



Implementation of Technology Acceptance Model (TAM) In MyHR System

Mochamat Farizat Firmasah Zakaria¹, Nur Rahmah Andayani²

^{1,2}Batam State Polytechnic, Ahmad Yani, Batam City, Riau Islands 29462, Indonesia
Farizalmuhammad69@gmail.com, nunun@polibatam.ac.id

Abstract. This study aims to investigate the application of the Technology Acceptance Model (TAM) to the MyHR system at PT Infineon Technologies Batam. Through the analysis of Perceived Ease Of Use, Perceived Usefulness, and Attitude Toward Using, this study aims to understand how these factors influence employee acceptance and adoption of the system. The population in this study includes all individuals who use the MyHR system to submit work certificates. The sample of this study was 100 people who were determined using the Slovin formula. Quantitative methods were used to collect data through questionnaires distributed to employees. The results showed that perceived ease and usefulness had a positive impact on the acceptance of the MyHR system, while user attitude did not significantly affect acceptance.

Keywords: Technology Acceptance Model, Human Resources Information System, Certificate of Employment.

1 Introduction

PT Infineon Technologies Batam is a semiconductor entity originating from Germany and has been operating since April 1996. Its main products include integrated circuit development for various segments, including DRAM, serial memory, interconnect components, automotive and industrial solutions, and smart card technology. The company has understood the importance of information technology in managing company operations, especially in employee management. Currently, they still use manual procedures in managing employee data and satisfying employee needs, but they realize that the adoption of information technology, such as digitizing employment certificates, can improve efficiency, and accessibility, and reduce the risk of human error.

A certificate of employment is an official letter issued by a company that is used as genuine evidence of a person's work experience in the business entity. [1] in the Smart Book of Human Resource Development, work certificates must be published as a thank-you to employees for their dedication, contribution, and loyalty to the company.

The manual process of applying for work certificates often takes a long time, is prone to errors, and is difficult to track employee history. Therefore, there is a need for a Human Resources System (HRIS) system that can help simplify and speed up the process of applying for a work certificate [2]. MyHR, as an adoption of HRIS, is a solution that enables efficient human resource management, including access to employee information and leave applications. Applying the Technology Acceptance Model (TAM) to the MyHR system is expected to provide valuable insights into improving the efficiency of human resource management through advanced technology.

The application of the Technology Acceptance Model to the MyHR system at PT Infineon Technologies Batam intends to identify factors that influence technology acceptance in the company. This research is expected to provide valuable insights into improving the efficiency of human resource management through advanced

technology. The quality of the system, ease of use, and benefits of MyHR have a major impact on the acceptance of the use of the Human Resource Management Information System (HR MIS) [3].

2 Theoretical Review

2.1 Theoretical Review

Information System. [4] The Information System within an organization fulfills daily transaction management requirements, aids operations, takes on managerial duties, supports strategic initiatives, and generates reports for external stakeholders.

Human Resources Information System (HRIS). [5] HRIS is a technology system created to gather, save, and examine data concerning employees within a company.

Technology Acceptance Model. TAM to forecasts users' willingness to adopt new technology [6]. [7] [8] The theory used in this study is TAM, this model aims to predict and explain how technology users can accept and use a technology in their work.

2.2 Literature Review

Application of the Technology Acceptance Model (TAM) Method to the Use of Academic Information System Applications [9] Perceived Ease of Use and Perceived Usefulness significantly influence Behavioral Intention to Use the use of SIAK at the Nusantara Business Institute. Behavioral Intention to Use significantly influences Perceived Usage on the use of SIAK at the Nusantara Business Institute.

Application of the TAM (Technology Acceptance Model) Method in the Implementation of the Banjar Bazaar Information System [10] In this study, the acceptance analysis of the Banjar Bazaar information system resulted in the TAM model. Only the hypothesis of the effect of Perceived Usefulness (PU) on Attitude Toward Using (ATU) is accepted, which indicates that belief in the usefulness of the Bazaar Banjar information system influences the attitude of acceptance or rejection of the system.

