 26.9%, while when compared to users registered as members at i-Bontang is only 3.1%. Thus, in terms of the number of members, i-Bontang is still far behind when compared to i-Balikpapan. It can be clearly illustrated in table 2 below.

**Table 2** Comparison Between i-Balikpapan Users (online) with offline users in the last 3 (three) years

No	Year	Number of Members		Number of Visitors	
		i-Balikpapan	Offline	i-Balikpapan	Offline
1	2019	441	3.435	257	85.809
2	2020	762	1.341	1.926	19.818
3	2021	452	711	414	9.387
	Total	1.555	5.787	2.597	115.014

And broadly speaking, if a comparison of the number of online and offline users between i-Bontang and i-Balikpapan visitors can be seen in table 3 below.

**Table 3** Comparison Between Online Users and Offline Users at Bontang Regional Library with Balikpapan Regional Library

	Bontang Library	Balikpapan Library
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Number of Members	3.1 %	26.9 %
Number of Visits	18.3%	19.6 %

This is one of the focuses of researchers to conduct research related to what factors can increase the interest of the people of Bontang City in the existence of i-Bontang. Broadly speaking, some of the gaps that researchers found include: 1) The number of potential population of i-Bontang users is generation Z approximately 60,369 people. However, the number of i-Bontang members in that age range is only 440 people, or only around 0.73%. 2) When compared to similar applications in other regions in the same province, the coverage of i-Bontang is still low. 3) In order to be able to compare with previous research, namely the application of i – Jogja application In the Jogjakarta Regional Library which only consists of 4 (four) external variables, the novelty in this study is the inclusion of new variables, namely: content content, infrastructure availability, librarian assistance and the ability to use computers. 4) In order to be able to compare with research from other countries, namely the application of TEEAL application in Kenya and Peru.

## **RESEARCH METHOD**

### **Types of Research**

This research is a quantitative research, namely research based on the philosophy of positivism which is used to examine certain populations or samples with random sampling techniques. Data collection is carried out using research instruments with quantitative / statistical data analysis with the aim of testing hypotheses that have been determined.

The method used is a survey method that aims to collect information about symptoms that are happening and seek information about institutions, social, economic, or political from a group or region. This research included direct research with respondents in the field with the locus being the Bontang City Regional Library.

From the description above, the type of research that will be carried out by researchers in this study is quantitative research. This research will later involve i-Bontang users at the Bontang City Regional Library, where this research focuses on individual analysis units, namely by analyzing individuals who are active users of the i-Bontang application service.

### **Population and Sample**

Population used: all users who have become members of i-Bontang at the Bontang City Regional Library. Which uses non-probability sampling techniques. The calculation results using the Slovin formula show that the number of samples to be studied amounted to 210 people. Non-probability sampling methods do not provide equal opportunities or opportunities to every component or member of the population to be taken as a sample (Sugiyono, 2018).

### **Research Instruments**

While Arikunto (2012) states that research instruments are tools chosen and used by researchers in their activities to collect data so that these activities become systematic and easy. Some of the research instruments used in this study are: Questionnaire / Questionnaire, Observations conducted at the Bontang City Regional Library and to several i-Bontang users, aimed at getting an overview of the object to be studied, and an interview directly to one of the librarians managing the i-Bontang application database at the Bontang City Library and Archives Office which is responsible for the i-Bontang application service.

### **Data collection procedure**

the process of gaining access to data; distribute questionnaires to users with the i-Bontang application service in the form of Google Drive via Whatsapp messages to i-Bontang users. Locus: Bontang City Regional Library, Jl. HM. Ardan 1 Bontang. When: December 2022 to January 2023. Data Collection Frequency: Performed 1 time, and data analysis immediately carried out.

**Data analysis**

Activities in data analysis are grouping data based on variables from all respondents, tabulating data based on variables from all respondents and presenting data for each variable studied, then doing calculations to test the hypotheses that have been proposed (Simamora, 2008). In conducting data analysis is divided into several stages, namely: Data processing, Data Presentation Methods, Statistical data analysis using the SEM approach with LISREL software version 8.3.

**Hypothesis Test**

Hypotheses can be formulated based on the number of relationships between independent variables and dependent variables in a structural model.

**RESULT AND DISCUSSION**

**Results of Hypothesis Testing with SEM Model**

1. Test Measurement Model.

The first stage of SEM analysis is measurement model testing which will be carried out through overall model fit test, validity test and reliability test. To test the validity of the measurement model will be used SFL values. Meanwhile, to test the reliability of the measurement model, Construct Reliability (CR) and Variance Extracted (VE) values will be used. The CR and VE values reflect the reliability of the measurement model in question (Alomary & Woollard, 2015).

**Table 4** Test Results of Measurement Model.

Variabel	Indikator	SLF	ei	CR	VE
Relevansi	REL1	0.95	0.1	0.9602	0.8895
	REL2	0.99	0.01		
	REL3	0.88	0.22		
Norma-normal Subjective	SBN1	0.9	0.18	0.8776	0.6466
	SBN2	0.77	0.41		
	SBN3	0.89	0.21		
	SBN4	0.62	0.61		
Content	KTN1	1	0	0.9843	0.9401
	KTN2	0.98	0.04		
	KTN3	0.94	0.11		
	KTN4	0.96	0.09		
Screen Design	SCRD1	0.87	0.24	0.92	0.7932
	SCRD2	0.88	0.22		
	SCRD3	0.92	0.16		
Mobility	MO1	0.92	0.15	0.9403	0.8402
	MO2	0.88	0.23		
	MO3	0.95	0.1		
Librarian Help	BPST1	0.88	0.22	0.9387	0.8364
	BPST2	0.93	0.13		
	BPST3	0.93	0.14		

