

Adoption Analysis of eSIM Services Using Modified Model of UTAUT-2 at PT Indosat.

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Abstract

eSIM has become a game changer and has created disruption in digital technology, reshaping the telecommunication Industry. PT Indosat, a prominent player in the Indonesian telecommunication market, has been proactive in launching eSIM. However, despite aggressive efforts, the adoption rate has not met the company's expectations. This research aims to investigate the variables influencing consumer intention to use eSIM and to gather a thorough understanding of the factors affecting eSIM adoption by utilizing the modified UTAUT2 model. In this study, the independent variables are Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Hedonic Motivation, Technology Trust, and Word of Mouth. In the meantime, the dependent variables are Behaviour Intention and adoption. A quantitative survey was conducted using purposive sampling from eSIM users. The analysis of the data was conducted using Structural Equation Model (SEM) with SmartPLS3. The findings indicate that eSIM adoption influenced by seven variables mentioned. Only one variable Social Influence does not significantly affect the user behaviour toward eSIM adoption. Organisations can develop targeted strategies to foster digital growth and increase user adoption by understanding the factors that influence eSIM adoption.

Keywords: eSIM, Digital Growth, Adoption, UTAUT2, Mix method, Digital Business Strategy

1. Introduction

Indonesia has witnessed a surge in smartphone penetration, surpassing population growth. According to Statista Digital Market Insight (2024) (Nafi, 2019) the country is projected to have 211.21 million smartphones by 2028, representing a 9% annual growth over the next five years. This growth rate significantly outpaces the projected of Indonesia population growth of approximately 4%. Given the increasing number of telecommunications services which exceeded the population in 2023, whereas 352.5 million user vs 277 million population it's evident that many Indonesians own multiple SIMcard from various of telecommunication providers.

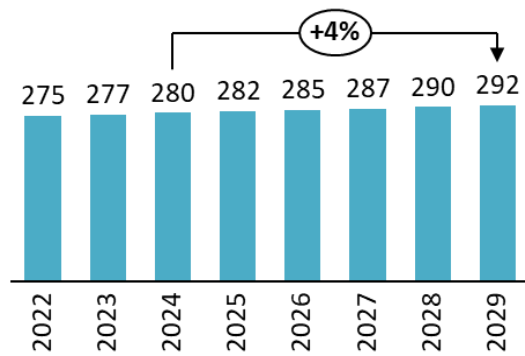


Fig 1: Numbers of Indonesian Population

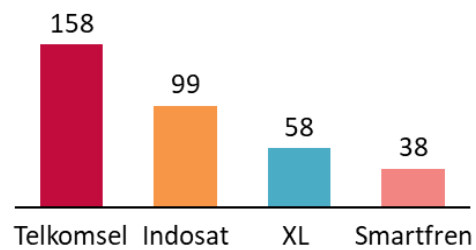


Fig 2: Number of Telecommunication Customers in Indonesia (Million)

To accommodate the growing demand for compact and feature-rich smartphones, eSIM technology has emerged as a solution. By eliminating the need of physical SIM cards, eSIM free up valuable space within device. This technology advancement has been embraced by smartphone manufacturers, making eSIM-enabled devices more accessible and affordable to customers. Global data shows that the business opportunity of eSIM in telecommunication companies has huge incremental, revenue valuation predicted increase by 3 times in 2027: (Juniper Research, 2023). PT Indosat, a prominent player in the Indonesian telecommunications market, has been proactive in launching eSIM services. However, despite aggressive efforts, the adoption rate has been slower than expected. eSIM has become a key driver for acquiring new subscribers for the company, eSIM offers several advantages for users, including simplicity, flexibility, and the ability to optimize smartphone functionality for multi-SIM card users. For telecommunication provider, such as Indosat, the growth of eSIM adoption will further reduce the cost of distributions and production, increase the user survivability and loyalty. Low adoption rate of eSIM suggest that underlying factors are hindering its growth.

