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Analysis Usage Behavior for Information System of University Library

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ABSTRACTS

This research is motivated by the use of university library information systems by users, which affects the behavior of using information systems in the University of Brawijaya Library. In order for library services to run well and experience an increase in users, the information system used must also be accepted and used properly by its users. With the use of information technology is expected to help facilitate service activities in the university library. By using the UTAUT (Unified Theory of Acceptance and Use of Technology) model as an analytical tool, it is expected to know how much influence the usage behavior information System has. This study aims to determine and analyze the effect of the Usage Behavior Information System of the University of Brawijaya Library, the results of which can be used for the development of the information system of the University of Brawijaya Library. The research method used is a quantitative method with a descriptive approach. The results of the study indicate that the use of the university library information system greatly influences the Usage Behavior Information System. However, the moderating effect of age, gender, and experience did not have a significant effect.

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1. INTRODUCTION

Information is a two-edged sword that can be both a source of power and a source of perplexity for those who utilize it. So much recent information has been abundant and fast-paced that it may be a hurdle in and of itself that we encounter every day, in numerous kinds of information and countless times. It is intended that library customers will not go wrong in their search for material that will be utilized to create a scientific work because of the availability of information literacy. The findings of earlier studies serve as a barometer for how far a study has progressed.

The amount of quality of service provided to library customers has an impact on users' faith in the library. The greater the level of service quality, the greater the trust that users have in the library. Changes in the strategic environment and advances in information systems may be a driving factor for public service apparatus to enhance bureaucratic performance and make service improvements toward the construction of good governance in the public sector. This means that technology-based information systems play a critical role in public services, particularly in the university library, which is at its heart, and the e-library is one example of how information and communication system technology is being used to provide effective and efficient library user services.

If an information system can provide good, timely, high-accuracy, succinct, brief, and clear-content information, it is considered efficient. In this case, accuracy is defined as the ratio of correctly delivered information to wrong information. If a system has a minimum accuracy of 95%, it is considered to have high accuracy. This great precision, however, will be useless if the arrival time is incorrect, late, or irregular. As a result, the information system must be full, organized, and brief to avoid causing problems for information consumers.

The University of Brawijaya Library employs lib.ub.ac.id as a kind of information system-based service to promote information literacy activities as part of the execution of the Tridarma of Higher Education University of Brawijaya. The website provides access to a variety of information sources. From general library information to all sorts of services such as e-journals, e-books, book searches, and scientific work searches for lecturers and students, to news information that users may want.

Information technology should be able to help people increase their information literacy. This technology must be embraced and used by its users to promote information literacy appropriately. In comparison to manual approaches, information technology is projected to aid information literacy initiatives in university libraries.

Based on the foregoing, this study was conducted to determine the extent to which information systems are utilized in university libraries. It is expected to find out how much influence it has by utilizing the Unified Theory of Acceptance and Use of Technology (UTAUT) model as an analytical tool. UTAUT is an analytical model that describes how people interact with technology (Venkatesh, 2000). This paradigm is a hybrid of the eight previous models that have proven effective. Performance expectations, effort expectations, social influences, and enabling factors all influence intention and behavior to use technology (user behavior), according to the UTAUT paradigm (facilitating conditions). Gender, age, experience, and willingness to use all moderated the four parameters. Empirical investigations based on this paradigm have been carried out in large numbers, with varying results.

The effect of performance expectations, business expectations, social influences, and enabling conditions on the behavior of using information systems discussed in this study, which will be modified by variables of gender, age, and experience. By using the UTAUT

model, it is hoped that it can describe how much use of information systems is applied in the Brawijaya University library.

2. METHODS

This form of study is classified as explanatory research employing a descriptive quantitative technique, depending on the research aims. The research was conducted at the Brawijaya University library. This site was chosen because the Brawijaya University library is a resource for the academic community, including students, professors, and Brawijaya University workers.

This study used the UTAUT (Unified Theory of Acceptance and Use of Technology) model (Venkatesh & Davis, 2000), which has been modified to meet the demands of the research, as indicated in **Figure 1**.

