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Digitalization of Student Identity Cards at Telkom University Bandung and Its Impact on Student Behavior

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A R T I C L E I N F O	ABSTRACT

The digitalization of Telkom University Bandung's Student Identity Cards (KTM) and its impact on student conduct are the subjects of this study. The study assesses how students view the benefits and ease of use of technology, how their behavior changes when using it, and how it affects their social relationships using the Technology Acceptance Model (TAM). Twenty active users of the digital KTM participated in the study, which used a quantitative descriptive-correlational methodology. A validated and trustworthy questionnaire was used to gather the data, and statistical techniques including regression and correlation analysis were used to examine the results. Results indicate that students view the digital KTM as useful and effective, which enhances their ability to access university resources. With digitalization accounting for only 4.8% of the variance and other factors accounting for the other 95.2%, its total influence on behavioral changes is negligible. These findings demonstrate the need for additional studies with bigger sample numbers and more thorough variables in order to comprehend the wider ramifications of higher education's digital transition.

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1. INTRODUCTION

Digitalization is the process of converting analog or non-digital formats into digital forms that can be accessed through electronic devices such as gadgets (Rusnia et al., n.d.). This transformation has become a vital part of developing modern education ecosystems, in line with the rapid advancements in digital technology. These developments enable more innovative and efficient learning practices (Hakim & Yulia, 2024)

Telkom University Bandung has implemented the digitalization of Student Identity Cards (KTM) as a form of adaptation to the technological era. The digital KTM replaces the physical card, allowing more practical access to campus services such as libraries, parking, and attendance systems. This transformation is expected to increase efficiency, simplify access, and change students' habits in interacting with campus services (Wisnubroto, 2024).

A Student Identity Card (KTM) is a mandatory identification card for students registered at a university in Indonesia (Petrus Pualinggi et al., 2021). The KTM at Telkom University Bandung has been transformed into a digital card connected to the campus application, making it easier and more flexible to use and increasing the effectiveness of accessing campus services. This change is expected to improve campus service systems and help students adapt to the rapidly evolving digital technology of the contemporary era.

The impact of the digitalization of the Student Identity Card (KTM) on student behavior at Telkom University Bandung is the focus of this study. The first research question is how students perceive the ease of use of the digital KTM, particularly regarding accessibility, practicality, and convenience compared to the physical KTM. The second question pertains to the perceived benefits of using the digital KTM, which include time efficiency, ease in managing identity, and simplicity in accessing campus services. This study also aims to explore how the adoption of the digital KTM affects students' behavioral changes in using technology, especially in terms of increased reliance on digital devices and campus applications. The final research question seeks to assess the impact of using the digital KTM on students' social interactions, including its effect on relationships with peers, campus staff, and interactions within the campus social community.

This study aims to delve deeper into students' perceptions of the ease of use of the digital KTM and to identify to what extent the digital KTM is considered more practical and convenient compared to the physical KTM. Additionally, this study seeks to evaluate the perceived benefits of the digital KTM in terms of time efficiency and ease of access to various campus services that were previously manual. This research also intends to assess changes in students' behavior in using technology, particularly regarding increased dependence on advanced digital devices and campus applications. Finally, the study aims to explore the influence of the digitalization of the KTM on students' social interactions, examining how it impacts their relationships with peers, campus staff, and interactions within the academic community.

Previously, some studies have discussed digitalization in educational settings. However, these studies generally focused on academic information systems rather than the digitalization of identification cards (Sitanggang et al., 2024). Meanwhile, research on digital transformation in higher education in Indonesia remains limited, particularly regarding its impact on student behavior. Therefore, this study aims to fill the gap in prior research by examining the impact of the digitalization of the Student Identity Card (KTM) on student behavior at Telkom University Bandung. Furthermore, this study seeks to provide new insights into the relationship between digitalization in higher education and changes in student behavior, especially in the current technological era.

First, the Technology Acceptance Model (TAM) developed by Davis (1989) is used to understand the factors influencing individuals' acceptance of technology. TAM consists of two main components: Perceived Usefulness, which evaluates how the ease of access provided by the digital KTM affects students, and Perceived Ease of Use, which assesses benefits such as time efficiency (Davis, 1987). Perceived usefulness refers to the extent to which a person believes that using a particular technology will enhance their performance, while perceived ease of use relates to the belief that using the technology will be free of effort. These two components are critical for evaluating the extent to which students accept the digital KTM based on their perceptions of its benefits and usability.