Research focuses on PT Indosat to analyze and identify the factors influencing customer intentions to adopt eSIM technology. By understanding these factors, this research seeks to uncover the factors and provide actionable insights to improve eSIM adoption. Company can develop effective strategies to accelerate eSIM adoption and drive digital growth, thereby improving its position. The relevant research questions to address above concern are: 1) What are the conditions of UTAUT2 variable; Performance Expectancy, Effort Expectancy, Social Influence, Facilitating Conditions, Hedonic Motivation, Technology Trust, Word of Mouth, Behavioural Intention and User behaviour in eSIM adoptions 2) Does each independent variable have positive effect to behavioural intention in using eSIM? 3) Does behavioural intention positively influence eSIM adoption at Indosat?

2. Literature Review

2.1 Strategy Management

Strategic management involves planning, directing and controlling of an organization to achieve long-term goals. It includes the formulation of action plans aimed at establishing a sustainable comparative advantage. Strategic management defined as the systematic process of formulation, implementation, and evaluation of cross-functional decisions that facilitate an organization in achieving the objectives (David & David, 2015). Stages in management strategy include 1) Formulation Strategy consists of vision and mission development,

identifying organizational opportunities and challenge, and setting long-term goals. 2) Strategy Implementation it is the development of a culture that supports the strategy, creating an effective culture, organization culture, developing marketing efforts and information system as well as preparing leadership organizations. 3) Strategy Evaluation is the stage of monitoring progress, evaluating the effectiveness of organization in achieving goals.

2.2 Digital Transformation

Digital transformation is end-to-end process of enhancing an organization by inducing substantial changes in its attributes through a blend of information technology, computation, communication and connectivity (Vial, 2019). It is a business transformation that is fuelled by emerging technology and represents a fundamental change in the function of technology within an organization (David Tang, 2021). Digital transformation is closely related to digital disruption, with the latter referring to changes in the market industry caused by new technologies. While digital transformation drives innovation and efficiency, organizations that fail to adapt to digital and technological changes risk disruption by new competitors that adopt advanced technologies. It is important to note that digital transformation does not always lead to disruptions, however organizations that resist change and fail to embrace digital technologies may find themselves at a competitive disadvantage.

2.3 Acceptance theory

Acceptance theory is an area of research that focuses on understanding the reasons why individuals or organizations adopt or reject new technologies. Theories aim to elucidate the factors influencing individual's decision to use technology and to predict their behaviour concerning technology use. Acceptance theory focuses on explaining the factors influencing user's decision and predict their behaviour to use new technology (Silva & Guilherme Ataíde Dias, 2008).

Indrawati (2017) defines adoption as a mental process that an individual must go through from the time they first hear about new product innovation to its final adoption. There are numerous theoretical models of consumer behaviour in adopting new technologies, with UTAUT being the most recent, which allows for modifications. By understanding the reasons behind technology adoption, we can identify: 1) technologies that better meet user needs and expectations, 2) Approaches to expedite the adoption of emerging technologies, 3) obstacles that impede technology utilization, and 4) the efficacy of user training and support programs.

2.4 Framework

The UTAUT2 model serves as a tool for identifying factors influencing adoption and the most relevant and comprehensive model for predicting new technology, explaining the behavior of information technology users (Venkatesh et al., 2003). A framework utilized to analyze and forecast customer acceptance of emerging technology. The UTAUT2 is development of the previous UTAUT Model to overcome some of its limitations and focus more on consumer technology adoption (Nurrahman et al., 2023). UTAUT2 model has a more accurate level of prediction in understanding the factors that influence interest in using technology (Indrawati, 2017, p. 32). The study utilizes a modified UTAUT2 model to determine what factors influence eSIM adoption at PT Indosat. This study integrates five core components of UTAUT2 and two additional parameters Word of Mouth (WoM) and Technology Trust (TT). The inclusions of WOM aim to assess the impact of customer satisfaction and communication in spreading the

information toward the use of eSIM (Al Halbasi et al., 2024) (García de Blanes Sebastián et al., 2024). Technology Trust is added to consider the importances of trust in the security and reliability of eSIM technology. While Price Value and Habits are important factors in adoption technology, they may not be as significant for eSIM adoption, especially in the early stages. As eSIM technology matures and becomes more widely adopted prices and habits may play a more prominent role in identifying. By incorporating their additional variables this research enhances the understanding of factors influencing eSIM at PT Indosat.

