JURNAL TEKNOLOGI DAN OPEN SOURCE
Vol. 8, No. 1, June 2025, pp. 133~141
e-ISSN: 2622-1659, accredited Four Grade by Kemenristekdikti, Decree No: 152/E/KPT/2023
DOI: 10.36378/jtos.v8i1.4382

Analysis of MyPertamina Application Acceptance Using a Modified Technology Acceptance Model (TAM)

M. Ailza Sifaul Anam[1], Asif Faroqi[2], Tri Lathif Mardi Suryanto[3]
[123]Department Information Systems, Universitas Pembangunan Nasional Veteran Jawa Timur

Article Info

Article history:

Received 05 20, 2025
Revised 05 31, 2025
Accepted 06 05, 2025

Keywords:

MyPertamina
PLS-SEM
Service Quality
Technology Acceptance

ABSTRACT

The rapid development of digital technology has driven PT Pertamina to launch the MyPertamina application as a solution to support the efficient and transparent distribution of subsidized fuel. However, the implementation of this application has encountered various technical complaints from users, including bugs, registration difficulties, and transaction issues, raising concerns about public acceptance of the technology. This study aims to analyze the factors influencing the acceptance of the MyPertamina application using the Technology Acceptance Model (TAM), which is modified by incorporating external variables such as perceived trust, perceived risk, perceived security, and service quality. A quantitative approach using Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed to analyze data from 391 respondents. The findings indicate that service quality, perceived usefulness, and perceived trust significantly affect the attitude toward use, which subsequently influences the intention to use the application. In contrast, perceived ease of use, perceived risk, and perceived security were found to have no significant effect on the attitude toward use. These results provide strategic insights for the development and improvement of MyPertamina's digital services to enhance public acceptance.

Corresponding Author:

M. Ailza Sifaul Anam
Department Information System
Universitas Pembangunan Nasional Veteran Jawa Timur
Surabaya, Indonesia
Email: ailzasifaul@mail.com

1. Introduction

The advancement of information technology has been a major driver of digital transformation across various sectors, including the energy sector[1]. One form of innovation introduced by PT Pertamina is the MyPertamina application, which is designed as a transaction and customer loyalty platform to support the distribution of subsidized fuel. This application offers several features, including cashless payments, loyalty point tracking, and product information, aiming to enhance user convenience.

According to 2021 data from the Indonesian Ministry of Energy and Mineral Resources (ESDM), Pertalite was the most widely consumed type of fuel by the Indonesian public, accounting for 70% of total fuel consumption[2]. In response to this high demand, the Indonesian government plans to tighten the distribution of subsidized fuels such as Pertalite and Solar starting from October 1, 2024[3].

Despite its innovative objectives, the implementation of this technology has faced various challenges. User reviews on distribution platforms such as the Apple App Store and Google Play Store reveal numerous complaints, including bugs, registration difficulties, and transaction failures. These issues indicate obstacles in user acceptance, even though the application holds substantial functional potential in supporting the government's fuel subsidy policy.

To gain a clearer understanding of this phenomenon, the Technology Acceptance Model (TAM) serves as the main analytical framework. This model evaluates user acceptance through two core components: perceived usefulness and perceived ease of use[4]. In this research, TAM is expanded by including several additional external factors—such as perceived trust, perceived risk, perceived security, and service quality—to achieve a more in-depth analysis of public acceptance toward the MyPertamina application[5].

This study seeks to determine the key factors that influence the acceptance of MyPertamina by employing a quantitative method through Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings are anticipated to support the development of digital public services that are more aligned with user needs and to provide guidance for stakeholders in enhancing system adoption strategies.

2. Research Method

2.1 Analysis

Analysis refers to a cognitive process aimed at breaking down a whole into smaller parts to understand the interrelationships among components and the function of each part comprehensively[6]. It involves activities such as separating, dissecting, and reorganizing elements based on specific criteria, with the goal of interpreting meaning and solving problems in greater depth prior to drawing conclusions[7].

2.2 User Acceptance Analysis

User acceptance analysis plays a crucial role in the successful implementation of new systems. A high level of acceptance indicates users' readiness to adopt the system, which directly affects its optimal use. By understanding the factors influencing acceptance, system development can be directed toward increasing effectiveness and user satisfaction[8].

