# Analysis of Cashless Payment Adoption using the Unified Theory of Acceptance and Use of Technology (UTAUT)

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**Abstract:** This study aims to analyze the adoption of cashless payments in West Sumatra using the Unified Theory of Acceptance and Use of Technology (UTAUT) model. The variables studied include Perceived Usefulness, Perceived Ease of Use, Social Influence, Facilitating Conditions, and Lifestyle Compatibility on the Intention to Use and Adoption of Cashless Payments, moderated by gender and level of education. The method used in this research is Structural Equation Modeling (SEM) with SmartPLS 4.0. Data was obtained from questionnaires distributed to 210 respondents in the cities of Padang, Pariaman, Padang Panjang, Bukittinggi, Payakumbuh, and Solok. The results showed that facilitating conditions and compatibility had a significant positive effect on the intention to use cashless payments, while perceived usefulness, ease of use, and social influence had no effect on the intention to use cashless payments. Furthermore, the intention to use cashless payments had a significant positive effect on the adoption of cashless payments. Meanwhile, gender and education level did not have a significant effect on the relationship between the independent variables and the intention to use cashless payments. This study implies that the government needs to improve facilities and technological support for cashless payment users. It also suggests that researchers should consider other variables that may affect the use of cashless payments in future studies.

**Keyword:** perceived usefulnee, perceived ease of use, social influence, facilitating condition, intention of use, adoption, cashless payment, UTAUT

## INTRODUCTION

The development of technology is a accelerating, giving birth to a digital society, as well as financial technology innovations and the trend towards a cashless society or also called cashless payments or also known as cashless payments have gained significant popularity in various parts of the world (Al, 2023; Fabris, 2019). Changes in human behavior occur in consumption patterns in the technological and digital era, one of which is the change

in payment systems and transactions that have changed to electronic payments or cashless payment.

Bank Indonesia launched the National Non-Cash Movement (GNNT) campaign on 14 August 2014 as an effort to initiate and introduce the public to cashless payments. In 2017, Bank Indonesia introduced e-money and the National Payment Gateway (GPN) to improve the interoperability and on-accessibility of debit cards, and in 2019 Bank Indonesia ratified the Quick Respond Code Indonesian Standard (QRIS) as a standard for cashless payments using e-money, e-wallets, and m-banking (Bank Indonesia, 2020, 2023). In Indonesia itself, cashless payments are seen to be developing, as can be seen in the largest digital transactions in Indonesia coming from the retail sector (28%), online transportation services (27%), food orders (20%), e-commerce (15%), and bill payments (7%). According to the World Payments Report in 2019, the number of digital consumers in Indonesia grew from 64 million to 102 million between 2017 and 2018, accounting for almost half of the country's total population.

Adopting cashless payment as a system or technology has many advantages for its users because it offers convenience, speed and efficiency as a motivation for users to use cashless payment systems (Rahman et al., 2020; Widiyati & Hasanah, 2020). This study will analyze the factors and predictors that affect the adoption of cashless payment using the United Theory of Acceptance and Use of Technology (UTAUT) Model (Venkatesh et al., 2003; Venkatesh Robert Smith & Morris, 2000). In this study, we will look at the factors that affect the adoption of cashless payment, namely perceived usefulness, perceived ease of use, social influence, facilitating conditions, and lifestyle compatibility to the intention of using and adoption of cashless payment (Dieu et al., 2023; Sakib et al., 2024; Yang et al., 2021). According to the results of the research of Emeka Izogo et al. (2012) All demographic factors, such as age, gender, income, education level, and employment status, have a significant impact on the adoption of financial technology. This study also looks at the influence of gender and education level in moderating the relationship between independent variables on the intention to use cashless payment. Many studies have been conducted to determine the factors that influence the adoption of internet banking, but the role of socio-demographic variables has been studied. This study will use the influence of demographic factors, namely gender, gender and education level as moderation variables.