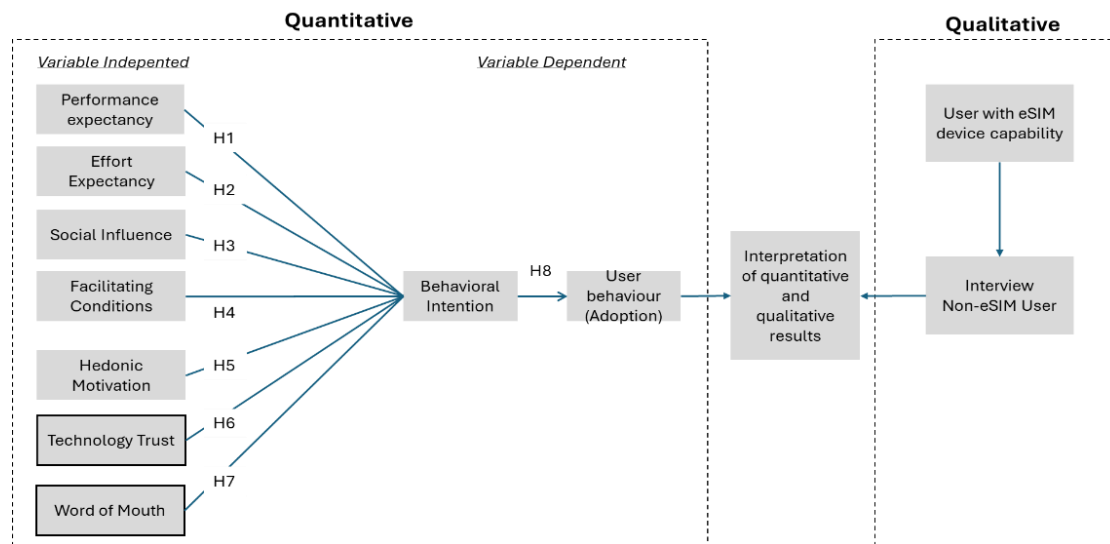


Fig 3: Conceptual Framework (Source: Processed research data, 2024)

2.5 Hypothesis

Hypothesis as a temporary statement proposed in a study Indrawati (2015, p. 94). Expected to be supported by empirical evidence. This is based on theoretical foundation and assists researchers in formulating predictions and assumptions regarding the relationship between each variable. This study's hypotheses shown as below:

H1: Performance Expectancy (PE) has positive and significant influences on eSIM Behavioral Intention (BI).

H2: Effort Expectancy (EE) has positive and significant influences on eSIM Behavioral Intention (BI).

H3: Social Influence (SI) has positive and significant influences on eSIM Behavioral Intention (BI).

H4: Facilitating Condition (FC) has positive and significant influences on eSIM Behavioral Intention (BI).

H5: Hedonic Motivation (HM) has positive and significant influences on eSIM Behavioral Intention (BI).

H6: Technology Trust (TT) has positive and significant influences on eSIM Behavioral Intention (BI).

H7: WoM has a positive and significant influence on eSIM Behavioral Intention (BI).

H8: Behavioral Intention (BI) has a positive and significant impact on User Behavior (UB) or adoption.

3. Research Methodology

Quantitative methodologies was used to comprehensively examine factors that influencing eSIM adoption. A quantitative survey was conducted using questionnaires distributed via Google Forms, targeting eSIM Indosat users selected through purposive sampling. All collected data subsequently analyzed using Structural Equation Modeling (SEM) with SmartPLS3 software. This approach aimed to verify the result of previous research, particularly regarding parameters with low significance in the hypothesis (Salman, Noviaristanti, 2024).

The operational variable used in the research is Performance Expectancy (PE), which refers to how much users believe that adopting new technologies will improve their productivity and performance in accomplishing tasks, ultimately leading to improved overall performance. Effort Expectancy (EE) relates to how users perceive the usability of new technology. Social Influence (SI) describes the degree to which social factors impact an individual's decisions about adopting technology. Facilitating Conditions (FC) illustrates the importance of these resources and infrastructure in assisting users with new technology adoption. Hedonic Motivation (HM) refers to pleasure gained from using eSIM. Technology Trust (TT) refers to the capacity to assess user confidence in the reliability and security associated with eSIM usage. Word of Mouth (WoM) refers to the extent to which users disseminate their personal experiences and opinions regarding eSIM, thereby impacting the decision-making process related to eSIM adoption. Behavioral Intention (BI) indicates the likelihood of an individual using eSIM in the future. The final variable is User Behaviour (UB), which assesses the actual usage patterns of eSIM technology.

