

University of Nebraska - Lincoln

DigitalCommons@University of Nebraska - Lincoln

---

Library Philosophy and Practice (e-journal)

Libraries at University of Nebraska-Lincoln

---

6-1-2021

## Analysis of the Technology Acceptance Model on The Union Catalog Server based the Senayan Library Management System within the Library of the Ministry of Marine Affairs and Fisheries of Indonesia

Desi Novita Sari

*Universitas Islam Negeri Syarif Hidayatullah Jakarta*, ndesi799@gmail.com

Mukmin Suprayogi

*Universitas Islam Negeri Syarif Hidayatullah Jakarta*, msyogi@uinjkt.ac.id

Muhammad Azwar

*Universitas Islam Negeri Syarif Hidayatullah Jakarta*, muh.azwar@uinjkt.ac.id

Follow this and additional works at: <https://digitalcommons.unl.edu/libphilprac>



Part of the [Cataloging and Metadata Commons](#)

---

Sari, Desi Novita; Suprayogi, Mukmin; and Azwar, Muhammad, "Analysis of the Technology Acceptance Model on The Union Catalog Server based the Senayan Library Management System within the Library of the Ministry of Marine Affairs and Fisheries of Indonesia" (2021). *Library Philosophy and Practice (e-journal)*. 5246.

<https://digitalcommons.unl.edu/libphilprac/5246>

# **Analysis of the Technology Acceptance Model on The Union Catalog Server based the Senayan Library Management System within the Library of the Ministry of Marine Affairs and Fisheries of Indonesia**

## **Abstract**

*This study aims to describe and analyze the relationship between Perceptions of User Ease (PEOU), Perceived Usefulness (PU), Attitudes Toward Using (ATU), and Acceptance (ACC) of the Union Catalog Server-based Senayan Library Management System (SLiMS) by librarians and library managers within the scope of the Ministry of Marine Affairs and Fisheries in Indonesia. This research is a quantitative descriptive. Sampling using total sampling. The research analysis used SmartPLS 3.0 to test 4 primary constructs (internal variable) Technology Acceptance Model (TAM) on the answers of 27 respondents spread across 27 libraries in Indonesia using the SLiMS Union Catalog Server. The results show that (1) PEOU has a significant effect on PU. It can be seen that the t-statistic value is above 1.96 (4.716) t-table sign at level 0, 5% (0.649). (2) PEOU does not affect ATU. It can be seen that the t-statistic value is below 1.96 (0.088), the insign t-table is below the 0.5% level (0.030). (3) PU has a significant effect on ATU. It can be seen that the t-statistic value is above 1.96 (2.649) t-table sign at the level of 0.5% (0.803). (4) PU has a significant effect on ACC of the system. It is seen that the t-statistic value is above 1.96 (2.446) t-table sign at the level of 0.5% (0.574). (5) ATU does not affect ACC. It can be seen that the t-statistic value is below 1.96 (1.241), and the insign t-table is below the 0.5% (0.307) level. It is concluded that of the five hypotheses proposed, 2 of them do not have a significant relationship, and 3 of them have a significant relationship. The master catalog system's importance is measured and assessed regularly using TAM so that system users can easily accept and use it without any constraints to providing the best results for library reference services.*

**Keywords:** *Union Catalog Server (UCS), Senayan Library Management System (SLiMS), Ministry of Marine Affairs and Fisheries' Library Integration Catalog, Technology Acceptance Model (TAM).*

## **Introduction**

Information technology that is increasingly developing has brought many positive impacts in various aspects of life, including libraries. Information technology helps accelerate users in obtaining information needs and makes library services more systemized (Supriyanto & Muhsin, 2012).

Law Number 43 of 2007 concerning Libraries, article 42 paragraph 3 states that the cooperation as referred to in paragraph (1) and service improvement as referred to in paragraph (2) shall be carried out by utilizing a library network system based on information and communication technology (Undang-Undang Nomor 43 Tahun 2007 Tentang Perpustakaan, 2007).

It is also under Regulation Number 8/PERMEN-KP/2014 concerning Guidelines for Organizing Special Libraries in the Ministry of Marine Affairs and Fisheries. The library

functions as a documentation center for all local content produced and then disseminates that information (Menteri Kelautan dan Perikanan, 2014).

To support the "One Data" program, libraries develop collaborative library networks by building a master catalog that can unify the entire library catalog by utilizing a library network system based on information and communication technology. The master catalog allows users to browse the leading catalog portal, and they can quickly find the collection they want along with the library location of the collection (Azwar, 2014, p. 187). It is known as the integration catalog.

The UCS portal can be accessed through the URL <http://perpustakaan.kkp.go.id/union/>, which functions as a master catalog, which is a combination of various library catalogs within the scope of the Ministry of Marine Affairs and Fisheries (Damayanti, 2018, pp. 7–16). The same automation system application needs to be done because it can only operate normally and optimally when using the same automation system application between libraries.

Senayan Library Management System, or SLiMS, has the vision to unite all libraries in Indonesia. This community develops a web-based master catalog application called the Union Catalog Server Portal, commonly called UCS (Azwar, 2013).

The UCS portal has been built since 2016. 41 out of 54 libraries spread across Indonesia, integrated into the Ministry of Marine Affairs and Fisheries' central catalog. However, in the official library website's distribution map, only 31 libraries are integrated and uploaded the catalog to UCS. It is due to several problems, such as some newly transferred staff who do not know and do not understand the integration catalog.

The UCS members consist of several sections: the Middle School of Fisheries Business library, secretarial education library, high school, large hall, education center, research center, polytechnic, directorate, and others (Fatkhan, 2018).

For this reason, the library needs to assess whether the information system used in the library is acceptable or not. In Teo (2011, p. 1), it is stated that technology acceptance is defined as *"... as a user's willingness to employ technology for the tasks it is designed to support."* Acceptance of technology can be defined as the user's willingness to use technology to support the task that has been designed. The technology user factor is essential to be considered in the application of the system because the level of the ability of technology users to use the system has a significant influence in determining the success or failure of the development and application of the system (Kustono, 2011, pp. 38–50).