Application of the Technology Acceptance Model Method for Measuring the Acceptance Level of the SIM3LON Application [11] From this research, it can be seen that the result is that SIM3LON application users accept the SIM3LON application and feel many benefits for users in doing work to help simplify and improve performance.

To help simplify and improve performance.

Analysis of iKalsel Application Acceptance Using the Theory Technology Acceptance Model (TAM) [12] the presence of the iKalsel Application is based on the perception of usefulness for users, including the ability to work faster, improve performance, and work productivity. The iKalsel application is seen as user-friendly, with an easy learning curve, simple control, clarity, and adaptability.

Application of the Technology Acceptance Model (TAM) in Testing the Acceptance Model of the MasjidLink Application [13] Based on research on the application of TAM in testing the application acceptance model MasjidLink application, it can be concluded that mosque leaders believe that the MasjidLink application is user-friendly, useful, and accepted by the community. The findings from statistical

analysis on TAM indicate a variable percentage that can aid in enhancing MasjidLink development by emphasizing the acceptance of the application.

2.3 Hypothesis development

H1: Perceived Ease of Use (PEOU) Affects Acceptance (ACC). The advancement of technology today is increasingly embraced by individuals due to its undeniable ease of use. The simpler the operation of a new application or technology, the greater the likelihood that an individual will accept its use (ACC).

H2: Perceived Ease of Use (PEOU) Affects Attitude Toward Using (ATU). The ATU construct includes indicators of acceptance and rejection attitudes. The easier it is to use an application (PEOU), the higher the likelihood that an individual will use it with high intensity. Conversely, the opposite is also true.

H3: Perceived Usefulness (PU) Affects Acceptance (ACC). A high level of usage and strong motivation to use the application (PU) indicate that the MyHR application is a user-friendly system technology. In other words, it has a high (ACC) or positive acceptance level.

H4: Perceived Usefulness (PU) berpengaruh terhadap Attitude Toward Using (ATU). The ATU construct encompasses indicators of acceptance and rejection attitudes. If users of the MyHR system fully believe in its utility in their daily lives, the greater an individual’s trust in using the application (PU), the more likely they are to accept its presence.

H5: Attitude Toward Using (ATU) berpengaruh terhadap Acceptance (ACC). The higher an individual's level of acceptance (ATU) of a technology or the MyHR system.

3 Research Methods

3.1 Research Methods

This research is a type of descriptive quantitative research, which is based on positivism philosophy and used to study specific populations or samples, research instruments are used for data collection, and statistical data analysis is used to test hypotheses [14].

3.2 Operational Variables and Measurements

The method of collecting data is the distribution of questionnaires with the help of a Likert scale research instrument. This Likert scale is used to measure response answers on a 4-point scale with equal intervals. In this study, each variable is given an item code, namely PEOU, PU, ATU, and ACC. The variables and indicators used can be seen in Table 1 as follows:

Table 1. Operational Variables and Measurements

No	Variable	Operational Definition	Indicator	Initials	Scale
1	<i>Perceived Ease of Use</i> (PEOU)	The notion of perceived ease of use pertains to "how much an individual	1. Ease of learning 2. Clear and	PEOU.1 PEOU.2	Ordinal

No	Variable	Operational Definition	Indicator	Initials	Scale
		believes that using a specific system will not require much effort"(Jogiyanto (2015:1909)).	easy to use		
			3. Ease of goal achievement	PEOU.3	
			4. Flexible	PEOU.4	
			5. Ease of interaction	PEOU.5	
			1. Speed up work	PU.1	
2	<i>Perceived Usefulness (PU)</i>	Perceived usefulness refers to how much an individual thinks that utilizing a specific system will enhance their work efficiency(Jogiyanto, 2019).	2. Answer information needs	PU.2	Ordinal
		3. Improve work performance	PU.3		
		4. Improving efficiency	PU.4		
3	<i>Attitude Toward Using (ATU)</i>	Users can indicate positive or negative feelings in predefined behaviors defined by Davis in (Jogiyanto (2007:116))	1. An attitude of rejection towards the system	ATU.1	Ordinal
		2. Attitude towards system acceptance	ATU.2		
		3. An attitude of rejection towards the system	ATU.3		
		4. Attitude towards system	ATU.4		

