



Factors Influencing Intention to Adopt Generative AI Tools in Indonesian Enterprise Users

Naufal Hadi Ramadan¹, Eko Agus Prasetyo²

^{1,2}School of Business and Management, Institut Teknologi Bandung, Indonesia

ABSTRACT: Indonesian enterprises are in the early stage of adopting generative AI tools. A report from Forbes shows that AI companies around the world have raised around \$354 billion for Generative AI technology. One of the key drivers of those funding is to capitalize on the growing market demand. Market demand in Indonesia for Generative AI technology is explored by studying the intention to adopt such tools among enterprise users. Quantitative study reveals that perceived ease of use is a factor influencing the user's intention to adopt Generative AI Tools in Indonesian enterprises. Recommendations for further research includes exploring more predictive factors and reaching broader target audiences for the study.

KEYWORDS: AI adoption intention model, Generative AI tools, Intention to adopt, Indonesian enterprises, Perceived ease of use.

I. INTRODUCTION

AI has the potential to unlock new capabilities and drive economic growth and innovation in the modern era [1]. As we thoroughly explore AI and its capability, it's crucial for businesses to understand and capitalize on the opportunities presented by this transformative technology. This yields some strategic implications of AI for businesses, regarding how companies can leverage AI to gain a competitive edge, drive operational efficiencies, and create value for their customers. By aligning business strategy with the potential of AI, companies can pave the way for sustained competitive advantage in an increasingly digital landscape. [2].

Artificial Intelligence itself, is a term first coined in early 1956 by John McCarthy during a conference focused on the concept. Since then, AI has evolved significantly, becoming one of the most important global issues of the 21st century [3]. Adoption in businesses of all sizes and industries has been on the rise, with AI being integrated into various aspects of operations, from customer service chatbots to predictive analytics for decision-making. With more and more use cases demanded by the businesses, solution providers from all over the world are racing to gain a solid foothold on the market competitive landscape.

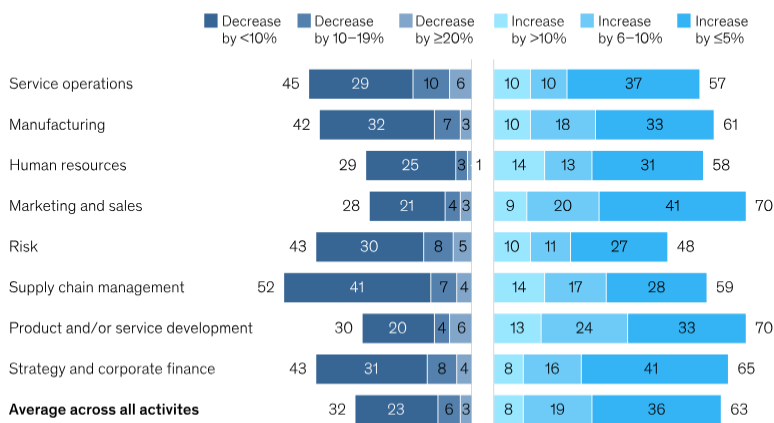
As of 2023, AI companies around the world have raised \$354.5 billion for generative AI technology [4]. One of the key drivers of those funding is to capitalize on the growing market demand [5]. In spite of the huge amount of money available for the development of generative AI technology, the product and use cases are still relatively new.

In some cases, adoption of AI in day-to-day operation shows promising results. Businesses executives report varying cost decreases and revenue increase after AI adoption. The functions that reported most significant impacts are supply chain management and marketing [6].



AI-related cost decreases are most often reported in supply chain management and revenue increases in product development and marketing and sales.

Cost decrease and revenue increase from AI adoption in 2021, by function, % of respondents¹



¹Question was asked only of respondents who said their organizations have adopted AI in a given function. Respondents who said "no change," "cost increase," "not applicable," or "don't know" are not shown.

