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# ANALYZING FACTORS BEHIND THE SUCCESSFUL ADOPTION OF THE SAMSAT DIGITAL NATIONAL (SIGNAL) APPLICATION FOR MOTOR VEHICLE TAX PAYMENT

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**Abstract**
Officially launched by the Indonesian National Police in early 2023, the Samsat Digital Nasional (SIGNAL) application is a digital platform for motor vehicle tax payments, allowing taxpayers to pay via smartphones. This research aims to identify critical factors influencing the successful adoption of the SIGNAL application, such as perceived ease of use, perceived usefulness, enjoyment, and intention to use on actual use of the application, particularly in South Tangerang, Banten, Indonesia, using the Extended Technology Acceptance Model (TAM). Primary data for this study were collected through a questionnaire distributed to 98 respondents. It was found that 91 respondents met the criteria for taxpayers who had made tax payments using the SIGNAL application. The Data analysis method uses Partial Least Squares Structural Equation Modeling (PLS-SEM) to explore the relationships between the variables. The results indicate that perceived ease of use and enjoyment positively influence users' intention to use, while perceived usefulness does not significantly affect intention to use. However, the intention to use positively significantly affects actual usage. These findings underscore the factors driving e-government service adoption and highlight the importance of user experience in application design. The study contributes to understanding digital service adoption in the public sector, suggesting that future strategies of Indonesian National Police should prioritize ease of use and enjoyment to enhance application usage.
**Keywords**: Motor Vehicle Tax, SIGNAL, Technology Acceptance Model, User Experience

## INTRODUCTION

In the current digital era, governments worldwide are using technology to improve public services and make it easier for citizens to fulfil their obligations, including paying motor vehicle taxes. In Indonesia, the National Police have taken significant steps by carrying out a digital transformation in paying motor vehicle tax through the Samsat Digital Nasional (SIGNAL) application, which replaces the previous application called Samsat Online Nasional (SAMOLNAS). Before the SIGNAL application was officially launched, it was tested first in 2021, and then the Indonesian National Police officially launched the SIGNAL application in early 2023 (Zea, 2023). This application is designed to make it easier to pay motor vehicle tax, which previously required a physical visit to the Samsat office. This initiative reflects the global trend towards electronic government (e-Government), where technology-based services are expected to increase efficiency (Doran et al., 2023), transparency (Sabani, 2021), and citizen satisfaction (Nadhira et al., 2024).

Despite the significant potential of e-government-based applications for motor vehicle tax payment, such as SIGNAL and some of its predecessors, the adoption rate of these applications among the public remains low compared to manual tax payments made directly at Samsat offices (Dharmayanti & Jati, 2021; Ridwal, 2022). Research by Puspasari et al. (2024) examining user experiences of SIGNAL through Play Store comments revealed that 58% of users provided positive reviews, while 42% gave negative reviews. Although positive reviews outnumber negative ones, the factors influencing public acceptance and usage of such technology are not yet fully understood, particularly in developing countries like Indonesia. It is crucial to identify and understand the factors that influence individuals' decisions to adopt the SIGNAL application for motor vehicle tax payments.

To address this research problem, it is essential to apply relevant technology acceptance theories, one of which is the Technology Acceptance Model (TAM) proposed by (Davis et al.,

1989). This study aims to address these gaps by examining the factors influencing the adoption of the SIGNAL application for motor vehicle tax payments in Indonesia. By applying the expanded TAM framework, which includes perceived enjoyment as an additional variable, this research seeks to provide a comprehensive understanding of user behavior towards e-government applications in a developing country context. The findings of this study are expected to contribute to both theoretical advancements in technology acceptance research and practical implications for policymakers and developers of e-government services in Indonesia and similar contexts globally.

Previous studies employing the Technology Acceptance Model (TAM) have highlighted several factors influencing the adoption of information technology. Ease of use, for instance, suggests that the simpler a system is to use, the higher the inclination to adopt it (Hamid et al., 2016; Tahar et al., 2020; An et al., 2023). Additionally, perceived usefulness, which closely relates to the perceived benefits of using an information system, significantly affects individuals' tendency to utilize digital payment applications (Bhuiyan et al., 2024). The utility of a tax payment application plays a crucial role in determining user willingness to adopt such systems (Abu-Silake et al., 2024).

