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AI in the Finance and Banking Industry in Indonesia : Analysis of effects for the Economy and Greater Productivity

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ABSTRACT

Artificial Intelligence (AI) is a collection of multiple technologies that includes computer vision, natural language, and machine learning which collaborate to analyze data sets to make decision making and automate processes. In the banking industry, AI is mostly being used to improve customer service, strengthen security and offer a personalized financial solution.This research aims to test to what extent customers feel comfortable in using AI powered services. Research work presented serves to understand and acknowledge customer's view in regard to the integration of AI to most banking services through a collection of data gathered by structure questionnaire. The main goal is to improve AI banking services in the future based on the customer's approach. Methods of research are focused mainly on primary data and constructed into a structured questionnaire. Outcomes coming from it will assist most banks to apply, modify, and upgrade AI tools to attract customers and increase customer satisfaction. The findings based on the research proves that most customers are willing to use AI for their banking services however there are still doubts and concerns for data security. More limitations and discussions will be presented throughout the research.

Keywords: Artificial Intelligence, Banking Sector, Customer Satisfaction, Financial Services, Technology.

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1. INTRODUCTION

The banking industry has shown massive development where it started off traditionally with heavy relying on manual process and paper based documentations. Starting off from Banking 1.0 with traditional and historical theories as the base, automated teller machines (ATMs) were still highly used back in the 1960s. Typically traditional banks offer normal financial service such as checking and saving accounts, loans and mortgages being strictly physical. Limited service offerings will lead to problems such as decrease in efficiency, increased operational costs, and trouble in adapting within market demands.

Therefore in this digitalized era, the development of banking industries is shown through the creation of online banking which is called Banking 4.0. As this is pushed by the growing numbers of smartphone users and supported by the J.D. Power survey that 41% of the customers have started their

business strictly digitally. The rapid development of online banking has then led to the introduction of AI in the banking industry serves as a hope in how it can be the solution for which problems are addressed before. China is predicted to have the largest economic benefits with an increase of GDP 26% by 2030 and followed by North America with 14.5%. This itself will contribute around 70% of the whole global economy with a total of $10.7 trillion (PWC Report 2023). As the banking industry shifts its focus towards the development of AI, it is also important to not only address the positive outcomes of it but analyze the potential impacts it could give to the economy and produce a better productivity level. Through the algorithms of AI, banks are able to detect money laundering activities, shorten the length of tasks that usually takes hours or even days, and even handle a huge amount of data within a decent amount of speed. Other features include enabled digital payments and a highly secured fraud detection system which would lead to a broader customer base where revenue and profits can potentially increase while reducing operational cost. Moreover, automated tasks, identifying data patterns and decision making are easily accomplished by AI. However this research is limited as to only see the point of view from its customers and how they feel through this advancements.

In conclusion, this research seeks to find a relationship between productivity, overall economic performance, and technological changes through artificial intelligence in this sector. This study gives an in-depth understanding of how customers feel of the integration of AI submerging into the finance sector services through analysis of the complexity of it.

1.1 Problem Statement

The Banking industry before digitalization has had to survive the financial crisis back in 2008 which has impacted a decrease in its return on equity (ROE) from 15.2% in 2007 to a downfall of 9% in 2017. Judging by the unsteady results, traditional banks had to look for ways to revive the industry. Several challenges that traditional banks had to face are to be discussed.