McKinsey & Company

Figure 1. McKinsey report on AI productivity

Delivering a product with new technology to the market is a challenging task to accomplish. One of the key business issues that companies selling generative AI products face is the need to navigate the complexities of introducing and implementing new technology in the market [7]. This includes addressing the challenges of change management, re-skilling the workforce, and integrating AI into existing business processes [8]. With these considerations in mind, companies would be greatly benefitted from developing a clear and comprehensive business strategy. Such development could focus on the development and improvement of their generative AI products while also on creating a culture that embraces innovation and promotes the successful adoption of AI-based business models.

Indonesian enterprises are increasingly investing in AI tools to enhance their operations and gain a competitive edge in the market. Studies have shown that Indonesian businesses, particularly in the manufacturing sector, are leveraging AI technologies to improve predictive capabilities and streamline business analytics [9].

This study aims to identify the factors influencing Indonesian enterprise executives' intention to adopt generative AI tools.

II. THEORETICAL FOUNDATION

A. AIADE MODEL

The AIADE model, as proposed by Upadhyay et al., 2021 [10], is a theoretical framework that aims to explain entrepreneurs' intentions to accept artificial intelligence (AI) in the context of digital entrepreneurship. This model integrates various factors that influence AI acceptance, including performance expectancy, openness, social influence, hedonic motivations, generativity, affordance through attitude, uncertainty, effort expectancy, and inconvenience. These factors serve as antecedents that shape entrepreneurs' decisions regarding the adoption of AI for digital entrepreneurship. The study by Upadhyay et al. (2021) contributes to the existing body of knowledge by extending technology adoption and acceptance theories, providing insights into the specific dynamics of AI acceptance in entrepreneurial settings.

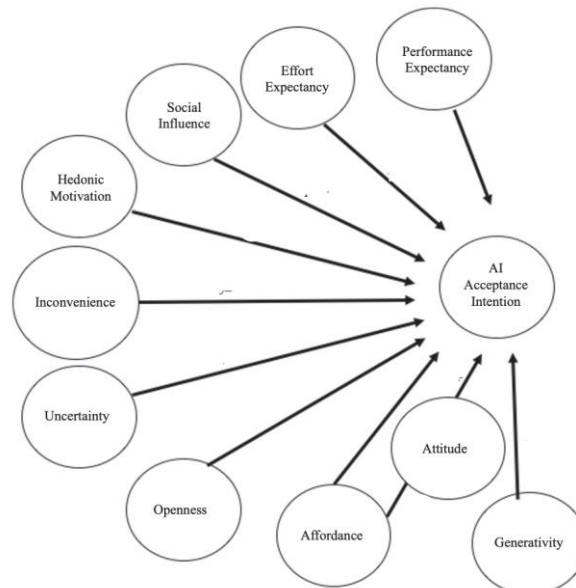


Figure 2. AIADe Model (Upadhyay, et al. 2021)

B. PERFORMANCE EXPECTANCY

Performance expectancy refers to the perceived increase in job performance from using generative AI products. A study from Venkatesh et al. (2003) shows that performance expectancy is the most decisive factor for an individual's decision toward adoption of technology.

If individuals perceive that the utilization of generative AI technology will be advantageous to them in terms of improving reliable work, leading to enhanced service quality such as high-performance expectations, they are inclined to adopt AI applications in their operations. This favorable viewpoint regarding the advantages of AI has the potential to increase its adoption among employees.

C. HEDONIC MOTIVATION

Hedonic motivation for business employees is a perceived pleasure they expect to obtain after using generative AI products for their daily work. Allam et al. (2019) argued that perceived enjoyment - a term similar to hedonic motivation - is a strong factor for individuals to adopt technology. Furthermore, hedonistic motivation toward AI devices were found to implicate a positive performance expectancy in service delivery (Gursoy et al., 2019).