4. Result and Discussions

The results section outlines the primary findings of the research, offering a clear and succinct summary of the data analysis and hypothesis testing outcomes. Tables and graphs visually represent result and facilitate understanding.

4.1 Result

A total of 929 responses were gathered from the surveys. Of these, 735 (79%) were eSIM users with 614 respondents specifically using Indosat eSIM. The subsequent analysis is focused on the experience of these 614 Indosat eSIM users. Respondents demonstrated a strong understanding of eSIM as evidenced by their responses to open-ended questions. The analytical assessment through descriptive analysis of the data reveals that eight variables of modified UTAUT2 model demonstrate strong reliability and validity with score values above 80%.

Table 1: Descriptive analysis: score values

Variables	Score Value	Category
PE	83.74%	Good
EE	83.03%	Good
SI	80.60%	Good
FC	83.89%	Good
HM	83.35%	Good
TT	83.75%	Good
WoM	83.76%	Good
BI	84.64%	Good
UB	83.39%	Good

Source: Processed research data (2024)

The data was analyzed using SmartPLS3 with the initial step involving the assesment of the outer model to determine the measurement validity of the latent variables. This involved evaluation convergent validity, discriminant validity and reliability. The subsequent criteria serve as a guideline for assessing validity. Loading factors > 0.7 , Average Variance Extracted (AVE) > 0.5 , Cronbach's Alpha (CA) > 0.7 and composite Reliability (CR) surpassing 0.7 (Hair Jr. et al., 2019). The computed show that all variables are valid, as outlined in TABLE 2.

Table 2: Result of Outer Model Test

Variabel	AVE > 0.7	CA > 0.6	CR > 0.7
Performance Exoectancy (PE)	0.708	0.897	0.924
Effort Expectancy (EE)	0.721	0.903	0.928
Social Influence	0.703	0.895	0.922
Facilitating Conditions (FC)	0.721	0.903	0.928
Hedonic Motivation	0.739	0.911	0.934
Technology Trust (TT)	0.706	0.896	0.923
Word of Mouth (WoM)	0.747	0.915	0.936
Behavioral Intention (BI)	0.778	0.929	0.946
User Behaviour (UB)	0.739	0.911	0.934

Source: SmartPLS3 running data (2024)

Discriminant validity testing aims to find out whether there are indicators that are significantly different and unrelated to other indicators (Hair Jr. et al., 2019). Discriminant validity can be assessed using the Fornell-Larcker criterion to evaluates the distinctiveness of latent variables, and by examining cross-loadings to determine the distinctiveness of indicators.

Table 3: Fornell–Larcker Discriminant Validity Test Results

Kode	BI	EE	FC	HM	PE	SI	TT	UB	WoM
BI	0.882								
EE	0.744	0.849							
FC	0.800	0.772	0.849						
HM	0.766	0.731	0.784	0.860					
PE	0.784	0.740	0.791	0.762	0.841				
SI	0.681	0.672	0.721	0.699	0.724	0.838			
TT	0.799	0.736	0.793	0.793	0.777	0.729	0.840		
UB	0.796	0.750	0.806	0.766	0.792	0.741	0.830	0.859	
WOM	0.799	0.740	0.791	0.763	0.752	0.707	0.806	0.803	0.864

Source: SmartPLS3 running data (2024)

The inner model assessment involves analyzing the structural model evaluation using R-Squared, Effect Size and Q-Squared. The results of R-Squared test are presented below:

Table 4: R-Square Result Test

Variabel	R-Square	R-Square Adjusted	Q-Square
Behavioral Intention (BI)	0.762	0.759	0.588
Usage Behaviour (UB)	0.634	0.634	0.463

Source: SmartPLS3 running data (2024)

Refer to R-Square and Q-Square, it is explained that independent variable has a significant contribution to forming Behavioural Intention. While BI has moderate contribution in forming Usage behaviour. The final hypothesis testing, researcher look at the T-Value, P-Value and path coefficient to determine the significance of the entire model. T-Value used as rule of thumb are ≥ 1.64 to determine the relationship between variables and P-Value $< 0,05$ (one tail) (Hair Jr. et al., 2019).