Second, Behavioral Changes focus on how individuals alter their habits in response to technological advancements (Abdullah, 2018). Technology adaptation is part of behavioral change, which involves users' readiness to accept and use new technologies in their daily lives. This readiness often depends on accessible technology, prior user experience, and environmental support. The digitalization of KTM is expected to influence how students use technology, including how they interact with campus services.

Third, the Digital Academic Environment describes the integration of technology into the educational ecosystem to enhance students' academic, administrative, and social activities (Muntianah et al., 2012). One aspect of the digital academic environment is the digitalization of KTM, which aims to improve efficiency and convenience in accessing campus services. The digital KTM replaces the physical card, allowing students to use services like libraries, attendance systems, and parking more efficiently. However, the impact of this digitalization on students' social interactions and engagement requires further exploration.

These three aspects complement each other in this study: TAM is used to assess technology acceptance, behavioral changes to examine the impact on students' habits, and the digital academic environment to understand its role in creating an advanced and effective academic ecosystem.

2.   RESEARCH METHOD

To evaluate the relationship between the digitalization of the Student Identity Card (KTM) and student behavior at Telkom University Bandung, this study employs a descriptive-correlational quantitative approach to examine the relationship between the independent variable (KTM digitalization) and the dependent variable (student behavior) (Darmawati & Hidayati, n.d.). The focus of the study is on students who actively use the digital KTM. A total of 20 respondents were selected using a purposive sampling technique, based on the criterion of active use of the digital KTM in daily campus activities (Fauzy, 2019).

The study used a questionnaire with a five-point Likert scale to measure four main elements: perceived ease of use, perceived benefits, changes in how individuals use technology, and the impact on social relationships. To ensure the quality of the instrument, the questionnaire was developed based on the Technology Acceptance Model (TAM) theory and relevant literature reviews. Reliability testing found all items to be valid (R-value > R-table), and validity testing showed a Cronbach's Alpha score of 0.959, indicating high internal consistency (Andrianti & Oetardjo, 2022).

To collect data, an online questionnaire was distributed using Google Forms. The data were then analyzed using SPSS software for descriptive and inferential statistics. Validity, reliability, normality, Pearson correlation, and simple linear regression tests were employed to assess the relationships between variables.

This study may have limited generalizability due to the small sample size of only 20 respondents. Additionally, because the complexity of variables was not fully explored, some aspects of behavioral changes and social impacts might not have been significantly detected. Therefore, further research with a larger sample size and investigation of additional variables is recommended.

3.   RESULTS AND DISCUSSIONS

Table 1. Validity Statistics

Variabel	Pertanyaan	R Hitung	R Tabel	Keterangan
Digitalisasi Kartu Tanda Mahasiswa (X)	P1	0.801	0.4227	VALID
	P2	0.803	0.4227	VALID
	P3	0.928	0.4227	VALID
	P4	0.791	0.4227	VALID
	P5	0.817	0.4227	VALID
	P6	0.835	0.4227	VALID
	P7	0.910	0.4227	VALID
	P8	0.885	0.4227	VALID

Variabel	Pertanyaan	R Hitung	R Tabel	Keterangan
Perilaku Mahasiswa (Y)	P9	0.934	0.4227	VALID
	P10	0.540	0.4227	VALID
	P11	0.938	0.4227	VALID
	P12	0.596	0.4227	VALID
	P13	0.800	0.4227	VALID
	P14	0.733	0.4227	VALID
	P15	0.781	0.4227	VALID
	P16	0.430	0.4227	VALID

Source: Primary data processed using SPSS

In the validity test, all 16 question items with 20 respondents had an R-Calculated value > R-Table (0.4227), indicating that all items are valid for measuring the research variables. This suggests that the instrument used in the study was well-designed to capture students' perceptions of the digitalization of student identity cards (KTM).

This validity reflects that students have a clear perception of ease of use, benefits, technological behavior changes, and impacts on social interaction. These findings reinforce that these factors are relevant for assessing the acceptance of digital KTMs.

Table 2. Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.959	.960	16

Source: Primary data processed using SPSS

Based on the reliability analysis using Cronbach's Alpha, the obtained value was 0.959 (> 0.7). This indicates that the questionnaire, consisting of 16 question items, has very high internal consistency (Padilla, 2024). This reliability supports the validity of further analysis on the studied variables.