Perceived ease of use can be defined as the degree of minimal effort needed by employees to adopt AI technology. In employees' point of view, it can be applied for products that are intended for internal usage of the company (like meeting.ai) or the ease of replacing operational effort to use the current technology toward generative AI solutions.

D. PERCEIVED EASE OF USE

Perceived ease of use has a degree of significance in the Technology Acceptance Model (TAM) and its influence on user behavior towards technology adoption (Venkatesh and Davis, 2000). Furthermore, previous study by Menabo et al (2020) suggests the importance of teachers perceiving technology as easy to use, as this perception positively impacts their intentions to integrate technology into their teaching practices.

E. INTENTION TO ADOPT

Intention to adopt, also known as AI acceptance, refers to the willingness of individuals, organizations, or society as a whole to adopt and utilize artificial intelligence technologies in various domains. It encompasses the attitudes, perceptions, and intentions towards incorporating AI systems into existing processes or creating new applications that leverage AI capabilities. Factors influencing intention to adopt can vary across different contexts, such as healthcare, education, business, and technology development.



Studies like those by Upadhyay et al. [10] and Na et al. [11] discussed the factors affecting intention to adopt in digital entrepreneurship and construction firms, respectively. These works highlight the importance of performance expectancy, social influence, effort expectancy, and organizational factors in shaping individuals' intentions to accept AI technologies. Similarly, research by Chan & Zary [12] emphasizes the need for methodological improvements to enhance AI adoption by addressing technical challenges and evaluating AI effectiveness, which are crucial aspects.

By adapting the AIADe model with selected factors, the study aims to confirm hypotheses on the following model.

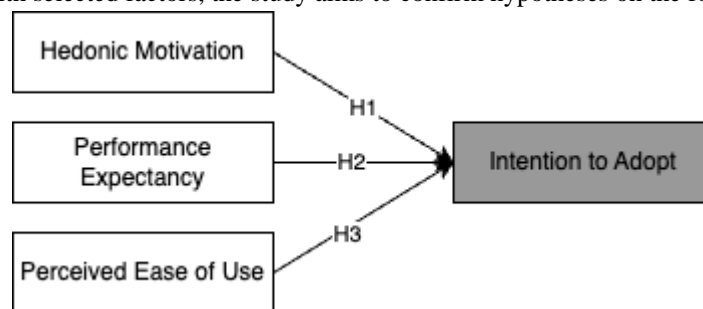


Figure 3. Intention to Adopt Model

Hypothesis for this research are:

- H1. Hedonic Motivation have positive and significant influence on Intention to Adopt
- H2. Performance Expectancy have positive and significant influence on Intention to Adopt
- H3. Perceived Ease of Use have positive and significant influence on Intention to Adopt

METHODOLOGY

The study collects data from respondents of an online questionnaire. The questionnaire is shared through email, chat messages and author’s social media pages. Respondents' profiles include Indonesian citizens aged 18-60 years old, employed in various industries within Indonesia. The duration in which the questionnaires actively accepted new respondents was two weeks. During the duration of acceptance, the study collected 115 responses in which 99 participants confirmed that they are familiar with generative AI. Therefore, the study proceeded to use responses from those 99 participants as the primary data.

Each variable is divided into several question items. Each item is measured in the likert scale of 5, with 1 means that the participant disagreed with the statement in the item, and 5 means that they agree. The items in question are described in Table I.

Table I. Questionnaire Items

Variable	Code	Items	Source
Performance Expectancy	PE1	I would find generative AI useful in my job.	[13]
	PE2	Using generative AI enables me to accomplish tasks quicker	
	PE3	Using generative AI increases my productivity.	
	PE4	If I use generative AI, I will increase my chance for getting a raise	
Hedonic Motivation	HM1	Using generative AI is fun.	[14]
	HM2	Using generative AI is enjoyable.	
	HM3	Using generative AI is very entertaining	