## LITERATURE REVIEW

### Extended Technology Acceptance Model

The Technology Acceptance Model (TAM), developed by Davis et al. (1989), aims to identify user behavior in accepting new technology. The goal of the TAM model is to pinpoint the psychological and cognitive elements that influence user acceptance of new technology. According to TAM, behavioral intentions determine the adoption and use of technology. These behavioral intentions are shaped by perceived usefulness and perceived ease of use, which in turn influence people's attitudes toward technology. Therefore, TAM allows researchers to include additional potential elements by incorporating external variables that may drive the adoption of a particular technology (Al-Adwan et al., 2023).

Due to its simplicity and ease of understanding, TAM is easily adaptable to various types of technology and their development variables, one of which is perceived enjoyment (Fussell & Truong, 2022). This research employs an expanded version of TAM by introducing the additional variable of perceived enjoyment. Huang et al. (2007) suggest that individuals are more likely to engage in activities that they find enjoyable. Previous research has also utilized the perceived enjoyment variable in different technological contexts. For instance, Won et al. (2023) applied it to sport app, To et al. (2021) investigated it in the context of mobile wallets, and De Cicco et al. (2022) explored it for chatbots. By including perceived enjoyment as an external variable, this study aims to provide a more comprehensive understanding of the factors influencing user acceptance and adoption of new technology.

### Perceived Of Usefulness on Intention to Use

In the Technology Acceptance Model (TAM) theory, perceived usefulness is a predictor that can influence the intention to use. The benefits of a system can increase an individual's desire to use that system (Davis et al., 1989). Previous studies indicate that perceived usefulness significantly impacts the intention to use technology in the context of e-government (Hamid et al., 2016) and mobile applications (An et al., 2023). Based on this explanation, the hypothesis we propose is:

$H_1$: Perceived usefulness has a significant effect on the intention to use.

### Perceived of Ease of Use on Perceived of Usefulness

Perceived ease of use refers to the level at which individuals believe that using a specific technology or system will be free from excessive effort (Cudjoe et al., 2015). The easier an information technology is perceived to be used, the more beneficial the system will be for its

users (Vigoroso et al., 2024). In the context of mobile payment systems, perceived ease of use is a factor influencing perceived usefulness (Yang et al., 2023). Based on these insights, we propose the following hypothesis:

$H_2$: Perceived of ease of use has a significant effect on the perceived of usefulness.

**Perceived of Ease of Use on Intention to Use**

The ease of use of an information system serves as a predictor in determining intention to use (An et al., 2023). In the context of safety training applications, the ease of use increases individuals' intention to use the application (Vigoroso et al., 2024). Similarly, the ease of use of mobile payment systems positively influences the intention to use these applications (Alshurideh et al., 2021; Yang et al., 2023). Based on these insights, we propose the following hypothesis:

$H_3$: Perceived ease of use has a significant effect on the intention to use.

**Perceived of Enjoyment on Intention to Use**

If the user can experience enjoyment through adopting new technology, the intention to use the technology will be positive (Suki & Suki, 2011). In the context of mobile e-wallets, enjoyment of the application significantly affects the tendency to use the application (To et al., 2021). Perceived enjoyment also influences intentions to use mobile payment applications (Nur & Panggabean, 2021) and facial recognition payment applications (Zhong et al., 2021). Based on these insights, we propose the following hypothesis:

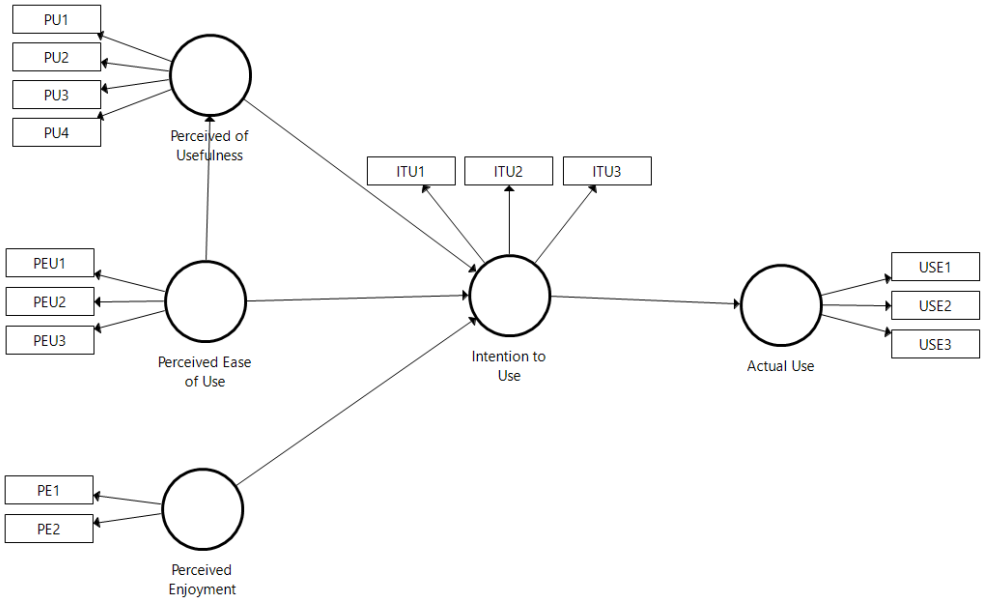
$H_4$: Perceived of enjoyment has a significant effect on the intention to use.

**The Intention to Use on Actual Use**

Intention to use refers to an individual's willingness to use or engage with something based on specific premises. In the TAM model, intention to use directly influences actual use (Sarmah et al., 2020) In electronic payment systems, intention to use is critical in increasing actual system usage (Tomić et al., 2023). This finding is consistent with Zaid Kilani et al. (2023), where intention to use e-wallets significantly contributes to actual adoption. Based on these insights, we propose the following hypothesis:

$H_5$: The Intention to use has a significant effect on Actual use.

**Figure 1.** Conceptual Framework




Source: Primary Data

## METHODS

This research uses quantitative methods, by collecting primary data through distributing questionnaires directly and online. The object of this research is motor vehicle taxpayers who live in South Tangerang City, Banten Province. The selection of this area was based on the consideration that South Tangerang City is included in the jurisdiction of the Greater Jakarta Police and is one of the cities that had the opportunity to trial the SIGNAL application earlier.

The sampling technique used was purposive sampling, aiming to ensure that the obtained samples align with the research requirements. Several criteria were established, including that respondents must be motor vehicle taxpayers residing in South Tangerang City, conduct tax payments independently, and use the SIGNAL application for tax payments. The determination of the minimum sample size adheres to the guidelines outlined by Roscoe (1975) which states that a sample size of between 30 and 500 is sufficient for behavioural research. A total of 91 respondents met the criteria and became the sample in this study.

Data collected from respondents was analyzed using the partial least squares structural equation modeling (PLS-SEM) method. This method was chosen because the method does not require normally distributed data by default and it obtains solutions with smaller sample sizes (Hair & Alamer, 2022).

**Table 1. Variables & Indicators**

| Variables | Indicators | Source |
|---|---|---|
| Perceived Usefulness (PU) | 1. Useful<br>2. Productivity<br>3. Effectiveness<br>4. Increase Performance | Davis et al. (1989) |
| Perceived Ease of Use (PEU) | 1. Easy to Use<br>2. Easy to Learn<br>3. Understandable | Davis et al. (1989) |
| Perceived Enjoyment (PE) | 1. Enjoyable<br>2. Fun | Huang et al. (2007) |
| Intention to Use (ITU) | 1. Desire to know the technology<br>2. Desire to Use<br>3. Desire to learn the technology | Davis et al. (1989) |
| Actual Use (USE) | 1. Frequency of Use<br>2. Actual Use<br>3. Regularity of use | Davis et al. (1989) |

## RESULTS AND DISCUSSION

The number of questionnaires distributed was 98 and 91 respondents who met the sampling criteria were motor vehicle taxpayers domiciled in South Tangerang City. The data in Table 1 shows a description of the respondents used in this research.