No	Variable	Operational Definition	Indicator	Initials	Scale
60	M. F. F. Zakaria and N. R. Andayani		acceptance		
			1. Motivation to keep using	ACC.1	
4	Acceptance (ACC)	How users adopt and use technology is based on their perceptions of the benefits and ease of use or not. The more frequently users use the system, the easier it is for them to benefit from the information system (Fred Davis, 1989)	2. Frequency of use	ACC.2	Ordinal
			3. Kepuasan Penggunaan	ACC.3	
			4. Usage Satisfaction	ACC.4	

Sources: Results of Data Processing, 2024

3.3 Population and Sample

[14] Population is a conceptual area made up of items or individuals with specific features and traits identified by researchers for study and examination. [14] In this study, the selected population is MyHR system users. To ensure precise and reliable results, the determination of the sample size uses the Slovin formula because the sample size must represent the population so that the research results can be

generalized. The reason the Slovin formula is utilized is that it doesn't need a sample size table, instead, it can be carried out with simple formulas and calculations. PT Infineon Technologies Batam has a workforce of approximately 2,400 employees. Slovin's formula to calculate the sample size is outlined below:

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{2.408}{1 + (2.408 \times (0,10))^2}$$

$$= \frac{2.408}{1 + 2.408 \times 0,01} = \frac{2.408}{25,8} = 93,33 \text{ (100) Rounded result}$$

4 Results and Discussion

4.1 Result and Discussion

If the PLS model demonstrates that all indicators satisfy the requirements for convergent validity, discriminant validity, and composite reliability, the outcomes of the measurement model can be utilized to evaluate the study's hypotheses.

- a. **Convergent validity.** The loading factor value of each indicator indicates an examination of the construct. The loading factors for each indicator are shown in figure 2 below.

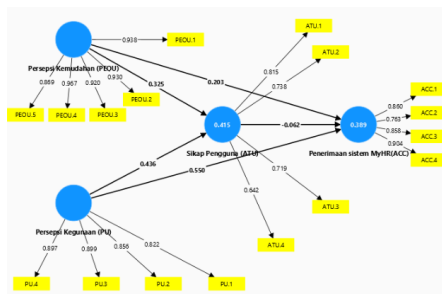


Figure 1 Outer Model

Convergent validity and high validity occur when the Outer loadings value exceeds 0,70 and the Average Variance Extracted (AVE) value exceeds 0,50. When the Outer loadings value is $> 0,70$, all indicators of the study variables show convergent and high validity. For example, if each study variable has an AVE $> 0,50$, then all study variables have strong convergent validity. The measurement model analysis showed several manifest variables with factor loadings $< 0,7$, so they should be removed from the model to fulfill the rule of thumb. In this context, the model should remove the variable Attitude Toward Using 4 (ATU.4). The following Loading Factor values have been removed.

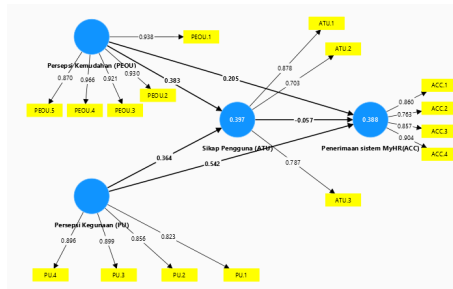


Figure 2 Estimated Model

b. **Discriminant Validity.** This value is the cross-loading factor (cross-loading).

Table 2 Discriminant Validity

	Perceived Ease of Use	Perceived Usefulness	Attitude Toward Using	Acceptance
PEOU.1	0,938	0,428	0,512	0,351
PEOU.2	0,930	0,330	0,492	0,264
PEOU.3	0,921	0,370	0,501	0,341
PEOU.4	0,966	0,415	0,518	0,399
PEOU.5	0,870	0,403	0,461	0,490
PU.1	0,444	0,823	0,506	0,407
PU.2	0,339	0,856	0,426	0,583
PU.3	0,412	0,899	0,427	0,530
PU.4	0,288	0,896	0,473	0,551
ATU.1	0,516	0,338	0,878	0,258
ATU.2	0,266	0,582	0,703	0,345
ATU.3	0,505	0,302	0,787	0,184
ACC.1	0,383	0,585	0,263	0,860
ACC.2	0,283	0,311	0,246	0,763
ACC.3	0,310	0,555	0,327	0,857
ACC.4	0,378	0,512	0,307	0,904