Perceived Ease of Use	EOU1	Generative AI is easy to learn	[15]
	EOU2	Generative AI is easy to use	
	EOU3	Generative AI is clear and understandable	
	EOU4	Generative AI is easy to become skillful at	
Intention to Adopt Generative AI Tools	AIA1	More and more people will use these generative AI tools	[16]
	AIA2	Will use these tools again	
	AIA3	Will encourage my friends to use in the future	

The model is analyzed using the PLS-SEM method. PLS-SEM utilizes partial regressions to estimate path coefficients between latent variables and their indicators in measurement models, as well as between latent variables in the structural model [17]. There are several methods discussed in the previous studies to determine the minimum sample size to conduct the PLS-SEM method. The most commonly referred method is the 10-times rule, which states that the minimum sample required is 10 times the parameters [18]. Because the quantitative research investigates 4 variables, 99 is well above the minimum requirement of sample size.

The analysis consisted of several steps:

1. Descriptive statistics: descriptive summary of respondents' profile, including demographic, income status, and the statistics for each factors
2. Reliability Testing: measuring reliability of the items using Cronbach's Alpha
3. Hypothesis Testing: confirming hypothesis by measuring each path coefficient from the model using the PLS method.

RESULT AND DISCUSSION

The summary of the participants are as follows:

Age:

- Young Adults (18-40): 71.3%
- Adults (>40): 28.7%

Income:

- Low (under 10 million IDR per month): 28.7%
- Middle (10 - 20 million IDR per month): 26.7%
- High (more than 20 million IDR per month): 44.6%

The participants of the study comprised a diverse group in terms of age and income levels. A significant majority, 71.3%, were young adults between the ages of 18 and 40, whereas adults over the age of 40 constituted 28.7% of the participants. In terms of income distribution among the participants, 28.7% had a low monthly income (under 10 million IDR), while those with a middle-income range (10 - 20 million IDR per month) accounted for 26.7%. The largest segment, making up 44.6% of the participants, reported a high monthly income exceeding 20 million IDR. This is interesting because the largest segment coming from the higher income group implies that the participants are more skilled workers or on an established stage of their career.

Next, the descriptive result for each variable is obtained and analyzed. From Table II we can see that the deviation and mean for each variable are quite similar.



Table II. Descriptive Statistics

Variable	Number of items	Lowest total	Highest total	Mean	Standard Deviation
PE	4	8	20	4.0696	0.6442
HM	3	8	15	4.3711	0.6452
EOU	4	11	20	4.2912	0.5958
AIA	3	5	15	4.4914	0.7121

Second, reliability testing for each item is conducted. In general, a Cronbach's alpha value of 0.7 or higher is commonly considered acceptable for establishing the reliability of a scale [19].

From the result in Table III, all variables in the research are considered reliable by having Cronbach Alpha score more than 0.7.

Table III. Reliability Test

Variable	Cronbach Alpha	Status
PE	0.7404	Reliable
HM	0.7903	Reliable
EOU	0.8123	Reliable
AIA	0.8733	Reliable

Finally, hypothesis testing is conducted to determine the variables influencing AI intention to adopt by testing the result from the data collection. Test was conducted using SmartPLS 4.0 software, utilizing the bootstrapping algorithm by iterating 5000 subsamples. The value of path coefficients and p-value can be seen in table IV.

Table IV. PLS-SEM Results

Path	Path Coefficient	p-value	Decision
EOU → AIA	0.302	0.035	Accepted
HM → AIA	0.188	0.515	Rejected
PE → AIA	0.406	0.133	Rejected

The positive path coefficient means that the variable has a positive influence on the target variable. However, the p-value should be lower or equal to 0.05 to be accepted [20]. Higher number of p-values indicates that the results are more likely to have occurred by random chance, thus lowering the statistical significance in the case of hypothesis testing.

From Table IV, we can see that the Performance Expectancy (PE) variable has the highest path coefficient among other variables. This usually corresponds to the conclusion that it has the highest influence on the target variable, Intention to Adopt (AIA). Unfortunately, the p-value of this path is larger than 0.05. Therefore, we reject H2: Performance Expectancy has positive and significant influence on Intention to Adopt.