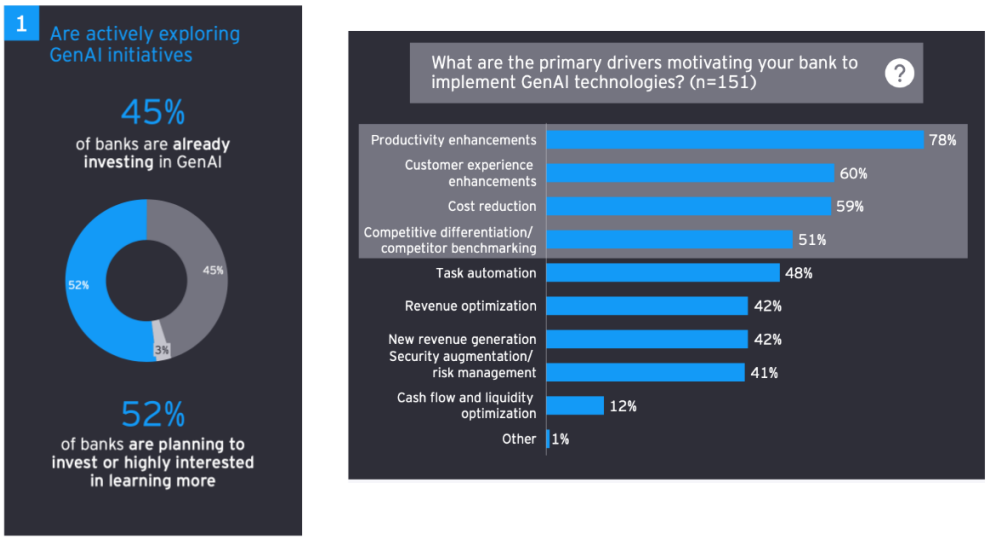

Figure 1.1 Survey conducted by EY

In a survey conducted by EY Perthenon in July 2023, we can see that not all banks have actively utilized AI in their banking operations. The proportion coming from Figure 1 shows that 52% are still planning on investing in AI-powered services, and the remaining 45% are already implementing it. This shows that the majority of the banks still lack knowledge and are not up to current trends. Most drivers are coming from the ability of AI to increase productivity, customer experience, cost reduction, competitive benchmarking and many more. Banks that are not adopting AI yet to their services are very much far behind and are facing losses to not achieve the benefits mentioned.

Traditional banking systems are admittedly to be late to trends and slow to adopt digital reformations. Limited services such as ability to do deposits, transfers, mortgages, bill payments and credit applications for their online advancements has proven to disable the maximum advantage of the use of IT in the banking industry. A Massachusetts Institute of Technology (MIT) report states that traditional banks are able to grasp a 60-80% of cost reduction by simply going digital. However, the slow pace of going digital has made it a challenge to run smoothly in this digitalized era. The evolution of modern banking approaches has made traditional banking a threat. Nowadays customers no longer feel the need and want to wait in line just to access financial services. A complex series of processes just to submit documents are no longer within their interests, while through the development of AI in online bankings are able to ease the access of customers to reach the services within a single button. Traditional banks need to realize the importance to reevaluate their approach to continue their competition in this fast paced business. In addition, the cost of maintaining a brick and mortar branch is rather expensive. The EY Parthenon Retail and Commercial Banking GenAI Survey July 2023 shows that only 45% of banks have implemented Gen-AI in their system, leaving the rest of the 52% who are still planning and their investment for the Gen-AI system.

As a result, there is increasing demand and strong concerns for traditional banks to start going digital to cope with world development. The use of technology itself has affected today's world and has highlighted the importance in increasing banks performance especially to measure their performance and operations. Past researchers has also evaluated the impact of artificial intelligence on most businesses (Wisskirchen, Biacabe, Bormann, Muntz, Niehaus, Soler & Brauchitsch, 2017; Soni, Sharma, Singh & Kapoor, 2018; Bataller & Harris, 2016; Matthew Scherer, 2016). The previous studies had identified dependent variables of this case as which there are mixed outcomes and financial situations as indicators.

1.2 Research Question

How do customers feel about the help of AI in the bank they are using and improve the services? This research question will let me as the researcher to get a grasp on their current level of knowledge regarding AI banking services and familiarity of daily usage of it.

1.3 Research Objective

In correlation to the research questions proposed before, this research aims to contribute within the banking industry by providing additional knowledge to guide key financial figures in taking a major role to implement AI for more positive progress and optimize performance, particularly in the Indonesian region, since all the respondents are coming from this country. Report from McKinsey forum stated that around two-thirds of senior digital analysts that attended believed AI and technology will distress how banking institutions continue to do their business and how to fully adapt to grasp the effectiveness of AI. It is important to address how these banking companies make good use of AI and are to be discussed within this study and impact their customers. This research aims to see the customer's view on implementing AI for the services provided by the bank and how comfortable they are on using it. Customer experience in banking is about the way customers understand and react to their dealings with banks. It includes every interaction point in a customer's journey like face-to-face meetings at bank branches, handling things through internet or cell phone applications, help from customer service representatives and more. The importance of having a seamless, tailored and easy-to-use customer experience across all channels is crucial for banks as it can result in better customer commitment and staying power which affects the financial institution's total earnings.

2. LITERATURE REVIEW

2.1 Artificial Intelligence in Banking Sectors

Artificial intelligence (AI) is a systematic set that consists of both theories and algorithms that allows computers to perform tasks that normally require human intelligence such as visual perception, voice recognition or the interpretation of a text, taking into account a certain context to a text that, in some cases, augments these abilities. The most recent tool that is used is called machine learning which is a subfield of AI itself. Most financial service providers nowadays use AI technology for their advantage in the digitalization era and compete within the competitors such as predictive analysis and speech recognition. With this, banks are able to improve the customer's experience by providing customer support representatives.