Table 5: Structural Path Analysis

Hipotesis	Path Coeff	T-Value	P-values	Result
H1 [PE → BI]	0.192	4,331	0.000	H1- Accepted
H2 [EE → BI]	0.097	3.223	0.001	H2- Accepted
H3 [SI → BI]	-0.022	0.648	0.259	H3- Rejected
H4 [FC → BI]	0.185	4.724	0.001	H4- Accepted
H5 [HM → BI]	0.097	2.475	0.007	H5- Accepted
H6 [TT → BI]	0.189	3.877	0.000	H6- Accepted
H7 [WoM → BI]	0.227	4.312	0.000	H7- Accepted
H8 [BI → UB]	0.796	25.480	0.000	H8- Accepted

Source: SmartPLS3 running data (2024)

All variable hypotheses were accepted, except for Social Influence, which was rejected due to a negative path coefficient, T-Value < 1.64 indicating no correlation and P-Value > 0.05 . This indicates that Social Influence does not significantly affect eSIM Behavioural Intention.

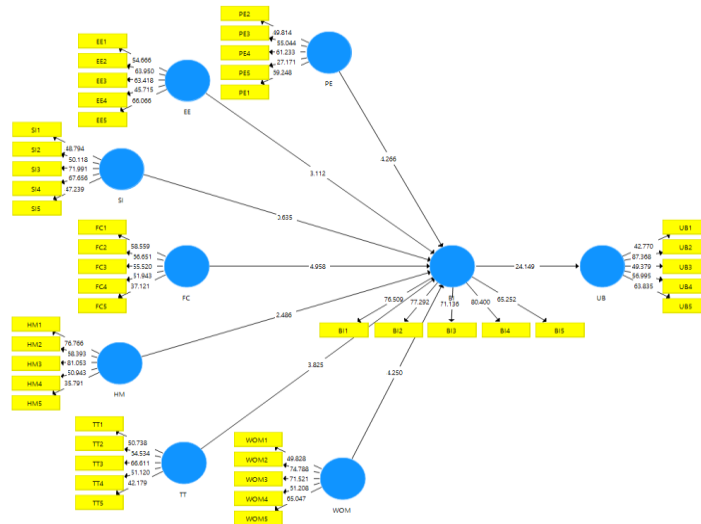


Fig 4: Overall Results of Research Model Testing

4.2 Discussion

1) The Influence of Performance Expectancy toward Behavioural Intention.

The results of the hypothesis testing demonstrate that Performance Expectancy as a positive and significant effect on the Behavioral Intention regarding eSIM. Research indicates a P-value of 0.000, which is less than 0.05, and a T-Value greater than 1.64, with a path coefficient of 0.197. The results corrugate earlier findings by Indrawati & Putri (2018), indicating that Performance Expectancy positively influence Behavioural Intention. García de Blanes

Sebastián et al. (2024) demonstrated that both PE and WoM are influential factors in the adoption of e-Pharmacy.

2) The Influence of Effort Expectancy toward Behavioral Intention.

Effort expectancy denotes the simplicity of using eSIM, elucidated through three fundamental concepts: complexity, ease of use and perceived ease of use (Venkatesh & Davis, 2000). The result of hypothesis testing demonstrates that Effort Expectancy has a significant positive effect on the Behavioral Intention of eSIM. The results indicated a P-Value of 0.001, which is less than 0.05, a T-Value of 3.223, exceeding 1.64 and a path coefficient of 0.097. Previous literature study strengthen that EE has positive correlation on BI (Al Halbusi et al., 2024).

3) The Influence of Social Influence toward Behavioral Intention.

Based on research findings, it indicates that the path coefficient is negative, with T-Value of 0.648 which is below the threshold of 1.64 and P-Value of 0.259 greater than 0.05. This suggests that SI does not have significant impact on eSIM Behavioural Intention. This finding contradicts previous studies by Al Halbusi et All (2024) and Fraij (2022) which suggested a positive impact of social influence on technology adoptions.

4) The Influence of Facilitating Condition toward Behavioral Intention.