It becomes crucial for the Ministry of Marine Affairs and Fisheries to collaborate library networks to determine how contributors or users of the system have expectations of the "One Data" program. Therefore, it is necessary to analyze the Union Catalog Server SLiMS information system's acceptance by contributors to determine the factors that affect the system's acceptance and get recommendations or input for the system's future development.

Researchers develop several models to measure user acceptance of information systems, including Theory of Reason Action (TRA), Theory of Planned Behavior (TPB), Unified Theory of Acceptance and Use of Technology (UTAUT), Technology Acceptance Model (TAM), and other models (Lai, 2017, p. 1).

The author chose to use the Technology Acceptance Model because several existing studies show that researchers have recognized it globally. Several TAM analyses in the use of technology in various libraries have been carried out to see aspects related to the application of library information systems, library automation systems, and digital libraries (Granić & Marangunić, 2019; Wibowo, 2019).

Until now, the Ministry of Marine Affairs and Fisheries' integration catalog has never analyzed the acceptance of information systems using TAM, so we do not know what factors can affect user acceptance of the SLiMS-based Union Catalog Server. TAM variables explain how behavioral intentions and technology use directly or indirectly, namely, perceived benefits, perceived ease of use, and attitudes towards technology (Rafique et al., 2020).

Research related to UCS has been researched by A. Khaidir Akbar and Muhammad Azwar (2018) with the title The Implementation of Portal Union Catalog Server Sulsellib Based on Senayan Library Management Systems (SLiMS). This research shows that the UCS Sulsellib portal's implementation is beneficial for library users in accessing collection information in various libraries in South Sulawesi Province because it is only through one web <http://ucs.sulsellib.net>. Research suggestions so that the SLiMS Sulsellib community can further improve performance both in system and community management.

Research related to TAM has been researched by Ade Abdul Hak (2015) with the title An Analysis of the Acceptance's Staffs of Madrasa Library on "Senayan" based on Library Automation System Using Technology Acceptance Model (TAM). This study investigates the implementation of "Senayan", an open-source library automation system in madrasah libraries. The T-test analysis results show a positive and significant effect for each construct, except for Perceived Usefulness (PU) on Attitudes Towards Behaviour (ATU) with a practical value of 11.9%. Meanwhile, the largest occurred in the Perceived Ease of Use (PEOU) on Attitudes Towards Behaviour (ATU) with an influence value of 64.3%. Thus, simplicity becomes more critical than usefulness in providing training for madrasah library staff. Besides, the provision of computers after training is also a consideration so that staff can immediately implement their knowledge and skills in the library.

Based on this background, policymakers need to assess the information system used. The information system used must be appropriate to be accepted by contributors who become librarians and library managers. Therefore, this paper's problem discusses "Analysis of Technology Acceptance Model (TAM) on the Acceptance of the Union Catalog Server SLiMS Information System in the Scope Library of the Ministry of Marine Affairs and Fisheries."

The formulation of the problem in this study are:

1. What is the description of the Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Attitude Toward Using (ATU), system Acceptance (ACC) of the library contributors within the Ministry of Marine Affairs and Fisheries to use the UCS SLiMS?
2. Is there any influence between Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Attitude Toward Using (ATU), system Acceptance (ACC) of library contributors within the Ministry of Marine Affairs and Fisheries in using the UCS SLiMS?

## **Literature Review**

### **1. Union Katalog Server SLiMS**

A catalog is a list of books containing particular objects or information to be conveyed, arranged in a sequence, orderly, and alphabetically (Badan Pengembangan dan Pembinaan Bahasa, 2016). Catalog also means a list of items that someone will buy from a store or all the books, paintings, and so on that he can find in a list (Woodford, 2012, p. 102).

Some of the catalog definitions, according to library science, are as follows:

- a. The catalog means a list of books, magazines, or other library materials collected in a place, especially libraries or information centers, arranged systematically (Hs, 2009, p. 141).
- b. A catalog is a list and index of a collection of books or other material that allows users to easily and quickly find the material they are looking for (Hunter & Bakewell, 1991).
- c. A library catalog is a record or list of library materials owned by a library or several libraries arranged according to specific rules and systems.

Online Dictionary Library Information Science (ODLIS) defines a catalog as a list of books, periodicals, maps, and other library materials arranged comprehensively and systematically in specific collections (alphabetically by author, title, and subject). In most modern libraries, card catalogs have been turned into machine-readable bibliographic records online (ODLIS ABC-CLIO, 2020). The purpose of the library catalog, as stated by Charles C. Cutter in *Rules for a Dictionary Catalog*, then developed by Bohdan S. Wynar in *Introduction to Cataloging and Classification*, is to offer users various approaches or points of access to the information contained in collection with the aim of:

- a. Enable someone to find any work, whether published in printed form or non-print format, when known from the author, title, and subject.
- b. Shows collections by specific authors, specific and related subjects, and specific types of literature.
- c. Assist in selecting works related to their bibliographic editions and their character (literature or topic) (Taylor & Miller, 2006; Wynar & Taylor, 1992).

From the above definition, a catalog is a list of library collections or several libraries arranged systematically so that library users can easily find out what collections the library has and where the collections can be found.

The main catalog or union catalog is a collection list from several libraries or information centers arranged with a particular system as a means of cooperation because there are similarities in fields, regions, interests, and others. Some of the benefits of providing this master catalog include: 1) as a medium for comprehensive information retrieval, 2) media for cooperation between libraries, 3) optimizing the use of information sources, 4) saving, time, cost, and energy, 5) disseminating information sources owned by a library (Hs, 2009, p. 146).

The union catalog is closely related to cooperative cataloging. As the term implies, cooperative cataloging is a collaboration between libraries in catalog processing, and the result is the master catalog. So, in a nutshell, it can be said that the main catalog is the result of cooperation in cataloging by several libraries or an amalgamation of several library catalogs.