**Table 2. Description of Respondents**

| Age Range | Gender | | Total |
|---|---|---|---|
| | Male | Female | |
| 20 – 25 | 12 | 21 | 33 |
| >25 – 30 | 9 | 10 | 19 |
| >30 – 35 | 9 | 7 | 16 |
| >35 - 41 | 3 | 11 | 14 |
| >41 - 50 | 1 | 2 | 3 |
| >50 | 2 | 4 | 6 |
| **Total** | **36** | **55** | **91** |

Source: Primary Data

**Outer Model Test**

In reflective measurement model assessment, the outer loadings of the indicators are examined as the first stage. High outer loadings on a construct indicate a high commonality between the related indicators. The required outer loadings value is > 0.7; in this research model, all indicators have an outer loadings value above 0.7.

To test convergent validity, use the AVE value with a value criterion of > 0.50 (Hair & Alamer, 2022). Based on the AVE value of each construct, it is above 0.50, which means that the construct has no convergent validity problems.

Discriminant validity testing uses cross-loading values with the criterion that the outer loading indicator on the related construct must be greater than all other cross-loading indicators (Hair & Alamer, 2022). In this study, each of these indicators met the cross-loading criteria.

For reliability testing, composite reliability is used with a value criterion of > 0.7 and Cronbach's alpha with a criterion value of > 0.60. The construct criteria in this research have met both criteria, which means that this research model has met the reliability requirements.

**Tabel 3. Outer Loading & AVE**

| Variables | Indicators | Outer Loadings | AVE | Results |
|---|---|---|---|---|
| Perceived Usefulness (PU) | PU1 | 0,819 | 0,691 | Valid |
| | PU2 | 0,851 | | Valid |
| | PU3 | 0,865 | | Valid |
| | PU4 | 0,787 | | Valid |
| Perceived Ease of Use (PEU) | PEU1 | 0,860 | 0,735 | Valid |
| | PEU2 | 0,869 | | Valid |
| | PEU3 | 0,842 | | Valid |
| Perceived Enjoyment (PE) | PE1 | 0,948 | 0,893 | Valid |
| | PE2 | 0,942 | | Valid |
| Intention to Use (ITU) | ITU1 | 0,868 | 0,798 | Valid |
| | ITU2 | 0,912 | | Valid |
| | ITU3 | 0,899 | | Valid |
| Actual Use (USE) | USE1 | 0,844 | 0,793 | Valid |
| | USE2 | 0,909 | | Valid |
| | USE3 | 0,917 | | Valid |

Source: Primary Data

**Tabel 4. Cross Loading**

| | Actual Use (USE) | Intention to Use (ITU) | Perceived Ease of Use (PEU) | Perceived Enjoyment (PE) | Perceived of Usefulness (PU) |
|---|---|---|---|---|---|
| USE1 | 0,844 | 0,714 | 0,577 | 0,556 | 0,487 |
| USE2 | 0,909 | 0,592 | 0,634 | 0,473 | 0,452 |
| USE3 | 0,917 | 0,700 | 0,651 | 0,593 | 0,467 |
| ITU1 | 0,628 | 0,868 | 0,703 | 0,777 | 0,418 |
| ITU2 | 0,641 | 0,912 | 0,589 | 0,708 | 0,494 |
| ITU3 | 0,757 | 0,899 | 0,674 | 0,665 | 0,451 |
| PEU1 | 0,557 | 0,510 | 0,860 | 0,569 | 0,531 |
| PEU2 | 0,630 | 0,611 | 0,869 | 0,617 | 0,552 |
| PEU3 | 0,601 | 0,753 | 0,842 | 0,800 | 0,426 |
| PE1 | 0,599 | 0,778 | 0,725 | 0,948 | 0,499 |

| | | | | | |
|---|---|---|---|---|---|
| PE2 | 0,558 | 0,737 | 0,748 | 0,942 | 0,534 |
| PU1 | 0,399 | 0,383 | 0,418 | 0,377 | 0,819 |
| PU2 | 0,508 | 0,461 | 0,487 | 0,489 | 0,851 |
| PU3 | 0,358 | 0,346 | 0,446 | 0,392 | 0,865 |
| PU4 | 0,466 | 0,472 | 0,564 | 0,524 | 0,787 |