Ability to Use Computer	KMP1	0.88	0.23	0.8876	0.7248
	KMP2	0.85	0.29		
	KMP3	0.83	0.31		
Level Infrastruktur	IFRS1	0.94	0.11	0.9429	0.8052
	IFRS2	0.88	0.23		
	IFRS3	0.88	0.23		
	IFRS4	0.89	0.21		
Perception of Convenience	PEOU1	0.72	0.47	0.9171	0.6502
	PEOU2	0.84	0.29		
	PEOU3	0.88	0.22		
	PEOU4	0.7	0.5		
	PEOU5	0.81	0.35		
	PEOU6	0.86	0.26		
Perceived Usefulness	PU1	0.73	0.47	0.9088	0.6668
	PU2	0.84	0.3		
	PU3	0.84	0.3		
	PU4	0.88	0.23		
	PU5	0.79	0.37		
Behaviour Intention to Use	BIOU1	0.82	0.33	0.9018	0.6481
	BIOU2	0.87	0.24		
	BIOU3	0.8	0.36		
	BIOU4	0.74	0.46		
	BIOU5	0.79	0.37		
Actual System Use	ACSU1	0.73	0.47	0.8557	0.5976
	ACSU2	0.77	0.41		
	ACSU3	0.77	0.41		
	ACSU4	0.82	0.32		

The results in Table 4 show a good SFL value of  $\geq 0.50$ , meaning that all indicators are valid in reflecting latent variables. Next is the value of CR = Construct Reliability, a good CR value  $\geq 0.7$ , the results show all qualified and the value of VE = Variance Extracted, a good VE value  $\geq 0.50$ .

## 2. Test Goodness of Fit Model

Model overall fit analysis, also known as the overall fit model, is associated with statistical GOF analysis obtained through data processing using LISREL 8.3 tools. The following are the results of GOF Model measurements using GOF size guidelines.

**Table 5** Goodness of Fit

GOFI	Calculated Result	Standard Values for Good	Conclusion
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	Value	Match	
RMSEA	0.058	$\leq 0.08$	Good match
NFI	0.97	$\geq 0.90$	Good match
NNFI	0.99	$\geq 0.90$	Good match
CFI	0.99	$\geq 0.90$	Good match
IFI	0.99	$\geq 0.90$	Good match
Std. RMR	0.079	$\leq 0.08$	Good match
GFI	0.98	$\geq 0.90$	Good match
AGFI	0.97	$\geq 0.90$	Good match

- a. Goodness of Fit Indeks (GFI)  
The GFI value obtained is 0.98, this result shows that the overall fit of the model is good (good fit), in accordance with GFI provisions where the amount of intermediate value is said to be a model with good fit, which is  $> 0.90$ .
- b. Adjusted Goodness of Fit Indeks (AGFI)  
The AGFI value obtained is 0.97, indicating that the overall fit of the model is good (good fit), because the value obtained is within the limit of AGFI conditions, which is  $\geq 0.90$ .
- c. Root Mean Square Error Approximation (RMSEA)  
The RMSEA result obtained is 0.057 indicating a good overall fit of the model because it has met the RMSEA requirements of  $\leq 0.08$ .
- d. Normed Fit Index (NFI)  
The NFI value obtained is 0.97, this result indicates that the overall fit of the model is good (good fit) because the NFI result has met the requirements of a good model match, which is  $> 0.90$ .
- e. Incremental Fit Index (IFI)  
IFI = 0.99, indicating a value that has met the IFI requirements, so it can be said that the overall fit of the model is good (good fit) which is  $\geq 0.90$ .
- f. Comparative Fit Index (CFI)  
CFI = 0.99, means the value obtained, and of course has met the CFI requirements, so it is concluded that the overall fit of the model is good (good fit) which is  $\geq 0.90$ .