2.3 MyPertamina Application

MyPertamina is a digital application developed by PT Pertamina to provide a more efficient and user-friendly experience in accessing various Pertamina services. These include fuel purchases, product information, and promotional offers. Additionally, MyPertamina supports the digitalization of energy services in Indonesia by offering an integrated, secure, and easy-to-use platform, ultimately enhancing customer satisfaction and loyalty.

2.4 Technology Acceptance Model (TAM)

The Technology Acceptance Model (TAM) was introduced by Davis in 1986 to explain the determinants of technology acceptance among users[8]. The model focuses on two key constructs: Perceived Usefulness and Perceived Ease of Use, which influence users' Attitude Toward Use and Behavioral Intention to Use[9]. Due to its simplicity and predictive power, TAM has become a foundational framework widely applied in information system research. TAM also allows for the inclusion of external variables to better reflect specific technological contexts. In this study, the model is extended with four additional constructs: Perceived Risk, Perceived Trust, Perceived Security, and Service Quality[5].

2.5 Problem Identification

Problem identification was conducted by analyzing user complaints sourced from app store reviews. The most frequently cited issues included transaction difficulties and frequent bugs or errors during use. Given that the use of *MyPertamina* is mandatory for purchasing subsidized fuels such as Pertalite and Solar, it becomes essential to examine the factors influencing public willingness to use the application.

2.6 Literature Study

A comprehensive literature review was conducted to examine scholarly sources such as journals, articles, and relevant publications. This stage aimed to build a solid theoretical foundation[10]. The Technology Acceptance Model (TAM) was adopted as the primary theoretical framework to guide the direction and focus of the study[11].

2.7 Conceptual Model Development

This study uses a modified TAM that includes nine variables: *Perceived Risk*, *Perceived Trust*, *Perceived Security*, *Perceived Ease of Use*, *Perceived Usefulness*, *Service Quality*, *Attitude Toward Use*, and *Intention to Use*. The conceptual model is illustrated in Figure 1.

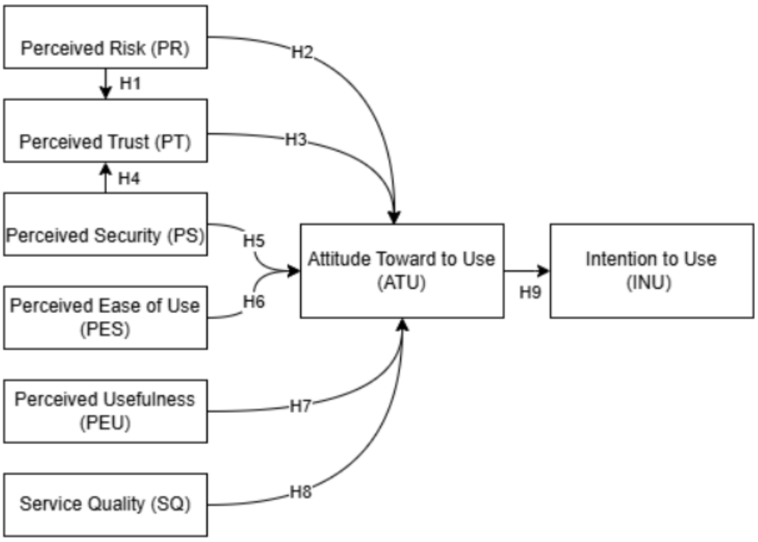

Figure 1. Conceptual Model

The relationships between these nine constructs are structured within a conceptual model, illustrated in Figure 1, which serves as the basis for hypothesis testing. By applying Partial Least Squares Structural Equation Modeling (PLS-SEM), the study seeks to validate the strength and significance of each relationship. This comprehensive approach allows for a more nuanced understanding of what drives the public to adopt digital platforms like MyPertamina, offering valuable insights for developers and policymakers aiming to improve system design and increase user adoption.

2.8 Research Hypotheses

Based on the conceptual model, nine hypotheses were formulated and are presented in Table 1.