The results of the hypothesis testing indicate that facilitating Conditions significantly positively influence Behavioural Intention. The T-Value is 4.724, exceeding 1.63, while the P-Value is 0.001 which is greater than 0.05, the path coefficient indicates a positive relationship. The result support the findings of Fraij (2022), demonstrating a positive relationship between FC and BI on e-HRM study.

5) The Influence of Hedonic Motivation toward Behavioral Intention.

The result of the hypothesis testing indicates that Hedonic Motivation significantly influences Behavioral Intention positively. The T-Value is 2.475, exceeding 1.64 as threshold. While P-Value is 0.007, which is less than 0.05, indicating a positive path coefficient. Previous literature indicates that HM has a positive correlation with BI as noted by Indrawati & Putri (2018) in e-Wallet study.

6) The Influence of Technology Trust toward Behavioral Intention.

The results indicate a positive path coefficient, with a T-Value of 3.877 and a P-Value 0.000 both are exceeding the conventional thresholds of T-Value > 1.64 and P-Value < 0.05. The results of the hypothesis testing indicate that Technology Trust has a positive significance for Behavioral Intention. Technology Trust indicates of user's confidence in term of security and reliability of technology, is a critical factor influencing eSIM adoption. Previous studies by Al Halbusi et al. (2024) demonstrate that Technology Trust positively influences user behavior in e-Pharmacy applications, while Abdallah et all (2017) indicate that Technology Trust has positive effect on adoption in mobile banking.

7) The Influence of WoM toward Behavioral Intention.

The outcomes of the hypothesis testing indicates that WoM has positive significance to Behavioural Intention. T-Value is 4.312 which > 1.64, and P-Value 0.000 lesser than 0.05 with path coefficient shows positive. WoM significantly influences perceptions and adoption

decisions. Positive recommendation from peers and community can significantly impact customer intention to adopt eSIM. This study aligns with the findings of Al Halbusi et al. (2024) which examined the influence of Word-of-Mouth (WoM) on the adoption of e-Pharmacy, and García de Blanes Sebastián et al. (2024) who identified a significant impact of WoM on F&B applications.

8) The Influence of Behavioral Intention toward User Behavior.

Behavioral Intention reflects an individual's preparedness to adopt new technology. The results of the hypothesis testing demonstrate a significant impact on User Behavior. The path coefficient is positive, with T-Value of 25.480 and a P-Value of 0.000, which < 0.05 . Behavioral Intention serves as a significant indicator of an individual's readiness to embrace technology, particularly in the context of eSIM adoption. Consistent with the finding of Al Halbusi et al. (2024), Indrawati & Putri (2018) as well as Nurrahman et al. (2023), it is evident that Behavioral Intention, when adapted to User Behavior plays a significant role in technology usage.

5. Conclusions

The study discovered that the adoption of eSIM significantly influenced by a variety of factors: Performance Expectancy (PE), Effort Expectancy (EE), Facilitating Conditions (FC), Hedonic Motivation (HM), Technology Trust (TT), Word of Mouth (WoM), Behavioral Intention (BI), all of which have positively influenced eSIM adoption. This implies that consumers are more inclined to adopt eSIM if they view it as secure, advantageous and easy to use. While Social Influence (SI) has the potential to be influential, it does not directly govern adoption decisions. In practical implications, this model and analysis can be used by Indosat to accelerate eSIM adoption through strategic initiatives 1) strengthen promotional and educational efforts for non-eSIM users to increase adoption; 2) focus on communication and education specifically regarding customer convenience in obtaining eSIM, switching devices to eSIM and replacing physical SIMs with eSIM. 3) Create a strategy plan by providing input to regulator and smartphone manufactures in formulating policies to support eSIM adoption. 4) diversify product and services between eSIM and physical SIM, ensuring eSIM users receive better benefits.