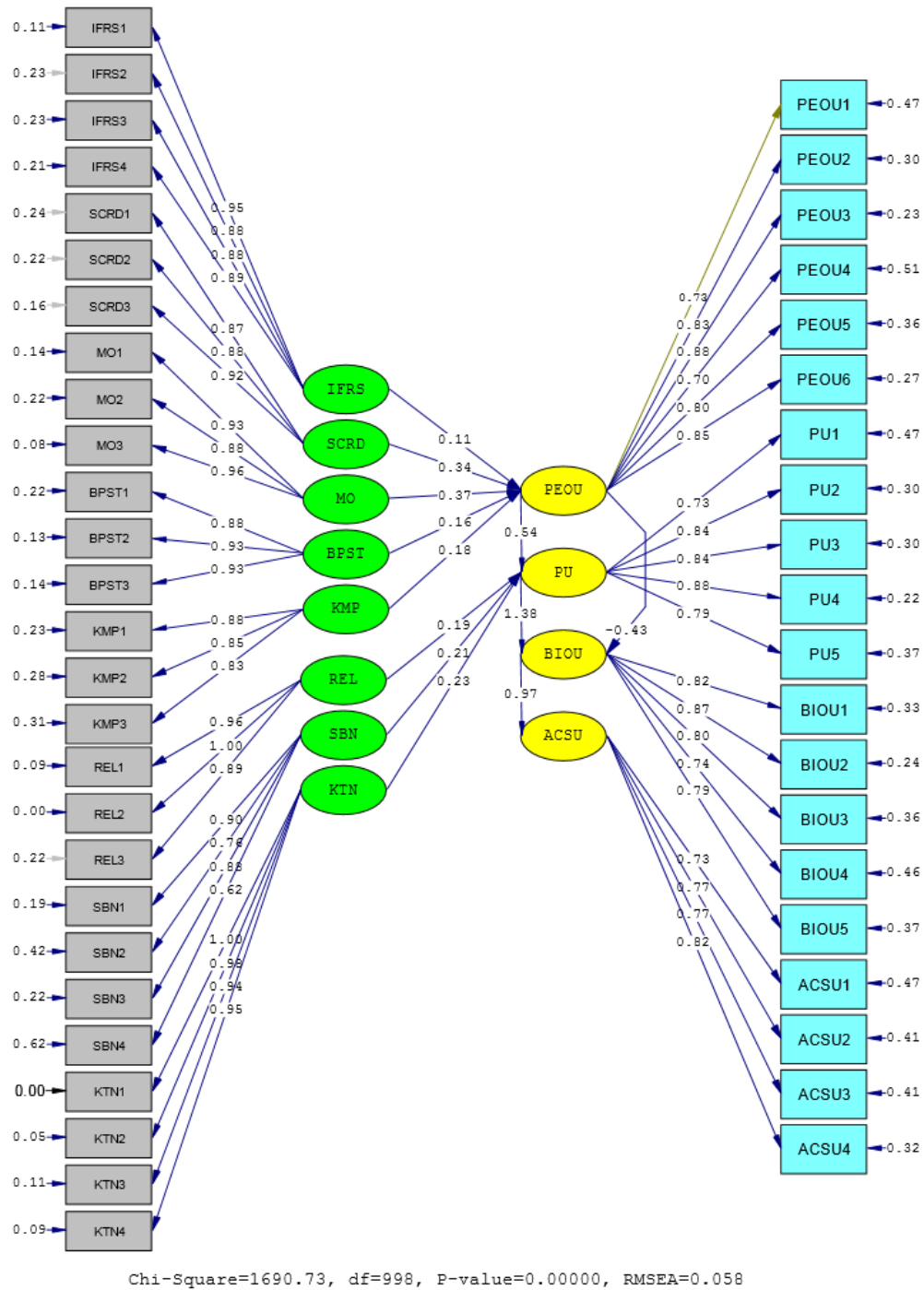


Figure 1 Standardized Loading Factor (SLF)

### 3. Structural Model Analysis (Hypothesis Testing)

The next stage is testing the processing results hypothesis with the SEM Model. In this section, structural model analysis includes the value of the coefficient or parameter and the t-value of the coefficient or parameter. The results of the analysis are represented by the figure below.

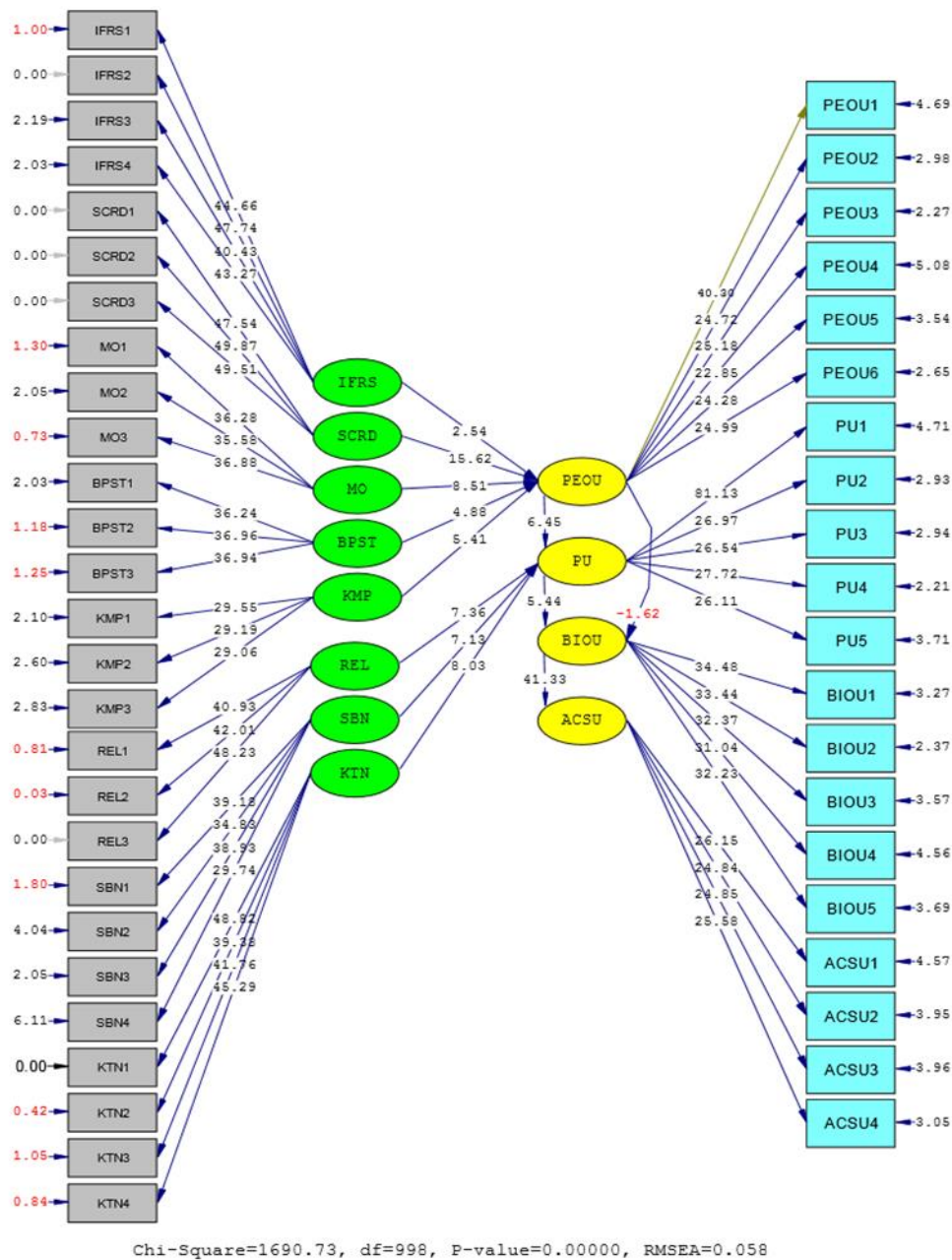


Figure 2 T hitung

The results of the relationship test to the structural model, which explains the relationship between latent variables in research:

**Hypothesis 1: Relevance positively affects Perceived Usefulness in using the i-Bontang application**

In the structural model analysis between variables and latent variables PU, it can be seen that the first hypothesis between Relevance (Relevance) and PU is accepted because the t-value obtained is 7.36 and the estimated coefficient is 0.19. The value is said to be significant because the t-value > 1.96 and the estimated value obtained is qualified and quite high, indicating a positive relationship between the latent variable Relevance (Relevance) and the latent variable PU (Rafique et al., 2020; Siyasih, 2021).



**Hypothesis 2: Subjective Norms positively affect Perceived Usefulness in using the i-Bontang application**

In the structural model analysis between the latent variable Subjective Norms and the latent variable PU, it can be seen that the second hypothesis between Subjective Norms and PU is accepted because the t-value obtained is 7.13 and the estimated coefficient is 0.21. The value is said to be significant because the t-value  $> 1.96$  and the estimated value obtained is qualified and quite high, indicating a positive relationship between the latent variable Subjective Norms and the latent variable PU.