Source: SmarPLS results

Based on the data above, indicators for each construct tend to have higher factor loadings on the constructs they are supposed to measure than other constructs, for example, the PEOU indicator has the highest factor loading on the perceived ease of use construct, with significant loadings (all above 0,8) and much lower loadings on other constructs. The same is true for the PU, ATU, and ACC indicators. Thus, the cross-loading check shows that the constructs in this model exhibit good discriminant validity, as the indicators for each construct tend to be more related to the construct they are supposed to measure than other constructs.

c. **Composite Reliability.** The construction indicator block used composite reliability and Cronbach's alpha coefficients to evaluate construct reliability.

The composite reliability and Cronbach's alpha values exceeding 0,70 signify the successful establishment of construct reliability.

Table 3 Construct Validity and Reliability

	<i>Cronbach's alpha</i>	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Perceived Ease of Use	0,958	0,960	0,968	0,856
Perceived Usefulness	0,891	0,895	0,925	0,755
Attitude Toward Using	0,708	0,718	0,820	0,534
Acceptance	0,871	0,895	0,910	0,718

Source: SmarPLS results

Each construct has high composite reliability ($\text{rho}_c > 0.7$), indicating a good correlation between its indicators. The average value of variance extracted (AVE) is relatively high, indicating that the indicators explain the construct variation particularly well.

- d. **R-Square.** By considering the R-square value of the dependent variable and the path coefficients of the independent variables, we can evaluate the structural model. Next, we check the significance of these numbers by looking at the t-statistics for each possible path.
1. A model is regarded as strong when the R-squared value equals 0,70.
 2. The model is deemed moderate when the R-Square value is 0,50.
 3. If the R-Square value is 0,25 or lower, the model is seen as weak.

Table 4 R-Square

	<i>R-Square</i>	<i>Adjusted R-Square</i>
Acceptance (ACC)	0,389	0,370
Attitude Toward Using (ATU)	0,415	0,403

Source: SmarPLS results

An R-Square value of 0,389 for the Acceptance variable suggests that approximately 38,9% of the fluctuations in ACC can be clarified by PEOU and PU. In the meantime, the R-Square value for the Attitude Toward Using variable (ATU) of 0,415 suggests that approximately 41,5% of the variance in the Attitude Toward Using a variable is accounted for by the two independent variables. Therefore, the findings of the study show that the impact of Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) is important in elucidating the differences in Acceptance (ACC) and Attitude Toward Using (ATU).

- e. **F-Square.** The impact of external latent factors on endogenous latent variables can be determined using the effect size F-2.
1. Effect Size 0.35 is considered to have a strong influence.

2. Effect Size 0.15 is considered to have a weak influence.
3. An estimated effect size of 0.02 is considered to have a weak influence.

Table 5 F-Square

	Perceived Ease of Use	Perceived Usefulness	Attitude Toward Using	Acceptance
Perceived Ease of Use			0,149	0,048
Perceived Usefulness			0,200	0,321
Attitude Toward Using				0,004
Acceptance				

Source: SmarPLS results

The F-Square value indicates that Perceived Ease of Use (PEOU) and Perceived Usefulness (PU) have a greater impact on Acceptance (ACC) than on Attitude Toward Using (ATU). A higher F-Square value indicates a stronger contribution to the Acceptance (ACC) variable in the regression model. Attitude Toward Using (ATU) has a lower influence on Acceptance (ACC) than the other variables.

- f. **Hypothesis Test (T-Statistic).** The bootstrap procedure accepts hypotheses when the significant t-values exceed 1.96, at a significance level below 0.05 when testing hypotheses using statistical tests such as t-statistics, p-values, and inter-construct significance values. By replacing empirical observations with statistical assumptions, estimates and standard errors of measurement are no longer calculated.