## METHOD

This study uses a quantitative method. With the number of individual populations in Padang City, Pariaman City, Pandang Panjang City, Bukittinggi City, Payakumbuh City and Solok City and research samples with categories of having and using cashless payment, at least 17 years old, and having used cashless payment for 6 months. The number of respondents in this study was 210 respondents. The data obtained is original data and raw data obtained from the distribution of questionnaires and measured using the Likert scale. Data collection will be carried out from May to June 2024 and then processed using the SmartPLS 4.0 software. Data processing is carried out using Structural Equation Moedel (SEM).
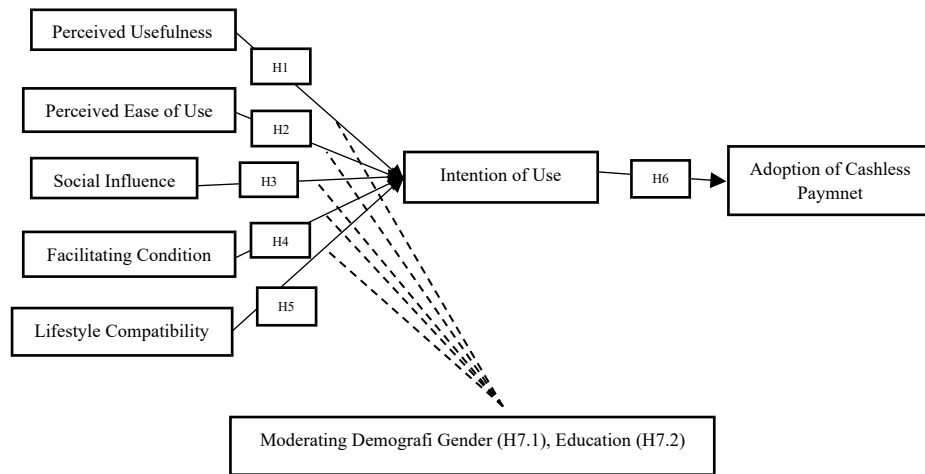
Figure 1. Conceptual Framework

## RESULTS AND DISCUSSION
### Validity and Reliability Test

An indicator is declared qualified if the AVE value is > 0.5 and the outer loading value is > 0.7. Discriminant validity testing can be done by testing HTMT, Fornell-Larcker Criterion, and Cross Loading. HTMT (Heterotrait-Monotrait Ratio) is a discriminant evaluation at the variable level provided that the HTMT value is below 0.90, indicating that the discriminant validity evaluation is accepted. Furthermore, the Fornell-Larcker value is accepted if the root AVE of the construct > the correlation between the constructs. The construct must divide the variance higher to the measurement item that measures it than to other variable items. While the crossloading value must show a higher indicator value of each construct compared to indicators on other constructs.

Furthermore, measuring construct reliability can be used in two assessments, namely composite reliability and Cronbach alpha. To declare a construct reliable, can be seen from the composite reliability value and Cronbach alpha> 0.6.