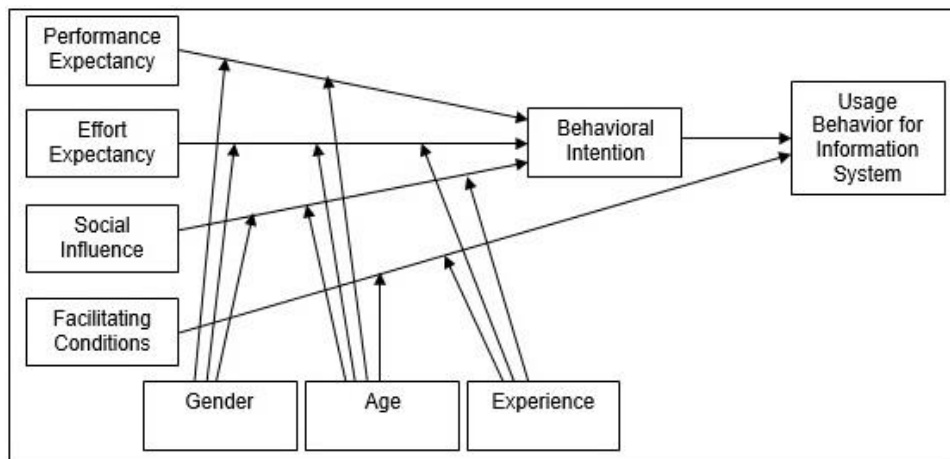


Figure 1. Research Conceptual Framework.

The primary and secondary data used in this study are both primary and secondary. The researcher employed a survey approach in conjunction with a questionnaire instrument to collect data. The method is non-probability sampling, and the sampling methodology is judgment sampling, specifically purposive sampling with criteria in the form of a specific consideration. Users or users who were still enrolled and active as students, whether they were students from the Vocational Program, Undergraduate, Postgraduate Masters, Professional Programs, and Doctoral Programs, Doctoral Programs, Brawijaya University, were the sample criteria selected in this study.

Furthermore, the sample includes Brawijaya University students who use the Brawijaya University Library information system. A total of 100 students employed as study samples when they visit Brawijaya University's Central Library.

These factors were measured using a Likert scale with a range of 1 to 7.1 indicating severe disagreement, 2 indicating disagreement, 3 indicating some disagreement, 4 indicating neutrality, 5 indicating some agreement, 6 indicating agreement, and 7 indicating strong agreement. The following variables were used in this study:

- (i) The independent variable (X), includes performance expectations (expectations/X1), business expectations (business expectations/X2), social impact factors (X3), and supporting conditions (X4).
- (ii) The dependent variable (Y) includes the behavior of using the university library information system (Information System Usage Behavior/Y2) and interest in using the university library information system (Behavioral Intention/Y1).

(iii) Gender/G (gender), Age/A (age), and Experience/EX are three moderating factors (M) (experience).

Structural Equation Modeling (SEM) using the Partial Least Square (PLS) technique was used to prove the hypothesis given in this study. PLS stands for component-based (SEM), as indicated in **Figure 2**.

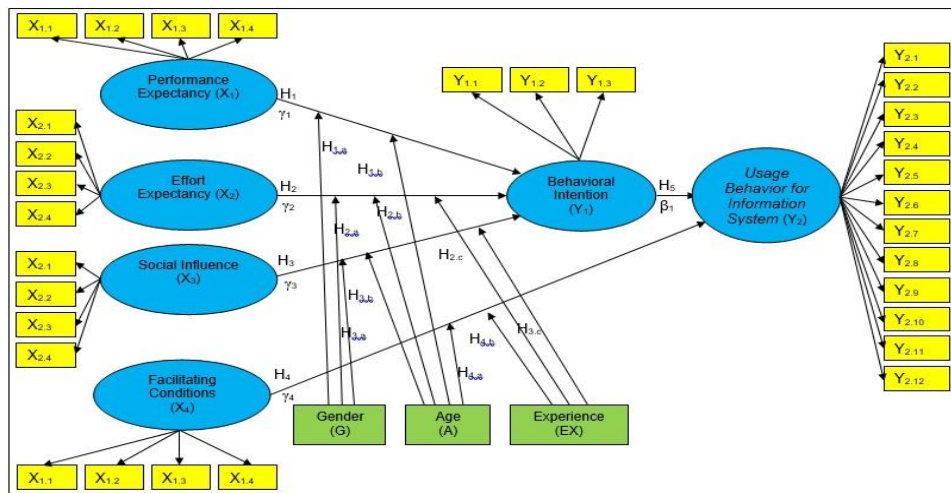


Figure 2. SmartPLS Measurement Output 3.2.8.