Tabel 1. Hipotheses

	Hipotheses
H1	Perceived Risk significantly affects Perceived Trust.
H2	Perceived Risk significantly affects Attitude Toward Use.
H3	Perceived Trust significantly affects Attitude Toward Use.
H4	Perceived Security significantly affects Perceived Trust.
H5	Perceived Security significantly affects Attitude Toward Use.
H6	Perceived Usefulness significantly affects Attitude Toward Use.
H7	Perceived Ease of Use significantly affects Attitude Toward Use.
H8	Service Quality significantly affects Attitude Toward Use.
H9	Attitude Toward Use significantly affects Intention to Use

2.9 Population and Sample

The target population in this study comprises users of the MyPertamina application in Indonesia. Due to the absence of official data on the total number of active users, the sample size was determined using the Lemeshow formula, which is suitable for unknown populations in survey research[12]. Based on a 5% margin of error, the minimum sample size was calculated to be 384 respondents. This study collected data from 391 respondents to ensure validity and robustness.

$$n = \frac{z^2 \times p\,(1-p)}{d^2}$$
$$n = \frac{(1.96)^2 \times 0.5\,(1-0.5)}{0.05^2} \quad \{1\}$$
$$n = \frac{3.8416 \times 0.25}{0.0025}$$
$$n = \frac{0.9604}{0.0025}$$
$$n = 384.16$$

Keterangan:
n = Minimum sample size
Z = Standard value
p = Maximum estimate
d = Margin of error (5% or 0.05)

3.0 Instrument Design and Testing

The research instrument consisted of a questionnaire with 32 items, constructed based on relevant theoretical constructs. Prior to the full-scale data collection, a pilot test involving 30 respondents was conducted to assess the instrument's validity and reliability.Validity testing ensured that each item measured the intended construct, with items considered valid if the correlation coefficient (r-calculated) was greater than or equal to the r-table value at a 5% significance level[13]. Reliability was assessed using Cronbach's Alpha, with a value ≥ 0.7 indicating acceptable internal consistency [14]. Instruments that failed to meet these criteria were revised accordingly before the final data collection phase.

3. Result and Discussion

3.1 Inferential Analysis Results

Inferential analysis in this study aimed to evaluate the outer and inner models using data collected from 391 respondents who are users of the MyPertamina application. The analysis was conducted using the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach.

3.1.1 Outer Model

The outer model represents the measurement structure that defines the relationship between observed indicators and their corresponding latent constructs. The evaluation of the outer model involves several key components: convergent validity, discriminant validity, and reliability testing[15].

Table 2. Outer Model Results

Variabel	Indikator	Outer Loadings	AVE
Attitude Toward to Use	ATU1	0.817	0.662
	ATU2	0.833	
	ATU3	0.791	
	ATU4	0.814	
Intention to Use	INU1	0.765	0.653
	INU2	0.819	
	INU3	0.793	
	INU4	0.853	
Perceived Ease of Use	PES1	0.818	0.646
	PES2	0.800	
	PES3	0.780	
	PES4	0.817	
Perceived Usefulness	PEU1	0.819	0.643
	PEU2	0.824	
	PEU3	0.790	
	PEU4	0.722	
Perceived Risk	PR1	0.824	0.656
	PR2	0.746	
	PR3	0.844	
	PR4	0.822	
Perceived	PS1	0.852	

Security	PS2	0.816	0.661
	PS3	0.833	
	PS4	0.747	
Perceived Trust	PT1	0.840	0.670
	PT2	0.842	
	PT3	0.801	
	PT4	0.790	
Service Quality	SQ1	0.740	0.588
	SQ2	0.727	
	SQ3	0.789	
	SQ4	0.810	

Table 3. Reliability Test Results

Variabel	CA	CR
Attitude Toward to Use	0.830	0.887
Intention to Use	0.822	0.883
Perceived Ease of Use	0.817	0.879
Perceived Usefulness	0.814	0.878
Perceived Risk	0.825	0.884
Perceived Security	0.829	0.886
Perceived Trust	0.836	0.890
Service Quality	0.766	0.851

As shown in Tables 2 and 3, all indicator loadings exceed the minimum threshold of 0.7, and Average Variance Extracted (AVE) values are above 0.5, indicating acceptable convergent validity[16]. Reliability analysis using Cronbach's Alpha and Composite Reliability also meets the standard criteria of ≥ 0.7, confirming that the constructs are internally consistent[17]. Therefore, it can be concluded that the outer model has satisfied all required evaluation criteria.

3.1.2 Inner Model

The inner model reflects the structural relationships between latent variables and was evaluated through three key indicators: the coefficient of determination (R-square), effect size (F-square), and hypothesis testing using bootstrapping. These measures provide insights into the model's explanatory power and the significance of causal relationships between constructs[18].