Table 1. AVE

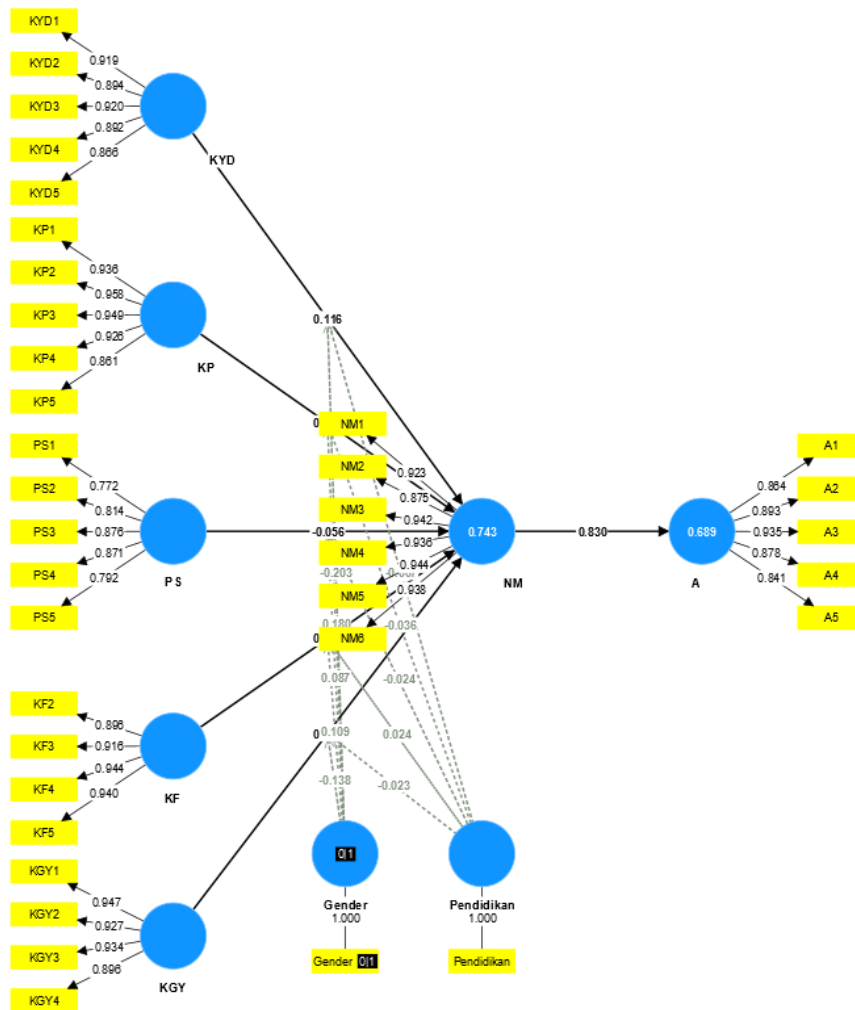| Variabel | AVE |
|---|---|
| Adoption | 0.780 |
| Facilitating Condition | 0.854 |
| Lifestyle Compatibility | 0.858 |
| Perceived Ease of Use | 0.858 |
| Perceived Usefulbess | 0.807 |
| Intention of Use | 0.859 |
| Social Influence | 0.682 |

**Figure 2. Outer Loading**

Information: KYD = Perceived usefulness, KP = Perceived Ease of use, PS = Social Influence,
KF = Facilitating Condition, KGY = Lifestyle Compatibility, G = Gender, P = Education

**Table 2.  Fornell_Lacker**

| Variable | A | Gender | KF | KGY | KP | KYD | NM | PS | Education |
|---|---|---|---|---|---|---|---|---|---|
| **A** | 0.883 | | | | | | | | |
| **Gender** | 0.095 | 1.000 | | | | | | | |
| **KF** | 0.812 | 0.094 | 0.924 | | | | | | |
| **KGY** | 0.773 | 0.053 | 0.792 | 0.926 | | | | | |
| **KP** | 0.764 | 0.100 | 0.820 | 0.690 | 0.927 | | | | |
| **KYD** | 0.675 | 0.057 | 0.709 | 0.704 | 0.812 | 0.899 | | | |
| **NM** | 0.830 | 0.109 | 0.824 | 0.762 | 0.765 | 0.663 | 0.927 | | |
| **PS** | 0.667 | 0.025 | 0.692 | 0.631 | 0.696 | 0.680 | 0.628 | 0.826 | |
| **Education** | 0.139 | 0.130 | 0.199 | 0.143 | 0.202 | 0.213 | 0.130 | 0.094 | 1.000 |