The UCS portal can be used by several methods (Azwar, 2014, pp. 190–191), such as:

- a. It combines existing library catalogs in one country collected into one national master catalog portal—an example of its application, <https://kin.perpusnas.go.id/>

- b. Combining existing library catalogs in various cities in one province in Indonesia. An example of its application is the central catalog of South Sulawesi province called UCS Sulselib, which consists of 57 libraries spread across ten cities, <http://ucs.sulselib.net/>
- c. Combining the catalogs of several libraries with similarities or similarities to specific subjects and falls within particular library criteria is scattered in various cities within a country. An example of its application is the UCS portal of the Ministry of Marine Affairs and Fisheries (KKP), Indonesia, which consists of 42 libraries, <http://perpustakaan.kkp.go.id/union/>
- d. Combining the catalog of several libraries in the scope of one integrated school or one university. For example, in one university, there is a central library and libraries in several faculties. These libraries can be put together in a master catalog. An example of its application is the central catalog of the Wali Songo State Islamic University Semarang, <http://library.walisongo.ac.id/ucs2/>

SLiMS-based Union Catalog Server (UCS) is a feature that appears in the Senayan 3-Stable 14 application. Starting from SLiMS3-Stable15 (Matoa), UCS began to be made separately and became version 2 (UCSv2). This feature's basic idea is to unify bibliographic collections from various library catalogs using SLiMS to search for collections through only one door (view). The findings will be presented with the location where the collection is located. A search can find bibliographic information on collections at various library locations. If the detailed record is clicked or can click the title, complete information will appear from the collection in question (Munir, 2018, p. 25; Wicaksono et al., 2017, p. 6).

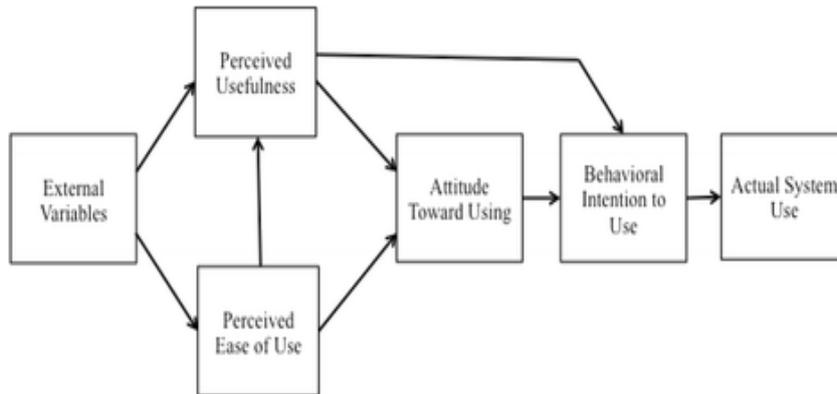
## 2. Technology Acceptance Model (TAM)

Davis first developed the Technology Acceptance Model (TAM) in 1986 by offering a theory as a foundation to study and understand users' behavior to receive and use information systems (Davis et al., 1989).

TAM is a technology acceptance theory developed by Davis in 1986 and is a good model (Gefen & Larsen, 2017; Hartono, 2007; Wu & Chen, 2017). The TAM model is adopted from the Theory of Reasoned Action (TRA) model, a theory of reasoned action developed by Fishben and Ajzen in 1975 with the premise that a person's reactions and perceptions will determine the person's attitude and behavior. This theory models a person's behavior as a function of behavioral goals. In more detail, TAM explains the acceptance of information technology with specific dimensions that can affect the acceptability of information system technology (Jokar et al., 2017; Xu et al., 2017).

According to Hak (2015), "This concept is one of the theories about using information technology systems that are considered very influential and is commonly used to describe the individual acceptance of information technology systems as technology acceptance model." However, TAM has a drawback, namely that it does not include the constructs of social influence and behavior control. TAM is an advantageous model, but it must be integrated into a broader model (Hartono, 2007; Legris et al., 2003).

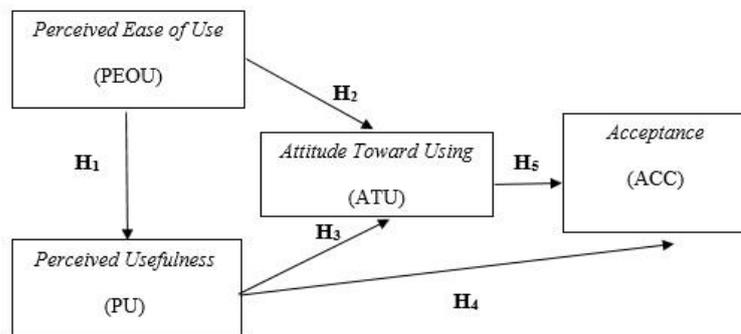
**Chart 1: Technology Acceptance Model (TAM)**



In this study, the constructs studied were limited to four primary constructs, namely Perceived Ease of Use (PEOU), Perceived Usefulness (PU), Attitude Toward Using (ATU), and Acceptance of UCS (ACC). Meanwhile, External Variables such as User Characteristics and System Characteristics were not studied because their contribution to TAM was considered insignificant, so they could be ignored even though they indirectly affected technology acceptance. Simultaneously, the behavioral intention and actual usage variables were replaced by the IT acceptance variable because the behavioral intention and actual usage variables were indicators to measure IT acceptance (Al-Gahtani, 2001).

For more details, the model used in this study is in Chart 2 below:

**Chart 2: Thinking Framework Model**



This study's hypothesis is based on Gahtani's research hypothesis, namely, the hypothesis to analyze the relationship between constructs and their influence on accepting the UCS SLiMS information system at the Ministry of Marine Affairs and Fisheries. The hypotheses are:

- H1: The effect of PEOU on PU
- H2: Effect of PEOU on ATU
- H3: The effect of PU on ATU
- H4: Effect of PU on ACC
- H5: Effect of ATU on ACC

## Research Methodology

This research is a quantitative descriptive. Sampling using total sampling. The research analysis was carried out using SmartPLS 3.0 to test 4 primary constructs (internal variable) Technology Acceptance Model (TAM) to 27 respondents' answers. The respondents are librarians and library managers within the Ministry of Marine Affairs and Fisheries who act as active users of the SLiMS Union Catalog Server information system.