**Hypothesis 3: Trust in Content has a positive effect on Perceived Usefulness in using the i-Bontang application**

In the structural model analysis between the latent variable Trust in Content and the latent variable PU, it can be seen that the third hypothesis between Trust in Content and PU is accepted because the t-value obtained is 8.03 and the estimated coefficient is 0.23. This value is said to be significant because the t-value  $> 1.96$  and the estimated value obtained are qualified and quite high, indicating a positive relationship between the latent variable Trust in Content and the latent variable PU.

**Hypothesis 4: Screen Design positively affects the Perceived Ease of Use in using the i-Bontang application**

In the structural model analysis between the latent variable Screen Design and the latent variable PEOU, it can be seen that the fifth hypothesis between Screen Design and PEOU is accepted because the t-value obtained is 15.62 and the estimated coefficient is 0.34. This value is said to be significant because the t-value  $> 1.96$  and the estimated value obtained is qualified and quite high, indicating a positive relationship between the latent variable Screen Design (Screen Design) and the latent variable PEOU.

**Hypothesis 5: Mobility has a positive effect on the perceived ease of use in using the i-Bontang application**

In the structural model analysis between the Mobility variable and the latent variable PEOU, it can be seen that the sixth hypothesis between Mobility and PEOU is accepted because the t-value obtained is 8.51 and the estimated coefficient is 0.37. This value is said to be significant because the t-value  $> 1.96$  and the estimated value obtained is qualified and quite high, indicating a positive relationship between the latent variable Mobility (Mobility) and the latent variable PEOU.

**Hypothesis 6: Librarian Assistance has a positive effect on Perceived Ease of Use in using the i-Bontang application**

In the structural model analysis between the latent variable Librarian Assistance and the latent variable PEOU, it can be seen that the seventh hypothesis between Librarian Assistance and PEOU is accepted because the t-value obtained is 4.88 and the estimated coefficient is 0.16. This value is said to be significant because the t-value  $> 1.96$  and the estimated value obtained is qualified and quite high, indicating a positive relationship between the latent variable Librarian Assistance (Librarian Assistance) and the latent variable PEOU.

**Hypothesis 7: A Person's Ability to Use a Computer (Computer Literacy) has a positive effect on the Perceived Ease of Use in using the i-Bontang application**

In the structural model analysis between the latent variable Computer Literacy and the latent variable PEOU, it can be seen that the eighth hypothesis between Computer Literacy and PEOU is accepted because the t-value obtained is 5.41 and the estimated coefficient is 0.18. This value is said to be significant because the t-value  $> 1.96$  and the estimated value obtained is qualified and quite high, indicating a positive relationship between the latent variable of a person's ability to use a computer (Computer Literacy) and the latent variable PEOU.

**Hypothesis 8: Level of Infrastructure positively affects Perceived Usefulness in using the i-Bontang application**

In the structural model analysis between the Infrastructure Level variable and the PU latent variable, it can be seen that the fourth hypothesis between the Infrastructure Level and the PU is accepted because the t-value obtained is 2.54 and the estimation coefficient is 0.11. This

value is said to be significant because the t-value  $> 1.96$  and the estimated value obtained is qualified and quite high, indicating a positive relationship between the latent variable of the Infrastructure Level and the latent variable PU.

**Hypothesis 9: Perceived Ease of Use positively affects Perceived Usefulness in using the i-Bontang application**

In the structural model analysis between the latent variable PEOU and the latent variable PU, it can be seen that the ninth hypothesis between PEOU and PU is accepted because the t-value obtained is 6.45 and the estimated coefficient is 0.54. This value is said to be significant because the t-value  $> 1.96$  and the estimated value obtained is qualified and quite high, indicating a positive relationship between the latent variable PEOU and the latent variable PU.

**Hypothesis 10: Perceived Usefulness affects Behavior Intention to Use in using the i-Bontang application**

In the structural model analysis between the latent variable PU and the latent variable Behavior Intention to Use, it can be seen that the tenth hypothesis between PU and BitU is accepted because the t-value obtained is 5.44 and the estimated coefficient is 1.38. This value is said to be significant because the t-value  $> 1.96$  and the estimated value obtained is qualified and quite high, indicating a positive relationship between the latent variable PU and the latent variable Behavior Intention to Use (Interest in Use).

**Hypothesis 11: Perceived Ease of Use has a significant positive effect on Behavior Intention to Use in using the i-Bontang application**

In the structural model analysis between the latent variable PEOU and the latent variable Interest in Use, it can be seen that the eleventh hypothesis between PEOU and Interest in Use is accepted because the t-value obtained is -1.62 and the estimated coefficient is -0.43. This value is said to be significant because the t-value  $< 1.96$  and the estimated value obtained are not qualified, indicating no positive relationship between PEOU and the latent variable Interest in Use.

**Hipotesis 12: Behaviour Intention to Use (Minat Penggunaan) berpengaruh positif signifikan Actual System to Use dalam menggunakan aplikasi i-Bontang**

In the structural model analysis between the latent variable BitU and the latent variable Actual System to Use, it can be seen that the twelfth hypothesis between BitU and Actual System to Use is accepted because the t-value obtained is 41.33 and the estimated coefficient is 0.97. This value is said to be significant because the t-value  $> 1.96$  and the estimated value obtained are qualified and quite high, indicating a positive relationship between the BitU latent variable and the Actual System to Use latent variable.

**Discussion of Research Results**

1. The Effect of Relevance on Perceived Usefulness in using the i-Bontang application.

The results of hypothesis 1 (one) show that there are significant conditions on the influence of the relevance of information needs to Perceived Usability in using the i-Bontang application. Based on the test results obtained with t-value (7.36)  $>$  t-table (1.96), the benefits felt by users in utilizing the i-Bontang application system are influenced by relevance to the needs of their tasks and work. This shows that Relevance has a significant effect on PU. i-Bontang users will find it easy and sufficient to find and get adequate information, varied, looking for collections that are useful and relevant to their needs. So it can be concluded that the existence of the i-Bontang application is very beneficial for users in supporting the information needs they need.