The similar situation also applies to the Hedonic Motivation (HM) variable. It has a positive influence, which can be seen from the path coefficient (0.188), but a significantly higher p-value of 0.515. According to this result we also reject H1: Hedonic Motivation have positive and significant influence on Intention to Adopt. The only path that has acceptable p-value is Perceived Ease of Use (EOU) with the value of 0.035. The path coefficient of 0.302 indicates that it has a relatively positive influence on the target variable. From these findings, this research accepts that the perceived ease of use variable has a positive and significant influence on Intention to Adopt for users from Indonesian enterprises. The relationship between the factors is summarized in the final model depicted in Figure 4.

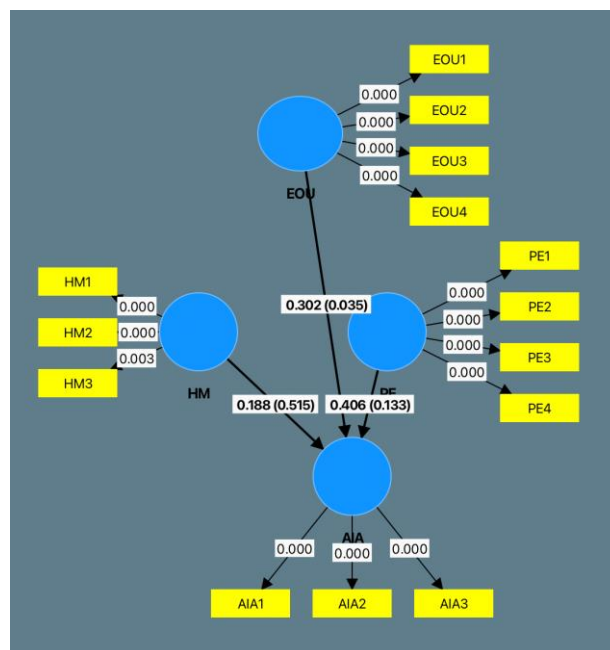


Figure 4. AI Adoption Model

- H1. Hedonic Motivation have positive and significant influence on Intention to Adopt - Rejected
- H2. Performance Expectancy have positive and significant influence on Intention to Adopt - Rejected
- H3. Perceived Ease of Use have positive and significant influence on Intention to Adopt - Accepted

CONCLUSION AND RECOMMENDATIONS

The conclusions of this study are:

1. Among Indonesian enterprise executives, intention to adopt generative AI tools are positively and significantly influenced by the perceived ease of use of said tools. Business practitioners who are looking to drive the adoption of generative AI tools within their organizations can consider prioritizing easy-to-use features and intuitive user interfaces in the selection phase. AI solution providers and vendors can also put more focus on the ease of use when developing generative AI products that are targeted for Indonesian enterprises. Training and live demonstration should be considered for those parties, since it will increase the perception of easiness among users of the tools.



2. This study did not confirm the influence of other explored factors, hedonic motivation and performance expectancy, towards the intention to adopt generative AI tools. Therefore, more research may be needed to further explore and understand these relationships.

Furthermore, future research can be improved with these points:

1. Develop larger models for Indonesian users from outside enterprise settings

This study focuses on Indonesian enterprise users. However, generative AI tools are also used in a broader use case such as for education, recreation, and general productivity. Future research can consider those cases and include participants from a more diverse background.

2. Explore more factors that can influence intention to adopt AI technology

The model to identify influences to the intention to adopt AI technology is limited. Future research can be beneficial to explore more factors and analyze the more complex relationship with intention to adopt variable.