The data obtained is primary data sourced from respondents' answers to the questionnaire. The questionnaire was distributed indirectly through Whatsapp social media with Google Form's help due to the comprehensive geographical coverage spread across parts of Indonesia.

An empirical model is used before testing the hypothesis from existing data. The coefficients in this empirical model show the causal relationship between the variables. This causal relationship represents the hypotheses that have been made and will be tested. This SLiMS Union Catalog Server acceptance variable is measured using the TAM indicators to see how users accept using the information system in their daily work. Respondents' answers in this study were measured using a Likert scale with intervals: 1 = Strongly Disagree; 2 = Disagree; 3 = Agree; 4 = Strongly Agree (Sugiyono, 2016).

The validity test will relate to the measuring instrument's accuracy to do its job to achieve the target, which is grouped into two, namely content validity and construct validity. A reliability test is to determine the level of how much a gauge measures stably and consistently. A construct is considered reliable if its composite reliability value is above 0.7. However, in development research, the loading scale of 0.5 to 0.6 is still acceptable (Ghozali, 2014).

Hypothesis testing will be carried out using the Partial Least Square (PLS) analysis tool, which can simultaneously test the measurement model (*Outer model*) as well as test the structural model (*Inner model*). The outer model is used to test the validity and Reliability, while the inner model is used to test the causality (hypothesis testing with predictive models). This technique uses multivariate statistics, which will compare multiple dependent variables with multiple independent variables. The PLS evaluation model is based on predictive measurements that are nonparametric. Evaluation with the PLS model is carried out by evaluating the outer and inner models (Ghozali, 2012).

The structural model is evaluated using R<sup>2</sup> for dependent constructs. The path coefficient of t-values for each path is tested for significance between constructs in the structural model. The higher is the R<sup>2</sup> value, the better the prediction model of the research model. However, R<sup>2</sup> is not the only absolute parameter in measuring the accuracy of the prediction model. R<sup>2</sup> is the most critical parameter that can explain this causality relationship. The path coefficient value or inner model shows the level of significance in testing the hypothesis. The coefficient value shown from the t-statistic must be > 1.96 for a two-tailed hypothesis or t-statistic > 1.64 for a one-tail hypothesis at 5% alpha and 80% power (Sarstedt et al., 2014).

## Results and Discussion

Before testing the model, a measurement model is first carried out to test the construct validity and Reliability. The validity must be tested so that this research instrument's ability

can be found in measuring the things to be measured. Furthermore, reliability testing was carried out to measure the consistency of measuring instruments and respondents' consistency in answering this research instrument. In this study, the validity and reliability testing using software tools Partial Least Square or SmartPLS version 3.0 (Hussain & Noraida Endut, 2018).

Convergent validity of the measurement model with reflexive indicators can be seen from the correlation between the item score or indicator and its construct (loading factor), which can be seen from the outer output loading. Individual indicators are considered reliable if they have a correlation value above 0.70. However, at the research stage of scale development, loading 0.50 to 0.60 is still acceptable (Ghozali, 2014, p.61). The output outer loading estimation results from the PLS Algorithm are as follows:

**Chart 3: Tampilan Output PLS Algorithm (Outer Model)**

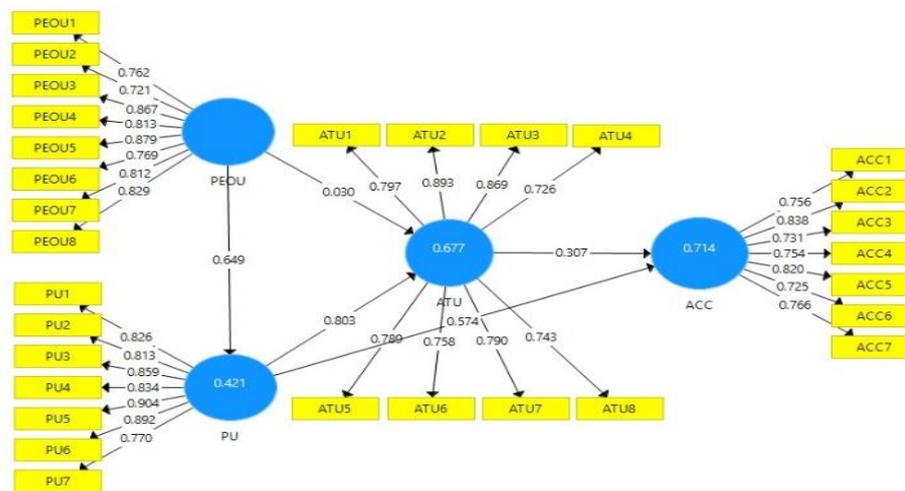


Chart 3 shows that each model's indicator has a loading factor above 0.50 to evaluate the next model.

While the *outer loading factor* can be seen in the following table:

Table 1: Outer Loading Factor

	ACC	ATU	PEOU	PU
ACC1	0,756			
ACC2	0,838			
ACC3	0,731			
ACC4	0,754			
ACC5	0,820			
ACC6	0,725			
ACC7	0,766			
ATU1		0,797		
ATU2		0,893		
ATU3		0,869		
ATU4		0,726		

ATU5		<b>0,789</b>		
ATU6		<b>0,758</b>		
ATU7		<b>0,790</b>		
ATU8		<b>0,743</b>		
PEOU1			<b>0,762</b>	
PEOU2			<b>0,721</b>	
PEOU3			<b>0,867</b>	
PEOU4			<b>0,813</b>	
PEOU5			<b>0,879</b>	
PEOU6			<b>0,769</b>	
PEOU7			<b>0,812</b>	
PEOU8			<b>0,829</b>	
PU1				<b>0,826</b>
PU2				<b>0,813</b>
PU3				<b>0,859</b>
PU4				<b>0,834</b>
PU5				<b>0,904</b>
PU6				<b>0,892</b>
PU7				<b>0,770</b>

Based on chart 3 and table 1, it can be seen that the loading value of each indicator (the loading factor value) is above 0.70 so that each indicator used is valid.