Table 4. R-square Values

Variabel	R-square
Attitude Toward to Use	0.684
Intention to Use	0.667
Perceived Trust	0.618

The R-square values indicate the proportion of variance in an endogenous construct that is explained by its exogenous predictors. As shown in Table 4, the R-square value for *Attitude Toward Use* is 0.684, suggesting that 68.4% of the variance in users' attitudes is explained by *Perceived Usefulness*, *Perceived Ease of Use*, *Perceived Risk*, *Perceived Trust*, *Perceived Security*, and *Service Quality*. The R-square for *Intention to Use* is 0.667, indicating that 66.7% of users' intention to use the application is predicted by their attitude. Meanwhile, the construct *Perceived Trust* has an R-square of 0.618, which implies that 61.8% of the variation in trust is explained by *Perceived Risk* and *Perceived Security*. According to Chin[19], R-square values of 0.75, 0.50, and 0.25 are considered substantial, moderate, and weak, respectively. Hence, the model demonstrates moderate to strong explanatory power across the three dependent variables.

Table 5. F-square Values

Relationship	F-square	Keterangan
PES→ATU	0.001	Very small
PEU→ATU	0.049	Small
PR→ATU	0.001	Very small
PS→ATU	0.002	Very small
PT→ATU	0.045	Small
SQ→ATU	0.227	Moderate
ATU→INU	2.005	Large
PR→PT	0.031	Small

PS→PT	1.071	Large

The F-square statistic was then used to evaluate the effect size of each exogenous variable on its corresponding endogenous construct. Table 5 summarizes the F-square results. Variables such as *Perceived Ease of Use*, *Perceived Risk*, and *Perceived Security* showed very weak effects on *Attitude Toward Use* with values of 0.001, 0.001, and 0.002, respectively—well below the threshold of 0.02 for a small effect. In contrast, *Perceived Usefulness* and *Perceived Trust* had small effects on *Attitude Toward Use*, with F-square values of 0.049 and 0.045. *Service Quality* had a moderate effect on *Attitude Toward Use* (0.227), while *Attitude Toward Use* had a very large effect on *Intention to Use* (2.005), reflecting its pivotal role. Additionally, *Perceived Security* had a substantial impact on *Perceived Trust* (1.071), whereas *Perceived Risk* had a minor but present effect (0.031). These results highlight that while some variables contribute minimally to attitude formation, others exert substantial influence on users' behavioral intentions.

The hypothesis testing was conducted using SmartPLS version 3 with the bootstrapping method. The results of the hypothesis testing through bootstrapping can be seen in Figure 1 and Table 6.

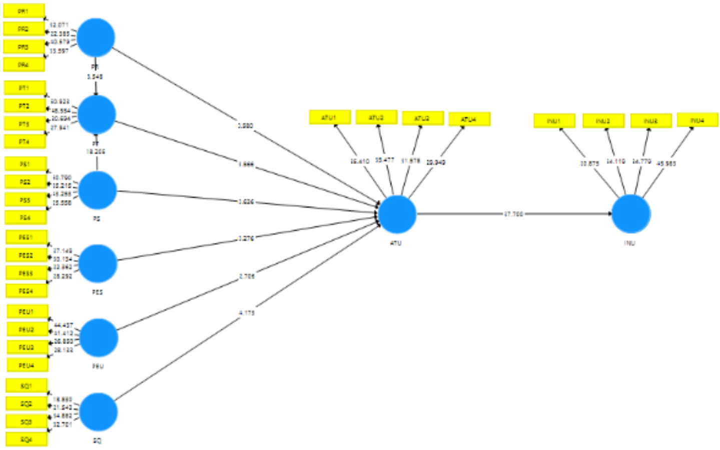

Figure 2. Structural model diagram in SEM analysis

The Structural Equation Modeling (SEM) analysis model presented illustrates the relationships between latent constructs in explaining users' intention to use (INU) a system. In this model, the latent constructs are represented by blue circles and are measured through indicators shown as yellow rectangles. The model consists of two main components: the measurement model, which links indicators to their respective constructs, and the structural model, which depicts the causal relationships among the constructs. The analysis results show that perceived risk (PR) has a significant influence on perceived trust (PT), but it does not have a direct significant effect on attitude toward use (ATU). This means that while perceived risk may reduce trust, it does not directly influence users' attitudes toward using the system. On the other hand, perceived trust (PT) significantly influences attitude toward use (ATU), indicating that the higher the level of trust, the more positive the user's attitude toward using the system.