The results of this study were also reinforced from previous research by Faturahman (2020) which states that the Relevance factor in i-Jogja has a significant effect on Perceived Usability. From these results, it can be concluded that the Perceived Usefulness in using the i-Bontang application is based on relevance to the tasks and work

2. The influence of Subjective Norms has a significant effect on Perceived Usefulness in using the i-Bontang application

From the calculation results, the value of t-value (7.13) > t-table (1.96) was obtained. This indicates a significant influence of subjective norms on perceived benefits. This has the understanding that the usefulness or utilization of the i-Bontang application on Subjective Norms variables such as the influence of mass media, the influence of friends, the influence of family, and the influence of librarians and employees can have a significant influence on perceived PU variables. Thus this result is in accordance with the hypothesis at the beginning of this study, then hypothesis 2 is accepted, so it is proven that Subjective Norms (Subjective Norms) affect PU. It can be concluded that subjective norms, such as the influence of mass media, the influence of the social environment, the influence of friends, and the influence of family influence users in utilizing the i-Bontang application (Merfazi et al., 2019).

The results of this study contradict research conducted by Faturahman (2017) which found that the influence of subjective norms has no effect on perceived benefits. This can be possible because i-Jogja users are more independent and not affected by their social environment compared to i-Bontang users who are interdependent, inter-interactive with the surrounding social environment. This study also corroborates research conducted by Vankatesh and Davis (2000) which found that Subjective Norms variables have a significant influence on usability if they are in mandatory conditions (there are orders or musts). According to Vankatesh and Davis (2000), it can be understood that i-Bontang users are influenced by the influence and appeals of their environment, such as orders from schools, parents, friend invitations and others (Venkatesh & Davis, 2000)

3. The Effect of Trust in Content on Perceived Usefulness in using the i-Bontang application.

From the calculation results, obtained with the value of t-value (8.03) > t-table (1.96), which means that the magnitude of the influence of Trust in Content on perceived benefits shows a significant condition. This has the understanding that user trust in i-Bontang content can have a significant influence on PU variables. Thus this result is in accordance with the hypothesis at the beginning of this study, then hypothesis 3 is accepted, thus it is proven that Trust in Content (Trust in Content) affects PU. This indicates that trust in i-Bontang content influences users in utilizing the i-Bontang application.

The results of this study are in line with studies conducted by Jade Miller and Otto Khera (Miller & Khera, 2017) that trust in content affects the benefits felt by digital library users in both countries: Peru and Kenya. Thus, the content in the i-Bontang application is enough to help and provide benefits to i-Bontang users.

1. The influence of Screen Design has a significant effect on the Perceived Ease of Use in using the i-Bontang application. Based on the test results in this study, t-value (15.62) > t-table (1.96) were obtained, which means that the magnitude of the influence of Screen Design on perceived convenience shows significant conditions. The results of this study are in line with Faturahman's (2017) research which found that Screen Design factors affect the ease of use of i-Jogja. In other words, Screen Design is one of the factors that affect the ease of use of the i-Bontang application, including menu choices, the right icons, and the appearance of the net. So these findings are plausible and support the initial hypothesis (Asabere et al., 2021; Mallat et al., 2009).
2. The influence of Mobility has a significant effect on Perceived easy of Use in using the i-Bontang application. From the calculation results, the value of t-value (8.51) > t-table (1.96) was obtained, which means that the hypothesis test in this study has shown that mobility variables have proven to have a significant effect on the perception of ease of using the i-Bontang application. Users see that the flexibility of accessing library material collections through the i-Bontang application is not tied to place and time, so it becomes one of the considerations for users in using the i-Bontang application. This shows that mobility is becoming an important factor in research and theory of mobile technology implementation. Hypothesis 4 exerts a significant influence on the opinion that people will use mobile phone technology, specifically the i-Bontang application, because they believe

that this technology will give them the ability to access information anywhere and anytime, anytime. In line with Faturahman's (2017) research, Mobility has a significant influence on Perceived Easy of Use for i-Jogja users.

3. The Effect of Librarian Assistance on Perceived Ease of Use in using the i-Bontang application. From the calculation results, the value of t-value (4.88) > t-table (1.96) was obtained, which means that the hypothesis test in this study has shown that the Librarian Assistance variable has proven to have a significant effect on the Perceived Ease of Use in using the i-Bontang application. Users see that the help of librarians is very helpful for users if at any time there are difficulties faced in accessing i-Bontang. And this is one of the considerations for users in using the i-Bontang application. This hypothesis is in line with the research of Jade Miller and Otto Khera (2017) that the influence of Librarian Assistance is a factor that influences the Perceived Ease of Use of digital library users in Peru and Kenya. Thus, the existence of a librarian in the midst of users who need help in literacy has a very strategic role (Hartono, 2017).
4. The Effect of One's Ability to Use a Computer (Computer Literacy) on the Perceived Ease of Use in using the i-Bontang application. Based on the calculation results, t-value (5.41) > t-table (1.96) were obtained, which means that the test in this study obtained that the magnitude of the influence of a person's ability to use a computer (Computer Literacy) on the perceived ease of use felt by i-Bontang users indicates significant conditions. This research is also in line with the research of Jade Miller and Otto Kherra (2017) which states that a person's ability to use a computer (Computer Literacy) affects the perceived ease of use in using digital libraries in Peru and Kenya. This can be interpreted that from the perspective of ease, the ability to interact with computers is one of the factors that influence users when using the i-Bontang application. With the ability to operate a steady computer, users will be very easy and do not find it difficult when using the i-Bontang application. So this is one of the strong reasons for users to use the i-Bontang application. Based on the explanation above, it can be concluded that the Computer Literacy factor has a significant influence on the ease of using the i-Bontang application. So these results support the initial hypothesis and are acceptable.
5. The Effect of Level of Infrastructure on Perceived Usefulness in using the i-Bontang application. Based on the test results in this study obtained with t-value (2.45) > t-table (1.96), which means that the magnitude of the influence of the Level of Infrastructure on the perceived PU shows significant conditions. This research is also in line with the research of Jade Miller and Otto Khera (2017) which states that the variable Level of Infrastructure has a significant effect on Perceived Ease of Use. This can be interpreted that from the perspective of usability, the level of infrastructure fulfillment, which includes electricity facilities, devices, internet network strength is a factor that affects users when using the i-Bontang application. With the support of adequate electricity facilities, reliable devices and a good and smooth internet network, users of the i-Bontang application will increasingly feel the ease of using the i-Bontang application. Based on the explanation above, it can be concluded that the Level of Infrastructure factor has a significant influence on the Perceived Ease of Use in using the i-Bontang application. So these results support the initial hypothesis and are acceptable.
6. The Effect of Perceived Ease of Use on Perceived Usefulness in using the i-Bontang application. The magnitude of PEoU's influence on PU felt in using the i-Bontang application shows a significant condition. This is based on the test results obtained with t-value (6.54) > t-table (1.96). Convenience is an important factor in the use of technology. Ease indicates the degree to which users believe that the use of an information system technology is easy and does not require much effort. Information systems will tend to be used by users if they are easy to use. In this case, the conveniences shown by the i-Bontang application system, its clarity and ease of use, and the connection of interaction between fellow users show that the i-Bontang mobile application technology is beneficial for library users (Hidayat et al., 2020).