Discriminant validity is used to show that latent constructs can predict sizes on their block better than sizes on other blocks. The numbers in bold in the table show that the correlation value of the indicator to its construct (latent variable) is greater than the correlation value between the indicator and other constructs. The following is the cross-loading of the PLS Algorithm output:

Table 2: Cross Loading Output PLS Algorithm

	ACC	ATU	PEOU	PU
ACC1	<b>0,756</b>	0,589	0,333	0,588
ACC2	<b>0,838</b>	0,494	0,384	0,647
ACC3	<b>0,731</b>	0,559	0,309	0,462
ACC4	<b>0,754</b>	0,685	0,388	0,677
ACC5	<b>0,820</b>	0,666	0,519	0,775
ACC6	<b>0,725</b>	0,588	0,589	0,660
ACC7	<b>0,766</b>	0,594	0,445	0,585
ATU1	0,645	<b>0,797</b>	0,453	0,752
ATU2	0,777	<b>0,893</b>	0,561	0,841
ATU3	0,670	<b>0,869</b>	0,504	0,762
ATU4	0,569	<b>0,726</b>	0,306	0,555
ATU5	0,565	<b>0,789</b>	0,358	0,623
ATU6	0,615	<b>0,758</b>	0,597	0,567
ATU7	0,545	<b>0,790</b>	0,393	0,567

<b>ATU8</b>	0,530	<b>0,743</b>	0,274	0,476
<b>PEOU1</b>	0,374	0,265	<b>0,762</b>	0,463
<b>PEOU2</b>	0,336	0,234	<b>0,721</b>	0,335
<b>PEOU3</b>	0,446	0,288	<b>0,867</b>	0,513
<b>PEOU4</b>	0,626	0,685	<b>0,813</b>	0,773
<b>PEOU5</b>	0,369	0,449	<b>0,879</b>	0,523
<b>PEOU6</b>	0,366	0,443	<b>0,769</b>	0,441
<b>PEOU7</b>	0,543	0,521	<b>0,812</b>	0,442
<b>PEOU8</b>	0,401	0,418	<b>0,829</b>	0,493
<b>PU1</b>	0,686	0,594	0,668	<b>0,826</b>
<b>PU2</b>	0,673	0,577	0,575	<b>0,813</b>
<b>PU3</b>	0,815	0,770	0,544	<b>0,859</b>
<b>PU4</b>	0,741	0,637	0,596	<b>0,834</b>
<b>PU5</b>	0,713	0,661	0,464	<b>0,904</b>
<b>PU6</b>	0,640	0,797	0,549	<b>0,892</b>
<b>PU7</b>	0,593	0,807	0,426	<b>0,770</b>

Another method for assessing discriminant validity is comparing the square root value of the AVE ( $\sqrt{AVE}$ ) for each construct with the correlation value between other constructs (latent variable correlation). The model has sufficient discriminant validity if the AVE root value for each construct is higher than the latent variable correlation value (Ghozali, 2014, p. 63).

AVE output and latent variable correlation from the PLS algorithm as follows:

Table 3: Output AVE and Root  $\sqrt{AVE}$

	Average Variance Extracted (AVE)	Root Average Variance Extracted (AVE)
<b>ACC</b>	<b>0,594</b>	<b>0,770 (0,77071)</b>
<b>ATU</b>	<b>0,636</b>	<b>0,797 (0,79749)</b>
<b>PEOU</b>	<b>0,653</b>	<b>0,808 (0,80808)</b>
<b>PU</b>	<b>0,712</b>	<b>0,843 (0,84380)</b>

Furthermore, the AVE root value will be compared with the correlation coefficient between variables, the results of which are shown in Table 4 below:

Table 4: Output Latent Variable Correlation

	ACC	ATU	PEOU	PU
ACC	1,000	0,779	0,558	0,827
ATU	0,779	1,000	0,551	0,823
PEOU	0,558	0,551	1,000	0,649
PU	0,827	0,823	0,649	1,000

Composite Reliability, after testing the construct validity, the construct reliability test is also carried out. The Reliability of a construct can be assessed by looking at Cronbach's alpha value and composite Reliability. This study's reliability test method is composite Reliability because it is better at estimating internal consistency. Two criteria can be measured: composite Reliability and Cronbach's alpha from the indicator block that measures the construct. The construct is reliable if the composite Reliability and Cronbach's alpha values are above 0.70 (Ghozali, 2014, p. 65).

The composite reliability output can be seen in Table 5 below:

Table 5: Output Composite Reliability

	Composite Reliability
ACC	0,911
ATU	0,933
PEOU	0,937
PU	0,945

The Cronbach alpha output can be seen in the table below:

Table 6: Output Cronbach Alpha

	Cronbach's Alpha
ACC	0,886
ATU	0,918
PEOU	0,925
PU	0,932

The output composite reliability and Cronbach's alpha above show that each construct's value is above 0.70. So it can be concluded that each construct in the estimated model has good Reliability.

The structural model is evaluated using the R-Square for the dependent construct, the t-test, and the significance of the structural path parameter coefficients. A structural model that has an R-square ( $R^2$ ) result of 0.67 indicates that the model is "good", an R-square ( $R^2$ ) is 0.33, indicating that the model is "moderate", and an R-square ( $R^2$ ) is 0.19, indicating that the model is "weak" (Ghozali, 2014, p. 42).

Table 7: Output R-square ( $R^2$ )

	R Square
PEOU	
PU	0,421
ATU	0,677
ACC	0,714

Table 7 shows the R-Square whose value changes will assess certain independent latent variables with latent dependent variables and see any substantive effects. Based on the model criteria, the three R-squares ( $R^2$ ) in the table above indicate that each structural model (inner model) in this study is categorized as "good".

1. The R-square ( $R^2$ ) value of the endogenous construct of PU in the first model was obtained at 0.42. It means that the PEOU construct in the model only explains the PU construct by 35%, and other variables outside the model explain the rest.
2. The R-square ( $R^2$ ) value of the endogenous construct of ATU in the second model is 0.677. So it can be concluded that the PEOU construct and PU construct in this second model can only explain the ATU construct by 67.7%, and the rest is explained by other variables not examined in this model.
3. The R-square ( $R^2$ ) value of the endogenous construct of ACC in the third model is 0.714. It means that the PU construct and the ATU construct in this third model can explain the ACC construct by 71.4%, and other variables outside the model explain the rest.