**Table 3. HTMT**

| Variable | A | G | KF | KGY | KP | KYD | NM | PS | Edu | G x KGY | P x KYD | P x KF | G x KYD | P x KP | P x PS | G x KP | G x KF | G x PS | P x KGY |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Adoption | | | | | | | | | | | | | | | | | | | |
| Gender | 0.095 | | | | | | | | | | | | | | | | | | |
| **FC** | 0.863 | 0.097 | | | | | | | | | | | | | | | | | |
| KGY | 0.821 | 0.053 | 0.838 | | | | | | | | | | | | | | | | |
| KP | 0.805 | 0.103 | 0.862 | 0.723 | | | | | | | | | | | | | | | |
| KYD | 0.719 | 0.058 | 0.751 | 0.747 | 0.854 | | | | | | | | | | | | | | |
| NM | 0.870 | 0.111 | 0.863 | 0.796 | 0.793 | 0.694 | | | | | | | | | | | | | |
| PS | 0.712 | 0.041 | 0.735 | 0.673 | 0.731 | 0.727 | 0.652 | | | | | | | | | | | | |
| Edu | 0.144 | 0.130 | 0.204 | 0.148 | 0.206 | 0.218 | 0.131 | 0.103 | | | | | | | | | | | |
| G x KGY | 0.518 | 0.029 | 0.499 | 0.746 | 0.428 | 0.447 | 0.502 | 0.402 | 0.134 | | | | | | | | | | |
| P x KYD | 0.107 | 0.036 | 0.193 | 0.149 | 0.089 | 0.097 | 0.194 | 0.107 | 0.088 | 0.079 | | | | | | | | | |
| P x KF | 0.100 | 0.012 | 0.245 | 0.199 | 0.185 | 0.195 | 0.244 | 0.173 | 0.036 | 0.105 | 0.675 | | | | | | | | |
| G x KYD | 0.397 | 0.030 | 0.418 | 0.422 | 0.570 | 0.787 | 0.402 | 0.446 | 0.191 | 0.567 | 0.014 | 0.129 | | | | | | | |
| P x KP | 0.109 | 0.012 | 0.185 | 0.183 | 0.106 | 0.090 | 0.203 | 0.041 | 0.096 | 0.143 | 0.832 | 0.750 | 0.041 | | | | | | |
| P x PS | 0.105 | 0.032 | 0.172 | 0.143 | 0.048 | 0.112 | 0.164 | 0.091 | 0.085 | 0.136 | 0.677 | 0.625 | 0.079 | 0.642 | | | | | |
| G x KP | 0.543 | 0.055 | 0.570 | 0.426 | 0.747 | 0.601 | 0.544 | 0.519 | 0.174 | 0.572 | 0.049 | 0.148 | 0.764 | 0.047 | 0.052 | | | | |
| G x KF | 0.606 | 0.054 | 0.714 | 0.522 | 0.597 | 0.461 | 0.596 | 0.496 | 0.164 | 0.700 | 0.145 | 0.141 | 0.585 | 0.153 | 0.182 | 0.797 | | | |
| G x PS | 0.417 | 0.013 | 0.450 | 0.380 | 0.497 | 0.451 | 0.424 | 0.804 | 0.096 | 0.511 | 0.079 | 0.167 | 0.573 | 0.048 | 0.042 | 0.668 | 0.632 | | |
| P x KGY | 0.088 | 0.024 | 0.211 | 0.095 | 0.195 | 0.159 | 0.214 | 0.149 | 0.000 | 0.016 | 0.687 | 0.827 | 0.078 | 0.687 | 0.588 | 0.154 | 0.118 | 0.139 | |

**Table 4. Comopsite Reliability and Cronboach's Alpha**

| Variable | Cronbach's Alpha | Composite Reliability | Information |
|---|---|---|---|
| Adoption of *Cashless Payment* | 0.929 | 0.946 | Reliable |
| Facility Conditions | 0.943 | 0.959 | Reliable |
| Lifestyle Compatibility | 0.945 | 0.960 | Reliable |
| Ease of Use | 0.958 | 0.968 | Reliable |
| Perceived Usefulness | 0.940 | 0.954 | Reliable |
| Intention to Use | 0.967 | 0.973 | Reliable |
| Social Influence | 0.886 | 0.915 | Reliable |
| Adoption of *Cashless Payment* | 0.929 | 0.946 | Reliable |
| Facility Conditions | 0.943 | 0.959 | Reliable |

## Inner Model Evaluation

According to the values of R-square, namely 0.75, 0.50, 0.25 are described as strong, medium, and weak. Below is the R-square value of each variable tested. Hair et al. (2019)