Table 6 Path coefficient - Mean, STDEV, T-value, P-value

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T Statistics ((O/STDEV))	P value	Result
PEOU -> ACC	0,203	0,209	0,094	2,163	0,031	Accepted
PEOU -> ATU	0,325	0,313	0,123	2,651	0,008	Accepted
PU -> ACC	0,550	0,559	0,083	6,623	0,000	Accepted
PU -> ATU	0,436	0,463	0,089	4,908	0,000	Accepted
ATU -> ACC	-0,062	-0,070	0,086	0,724	0,459	Rejected

Source: SmarPLS results

The hypothesis analysis obtained is as follows:

1. **H1:** Perceived Ease Of Use (PEOU) has a significant impact on the Acceptance (ACC) of the MyHR system. This is supported by the statistical analysis, where the t-value is 2,163, which is greater than the

critical value of 1,96, or the p-value is 0,031, which is less than the significance level of 0,050. The results of this hypothesis test are the same as the results of research conducted by Albert Budiyono (2023) which states that perceived ease of use (PEOU) has a significant effect on acceptance (ACC) of the use of the Binus Nusantara Institute Academic Information System Application.

2. **H2:** PEOU influences the Attitude Toward Using (ATU). Again, the statistical analysis supports this, as PEOU has a t-value of 2,651, greater than 1,96, and a p-value of 0,008, less than 0,050. The results of this hypothesis test are in line with research conducted by Nurlaila, et al (2022) which shows that Perceived Ease of Use affects Attitude Toward Using, which shows that perceived convenience affects user acceptance of PPID's website.
3. **H3:** Perceived Usefulness (PU) influences MyHR system ACC. This hypothesis is accepted because PU has a t-value statistic of 6,623 > 1.96 or the P-values are 0,000 < 0,050. This hypothesis test is the same as research conducted by Agus Mulyanto, et al (2020) Perceived ease of use and perceived usefulness have a significant effect on the Acceptance of IT.
4. **H4:** PU influences ATU. This hypothesis is accepted because PU has a t-value statistic of 4.908 > 1.96 or the P-values are 0.000 < 0.050. The results of descriptive statistical analysis on TAM show that MasjidLink is accepted by the community. The result of Permana's research (2018), this study shows that Perceived Usefulness affects Attitude Toward Using.
5. **H5:** There is no correlation between ATU and MyHR system ACC. This hypothesis is rejected because the t-value statistic is 0.724 < 1.96 or the P-value is 0.459 > 0.050.

5 Conclusions and Suggestions

From this research on the use of the MyHR system at PT Infineon Technologies Batam, it can be concluded that employees' impressions of how easy and useful the system affects its acceptance and use.

1. State that Perceived Ease of Use has a positive effect on MyHR system acceptance. Employees' impression that using the MyHR system is easy, without requiring excessive effort, makes them more open and ready to use it. This helps improve efficiency in submitting work certificates, speed up responses, and make the overall employee experience better.
2. Perceived Ease of Use using the MyHR system has a favorable impact on the Attitude Toward Using its utilization. These findings suggest that employees are more receptive and prepared to integrate this system into their work practices, potentially enhancing efficiency in the submission of work certificates, expediting responses, and enhancing the overall employee experience.
3. The Perceived Usefulness of MyHR also affects the acceptance of this system. If employees feel the system provides tangible benefits in the work certificate submission process, they are more likely to accept and adopt the system. This helps improve the efficiency of the submission

process, provides tangible benefits to users, and increases employee satisfaction and productivity.

4. Perceived Usefulness has a positive effect on Attitude Toward Using. When employees feel that the MyHR system provides real benefits in the process of submitting work certificates, this tends to increase users' positive attitudes toward the system.
5. Attitude Toward Using system use does not significantly affect system acceptance, it does not significantly affect system acceptance. This indicates that additional variables, such as the Perceived Ease of Use (PEOU) or the Perceived Usefulness (PU), might exert a more substantial influence on the system's adoption.