The Path coefficient table's T-statistic value is used in structural models to see the relationship between the independent and dependent variables to assess the prediction model's significance for the resampling bootstrapping method. Table 8 is the result of data processing for the significance test.

Table 8: T- Statistics

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics ((O/STDEV))
PEOU -> PU	0.649	0.711	0.138	4.716
PEOU -> ATU	0.030	-0.005	0.344	0.088
PU -> ATU	0.803	0.838	0.303	2.649
PU -> ACC	0.574	0.506	0.234	2.446
ATU -> ACC	0.307	0.377	0.248	1.241

Analysis of t-test results using bootstrapping in SmartPLS is at a significance level of 5% and has a threshold value of 1.96.

### H1: Does Perceived Ease of Use (PEOU) have positively affect Perceived Usefulness (PU)?

From the data processing results, hypothesis 1 (H1) in Table 8 shows a positive influence between the PEOU construct and the PU construct with a coefficient value of 0.649 and significant at the 5% level. It is evident from the magnitude of the t-statistic value for the PEOU construct for the PU construct above 1.96, which is 4.716 or 4.72 so that the PEOU constructs effect on the PU construct is significant.

The level of ease of use of technology is perceived by contributors to positively affect the usability of the Union Catalog Server SLiMS is signed and accepted.

The PEOU latent variable's coefficient value on the output path coefficient is 0.649, which means a positive influence of 64.9% or 65% on the PU construct. The higher the perception of the ease of users of the SLiMS Union Catalog Server, called the Ministry of Marine Affairs and Fisheries' integration catalog, the higher the system's usefulness. Logically it can be perceived that the more accessible the system to use will provide benefits or uses (Alsabawy et al., 2016).

The results show high perceived ease of using SLiMS-based Union Catalog Server in terms of usefulness. The UCS system has proven to be easy to learn, easy to achieve, transparent and user friendly, more flexible, and free from difficulties. It has a significant effect on the benefits for contributors to the Union Catalog Server SLiMS in the library at the Ministry of Marine Affairs and Fisheries.

## **H2: Does Perceived Ease of Use (PEOU) have positively affect Attitude Toward Using (ATU)?**

From the data processing results, hypothesis 2 (H2) states that Table 8 shows no significant effect between the PEOU construct and the ATU construct. It is evident from the sizeable t-statistic value for the PEOU construct against the ATU construct, which is still below 1.96, which is 0.088 (0.09). So it can be concluded that  $H_a$  cannot be accepted or rejected.

The construct of Perceived Ease of Use (PEOU) is defined as the extent to which a person believes that using technology will be free from various difficulties. If someone believes that information systems are easy to use, then he will use them. Conversely, if someone believes that the system is not easy to use, they will not use it.

The construct of Attitude Toward Using (ATU) is conceptualized as an attitude towards using a system in acceptance or rejection when someone uses technology in their work. Other researchers state that the attitude factor is one of the aspects that influence individual behavior (Abdullah et al., 2016).

The results show low perceived ease of use of SLiMS-based UCS in terms of attitudes towards its use. A person's attitude consists of cognitive or perspective elements, affective, and components related to behavior.

## **H3: Does Perceived Usefulness (PU) have positively influence Attitude Toward Using (ATU)?**

From the data processing results, hypothesis 3 (H3) in Table 8 shows a positive influence between the PU construct and the ATU construct with a coefficient value of 0.803 and significant at the 5% level. It is evident from the t-statistic value for the PU construct for the ATU construct above 1.96, 2.649, or 2.65. So it can be concluded that  $H_a$  is acceptable. It is supported by the results of research from Davis et al. (1989), which found that perceived usefulness (PU) has a positive effect on attitude towards use (ATU).

PU's effect on the ATU constructs proved positive, with the latent variable coefficient value for PU on the output path coefficient of 0.803. It means that there is a positive effect of 80% on the ATU construct. The higher the perceived usefulness of the SLiMS-based Union Catalog Server system at the Ministry of Marine Affairs and Fisheries, the better the user's attitude towards the system.

There is an illustration of the high perceptions of the SLiMS-based Union Catalog Server's usefulness in the library within the Ministry of Marine Affairs and Fisheries in terms of user

attitudes. Attitudes are shown by the following: work is done faster, making work more accessible, developing job performance, being helpful, increasing productivity, and increasing effectiveness. The usefulness of the UCS Portal has a significant effect on user attitudes, so logically, the system that provides more benefits and uses to users will affect the user's attitude to use the system to improve its performance (Sugihartono et al., 2020).

#### **H4: Does Perceived Usefulness (PU) have positively influence Acceptance (ACC)?**

From the results of data processing, it can be seen that hypothesis 4 (H4) in Table 8 shows a positive influence between the PU construct and the ACC construct with a coefficient value of 0.574 and significant at the 5% level. It is evidenced by the sizeable t-statistic value for the PU construct for the ACC construct above 1.96, which is 2.446 or 2.45. So it can be concluded that  $H_a$  is acceptable.

There is an illustration of the high perceived usefulness of SLiMS-based UCS in the library within the Ministry of Marine Affairs and Fisheries regarding the system's acceptance. Users accept the system well as indicated by things, such as work done faster, making work more accessible, developing job performance, being helpful, increasing productivity, and increasing effectiveness. The usefulness of a system has a significant effect on the acceptance of the system by contributors. They feel the effect of the usefulness of the system on improving performance in completing tasks. Also, they tend to use the system more often to automatically facilitate work activities to accept the system to support their activities (Mican et al., 2020).

#### **H5: Does Attitude Toward Using (ATU) have a positive effect on Acceptance (ACC)?**

From the results of data processing, it can be seen that hypothesis 5 (H5) contained in Table 8 can be seen that there is no significant effect between the ATU construct on the ACC construct. It is evidenced by the sizeable t-statistic value for the ATU construct against the ACC construct, which is still below 1.96, which is 1.241 or 1.24. So it can be concluded that  $H_a$  cannot be accepted or rejected.