Application of AI itself has been used in different sectors such as government payments, healthcare facilities, online trading business, logistics, financial industries, etc. In the banking sectors it helps manage financial services and engages customers while offering personalized recommendations. Their flexibility allows them to help both large and small organizations. The basic concept of AI is through a series of mathematical computations that enables communication to communicate at a high-speed base based on conditions driven by the computer system. According to Patel, R (2022), AI in the digital services gives a much more efficient and faster output compared to traditional ways to perform the various financial computations used in the banking operations. Furthermore, the application of AI is unavoidable given the characteristics of technology nowadays and to advance against competitors. Application of AI helps banks to prevent frauds, increased reliability and accuracy, high-speed processing data and ease banking services. Banking's industry quality of products and services are progressing. Through the cutting edge technology, user experiences are also increased as data handling is being simplified, accelerated and redesigned with the purpose to create better effectiveness. Future of the banking industry is foreseen to have a brighter future using AI's potential in detecting and preventing fraud while still complying with regulations. Fighting against money laundering usually is a challenge especially through human labor, however artificial intelligence is able to program within only seconds. Offering high quality services increases the potential of a wider customer target and would result in higher revenue for the bank itself.

Noreen et al. (2023) has conducted a study that focuses on how the advancement of technologies such as AI for banking industries into shaping traditional banks to adapt the modernized world through automation of optimization routine tasks, maximize operational efficiency and back-end processes. Other than that, this study highlights the potential challenges that bank industries might face through implementations of AI. It is important to take such matters into considerations such as threat of security measures, data privacy, and bias of algorithms used.

Supported by Thowfeek et al (2020) highly emphasizes the key drivers for improved capabilities of computations are through technological advancements such as creations of elaborated algorithms and data processing infrastructures. The algorithms are such a big aid for enhancing customer experience and engagement. AI driven tools help improve customer interactions by personalized chatbots. These changes are enabling the banking industry for advanced decision making through data analytics that are generated through AI for algorithms to support anti-fraud activities and risk management. Though concerns regarding security are rising, this study delves into other factors to consider such as security and regulation compliance to prevent cyber attacks to protect private financial data. According to the article, operation costs are able to be reduced while increasing efficiency by technological automated repetitive tasks therefore allocation of costs can be directed somewhere else.

2.2 Key Areas of AI in Banking Sectors

Cost saving : AI advancements allows the banking sectors to reduce a high amount of cost regarding paperwork and printing. According to (Millenium Consultant, 2022), as of 2023, an amount totaling USD 416 billion were saved due to the use of AI technology in the banking sector. Operations cost of banks were limited for accessing information for managerial and customer use without additional personal or paper costs. Chatbots: Technological advancement such as chatbots is one of the most unique software within all AI technologies, as it interacts with customers using preprogrammed queries of customers for effective communication and ease problem solvings (Mogaji et al., 2021). This does not only solves customer problems without human interactions but also tracks on customer data records which is useful for resolution of future problems (Huang and Lee 2022).

Customer experience: Customer satisfaction and experience are both important indicators as to how far the adoption of digital financial services in banks are impacted. The change in customer preference over the years is enabling banks to respond to their demands with personalized content. Machine learning of which AI technologies comprise uses a specific algorithm for banks to analyze and predict customer behavior along with credit scores to initiate personalized plans for their each and different customers (Millenium Consultant, 2022). Al helps banks services to process and meet their customers expectations. A study from China has perceived that intelligence from AI gives a positive impact for consumer's social support. This supports the claim that AI are able to affect customer satisfaction (Lin and Lee, 2023).

Sentiment analysis : Prediction of customers behavior is one of the fundamental concerns of any financial institution to develop and provide for financial products and services. Sentiment analysis for customers in concern of AI is analyzed through social media, responses from emails, and surveys for predicting preferences of customers (Huang & Lee, 2022). The technology used is to collect information for developing and display contents according of their preferences and choices (Verma, 2022)

Automation: AI technology in this sector allows for tasks to be completed without human help which includes the aid from digital machines to count currencies quickly and accurately. The automation technology increases the amount of work done while reducing employee's stress level and potential mathematical errors when counting cash in the operations. In addition, the automation system has increased the conduciveness of the working environment as it is highly functional for the future of financial institutions itself.

Fraud detection: Due to the large amount of tasks, most financial institutions are facing high risk of being exposed to fraud threats also depending on the complexity of the tasks. As stated before, the use of AI with mathematical systems can help monitor their customers and their behavior through unsupervised learning programs (Huang & Lee 2022). This in fact helps fraud prevention through AI technology (Rahman et al., 2023). Though AI is based on a machine learning program, however it has the ability to replace human tasks in an automated way and eliminate potential risks of threats within the banking sectors.