Perceived security (PS) plays a strong role in shaping trust, as evidenced by a high coefficient and level of significance. However, perceived security does not directly influence attitude toward use, suggesting that its contribution lies more in building trust rather than directly shaping users' attitudes. Perceived ease of use (PEU) has a significant influence on attitude toward use, showing that the easier a system is to use, the more positive the user's attitude becomes. Similarly, system quality (SQ) also has a significant impact on users' attitudes, emphasizing the importance of technical quality in shaping user perceptions. However, perceived usefulness (PES) does not show a significant effect on attitude toward use. This indicates that even if a system is perceived as useful, that perception alone may not be sufficient to generate a positive attitude directly. Finally, attitude toward use (ATU) has a very strong influence on intention to use (INU), meaning that users' attitudes are the primary determinant of their intention to continue using the system. Overall, this model emphasizes that trust, ease of use, and system quality are key elements in shaping users' attitudes, which in turn become crucial factors in determining their intention to use the system.

Tabel 6. Hypothesis testing results in SEM-PLS analysis

Hipotesis	**O**	**T-statistics**	**P-value**	**Ket.**
PR→PT	0.124	3.548	0.000	Supported

PR→ATU	0.020	0.580	0.562	Not supported
PT→ATU	0.212	3.566	0.000	Supported
PS→PT	0.721	18.205	0.000	Supported
PS→ATU	0.050	0.636	0.525	Not supported
PES→ATU	0.022	0.276	0.782	Not supported
PEU→ATU	0.219	2.706	0.007	Supported
SQ→ATU	0.423	4.173	0.000	Supported
ATU→INU	0.817	37.700	0.000	Supported

Hypothesis testing was conducted using the bootstrapping method in SmartPLS version 3. A hypothesis was accepted if the t-statistic exceeded 1.96 and the p-value was below 0.05[19][20]. The results, presented in Table 6 and Figure 1, reveal that six hypotheses were statistically supported. Specifically, *Perceived Risk* significantly influenced *Perceived Trust* (t = 3.548, p = 0.000), and *Perceived Security* also had a significant effect on *Perceived Trust* (t = 18.205, p = 0.000). Furthermore, *Perceived Trust*, *Perceived Usefulness*, and *Service Quality* were found to have significant positive effects on *Attitude Toward Use*, with t-values above 2.7 and p-values below 0.01. *Attitude Toward Use* itself had a very strong and significant effect on *Intention to Use* (t = 37.700, p = 0.000).

Conversely, three hypotheses were rejected. *Perceived Risk*, *Perceived Security*, and *Perceived Ease of Use* did not significantly influence *Attitude Toward Use*, as their p-values were greater than 0.05 and t-values below 1.96. This suggests that while users may be aware of potential risks and usability issues, these concerns do not directly impact their attitude toward using the application—possibly due to the obligatory nature of *MyPertamina* in subsidized fuel transactions.

These findings emphasize that trust, usefulness, and service quality are the most influential factors in shaping a positive attitude, which subsequently leads to strong behavioral intentions. Risk perception and usability concerns, although important, may be secondary in contexts where application usage is mandatory.

4. Conclusion

This study examined the acceptance of the MyPertamina application by integrating the original Technology Acceptance Model (TAM) with several relevant external variables, including Perceived Trust, Perceived Risk, Perceived Security, and Service Quality. The use of TAM as the foundational framework, combined with these additional constructs, allows for a more comprehensive analysis of user behavior in the context of government-mandated digital services. Data were collected from 391 respondents and analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM), a robust statistical technique suitable for complex models with multiple interrelated variables. The results of this analysis offer several important insights into the factors that influence user acceptance and intention.

The findings demonstrate that Perceived Trust, Perceived Usefulness, and Service Quality have a significant and positive influence on Attitude Toward Use. This attitude, in turn, strongly predicts users' Intention to Use the MyPertamina application. These results highlight a clear pattern: when users perceive an application as trustworthy, beneficial to their needs, and supported by high-quality service delivery, they are more likely to form positive attitudes and sustain long-term usage. Such insights are especially relevant in the public service domain, where user satisfaction is not only tied to design but also to the reliability and perceived value of the system.