The results of this study show that library users benefit from the ease of i-Bontang mobile application technology. A previous study by Faturahman (2017) also found that there is a significant relationship between PEOU and PU when using i-Jogja. The study supports these findings. This means that if the i-Bontang application is easy to use, users will feel the benefits more. That is, the level of effort and effort made by users to maximize the utilization of the i-Bontang application will affect their perception of its usefulness and usefulness. Similarly, the results in research by Jade Miller and Otto Khera (2017), where Perceived Ease of Use contributes significantly to the variable Perceived Intent to Use on the use of digital library applications in Peru and Kenya.

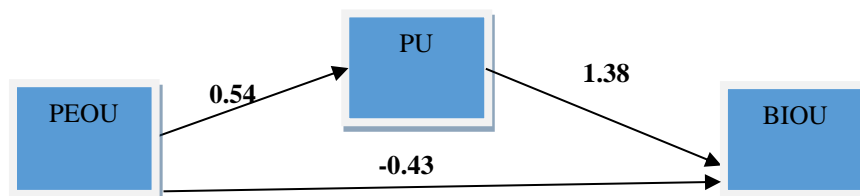
7. The Effect of Perceived Usefulness on Behavior Intention to Use in using the i-Bontang application. The magnitude of the influence of PU on BIU felt in using the i-Bontang application shows a significant condition. This is based on the test results obtained with t-value (5.44) > t-table (1.96).

The results show that the more benefits offered by the i-Bontang application, the more satisfied users who use it, which in turn increases user interest in using it. Usability also shows user confidence in the contribution of the i-Bontang application to its performance, so that if the i-Bontang mobile application technology is able to provide benefits and improve its performance, user interest will increase. Previous research by Faturahman (2017) also supports the results of this study.

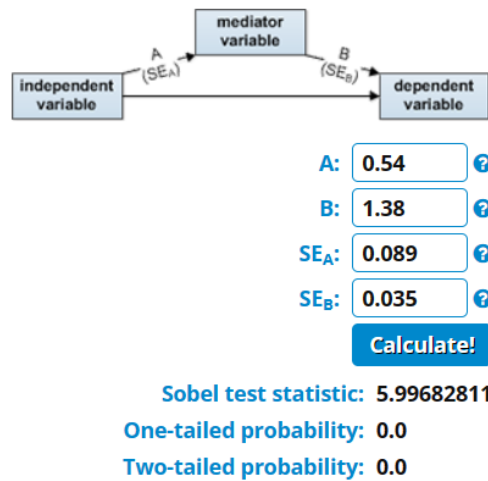
8. The Effect of Perceived Ease of Use on Behavior Intention to Use in using the i-Bontang application.

Based on the test results obtained on H11, a t-value (-1.62) < t-table (1.96) was obtained, meaning that Hypothesis 11 was rejected. This is different from previous research conducted by Faturahman (2017) which showed the influence of Perceived Ease of Use on BIU in using the i-Jogja application. In research on i-Jogja shows the results that an easy-to-use system will increase the intention to use it (Behavior Intention to Use). Ease of use which includes clarity, ease of application, and flexibility greatly influences i-Jogja users in meeting literacy needs. This is different from i-Bontang users, where the convenience factor does not directly affect the interest of i-Bontang users. This shows that i-Bontang users are more independent and flexible, regardless of whether the new application is difficult or easy to find the information needed. This is likely due to the relatively high level of ability or literacy level of computer use of the Bontang community, so that new applications offered by outsiders will be easily accepted and adapted in their daily lives. This is in line with the results of data collection conducted by BPS that the people of Bontang City are recorded as the people who have accessed the internet the most for the last 3 months in 2022 (Koran Kaltim, 2022).

However, when viewed in the SEM model, it turns out that from the results of the calculation, it can be proven that the influence of PEOU has a significant positive effect on Behavior Intention to Use (Interest in Use) in using the i-Bontang application through Perceived Usefulness. It can be seen in the picture following its indirect influence.



**Figure 1** Indirect Influence Between Variables Using SEM  
 (PEOU: Perceived Ease Of Use; PU: Perceived Usefulness; BIOU: Behaviour Intention to Use;  $0.54 * 1.38 = 0.75$ )



**Figure 2** Sobel Test Results

From the results of the Sobel Test, it shows that the indirect influence of PEOU on BI<sub>U</sub> through PU is significant and positive. The large coefficient of 0.75 with a calculated t value of 5.9968 is greater than the t-table of 1.96. This means that PU is able to mediate the influence of PEOU on BI<sub>U</sub>.