2.3 The Scope of AI Applications in the Banking Sector

Credit scores are assessed by banks through evaluating the credit ratings of loan applicants, which helps banks manage risk and optimize profits (Ince & Aktan, 2009). However, credit risk remains a critical challenge, as it is difficult to mitigate and monitor, especially to prevent systemic failures (Ghodselahi & Amirmadhi, 2011). Artificial intelligence (AI) is employed in this sector to classify the likelihood of positive or negative credit scores, using regression models like logistic regression and discriminant analysis to enhance profitability and marketing strategies. Mobile banking wallets have become prevalent, with 65% of consumers utilizing them (Payne et al., 2018). These digital payment

methods offer convenience, allowing banks to analyze user data to improve services and strengthen customer relationships. Customer loyalty is fostered through fulfilling clients' needs and providing high-quality services, with AI and regression models predicting client loyalty and optimizing future strategies (Kishada et al., 2016; Puri & Rocholl, 2008). In fraud detection, AI and machine learning are crucial for processing vast amounts of digital data to identify and prevent fraudulent activities, integrating AI into operational strategies for more effective task completion (Ortiz et al., 2016; Al-Araj et al., 2022). Cybersecurity enhancements, such as Pattern Scout and Threat Match, improve network visibility and real-time monitoring, reducing security costs and data breaches, and significantly decreasing task evaluation times from 15-60 minutes to 1-5 minutes with advanced systems (Kaya, 2019; Soni, 2019; Vieira & Sehgal, 2018).

2.4 Customer Satisfaction

Customer satisfaction reflects a company's ability to deliver goods, services, and capabilities effectively, and it is crucial for fostering future purchasing activities and client loyalty. It serves as a significant indicator of growth and revenue prospects. Although banks offer similar services, competition in the banking sector emphasizes customer experience, particularly in terms of pricing. To measure customer service quality, banks must differentiate themselves and assess their relationships with clients. Clients expect respect and a banking service that genuinely understands their needs rather than merely promoting products. Banks must provide exceptional service both at ATMs and over the phone to ensure a consistent experience across channels. Meeting customer expectations and delivering a seamless experience is vital for maintaining satisfaction and preventing clients from switching to competitors. As customer demands and quality expectations rise, banks need to focus on providing value, stimulating connections, and continuously innovating. The rapid advancement of technology, particularly artificial intelligence, has influenced growth in the banking sector by enabling banks to offer high-quality services and foster customer loyalty. AI technologies, such as artificial neural networks, enhance customer satisfaction by improving service quality and addressing customer needs. Features of AI, including trendiness, attractiveness, and problem-solving capabilities, make banking services more innovative and appealing. Research indicates that digital banking services supported by AI meet customer needs and enhance satisfaction, with visual attractiveness and problem-solving capabilities being crucial factors. Additionally, studies on AI in customer service reveal that while customers are initially skeptical of automated systems, they are optimistic about future improvements in service quality.

2.5 Limitations and Challenges of Artificial Intelligence

The strategic focus of boards and bank leaders has long included artificial intelligence and machine learning (AI/ML), a priority that has only intensified with the advent of generative AI tools capable of swiftly creating content and code. Despite the emergence of these tools, boards have been grappling with evaluating various risks associated with AI and machine learning. According to surveys from Ernst & Young LLP (EY) and the Institute of International Finance (IIF) in 2022, along with recent discussions with chief risk officers (CROs) in financial services, key areas of focus for AI/ML implementation include credit risk management and fraud detection. Additionally, banks are exploring generative AI applications in these areas and broader regulatory compliance. However, early adopters of AI/ML face significant risks, including potential lawsuits over copyrighted content in AI results, concerns about algorithmic bias, lack of transparency in AI processes, and threats to data privacy and cybersecurity. Many financial institutions are therefore adopting a cautious approach, initially applying AI/ML in less visible processes or in ways that enhance operational efficiency and employee support. This cautious approach is compounded by the complexities of board oversight due to unclear regulatory guidance. Regulators are increasingly concerned about bias in credit algorithms, misinformation from chatbots, and data privacy issues. As the use of generative AI grows, so does the

need for robust and adaptable governance. Boards must ensure thorough and strategic oversight of AI usage to manage risks and optimize business operations.

3. METHOD

Methodology

The purpose of this research is to analyze how the banking industry is able to improve their services based on the customer point of view after implementing AI. The approach of this research is using a quantitative method using a list of questions in a questionnaire based to be given out to people to fill out. Collections of data will then be examined to be analyzed for this research. The result we wish to obtain is to provide a solution on how to improve a better function using AI in banks to improve customer satisfaction.