REFERENCES

1. Fu, X. 2023. Quantifying the economic benefits of artificial intelligence technology. Proceedings of the 4th Management Science Informatization and Economic Innovation Development Conference, MSIEID 2022, December.
2. Gudigantala, N., Madhavaram, S., & Bicen, P. 2023. An AI decision-making framework for business value maximization. *AI Magazine*, 44(1), 67-84.
3. McCorduck, P. and Cfe, C. 2004. *Machines Who Think: A Personal Inquiry into the History and Prospects of Artificial Intelligence* (2nd ed.). A K Peters/CRC Press.
4. Forbes 2023. Generative AI Is Generating Hype But Can It Generate Value? <https://www.forbes.com/sites/lawrencewintermeyer/2023/10/26/generative-ai-is-generating-hype-but-can-it-generate-value/?sh=146750ace81f>
5. Baker-Brunnbauer, J. 2021. Management perspective of ethics in artificial intelligence. *AI and Ethics*.
6. McKinsey 2022. The state of AI in 2022—and a half decade in review <https://www.mckinsey.com/capabilities/quantumblack/our-insights/the-state-of-ai-in-2022-and-a-half-decade-in-review>
7. Dawid, H., Decker, R., Hermann, T., Jahnke, H., Klat, W., König, R., & Stummer, C. 2016. Management science in the era of smart consumer products: challenges and research perspectives. *Central European Journal of Operations Research*, 25(1), 203-230.
8. Lee, J H., Suh, T., Roy, D., & Baucus, M S. 2019. Emerging Technology and Business Model Innovation: The Case of Artificial Intelligence.
9. Judijanto, L., Muda Priyangan, D., Muthmainah, H. N., & Jata, I. W. 2023. The influence of data quality and machine learning algorithms on AI prediction performance in business analysis in indonesia. *The Eastasouth Journal of Information System and Computer Science*, 1(02), 75-86.
10. Upadhyay, N., Upadhyay, S. and Dwivedi, Y.K. 2022. Theorizing artificial intelligence acceptance and digital entrepreneurship model, *International Journal of Entrepreneurial Behavior & Research*, Vol. 28 No. 5, pp. 1138-1166.
11. Na, S., Heo, S., Han, S., Shin, Y., & Roh, Y. 2022. Acceptance model of artificial intelligence (ai)-based technologies in construction firms: applying the technology acceptance model (tam) in combination with the technology–organisation–environment (toe) framework. *Buildings*, 12(2), 90.
12. Chan, K. and Zary, N. 2019. Applications and challenges of implementing artificial intelligence in medical education: integrative review. *Jmir Medical Education*, 5(1), e13930
13. Venkatesh, Viswanath & Morris, Michael & Davis, Gordon & Davis, Fred. 2003. User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*. 27. 425-478
14. Venkatesh, V., Thong, J. Y. L., & Xu, X. 2012. Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly*, 36(1), 157–178.
15. Davis, F. D. 1989. Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319–340.
16. Parra-Lopez, E., Bulchand-Gidumal, J., Gutierrez-Tano, D. and Diaz-Armas, R. 2011, Intentions to use social media in organizing and taking vacation trips”, *Computers in Human Behavior*, Vol. 27 No. 2.



17. Hult, G., Hair, J., Proksch, D., Sarstedt, M., Pinkwart, A., & Ringle, C. 2018. Addressing endogeneity in international marketing applications of partial least squares structural equation modeling. *Journal of International Marketing*, 26(3), 1-21.
18. Hair, Joseph & Ringle, Christian & Sarstedt, Marko. 2011. PLS-SEM: Indeed a silver bullet. *The Journal of Marketing Theory and Practice*. 19. 139-151.
19. Arseven, Z., Kılıç, A., & Şahin, Ş. 2016. Value-eroding teacher behaviors scale: a validity and reliability study. *Universal Journal of Educational Research*, 4(6), 1378-1386.
20. Kock, Ned. 2016. Hypothesis Testing with Confidence Intervals and P Values in PLS-SEM. *International Journal of e-Collaboration*. 12. 1-6.