A reliable questionnaire enhances confidence in the research findings. It ensures that students hold consistent views on the aspects of digital KTM, clarifying the patterns of technology acceptance among respondents.

Table 3. One-Sample Kolmogorov-Smirnov Test (Normality Test)

		Unstandardized Residual
N		8
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	5.05570591
Most Extreme Differences	Absolute	.189
	Positive	.189
	Negative	-.134
Kolmogorov-Smirnov Z		.535
Asymp. Sig. (2-tailed)		.937

a. Test distribution is Normal.

b. Calculated from data.

Source: Primary data processed using SPSS

Based on the output table, the Asymp.Sig (2-tailed) value is 0.937 > 0.05. Therefore, according to the decision-making criteria for the Kolmogorov-Smirnov normality test above, it can be concluded that the data is normally distributed. This indicates that the assumption of normality in the regression model has been met (Hasbi et al., 2023).

Normally distributed data meets the requirements for regression analysis, ensuring the reliability of the research results. This normality indicates that the distribution of students' responses regarding the digital KTM tends to be consistent.

Table 4. ANOVA[a] (Simultaneous Test) F-Test

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.954	1	8.954	.300	.603[b]
	Residual	178.921	6	29.820		
	Total	187.875	7			

a. Dependent Variable: Student Behavior

b. Predictors: (Constant), Digitalization of Student Identity Cards

Source: Primary data processed using SPSS

The F-test results show that the regression model as a whole is not significant, with a Sig. value of 0.603, which is greater than 0.05. This means that the digitalization of the Student Identity Card (KTM) does not have a significant effect on changes in student behavior when analyzed simultaneously.

When analyzed as a whole, the digitalization of the KTM does not have a significant impact on changes in student behavior. This could be due to the small sample size. These findings are consistent with the TAM theory, which states that perceived ease of use can increase technology acceptance, but it is not significant enough to independently influence behavioral change (Davis, 1989) (Santi & Erdani, 2021).

Table 5. Coefficients[a] (Partial Test) T-Test

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	47.855	35.675		1.341	.228
	Digitalisasi Kartu Tanda Mahasiswa	.274	.501	.218	.548	.603

a. Dependent Variable: Perilaku Mahasiswa

Source: Primary data processed using SPSS

The T-test results show that, partially, the digitalization of the KTM does not have a significant effect on changes in student behavior, with a Sig. value of 0.603, which is greater than 0.05. The beta coefficient (B = 0.274) indicates that, although there is a positive relationship, the effect is weak.

Individually, the digitalization of the KTM has only a very small and insignificant effect on student behavior. This suggests that the effect is weak and could be due to factors such as the small sample size or low variation in the independent variables.

Table 6. Model Summary[b] (Coefficient of Determination Test)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.218[a]	.048	-.111	5.461

a. Predictors: (Constant), Digitalisasi Kartu Tanda Mahasiswa

b. Dependent Variable: Perilaku Mahasiswa

Source: Primary data processed using SPSS

The results of the coefficient of determination analysis show a correlation (R) value of 0.218 and an R-squared value of 0.048. The contribution of the independent variable to the dependent variable can be calculated using the following formula:

$$Kd = r2 \times 100\%$$
$$Kd = 0.048 \times 100\% = 4.8\%$$

This indicates that the digitalization of the Student Identity Card (KTM) influences student behavior by 4.8%, while the remaining 95.2% is influenced by other variables not explored in this study. The small R-squared value suggests that digital KTM is not the only factor affecting changes in student behavior, highlighting the need for further exploration of other factors that may have a larger impact.

4. CONCLUSION

According to the components of the Technology Acceptance Model (TAM), students at Telkom University Bandung have viewed the digitization of Student Identity Cards (KTM) as advantageous, mainly in terms of time efficiency and simplicity of use. Notwithstanding these favorable opinions, the

statistical results imply that it has little direct influence on changing behavior, as shown by a low R-squared value of 4.8% and a week correlation (R = 0.218). These findings suggest that student conduct is more significantly influenced by other, as-yet-undiscovered elements. By pointing out knowledge gaps on the behavioral effects of technology adoption, this study adds to the scholarly conversation on the digital transformation of education. To give a more comprehensive view, future studies should increase the sample size and incorporate other variables including user satisfaction and environmental conditions. Additionally, it is advised that digital systems be continuously improved in order to optimize their capacity to serve educational environments.

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