The PLS approach was used in this work, and SmartPLS 3.2.8 software was used to test hypotheses. When utilizing PLS to analyze, two factors must be done. First, evaluate the outer model or measurement model, which includes a review of the study variables' reliability and validity. The outer model is evaluated using three criteria: convergent validity, discriminant validity, and composite reliability. The second step is to evaluate the inner model, often known as the structural model. The inner model, also known as the structural model, is tested to see if there is a link between the construct, significant value, and R-square of the research model.

3. RESULTS AND DISCUSSION

From the results of the reliability test of the SmartPLS 3.2.8 algorithm based on the Average Variance Extracted (AVE) and Composite Reliability values in **Table 1**, the AVE value of all constructs used is more than 0.50 and for the Composite Reliability value of all constructs used is more than 0.7, which means that all of the construct variables have high reliability. The variable will be considered reliable if the correlation value is above 0.60. So, it can be stated that all research variables are reliable.

Table 2 shows the results of the Goodness of Fit test. The value of R-square (R^2) for the endogenous variable of Interest in Utilization of Higher Education Library Information Systems (Y_1) is 0.615 or 61.5%, and R-square (R^2) for the endogenous variable of Behavior of University Library Information System Utilization (Y_2) is 0.510 or 50.10%, according to the results of the Goodness of Fit test in **Table 2**.

The following formula can be used to calculate Q-squared (Q^2) using data R-squared (R^2) in two R^2 in **Table 2**:

$$Q^2 = 1 - (\sqrt{1 - R_1^2}) * (\sqrt{1 - R_1^2})$$

$$Q^2 = 1 - (\sqrt{1 - 0.615}) * (\sqrt{1 - 0.510})$$

$$Q^2 = 1 - (\sqrt{0.385}) * (\sqrt{0.49})$$

$$Q^2 = 1 - (0.620) * (0.7)$$

$$Q^2 = 0.566$$

The Q-square (Q^2) result of $0.566 > 0$ may be interpreted using the Q-square (Q^2) computation above. This statistic means that the research model used can explain 56.6% of the information in the data (56.6%), and that the model has a predictive relevance value or a very accurate prediction level.

Table 1. SmartPLS Algorithm Output 3.2.8.

Variable	AVE	Composite Reliability	R Square (R^2)	Information
Gender (G)	1.000	1.000		Reliable
Age (A)	1.000	1.000		Reliable
Experience (EX)	1.000	1.000		Reliable
G*A	1.000	1.000		Reliable
G*EX	1.000	1.000		Reliable
G*A*EX	1.000	1.000		Reliable
A*EX	1.000	1.000		Reliable
Performance Expectancy (X_1)	0.943	0.985		Reliable
Effort Expectancy (X_2)	0.765	0.928		Reliable
Social Influence (X_3)	0.575	0.722		Reliable
Facilitating Conditions (X_4)	0.535	0.818		Reliable
Behavioral Intention (Y_1)	0.842	0.941	0.615	Reliable
Usage Behavior for Information Literacy (Y_2)	0.504	0.900	0.510	Reliable

Table 2. Goodness The goodness of fit testing algorithm output.

Endogenous Variables	R Square (R^2)
Behavioral Intention (Y_1)	0.615
Usage Behavior for Information Literacy (Y_2)	0.510

The following **Table 3** shows a summary of the results of hypothesis testing without the effect of a moderating effect and hypothesis testing with the impact of a moderating effect:

Table 3. Summary of hypothesis test results.