Source: Primary Data

**Tabel 5. Cronbach's Alpha & Composite Reliability**

| Variables | Cronbach's Alpha | Composite Reliability | Results |
|---|---|---|---|
| Perceived Usefulness (PU) | 0.851 | 0.899 | Reliable |
| Perceived Ease of Use (PEU) | 0.820 | 0.893 | Reliable |
| Perceived Enjoyment (PE) | 0.880 | 0.943 | Reliable |
| Intention to Use (ITU) | 0.873 | 0.922 | Reliable |
| Actual Usage (USE) | 0.869 | 0.920 | Reliable |

Source: Primary Data

**Inner Model Test**

To see the explanatory power of a model using $R^2$ values, the $R^2$ value ranges from 0 to 1; the more significant the $R^2$ value, the stronger the explanatory power of the model, (Hair & Alamer, 2022). The $R^2$ value is categorized as strong if it is more than 0.67, moderate if it is more than 0.33, and weak if it is more than 0.19. To see the $R^2$ value, see Table 2.

**Tabel 6. $R^2$ Value**

| Variable | $R^2$ | Description |
|---|---|---|
| Actual Use | 0.574 | Moderate |
| Intention to Use | 0.676 | Strong |
| Perceived Usefulness | 0.342 | Weak |

Source: Primary Data

This research also uses the Q2 statistic value to measure the predictive relevance of the model, with the expected value being the Q2 statistic > 0, which has the relevant predictive ability. Based on these results, it indicates that the designed structural model can be explained by 90.9%, of which other factors outside the research model explain the remaining 9.1%

**Hypothesis Test**

Hypothesis testing was carried out to determine the relationship between variables in this study. Testing the PLS-SEM model structure uses SmartPLS software, and it involves carrying out a bootstrapping procedure to examine the path coefficients of the variables being tested. The test results can be seen in Table 3.

**Tabel 7. Hypothesis Test Results**

| | Original Sample (O) | T Statistics (\|O/STDEV\|) | P Values |
|---|---|---|---|
| Perceived of Usefulness -> Intention to Use ($H_1$) | 0.040 | 0.222 | 0.520 |
| Perceived Ease of Use -> Intention to Use ($H_2$) | 0.184 | 1.968 | 0.049 |
| Perceived Ease of Use -> Perceived of Usefulness ($H_3$) | 0.406 | 7.739 | 0.000 |
| Perceived Enjoyment -> Intention to Use ($H_4$) | 0.397 | 5.066 | 0.000 |
| Intention to Use -> Actual Use ($H_5$) | 0.526 | 13.137 | 0.000 |

Source: Primary Data

**Hypothesis 1 : Perceived Usefulness on Intention to Use**

Based on the hypothesis test for $H_1$ shows a t-statistic value of 0.222 and a P-value of 0.520, indicating that perceived usefulness does not significantly influence the intention to use

the SIGNAL application. These results diverge from those of (Hamid et al., 2016) and (An et al., 2023), who found that perceived usefulness significantly affects the intention to use. However, our results align with (Tahar et al., 2020) and (Ahmad et al., 2022), suggesting that perceived usefulness does not play a crucial role in shaping users' intentions in the context of the SIGNAL application. One possible explanation for this discrepancy is that, despite the convenience of online payments, users may find the lack of immediate receipt of the vehicle registration certificate to be a significant weakness. The delay in receiving the certificate via courier or self-collection at the Samsat office could diminish the perceived usefulness of the application compared to direct payments at the Samsat office, where the certificate is immediately issued (Dharmayanti & Jati, 2021).

**Hypothesis 2 : Perceived Ease of Use on Intention to Use**

Based on the hypothesis test results, $H_2$ shows a t-statistic value of 1.968, slightly higher than 1.96, and a P-value of 0.049, which is less than 0.05. This indicates that perceived ease of use significantly influences taxpayers' intention to use these digital applications. These results align with research conducted by (Ahmad et al., 2022), (Bhuiyan et al., 2024), and (Harb et al., 2023), which stated the same. The ease of use of a mobile system can influence an individual's propensity to use the application. The simplicity and user-friendliness of the SIGNAL application can positively affect users' willingness to adopt and continue using it. It underscores the importance of designing intuitive and easy-to-navigate applications.