9. The Effect of Behavior Intention to Use on Actual System Usage in using the i-Bontang application.

The magnitude of BI<sub>U</sub>'s influence on Actual System Use or abbreviated as ASU which is felt shows significant results. It can be seen from the results of the hypothesis test with the acquisition of t-value (41.33) > t-table (1.96). This research shows that the more benefits offered by the i-Bontang application, the more satisfied users who use it, which in turn increases user interest in using it. ASU also shows user confidence in the contribution of the i-Bontang application to its performance, so that user interest will increase if the i-Bontang mobile application technology can generate benefits and improve its performance. These results also support previous research by Faturahman (2017). Research facts prove that if someone feels an information system is useful for someone, then people will have a positive attitude towards the use of the information system. This means that with the intention to use a technology, in this case, the i-Bontang application will affect the use of the technology directly. This is based on its users who assume that the application is useful for themselves.

From the discussion above, then from the 12 hypotheses proposed, there are 11 hypotheses that are accepted and 1 hypothesis that is rejected. Where the rejected hypothesis is the influence of PEOU on BI<sub>U</sub> in using the i-Bontang application. When viewed from the SFL value, the highest value is obtained in the Behavior Intention to Use variable. which is 0.97. Thus, the variable that most strongly influences the use of the i-Bontang application is the Behavior Intention to Use variable).

If the results of the analysis of the three studies are juxtaposed between variables, it can be illustrated in Table 3 below:

**Table 6** Hasil Analisis Hubungan Antar Variabel Pada Beberapa Penelitian

No	Variabel	i-Bontang	i-Jogja (Faturahman, 2017)	TEEAL (Khera dan Miller, 2017)
1	Relevance terhadap PU	Influential	Influential	-
2	Subjective Norm terhadap PU	Influential	No Effect	-

3	Trust in Content terhadap PEOU	Influential	-	Influential
4	Screen Design terhadap PEOU	Influential	Influential	-
5	Mobility terhadap PU	Influential	Influential	-
6	Librarian Assistance terhadap PeoU	Influential	-	Influential
7	Computer Literacy terhadap PeoU	Influential	-	Influential
8	Level of Infrastructure terhadap PU	Influential	-	Influential
9	PEoU terhadap PU	Influential	Influential	Influential
10	PU terhadap BItU	Influential	Influential	Influential
11	PEoU terhadap BItU	No Effect	Influential	Influential
12	BItU terhadap ASU	Very Influential	Influential	Influential

Information:

- PEOU = Perceived Ease of Use = Perception of Convenience
- PU = Perceived of Usage = Perceived Usability
- BItU = Behaviour Intention to Use = Usage Interests

### **Managerial Implications**

From the above hypotheses, there are 11 hypotheses that can be accepted and only 1 hypothesis that is rejected, namely the PEOU variable against BItU. Therefore, from the results of this study, several managerial implications are recommended as follows: (Larasati et al., 2021)

- (1) Implications for program planning and development of i-Bontang services in the future according to the hypothetical results obtained in this study, among others:
  - a. Creating content that is more diverse, more relevant and in demand by i-Bontang users in all segments.
  - b. Often carry out activities that invite i-Bontang users to interact with each other in the i-Bontang application, for example holding seminars, online literacy workshops.
  - c. Always upgrade the appearance of the i-Bontang menu so that it is always attractive and not monotonous for service users.
  - d. Every year increase the number of collections of i-Bontang services
  - e. Working with the Education Office to encourage school-age children to interact with computers from an early age.
  - f. Collaborating with relevant agencies and institutions in charge of women's empowerment to improve computer skills and interact with i-Bontang in order to make good use of it, in order to improve the quality of their knowledge in order to improve the quality of their human resources
- (2) Implications for the i-Bontang socialization model by targeting the dominant population using the application according to the results of the respondent data obtained. And as a first step is to target school children as generation Z who are the most users of i-Bontang.
- (3) Implications for improving the quality of human resources of librarians as the spearhead of i-Bontang services in the future.
- (4) Implications for the availability of a reliable and secure network for the i-Bontang user community, by further improving the pattern of cooperation with related agencies that handle telecommunications networks in order to ensure the availability of a wide and reliable network for the i-Bontang user community.
- (5) Implications for the policy through the Mayor's Circular to require school-age children to use i-Bontang services in literacy programs in schools.

## CONCLUSION

The variables that influence Perceived Usefulness are Relevance, Subjective Norms, Trust in Content, and Perceived Ease of Use. Variables that affect Perceived Easy of Use are Screen Design, Mobility, Librarian Assistance, Computer Literacy and Level of Infrastructure. The variable that affects Behavior Intention to Use (Interest in use) is Perceived Usefulness (Perceived Usefulness = PU). The variable Perceived Ease of Use does not have a direct effect on Behavior Intention to Use = BI<sub>U</sub>. But, affects BI<sub>U</sub> through PU variables, in other words PU is able to mediate the influence of PE<sub>U</sub> on BI<sub>U</sub>. The variable that most strongly influences the Actual System to Use is Behavior Intention to Use).