There is an illustration of the low perception of user attitudes towards the SLiMS-based Union Catalog Server Portal in the library within the Ministry of Marine Affairs and Fisheries in system acceptance. User attitudes showed that motivation to keep using, motivating other users, frequency of use, and user satisfaction did not significantly influence the system's acceptance. The system is one of the Ministry of Marine Affairs and Fisheries' policies to support "One Data" (Talantis et al., 2020).

## Conclusion

This study analyzes users' acceptance behavior or contributors to implementing the SLiMS Union Catalog Server system or the Ministry of Marine Affairs and Fisheries' integration catalog. The model used to determine the factors that influence the acceptance of contributions or users to apply the SLiMS Union Catalog Server system in this study is the Technology Acceptance Model (TAM). The method used to analyze the relationship between constructs is the PLS method. Based on the results of research and discussion, the researcher can draw the following conclusions:

The description of the four paths formed in this research model contains four variables. The four variables are perceived ease of use (PEOU), perceived usefulness (PU), attitude toward using (ATU), and acceptance (ACC). These variables positively correlated with the SLiMS-based Union Catalog Server information system's acceptance by the library's contributors within the Ministry of Marine Affairs and Fisheries.

The five hypotheses that have been adjusted to the TAM model have been constructed using the PLS-SEM method and processed using SmartPLS software. The results show that two hypotheses indicate an insignificant relationship, namely the relationship between the construct of perceived ease of use and attitude toward using (PEOU > ATU) and the construct of attitude toward using with acceptance (ATU > ACC).

The Technology Acceptance Model (TAM) can be used as a reference for analyzing the Union Catalog Server SLiMS information system's acceptance, which is often called the integration catalog by contributors in the library within the Ministry of Marine Affairs and Fisheries.

This SLiMS-based master catalog system is essential to regularly measure and assess TAM so that contributors can efficiently operate it without significant obstacles to impact information retrieval services in libraries.

## References

- Abdullah, F., Ward, R., & Ahmed, E. (2016). Investigating the influence of the most commonly used external variables of TAM on students' Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) of e-portfolios. *Computers in Human Behavior*, *63*, 75–90. <https://doi.org/10.1016/j.chb.2016.05.014>
- Akbar, A. K., & Azwar, M. (2018). The Implementation of Portal Union Catalog Server Sulselib Based On Senayan Library Management Systems (SLiMS). *Pustakaloka*, *10*(1), 19–38. <https://doi.org/10.21154/pustakaloka.v10i1.1232>
- Al-Gahtani, S. (2001). The Applicability of TAM Outside North America: An Empirical Test in the United Kingdom. *Information Resources Management Journal*, *14*(3), 37–46. <https://doi.org/10.4018/irmj.2001070104>
- Alsabawy, A. Y., Cater-Steel, A., & Soar, J. (2016). Determinants of perceived usefulness of e-learning systems. *Computers in Human Behavior*, *64*, 843–858. <https://doi.org/10.1016/j.chb.2016.07.065>

- Azwar, M. (2013). Membangun Sistem Otomasi Perpustakaan dengan Senayan Library Management System (SLiMS). *Khizanah al-Hikmah : Jurnal Ilmu Perpustakaan, Informasi, dan Kearsipan*, 1(1), 19–33. <http://journal.uin-alauddin.ac.id/index.php/khizanah-al-hikmah/article/view/23>
- Azwar, M. (2014). *Information Literacy Skills: Strategi Penelusuran Informasi Online* (Edisi pertama). Alauddin University Press. <http://eprints.rclis.org/25687/>
- Badan Pengembangan dan Pembinaan Bahasa. (2016). Katalog. In *Kamus Besar Bahasa Indonesia (KBBI) Daring*. Kementerian Pendidikan dan Kebudayaan RI. [https://products.abc-clio.com/ODLIS/odlis\\_c.aspx](https://products.abc-clio.com/ODLIS/odlis_c.aspx)
- Damayanti, P. (2018). Knowledge Repository Bidang Kelautan dan Perikanan. *Jurnal Perpustakaan Pertanian*, 27(1), 7–16. <https://doi.org/10.21082/jpp.v27n1.2018.p%p>
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, 35(8), 982–1003. <https://doi.org/10.1287/mnsc.35.8.982>
- Fatkhan, I. (2018, July 23). *Peta Sebaran KGI Perpustakaan Lingkup KKP*. Perpustakaan Kementerian Kelautan Dan Perikanan. <https://kkp.go.id/setjen/perpustakaan/artikel/5227-peta-sebaran-sistem-integrasi-aplikasi-perpustakaan-se-kkp>
- Gefen, D., & Larsen, K. R. (2017). Controlling for Lexical Closeness in Survey Research: A Demonstration on the Technology Acceptance Model. *Journal of the Association for Information Systems*, 18(10). <https://doi.org/10.17705/1jais.00469>
- Ghozali, I. (2012). *Structural equation modeling: Metode alternatif dengan partial least square (PLS)*. Badan Penerbit Universitas Diponegoro.
- Ghozali, I. (2014). *Structural Equation Modeling: Metode Alternatif dengan Partial Least Square (PLS) dilengkapi Software 3.0. XIstat 2014 dan WarpPLS 4.0* (4th ed.). Badan Penerbit Universitas Diponegoro.
- Granić, A., & Marangunić, N. (2019). Technology Acceptance Model in Educational Context: A Systematic Literature Review. *British Journal of Educational Technology*, 50(5), 2572–2593. <https://doi.org/10.1111/bjet.12864>
- Hak, A. (2015). An Analysis of the Acceptance's Staffs of Madrasa Library on "Senayan"-based Library Automation System Using Technology Acceptance Model (TAM). *Library Philosophy and Practice (e-Journal)*, 1260. <https://digitalcommons.unl.edu/libphilprac/1260>
- Hartono, J. (2007). *Sistem Informasi Keperilakuan*. Andi.
- Hs, L. (2009). *Kamus Kepustakawanan Indonesia: Kamus lengkap istilah-istilah dunia pustaka dan perpustakaan yang ditulis lengkap oleh pustakawan senior*. Pustaka Book Publisher.
- Hunter, E. J., & Bakewell, K. G. B. (1991). *Cataloguing*. Library Association publ.
- Hussain, A. H. M. B. & Noraida Endut. (2018). *Application of SEM using Smart PLS: Examining decent working conditions of small enterprises*. SAGE Publication. <https://dx.doi.org/10.4135/9781526445698>