This study has identified the primary factors driving the adoption of eSIM; however, there are opportunities for additional research to delve deeper into this subject. Additional factors, such as marketing strategy, an expanded sample size that is not restricted to Indosat users, and case studies of other organizations involved in the eSIM ecosystem, could be investigated in future research. Furthermore, the consideration of alternative theoretical frameworks beyond UTAUT2 may offer new perspectives on the future adoption of eSIM

References

- 1) Abdallah, A., Dwivedi, Y. K., & Rana, N. P. (2017). International Journal of Information Management Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust. *International Journal of Information Management*, 37(3), 99–110. <https://doi.org/10.1016/j.ijinfomgt.2017.01.002>
- 2) Al Halbusi, H., Al-Sulaiti, K., Abdelfattah, F., Ahmad, A. B., & Hassan, S. (2024). Understanding consumers' adoption of e-pharmacy in Qatar: applying the unified

- theory of acceptance and use of technology. *Journal of Science and Technology Policy Management*. <https://doi.org/10.1108/JSTPM-03-2023-0042>
- 3) David, F. R., & David, F. R. (2015). *Strategic Management Concepts and Cases*, Global Edition (2014). <http://http://www.pearsonmylabandmastering.com>
 - 4) Fraij, J. (2022). UTAUT2 Model to Investigate the Adoption Oof E-HRM in the Telecommunication Sector. May. <https://doi.org/10.37394/23204.2022.21.12>
 - 5) García de Blanes Sebastián, M., Azuara Grande, A., & Sarmiento Guede, J. R. (2024). Understanding the use of travel and restaurant platforms through the UTAUT2 model. *British Food Journal*, 126(2), 774–794. <https://doi.org/10.1108/BFJ-07-2023-0636>
 - 6) Hair Jr., J. F., Anderson, R. E., Babin, B. J., & Black, W. C. (2019). *Multivariate Data Analysis, Multivariate Data Analysis*. In Book (Vol. 87, Issue 4). www.cengage.com/highered
 - 7) Indrawati. (2015). *Metode Penelitian Manajemen dan Bisnis, Konvergensi Teknologi Komunikasi dan Informasi*.
 - 8) Indrawati. (2017). *Perilaku Konsumen Individu*. In *Perilaku Konsumen Individu* (pp. i–355). Refika Aditama.
 - 9) Indrawati, & Putri, D. A. (2018). Analyzing factors influencing continuance intention of E-payment adoption using modified UTAUT 2 Model: (A case study of Go-Pay from Indonesia). 2018 6th International Conference on Information and Communication Technology, ICoICT 2018, 0(c), 167–173. <https://doi.org/10.1109/ICoICT.2018.8528748>
 - 10) Juniper Research. (2023). *Embedded SIM (eSIM) global market size 2023-2027*. Statista. <https://www.statista.com/statistics/1344336/e-sim-market-size-worldwide/>
 - 11) Nafi, M. (2019). *Penetrasi Smartphone*. Statista. databooks.katadata.co.id/statista
 - 12) Nurrahman, A. H., Noviaristanti, S., & Firli, A. (2023). Analyzing the Continuance Intention of Fixed Broadband Using Modified Utaut2 Model (A Case Study of Indihome in Indonesia). 2023 International Conference on Digital Business and Technology Management, ICONDBTM 2023, 1–6. <https://doi.org/10.1109/ICONDBTM59210.2023.10326740>
 - 13) Salman, Noviaristanti, S. (2024). Analysis of acceptance and use of the agree mart mobile groceries marketplace application using the UTAUT-3 Model in Indonesia. *Journal of Multidisciplinary Academic Business Studies*, 1(2), 217–239. <https://doi.org/10.35912/jomabs.v1i2.1962>
 - 14) Silva, P. M., & Guilherme Ataide Dias. (2008). Theories About Technology Accepentace : Why the Users Accept or Reject the Information Technology ? *Brazilian Journal of Information Science*, 1(2), 69–86. <http://www.bjis.nesp.br/>
 - 15) Statista Digital Market Insighths. (2024). *Penetrasi smartphone di Indonesia*. <https://www.statista.com/forecasts/266729/smartphone-users-in-indonesia>
 - 16) Venkatesh, V., & Davis, F. D. (2000). Theoretical extension of the Technology Acceptance Model: Four longitudinal field studies. *Management Science*, 46(2), 186–204. <https://doi.org/10.1287/mnsc.46.2.186.11926>
 - 17) Venkatesh, V., Smith, R. H., Morris, M. G., Davis, G. B., Davis, F. D., & Walton, S. M. (2003). *Quarterly USER ACCEPTANCE OF INFORMATION TECHNOLOGY: TOWARD A UNIFIED VIEW1*.