**Table 5. R-Square**

| Variabel | R Square |
|---|---|
| Adoption of cashless payment | 0.689 |
| Intention to use cashless payment | 0.743 |

1. The contribution of the variables Perceived Usability, Ease of Use, Social Influence, Facility Conditions and Lifestyle Compatibility to the Intention to Use *Cashless Payment* variable was 0.743 or 74.3%. While the remaining 25.7% (100-74.3) was influenced by variables outside the study.
2. The contribution of the variables Perceived Usability, Ease of Use, Social Influence, Facility Condition, Lifestyle Compatibility and Intention to Use *Cashless Payment* to the Adoption of *Cashless Payment* variable was 0.689 or 68.9%. While the remaining 31.1% (100-68.9) was influenced by variables outside the study

**Table 6. Coefficient Path Test**

| Hypothesis | Original Sample | T statistics | P-values | Information |
|---|---|---|---|---|
| Perceived Usefulness -> Intention | 0.116 | 0.691 | 0.490 | Rejected |
| Perceived Ease of use -> Intention | 0.150 | 1.247 | 0.212 | Rejected |
| Social Influence -> Intention | 0.056 | 0.402 | 0.688 | Rejected |
| Facilitating Condition -> Intention | 0.303 | 2.472 | 0.013 | Accepted |
| Lifestyle Compatibility -> Intention | 0.388 | 2.948 | 0.003 | Accepted |
| Intention -> Adoption | 0.830 | 17.449 | 0.000 | Accepted |

Based on the table above, it can be seen that the results of the influence between variables can be seen. There were three hypotheses accepted, namely the condition of failure, lifestyle compatibility and intention to use cashless payment, and 3 hypotheses were rejected, namely perceived usefulness, ease of use and social influence.
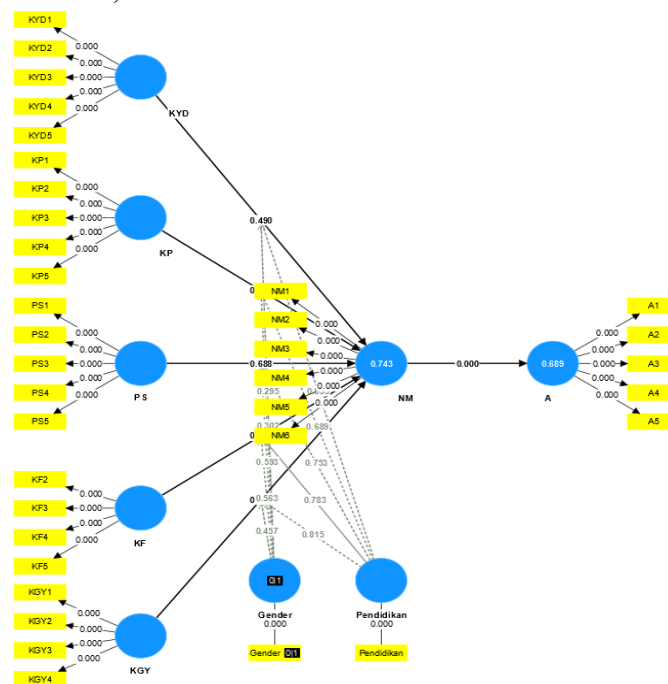


**Figure 3. Results of Bootstaping Analysis**
Information: KYD = Perceived usefulness, KP = Perceived Ease of use, PS = Social Influence,
KF = Facilitating Condition, KGY = Lifestyle Compatibility, G = Gender, P = Education

The first hypothesis that examines the perceived usefulness of the intention to use cashless payment. The results of the table show that the perceived usefulness does not have a significant effect on the intention to use cashless payment. The original sample value was 0.116, P value 0.490 and T-statistic 0.691. These results are in line with research Simorangkir & Afgani (2021)  and María et al. (2023)  found that there is no perceived usefulness for the intention to use cashless payment.The second hypothesis that examines ease of use is the intention to use cashless payment. The results of the table show that ease of use does not have a significant effect on the intention to use cashless payment. The original sample value was 0.116, P value 0.490 and T-statistic 0.691. These results are in line with research Simorangkir & Afgani (2021)  and   María et al. (2023)  found that there is no perceived usefulness for the intention to use cashless payment. The original sample value was 0.116, the P Value was 0.490 and the T-statistical value was 0.691. The results of this study are in line with the results    Hossain et al. (2017)  of Daştan & Gürler (2016) the study and also show that ease of use does not have a significant effect on the intention to use cashless payment.