- Jokar, N. K., Noorhosseini, S. A., Allahyari, M. S., & Damalas, C. A. (2017). Consumers' acceptance of medicinal herbs: An application of the technology acceptance model (TAM). *Journal of Ethnopharmacology*, 207, 203–210. <https://doi.org/10.1016/j.jep.2017.06.017>
- Kustono, A. S. (2011). Pengaruh Keahlian Pengguna terhadap Kinerja Sistem Informasi dengan Variabel Intervening Partisipasi, Kecemasan, Kepuasan, Derajat Penerimaan, dan Ketidakpastian Kerja. *Optimal: Jurnal Ekonomi Dan Kewirausahaan*, 5(1), 38–50. <http://jurnal.unismabekasi.ac.id/index.php/optimal/article/view/648>
- Lai, P. C. (2017). The Literature Review Of Technology Adoption Models And Theories For The Novelty Technology. *JISTEM - Journal of Information Systems and Technology Management*, 14(1), 21–38. <https://doi.org/10.4301/s1807-17752017000100002>
- Legris, P., Ingham, J., & Collerette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information & Management*, 40(3), 191–204. [https://doi.org/10.1016/S0378-7206\(01\)00143-4](https://doi.org/10.1016/S0378-7206(01)00143-4)
- Peraturan Menteri Kelautan dan Perikanan Republik Indonesia Nomor 8 / PERMEN-KP / 2014 tentang Pedoman Penyelenggaraan Perpustakaan Khusus di Lingkungan Kementerian Kelautan dan Perikanan, Pub. L. No. Nomor 8 / PERKEM-KP / 2014, 1 (2014). <https://jdih.kkp.go.id/peraturan/8-permen-kp-2014.pdf>
- Mican, D., Sitar-Tăut, D.-A., & Moisescu, O.-I. (2020). Perceived usefulness: A silver bullet to assure user data availability for online recommendation systems. *Decision Support Systems*, 139, 113420. <https://doi.org/10.1016/j.dss.2020.113420>
- Munir, G. (2018). *Pengaruh Kualitas UCS (Union Catalog Server) Senayan Library Menagement Sistem (SLiMS) terhadap Kepuasan Kontributor di Perpustakaan Lembaga Pendidikan Muhammadiyah Yogyakarta* [Master, UIN Sunan Kalijaga Yogyakarta]. <http://digilib.uin-suka.ac.id/30534/>
- ODLIS ABC-CLIO. (2020). Catalog. In *Online Dictionary Library Information Science (ODLIS)*. ABC-CLIO. [https://products.abc-clio.com/ODLIS/odlis\\_c.aspx](https://products.abc-clio.com/ODLIS/odlis_c.aspx)
- 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>
- Undang-Undang Nomor 43 Tahun 2007 tentang Perpustakaan, (2007).
- Sarstedt, M., Ringle, C. M., Smith, D., Reams, R., & Hair, J. F. (2014). Partial least squares structural equation modeling (PLS-SEM): A useful tool for family business researchers. *Journal of Family Business Strategy*, 5(1), 105–115. <https://doi.org/10.1016/j.jfbs.2014.01.002>
- Sugihartono, T., Putra, R. R. C., Laurentinus, Romadiana, P., Pradana, H. A., & Wahyuningsih, D. (2020). The Impact of Ease of Use and Attitude Toward Using Document Submission System Application on Behavior Intention. *2020 8th International Conference on Cyber and IT Service Management (CITSM)*, 1–4. <https://doi.org/10.1109/CITSM50537.2020.9268813>

- Sugiyono. (2016). *Metode Penelitian Kombinasi (Mixed Methods)*. Alfabeta.
- Supriyanto, W., & Muhsin, A. (2012). *Teknologi Informasi Perpustakaan: Strategi Perancangan Perpustakaan Digital*. Kanisius.
- Talantis, S., Shin, Y. H., & Severt, K. (2020). Conference mobile application: Participant acceptance and the correlation with overall event satisfaction utilizing the technology acceptance model (TAM). *Journal of Convention & Event Tourism*, 21(2), 100–122. <https://doi.org/10.1080/15470148.2020.1719949>
- Taylor, A. G., & Miller, D. P. (2006). *Introduction to cataloging and classification*. Libraries Unlimited.
- Teo, T. (2011). *Technology acceptance in education: Research and issues*. Sense.
- Wibowo, M. P. (2019). Technology Acceptance Models and Theories in Library and Information Science Research. *Library Philosophy and Practice (e-Journal)*. <https://digitalcommons.unl.edu/libphilprac/3674>
- Wicaksono, H., Nugraha, A., Syamsudin, A., Ridho, M. R., Zayd, S., Purwoko, Wardiyono, Subratha, E., & Pipii, I. S. (2017). *UCS Documentation (Union Catalog Server)*. SLiMS Community. <https://go.slims.id/?wpdmpro=union-catalogue-service-ucs-documentation>
- Woodford, K. (2012). *Cambridge learner's dictionary*. Cambridge University Press.
- Wu, B., & Chen, X. (2017). Continuance intention to use MOOCs: Integrating the technology acceptance model (TAM) and task technology fit (TTF) model. *Computers in Human Behavior*, 67, 221–232. <https://doi.org/10.1016/j.chb.2016.10.028>
- Wynar, B. S., & Taylor, A. G. (1992). *Introduction to cataloging and classification*.
- Xu, X., Thong, J. Y. L., & Tam, K. Y. (2017). Winning Back Technology Disadopters: Testing a Technology Readoption Model in the Context of Mobile Internet Services. *Journal of Management Information Systems*, 34(1), 102–140. <https://doi.org/10.1080/07421222.2017.1297172>