Conversely, the study found that Perceived Risk, Perceived Security, and Perceived Ease of Use do not exhibit a significant effect on user attitude. This counterintuitive outcome suggests that, in certain contexts—particularly those involving obligatory platforms like MyPertamina—users may be willing to overlook concerns related to system security or ease of use. The findings may also reflect a growing user desensitization toward digital risks, or a pragmatic shift in priorities where users value functional access over comfort or perceived safety. This could be especially true in environments with limited alternatives, where the application serves as a gatekeeper to essential government services, such as subsidized fuel distribution.

These insights contribute meaningfully to the broader discourse on digital service adoption in the public sector. They underscore the importance for service providers to prioritize investments in building user trust, enhancing the practical utility of the system, and maintaining high service standards. Focusing solely on user interface design or technical risk mitigation may be insufficient if users do not perceive clear benefits or reliability in service delivery. For future research, it is recommended to explore additional external variables that could further shape public acceptance, such as User Experience (UX), social influence, cultural norms, and digital literacy. These elements may offer deeper explanatory power in understanding user behavior, particularly in diverse or underserved populations. Moreover, longitudinal studies are encouraged to monitor changes in user perceptions over time, especially as national digital infrastructure, regulatory frameworks, and policy directives continue to evolve. Such approaches would not only enhance theoretical development within the field of technology acceptance but also provide actionable insights for policymakers and system developers engaged in digital transformation initiatives within the public sector..

References

[1] S. Suryadi, "Peranan perkembangan teknologi informasi dan komunikasi dalam kegiatan pembelajaran dan perkembangan dunia pendidikan," vol. 3, no. 3, 2015.

[2] S. Ravel, "Paling Banyak Dikonsumsi, Pertalite Jadi BBM Favorit Masyarakat." [Online]. Available: https://otomotif.kompas.com/read/2022/03/14/072200715/paling-banyak-dikonsumsi-pertalite-jadi-bbm-favorit-masyarakat

[3] F. D. Muliawati, "Yang Berhak Minum BBM Subsidi Harus Daftar QR Code, Ini Cara Mudahnya." [Online]. Available: https://www.cnbcindonesia.com/news/20240906102054-4-569691/yang-berhak-minum-bbm-subsidi-harus-daftar-qr-code-ini-cara-mudahnya

[4] Y. Nurfaizal and R. Wahyudi, "Analisis Penerimaan Sistem Informasi Manajemen BPJS Kesehatan Layanan Primary Care di UPTD Puskesmas Kabupaten Banyumas," *J. Teknol. Inf. dan Ilmu Komput.*, vol. 9, no. 5, pp. 977–984, 2022, doi: 10.25126/jtiik.2022945372.

[5] M. A. Almaiah *et al.*, "Investigating the Role of Perceived Risk, Perceived Security and Perceived Trust on Smart m-Banking Application Using SEM," *Sustain.*, vol. 15, no. 13, pp. 1–17, 2023, doi: 10.3390/su15139908.

[6] M. T. Hidayat, Q. Aini, and E. Fetrina, "Penerimaan Pengguna E-Wallet Menggunakan UTAUT 2 (Studi Kasus) (User Acceptance of E-Wallet Using UTAUT 2 – A Case Study)," vol. 9, no. 3, pp. 239–247, 2020.

[7] A. Ariyanto, I. Ivantan, and P. Purwanti, "Pengaruh Kualitas Produk dan Harga terhadap Kepuasan Konsumen Yang Berdampak pada Loyalitas Pelanggan Pemakai Paket Data Internet Indosat Ooredoo (Studi Pada Mahasiswa Prodi Manajemen S-1 Universitas Pamulang)," *Ekon. J. Econ. Bus.*, vol. 6, no. 2, p. 668, 2022, doi: 10.33087/ekonomis.v6i2.623.

[8] M. Nasir, "Evaluasi Penerimaan Teknologi Informasi Mahasiswa di Palembang Menggunakan Model UTAUT," no. 12, pp. 36–40, 2013.

[9] F. D. Davis, "Information Technology Introduction," vol. 13, no. 3, pp. 319–340, 1989.

[10] I. Valda, A. Faroqi, and E. M. Safitri, "Evaluasi Faktor Penerimaan Nasabah Terhadap Aplikasi Mobile Banking Syariah Menggunakan Modifikasi Tam (Studi Kasus: Bsi Mobile)," *J. Inform. dan Tek. Elektro Terap.*, vol. 12, no. 3, 2024, doi: 10.23960/jitet.v12i3.4828.