**Hypothesis 3 : Perceived Ease of Use on Perceived of Usefulness**

Based on the hypothesis test results, $H_3$ shows a t-statistic value of 7.739, which is greater than 1.96, and a P-value of 0.000, which is less than 0.05. This indicates that perceived ease of use significantly influences perceived usefulness. These results align with research conducted by (An et al., 2023), (Yang et al., 2023), (Vigoroso et al., 2024) and (Alshurideh et al., 2021). The results suggest that as the ease of use of the SIGNAL application increases, users perceive the application to be more helpful. This relationship highlights that user-friendly applications are often seen as more beneficial, reinforcing the importance of a seamless user experience.

**Hypothesis 4 : Perceived Enjoyment on Intention to Use**

Based on the hypothesis test results, $H_4$ shows a t-statistic value of 5.066, which is greater than 1.96, and a P-value of 0.000, which is less than 0.05. This indicates that perceived enjoyment significantly influences the intention to use. Enjoyment through pleasure and interaction with the applications promotes acceptance of technology (To et al., 2021). The results of this research are also in line with research by (Nur & Panggabean, 2021) and (Zhong et al., 2021). Enjoyable interactions with the SIGNAL application can enhance user engagement and promote continued use.

**Hypothesis 5 : Intention to Use on Actual Use**

Based on the hypothesis test results, $H_5$ shows a t-statistic value of 13.137, which is greater than 1.96, and a P-value of 0.000, which is less than 0.05. This indicates that the intention to use significantly influences actual use. A person's intention to use a system is the strongest predictor in determining the actual use of a digital system (Zaid Kilani et al., 2023). This result also aligns with research by (Tomić et al., 2023), which states that the actual use of electronic payment systems is strongly influenced by the intention to use. There is a high correlation between users' intention to use the SIGNAL application and their actual usage. It is essential to foster positive user intentions to increase the actual adoption of the application.

## CONCLUSIONS

This research concludes that the adoption of digital tax payment systems by taxpayers is significantly influenced by the ease of use and enjoyment derived from using the system.

While perceived usefulness may not directly affect the intention to use, ease of use plays a crucial role in enhancing system usability. Moreover, a higher intention to use the system correlates with greater adoption likelihood.

The implication for Indonesian National Police as developers of digital tax payment systems is clear: prioritizing ease of use and enhancing user enjoyment are paramount. This can be achieved through optimizing intuitive interfaces, incorporating attractive designs, and integrating interactive features to enrich the user experience. Streamlining navigation and simplifying processes should also be focal points for future system updates to further increase user adoption.

However, this study acknowledges several limitations. As a technology-driven application, the relevance of these findings may diminish over time with advancements in app development that alter user perceptions and experiences. Additionally, the study's scope was confined to motor vehicle taxpayers in South Tangerang City, warranting caution in generalizing these findings to other populations.

Future research should consider expanding the sample population and extending the duration of user experience to obtain more comprehensive insights into the application of the extended Technology Acceptance Model in motor vehicle tax payment systems

## REFERENCES

Abu-Silake, S. A., Alshurafat, H., Alaqrabawi, M., & Shehadeh, M. (2024). Exploring the key factors influencing the actual usage of digital tax platforms. *Discover Sustainability*, 5(1), 88. https://doi.org/10.1007/s43621-024-00241-2

Ahmad, A. R., Meuthia, R. F., & Ferdawati. (2022). The Effect of Perceived Ease of Use, Perceived Usefulness, and Compatibility on the Intention to Use the Samsat Digital National (SIGNAL) Application in Padang. *Proceeding Applied Business and Engineering Conference 2022*.