Hypothesis	Independent	Dependent	Moderation	T Value	Information
H1	X_1	Y_1	-	1.401	rejected
H1a	X_1	Y_1	Gender/G	0.109	rejected
H1b	X_1	Y_1	Age/A	0.045	rejected
H2	X_2	Y_1	-	2.822	accepted
H2a	X_2	Y_1	Gender/G	0.035	rejected
H2b	X_2	Y_1	Age/A	0.018	rejected
H2c	X_2	Y_1	Experience/EX	0.336	rejected
H3	X_3	Y_1	-	1.488	rejected
H3a	X_3	Y_1	Gender/G	0.058	rejected
H3b	X_3	Y_1	Age/A	0.130	rejected
H3c	X_3	Y_1	Experience/EX	0.188	rejected
H4	X_4	Y_2	-	3.826	accepted
H4a	X_4	Y_2	Age/A	1.427	rejected
H4b	X_4	Y_2	Experience/EX	0.558	rejected
H5	Y_1	Y_2	-	1.703	rejected

The results of combining the performance expectation variable (X1) with the variable interest in using university library information systems (Y1) revealed a positive but non-significant effect, as evidenced by the regression coefficient (original sample) of 0.255 and the t-count (t-statistics) of 1,401 (1.96), both of which are less than the t-table value. This study's findings contradict those of Venkatesh et al. (2003), Al-Gahtani et al. (2007), Handayani (2007), and Venkatesh & Morris (2000).

The regression coefficient (original sample) of 0.416 and t-count (t-statistics) of 2.822 (>1.96), which is greater than the t-table value, showed a positive and significant effect when testing the business expectation variable (X2) with the variable interest in using university library information systems (Y1). The findings of this study are supported by prior research was undertaken by Venkatesh et al. (2003) and Venkatesh & Morris (2000).

The results of combining the social factor variable (X3) with the variable interest in using university library information systems (Y1) revealed a positive but non-significant effect, as evidenced by the regression coefficient (original sample) of 0.173 and the t-count (t-statistics) of 1,488 (1.96), both of which are lower than the t-table value. Venkatesh et al. (2003), Al-Gahtani et al. (2007) and Venkatesh & Morris (2000).

The test of the facilitating condition variable (X4) with the behavioral variable of using the university library information system (Y2) revealed a positive and significant effect, as evidenced by the regression coefficient (original sample) of 0.486 and the t-count (t-statistic) of 3,826 (>1.96), which is greater than the t-table value. Previous research by Venkatesh et al. (2003), Al-Gahtani et al. (2007), Handayani (2007), Gupta et al. (2008), Wang and Shih (2009), Venkatesh & Morris (2000), and Baridwan et al. (2010) has verified the findings of this work (2012). The findings of this study, on the other hand, contradict recent studies by Venkatesh et al. (2003).

The results of combining the variable interest in using university library information systems (Y1) with the behavioral variable of using university library information systems (Y2) revealed a positive but non-significant effect, as evidenced by the regression coefficient (original sample) of 0.247 and the t-count (t-statistics) of 1.703 (1.96) which is lower than the t-table value. The findings of this study contradict those of Venkatesh et al. (2003), Al-Gahtani et al. (2007), Wang and Shih (2009), and Venkatesh & Morris (2000).

The effects of performance expectations, business expectations, and social factors on interest in using university library information systems, as well as the effect of facilitating conditions on the use of university library information systems, are unaffected by gender, age, or experience.

4. CONCLUSION

The following conclusions may be drawn from the outcomes of hypothesis testing and discussion of the study findings this research can explain the UTAUT (Unified Theory of Acceptance and Use of Technology) main model, which states.

- (i) Expected performance is not a deciding factor in whether or not to use university library information systems.
- (ii) One of the drivers of individual interest in using university library information systems is effort expectation.
- (iii) One of the influencing variables in interest in using university library information systems is social considerations (social influence).
- (iv) One of the variables of behavior in the use of university library information systems is the enabling condition.

Interest in utilizing university library information systems is not a determinant factor in using university library information systems.

The effect of performance expectations, business expectations, and social factors on interest in using university library information systems, as well as the effect of facilitation conditions on the use of university library information systems, were not influenced by gender, age, or experience. This means that there is no difference in perception between:

- (i) Men and women in the use of university library information systems in terms of performance expectations, business expectations, social factors, and facilitation conditions;
- (ii) Younger and older users of information systems in terms of performance expectations, business expectations, social factors, and facilitation conditions;
- (iii) Experienced and inexperienced system users in the use of university library information systems in terms of performance expectations, business expectations, social factors, and facilitation conditions; and
- (iv) Experienced and inexperienced users of the system in university use.

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6. AUTHORS' NOTE

The authors declare that there is no conflict of interest regarding the publication of this article. Authors confirmed that the paper was free of plagiarism.

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