[11] R. F. Jatnika, I. Kaniawulan, and D. Singasatia, "ANALISIS PENERIMAAN APLIKASI MYPERTAMINA MENGGUNAKAN METODE TECHNOLOGY ACCEPTANCE MODEL (TAM)," vol. 14, no. 2, pp. 347–357, 2023.

[12] S. Aisyah, E. Saputra, N. E. Rozanda, and T. K. Ahsyar, "Evaluasi Usability Website Dinas Pendidikan Provinsi Riau Menggunakan Metode System Usability Scale," vol. 7, no. 2, pp. 125–132, 2021.

[13] H. Sujono and B. Santoso, "Analisis Kualitas E-Learning dalam Pemanfaatan Web Conference sebagai Media Belajar Mahasiswa.".

[14] G. Imam, *Aplikasi Analisis Multivariate Dengan Program IBM SPSS*. 2018.

[15] S. Nurfa'izin, T. Puspitasari, S. Widiyanti, and I. Hartati, "Prosiding SNST ke-6 Tahun 2015," *Pros. SNST ke-6*, no. 6, pp. 207–215, 2015.

[16] H. Ghozali, Imam; Latan, *Partial Least Squares: Konsep, Teknik dan Aplikasi Menggunakan Program SmartPLS 3.0 untuk Penelitian Empiris*. Badan Penerbit UNDIP, 2015.

[17] D. H. Perkasa and M. Magito, "Determinan Faktor Blue Economy Dalam Aplikasi Praktis Sdm Perhotelan Di Pulau Tidung Kepulauan Seribu," *Jesya*, vol. 7, no. 1, pp. 840–852, 2024, doi: 10.36778/jesya.v7i1.1495.

[18] A. Juliandi, "Structural Equation Model Partial Least Square (SEM-PLS) Menggunakan SmartPLs," *Jangan Belajar*, vol. 1, no. was, pp. 1–4, 2018.

[19] M. Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, *A Primer on Partial Least Squares Structural Equation Modeling (PLS-SEM)*. SAGE Publications, 2021.

[20] D. Hafisah and G. Irawanti, "PERAN CUSTOMER VALUE DALAM MEMEDIASI GREEN MARKETING TERHADAP KEPUTUSAN PEMBELIAN MOBIL LOW COST GREEN CAR (LCGC) PADA DEALER TRI MANDIRI SEJATI DAIHATSU SAMPIT," vol. 8, no. 2, pp. 185–200, 2023.

[21] J. Jasri and N. W. Al-hafiz, "Designing a mobile-based infaq application markazul quran wassunnah foundation (MQS)Kuantan Singingi", *J. Teknik Informatika CIT Medicom*, vol. 15, no. 5, pp. 247–254, Nov. 2023.

[22] R. Nazli, A. Amrizal, H. Hendra, and S. Syukriadi, "Modeling User Interface Design E-Business Applications for Marketing Umkm Products in Payakumbuh City Using Pieces Framework", *JTOS*, vol. 7, no. 2, pp. 55 - 66, Nov. 2024.

[23] Siti Saniah and Mhd. Furqan, “Classification Of Rice Plant Diseases Using K-Nearest Neighbor Algorithm Based On Hue Saturation Value Color Extraction And Gray Level Co-Occurrence Matrix Features”, *JTOS*, vol. 7, no. 2, pp. 212 - 223, Dec. 2024.

[24] Nofri Wandi Al-Hafiz, Helpi Nopriandi, and Harianja, “Design of Rainfall Intensity Measuring Instrument Using IoT-Based Microcontroller”, *JTOS*, vol. 7, no. 2, pp. 202 - 211, Dec. 2024.

[25] N. W. Al-Hafiz and H. Harianja, “Design of an Internet of Things-Based automatic cat feeding control device (IoT)”, *Mandiri*, vol. 13, no. 1, pp. 161–169, Jul. 2024.

[26] PutriD. and Al-HafizN., “SISTEM INFORMASI SURAT KETERANGAN GANTI RUGI TANAH PADA KECAMATAN KUANTAN TENGAH MENGGUNAKAN WEBGIS”, *Biner : Jurnal Ilmiah Informatika dan Komputer*, vol. 2, no. 2, pp. 112-121, Jul. 2023.