Al-Adwan, A. S., Li, N., Al-Adwan, A., Abbasi, G. A., Albelbisi, N. A., & Habibi, A. (2023). "Extending the Technology Acceptance Model (TAM) to Predict University Students' Intentions to Use Metaverse-Based Learning Platforms". *Education and Information Technologies*, 28(11), 15381–15413. https://doi.org/10.1007/s10639-023-11816-3

Alshurideh, M. T., Al Kurdi, B., Masa'deh, R., & Salloum, S. A. (2021). The moderation effect of gender on accepting electronic payment technology: a study on United Arab Emirates consumers. *Review of International Business and Strategy*, 31(3), 375–396. https://doi.org/10.1108/RIBS-08-2020-0102

An, S., Eck, T., & Yim, H. (2023). Understanding Consumers' Acceptance Intention to Use Mobile Food Delivery Applications through an Extended Technology Acceptance Model. *Sustainability*, 15(1), 832. https://doi.org/10.3390/su15010832

Bhuiyan, M. R. I., Akter, Most. S., & Islam, S. (2024). How does digital payment transform society as a cashless society? An empirical study in the developing economy. *Journal of Science and Technology Policy Management*. https://doi.org/10.1108/JSTPM-10-2023-0170

Cudjoe, A. G., Anim, P. A., & Tetteh Nyanyofio, J. G. N. (2015). Determinants of Mobile Banking Adoption in the Ghanaian Banking Industry: A Case of Access Bank Ghana Limited. *Journal of Computer and Communications*, 03(02), 1–19. https://doi.org/10.4236/jcc.2015.32001

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

De Cicco, R., Iacobucci, S., Aquino, A., Romana Alparone, F., & Palumbo, R. (2022). Understanding Users' Acceptance of Chatbots: An Extended TAM Approach In: Følstad, A., et al. Chatbot Research and Design. CONVERSATIONS 2021. Lecture Notes in Computer Science (), vol 13171. Springer, Cham. https://doi.org/10.1007/978-3-030-94890-0_1https://doi.org/10.1007/978-3-030-94890-0_1

Dharmayanti, N. K. P. G., & Jati, I. K. (2021). Factors Affecting E-Samsat Acceptance (Study at the Denpasar SAMSAT Joint Office). *American Journal of Humanities and Social Sciences Research*, 5(6), 335–343. www.ajhssr.com

Doran, N. M., Puiu, S., Bădîrcea, R. M., Pirtea, M. G., Doran, M. D., Ciobanu, G., & Mihit, L. D. (2023). E-Government Development—A Key Factor in Government Administration Effectiveness in the European Union. *Electronics*, 12(3), 641. https://doi.org/10.3390/electronics12030641

Fussell, S. G., & Truong, D. (2022). Using virtual reality for dynamic learning: an extended technology acceptance model. *Virtual Reality*, 26(1), 249–267. https://doi.org/10.1007/s10055-021-00554-x

Hair, J., & Alamer, A. (2022). Partial Least Squares Structural Equation Modeling (PLS-SEM) in second language and education research: Guidelines using an applied example. Research Methods in Applied Linguistics, 1(3), 100027. https://doi.org/10.1016/j.rmal.2022.100027

Hamid, A. Abd., Razak, F. Z. A., Bakar, A. A., & Abdullah, W. S. W. (2016). The Effects of Perceived Usefulness and Perceived Ease of Use on Continuance Intention to Use E-Government. *Procedia Economics and Finance*, 35, 644–649. https://doi.org/10.1016/S2212-5671(16)00079-4

Harb, J., Morton, E., & Narayanan, V. (2023). Acceptance of myTax in Australia. AUSTRALIAN TAX FORUM, 38(1), 111–149. https://search.informit.org/doi/10.3316/informit.105488529510112

Huang, J., Lin, Y., & Chuang, S. (2007). Elucidating user behavior of mobile learning: A perspective of the extended technology acceptance model. *The Electronic Library*, 25(5), 585–598. https://doi.org/10.1108/02640470710829569

Nadhira, R., Hamdi, H., Putri, S. A. E., & Shakilla Ervi, T. (2024). Enhancing citizen satisfaction and loyalty in e-government: Lessons learned from Jakarta COVID-19 website. *Information Services & Use*, 1–18. https://doi.org/10.3233/isu-240229

Nur, T., & Panggabean, R. R. (2021). Factors Influencing the Adoption of Mobile Payment Method among Generation Z: the Extended UTAUT Approach. *Journal of Accounting Research, Organization, and Economics*, 4(1), 14–28. www/http/jurnal.unsyiah.ac.id/JAROE

Ridwal, R. (2022). Efektivitas Layanan Aplikasi Samsat Mobile Jawa Barat Dalam Upaya Meningkatkan Kepatuhan Wajib Pajak Kendaraan Bermotor Pada Masa Pandemi Covid-19 Di Kota Bekasi. *Jurnal Reformasi Administrasi* , 9(1). https://doi.org/https://doi.org/10.31334/reformasi.v9i1.2368

Roscoe, J. T. (1975). Fundamental research statistics for the behavioral sciences (Second ed.). (2nd ed.). Holt Rinehart and Winston.