## REFERENCES

- Alomary, A., & Woollard, J. (2015). *How is Technology Accepted By Users? A Review of Technology Acceptance Models and Theories*. Proceedings of The IRES 17th International Conference. [Google Scholar](#)
- Anzaeni, M. W., & Latifah, L. (2017). Analisis Penerimaan Penggunaan Otomasi Perpustakaan Unnes Berdasarkan Pendekatan Technology Acceptance Model (TAM). *Economic Education Analysis Journal*, 6(2), 530–548. <https://journal.unnes.ac.id/sju/index.php/eeaj/article/view/16441> [Google Scholar](#)
- Arikunto, S. (2012). *Prosedur Penelitian: Suatu Pendekatan Praktik*. . . Jakarta: Rineka Cipta. [Google Scholar](#)
- Asabere, N. Y., Acakpovi, A., Agyiri, J., Awuku, M. C., Sakyi, M. A., & Teyewayo, D. A. (2021). Measuring the Constructs That Influence Student and Lecturer Acceptance of an E-Library in Accra Technical University, Ghana. *International Journal of Online Pedagogy and Course Design*, 11(1), 53–72. <https://doi.org/10.4018/IJOPCD.2021010104> [Google Scholar](#)
- BPS. (2021). *Sensus Penduduk 2020 Mencataan Jumlah Penduduk Bontang sebanyak 178.917 Jiwa*. BPS-Statistics of Bontang Municipality. [Google Scholar](#)
- Easton, A., & Wells, K. (2020). Mobile Libraries & Information Needs in Refugee Camps. *Pathfinder: A Canadian Journal for Information Science Students and Early Career Professionals*, 1(1), 17–25. <https://doi.org/10.29173/pathfinder16> [Google Scholar](#)
- Fathurrahman, M. (2020). Tingkat Penerimaan Pengguna Terhadap Aplikasi Perpustakaan Digital IJOGJA. *Ilmu Informasi Perpustakaan Dan Kearsipan*, 9(1), 23. <https://doi.org/10.24036/111254-0934> [Google Scholar](#)
- Hartono, H. (2017). Strategi Pengembangan Perpustakaan digital Dalam Membangun Aksesibilitas Informasi: Sebuah Kajian teoritis Pada perpustakaan Perguruan Tinggi islam di Indonesia. *UNILIB : Jurnal Perpustakaan*, 8(1). <https://doi.org/10.20885/unilib.vol8.iss1.art7> [Google Scholar](#)
- Hidayat, E. W., Mubarak, H., & Rahman, H. A. (2020). Pengukuran Tingkat Penerimaan Teknologi pada Layanan Informasi di Perpustakaan Universitas ‘ABC’ Menggunakan Technology Acceptance Model (TAM). *Jurnal Rekayasa Sistem & Industri (JRSI)*, 7(1), 18. <https://doi.org/10.25124/jrsi.v7i1.340> [Google Scholar](#)
- Koran Kaltim. (2022, January 1). *Masyarakat Kota Bontang, Jadi Pengakses Internet Paling Tinggi di Kaltim Selama 2022*. Koran Kaltim.Com. <https://korankaltim.com/read/teknologi/58855/masyarakat-kota-bontang-jadi-pengakses-internet-paling-tinggi-di-kaltim-selama-2022> [Google Scholar](#)
- Krismayani, I. (2018). Mewujudkan Fungsi Perpustakaan di Daerah. *Anuva*, 2(2), 233. <https://doi.org/10.14710/anuva.2.2.233-242> [Google Scholar](#)
- Larasati, I., Yusril, A. N., & Zukri, P. Al. (2021). Systematic Literature Review Analisis Metode Agile Dalam Pengembangan Aplikasi Mobile. *Sistemasi*, 10(2), 369. <https://doi.org/10.32520/stmsi.v10i2.1237> [Google Scholar](#)



- Makridakis, S. (2017). The forthcoming Artificial Intelligence (AI) revolution: Its impact on society and firms. *Futures*, 90, 46–60. <https://doi.org/10.1016/j.futures.2017.03.006> [Google Scholar](#)
- Mallat, N., Rossi, M., Tuunainen, V. K., & Öörni, A. (2009). The impact of use context on mobile services acceptance: The case of mobile ticketing. *Information & Management*, 46(3), 190–195. <https://doi.org/10.1016/j.im.2008.11.008> [Google Scholar](#)
- Merfazi, M., Sugiarto, S., & Anggraini, R. (2019). Persepsi Masyarakat terhadap kebijakan Trans Koetaradja Pada Koridor Pusat Kota – Mata ie Dan Pusat Kota – Ajun – Lhoknga menggunakan Indikator Variabel Laten. *Jurnal Arsip Rekayasa Sipil Dan Perencanaan*, 2(1), 58–67. <https://doi.org/10.24815/jarsp.v2i1.13204> [Google Scholar](#)
- Miller, J., & Khera, O. (2017). Digital Library Adoption and the Technology Acceptance Model: A Cross-Country Analysis. *The Electronic Journal of Information Systems in Developing Countries*, 40(1), 1–19. <https://doi.org/10.1002/j.1681-4835.2010.tb00288.x> [Google Scholar](#)
- Nurdiyansyah, W. A. (2017). *Manajemen Sekolah Berbasis ICT*. [Google Scholar](#)
- Rafique, H., Almagrabi, A. O., Shamim, A., Anwar, F., & Bashir, A. K. (2020). Investigating the Acceptance of Mobile Library Applications with an Extended Technology Acceptance Model (TAM). *Computers & Education*, 145, 103732. <https://doi.org/10.1016/j.compedu.2019.103732> [Google Scholar](#)
- Schröter, M., Stumpf, K. H., Loos, J., van Oudenhoven, A. P. E., Böhnke-Henrichs, A., & Abson, D. J. (2017). Refocusing ecosystem services towards sustainability. *Ecosystem Services*, 25, 35–43. <https://doi.org/10.1016/j.ecoser.2017.03.019> [Google Scholar](#)
- Simamora, B. (2008). *Panduan Riset Perilaku Konsumen*. Gramedia Pustaka Utama. [Google Scholar](#)
- Siyasih, F. (2021). Rancang Bangun Sistem Perpustakaan Digital (Studi Kasus: Smk 1 Bandar Lampung). *Jurnal Informatika Dan Rekayasa Perangkat Lunak*, 2(3), 368–374. <https://doi.org/10.33365/jatika.v2i3.1238> [Google Scholar](#)
- Sugiyono. (2018). *Metode Penelitian Kuantitatif, Kualitatif, dan R&D* (6th ed.). Alfabeta. [Google Scholar](#)
- Uska, M. Z. (2017). Analisis Penerimaan Digital Library Menggunakan Technology Acceptance Model (TAM) di Universitas Hamzanwadi. *EDUMATIC: Jurnal Pendidikan Informatika*, 1(1), 1. <https://doi.org/10.29408/edumatic.v1i1.723> [Google Scholar](#)
- Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, 46(2), 186–204. <https://doi.org/10.1287/mnsc.46.2.186.11926> [Google Scholar](#)
- Zhang, Z.-K., Liu, C., Zhan, X.-X., Lu, X., Zhang, C.-X., & Zhang, Y.-C. (2016). Dynamics of information diffusion and its applications on complex networks. *Physics Reports*, 651, 1–34. <https://doi.org/10.1016/j.physrep.2016.07.002> [Google Scholar](#)