The third hypothesis that examines the social influence on the intention to use cashless payment. The results of the table show that social influence does not have a significant effect on the intention to use cashless payment. The original sample value was -0.056, the P value was 0.688 and the T-statistic was 0.402. These results are in line with Goh & Nguyen (2022) research and also found that social influences do not have a positive effect on the intention to use cashless payments Mehta et al. (2019). The results of the fourth hypothesis examine the influence of facility conditions on the intention to use cashless payment. The table results show that the condition of the facility has a positive and significant influence on the intention to use cashless payment. The original sample value was 0.303, the P value was 0.013 and the T-statistic = 2.472. This result is in line with research Kurniadi et al. (2021) and research that found that the condition of the facility affects the intention to use cashless payment positively and significantly Abdullah et al. (2020). The results of the fifth hypothesis examine the influence of lifestyle compatibility on the use of cashless payment. The table results show that lifestyle compatibility has a significant influence on the intention to use cashless payment. The original sample value was 0.388, the P value was 0.003 and the T-statistic was 2.948. The results of this study are in line with the research Yang et al. (2021) and found that lifestyle compatibility a significant positive effect on the intention to use cashless payment Munikrishnan et al. (2024) The results of the sixth hypothesis examine the influence of use intention on the adoption of cashless payment. The results of the table show that use intention has a significant positive effect on the adoption of using cashless payment.

**Effects of Gender Moderation and Education Level**

**Table 7. Coefficient Path Test**

| Hypothesis | *Original Sample* | T statistics | P-values | Information |
|---|---|---|---|---|
| Gender x Perceived Usefuleness-> Intention | -0.203 | 1.047 | 0.295 | Rejected |
| Gender x Perceived ease of use -> Intention | 0.180 | 1.032 | 0.302 | Rejected |
| Gender x Social Influence -> Intention | 0.087 | 0.534 | 0.593 | Rejected |
| Gender x Facilitating condition -> Intention | 0.109 | 0.578 | 0.563 | Rejected |
| Gender x Lifestyle compatibility -> Intention | -0.138 | 0.744 | 0.457 | Rejected |
| Education x Perceived usefulness-> Intention | -0.007 | 0.082 | 0.935 | Rejected |
| Education x Perceived ease of use -> Intention | -0.036 | 0.400 | 0.689 | Rejected |
| Education x Social Influence -> Intention | -0.024 | 0.315 | 0.753 | Rejected |
| Education x Facilitating Condition -> Intention | 0.024 | 0.276 | 0.783 | Rejected |
| Education x Lifestyle Compatibility -> Intention | -0.023 | 0.233 | 0.815 | Rejected |

Based on the results of the original value of the sample, P value and T satistic from the table show that gender and education level do not have a significant effect on moderating the relationship between perceived usability, ease of use, social influence, facility conditions, and lifestyle compatibility on the intention to use cashless payment.

This section contains data (in brief form), data analysis, and interpretation of the results. Results can be presented in tables or graphs to clarify the results verbally because sometimes the display of an illustration is more complete and informative than the display in narrative form.

This section must answer the problems or research hypotheses that have been formulated previously.

**CONCLUSION**

The condition of facilities and lifestyle compatibility have a positive effect on the intention to use cashless payment and the intention to use has a significant effect on the adoption of cashless payment. Meanwhile, the perceived usability, ease of use, and social influence on the intention to use cashless payment were found to have no significant influence. The results of gender moderation and education level showed no significant effect in influencing the relationship of independent variables to the intention to use cashless payment.

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