Sabani, A. (2021). Investigating the influence of transparency on the adoption of e-Government in Indonesia. *Journal of Science and Technology Policy Management*, 12(2), 236–255. https://doi.org/10.1108/JSTPM-03-2020-0046

Sarmah, R., Dhiman, N., & Kanojia, H. (2020). Understanding intentions and actual use of mobile wallets by millennial: an extended TAM model perspective. *Journal of Indian Business Research*, 13(3), 361–381. https://doi.org/10.1108/JIBR-06-2020-0214

Suki, N. M., & Suki, N. M. (2011). Exploring The Relationship Between Perceived Usefulness, Perceived Ease Of Use, Perceived Enjoyment, Attitude And Subscribers' Intention Towards Using 3g Mobile Services. *Journal of Information Technology Management*, XXII(1).

Tahar, A., Riyadh, H. A., Sofyani, H., & Purnomo, W. E. (2020). Perceived Ease of Use, Perceived Usefulness, Perceived Security and Intention to Use E-Filing: The Role of Technology Readiness. *The Journal of Asian Finance, Economics and Business*, 7(9), 537–547. https://doi.org/10.13106/jafeb.2020.vol7.no9.537

To, A. T., Trinh, T. H. M., & Gomez Corona, C. (2021). Understanding behavioral intention to use mobile wallets in vietnam: Extending the tam model with trust and enjoyment. *Cogent Business & Management*, 8(1). https://doi.org/10.1080/23311975.2021.1891661

Tomić, N., Kalinić, Z., & Todorović, V. (2023). Using the UTAUT model to analyze user intention to accept electronic payment systems in Serbia. *Portuguese Economic Journal*, 22(2), 251–270. https://doi.org/10.1007/s10258-022-00210-5

Vigoroso, L., Roccato, M., Cavallo, E., & Caffaro, F. (2024). Intention to Adopt Digital Games for Safety Training in Young Farm Operators: The Role of Ease of Use, Perceived Usefulness, and Game Design Characteristics. *International Journal of Human–Computer Interaction*, 1–10. https://doi.org/10.1080/10447318.2024.2310353

Won, D., Chiu, W., & Byun, H. (2023). Factors influencing consumer use of a sport-branded app: the technology acceptance model integrating app quality and perceived enjoyment. *Asia Pacific Journal of Marketing and Logistics*, 35(5), 1112–1133. https://doi.org/10.1108/APJML-09-2021-0709

Yang, C. C., Yang, S. Y., & Chang, Y. C. (2023). Predicting Older Adults' Mobile Payment Adoption: An Extended TAM Model. *International Journal of Environmental Research and Public Health*, 20(2). https://doi.org/10.3390/ijerph20021391

Zaid Kilani, A. A.-H., Kakeesh, D. F., Al-Weshah, G. A., & Al-Debei, M. M. (2023). Consumer post-adoption of e-wallet: An extended UTAUT2 perspective with trust. *Journal of Open Innovation: Technology, Market, and Complexity*, 9(3), 100113. https://doi.org/10.1016/j.joitmc.2023.100113

Zea, A. (2023, March 14). Mudahkan Masyarakat, Kapolri Resmikan Aplikasi Samsat Digital. https://bandungraya.inews.id/read/268466/mudahkan-masyarakat-kapolri-resmikan-aplikasi-elektronik-samsat-digital-e-signal

Zhong, Y., Oh, S., & Moon, H. C. (2021). Service transformation under industry 4.0: Investigating acceptance of facial recognition payment through an extended technology acceptance model. *Technology in Society*, 64, 101515. https://doi.org/10.1016/j.techsoc.2020.101515