In conclusion, this research will provide useful suggestions as follows:

1. More awareness is necessary about how helpful and user-friendly the MyHR system is for employees. By providing more effective training or socialization, it is hoped that positive perceptions of the system can increase, which in turn will improve the efficiency of the work certificate submission process and the overall employee experience.
2. It is important to involve employees in the development and improvement stages of the MyHR system. By obtaining direct input from users, improvements made will be more in line with their daily needs, which can enhance overall system acceptance and adoption.
3. Monitoring of questionnaire filling needs to be improved so that the results obtained are appropriate and maximized.
4. Future research should use more independent variables for more varied results like a Behavioral Intention to Use and Actual System Usage.
5. Further research should incorporate interviews with participants to gather more accurate data and depict real-life situations.

References

- [1] Maulidyah Amalina Rizqi, *Buku Pintar Human Resources Development: Praktik Singkat Divisi Sumber Daya Manusia*. Yogyakarta: Deepublish, 2019.
- [2] R. Edhy Permata, "Human Resource Information System (HRIS) Di PT. Sarmiento Parakantja Timber Berbasis Web," *Jurnal Penelitian Dosen Fikom (UNDA)*, vol. 10, no. 1, 2019.
- [3] Y. Dwi Hanafi and M. Anwar, "Implementasi Aplikasi Human Resource Information System (HRIS) Pada PT Swabina Gatra," 2023. [Online]. Available: https://jurnalkip.samawa-university.ac.id/karya_jpm/index
- [4] Hutahaean Japerson, *Konsep Sistem Informasi*, 1st ed. Yogyakarta: Deepublish, 2018.
- [5] Suharti and Sulisty, "Human Resource Information System : Fungsi, Peran, Manfaat, dan Penerapan Pada Wordpress," 2018.
- [6] Widanengsih, "Technology Acceptance Model to Measure Customers's Interest to use Mobile Banking," *Journal of Industrial Engineering & Management Research*, p. 74, 2021.
- [7] F. D. Davis, "A Technology Acceptance Model for Empirically Testing New End-User Information Systems," 1986. [Online]. Available: <https://www.researchgate.net/publication/35465050>
- [8] D. Evita, "Pengaruh Penggunaan IFS terhadap Kinerja dan Kreativitas Karyawan PT PAL Indonesia (Persero) dengan Pendekatan Task-Technology Fit (TTF) dan Technology Acceptance Model (TAM)," vol. 9, no. 1, 2020.
- [9] A. Budiyanto, "Penerapan Metode Technology Acceptance Model (TAM) Terhadap Penggunaan Aplikasi Sistem Informasi Akademik Institut Bisnis Nusantara," 2023.

- [10] P. Adi and G. Permana, "Penerapan Metode TAM (Technology Acceptance Model) dalam Implementasi Sistem Informasi Bazzar Banjar," 2018.
- [11] A. Safitri *et al.*, "Penerapan Metode Technology Acceptance Model Untuk Pengukuran Tingkat Penerimaan Aplikasi SIM3LON (Sistem Mandiri LPG Online)," *JATISI (Jurnal Teknik Informatika dan Sistem Informasi)*, 2021, [Online]. Available: <http://jurnal.mdp.ac.id>
- [12] S. R. Azkiya and L. Labibah, "Analisis Penerimaan Aplikasi Ikalsel Menggunakan Teori Technology Acceptance Model (TAM)," *UNILIB : Jurnal Perpustakaan*, vol. 14, no. 1, Feb. 2023, doi: 10.20885/unilib.Vol14.iss1.art3.
- [13] A. Mulyanto, S. Sumarsono, T. F. Niyartama, and A. K. Syaka, "Penerapan Technology Acceptance Model (TAM) dalam Pengujian Model Penerimaan Aplikasi MasjidLink," *Semesta Teknik*, vol. 23, no. 1, 2020, doi: 10.18196/st.231253.
- [14] Sugiyono, *Metode Penelitian Kuantitatif, Kualitatif dan R & D*, 1st ed. Bandung: Alfabeta, 2017.

Open Access This chapter is licensed under the terms of the Creative Commons Attribution-NonCommercial 4.0 International License (<http://creativecommons.org/licenses/by-nc/4.0/>), which permits any noncommercial use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons license and indicate if changes were made.

The images or other third party material in this chapter are included in the chapter's Creative Commons license, unless indicated otherwise in a credit line to the material. If material is not included in the chapter's Creative Commons license and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder.