4. RESULTS AND DISCUSSION

4.1 Demographic Findings

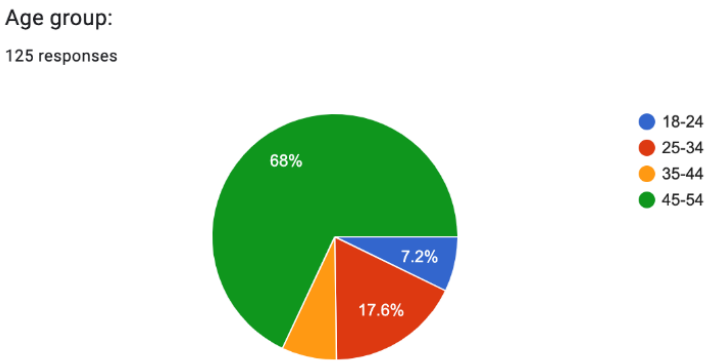

Figure 4.1 Age Demographic

Demography allows researchers to analyze quantifiable statistics of specific populations (Vogt & Johnson, 2011). In this study, data samples were primarily collected from Indonesia, with the majority of respondents aged 45-54, representing 68% of the sample, followed by those aged 25-34 at 17.6%. The remaining samples are from the 18-24 and 35-44 age groups. The prevalence of older respondents may influence the discussion towards their behaviors and perspectives, potentially differing from younger generations in terms of financial conditions, risk tolerance, and technological knowledge. Despite this, the results should be examined to ensure that AI-powered banking services are designed to be accessible and beneficial across all age ranges.

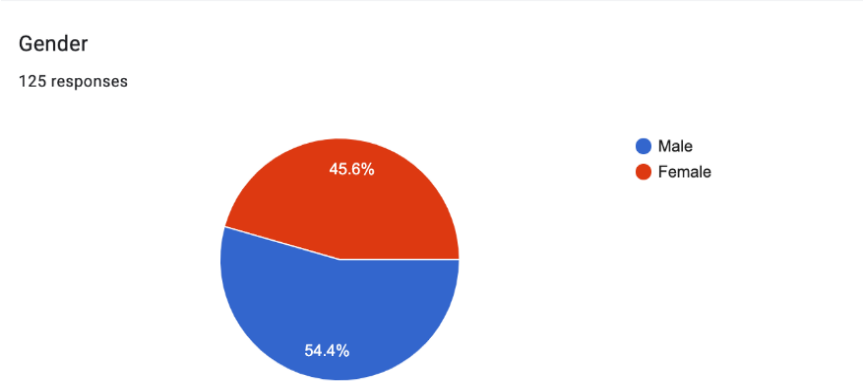

Figure 4.2 Gender Demographic

The second question coming from the questionnaire is also still aligned with demographic purposes. Through the pie chart, we can see that both genders are almost represented equally with 54.4% male and 45.6% female. The gap between respondents of both genders are not significantly different. In this modern age, it is important to understand the different genders' unique viewpoints and experiences for most businesses, researchers, and organizations, especially for the banking industry. To conduct questionnaires, it is critical to include gender survey questions to be more inclusive and yield meaningful insights. Analysis of the survey responses and considering gender as a parameter will allow me as the researcher to evaluate how gender plays a role in this case and help indicate a pattern. Since both genders are represented equally in this questionnaire, therefore behaviors regarding usage of AI for financial banking services will most likely be similar with one another.

4.2 Awareness and Usage Findings

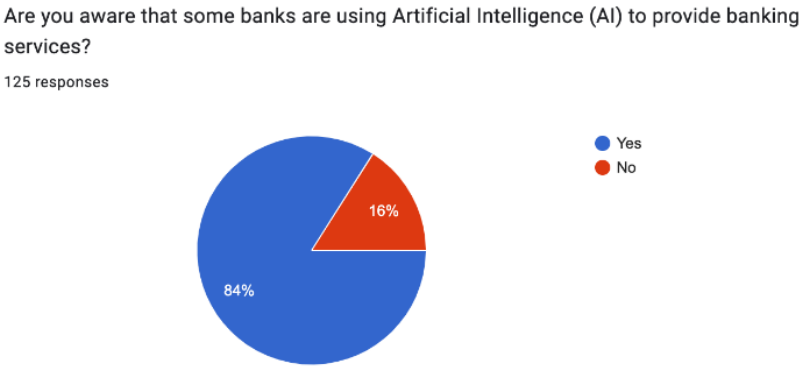

Figure 4.3 AI Awareness of Users

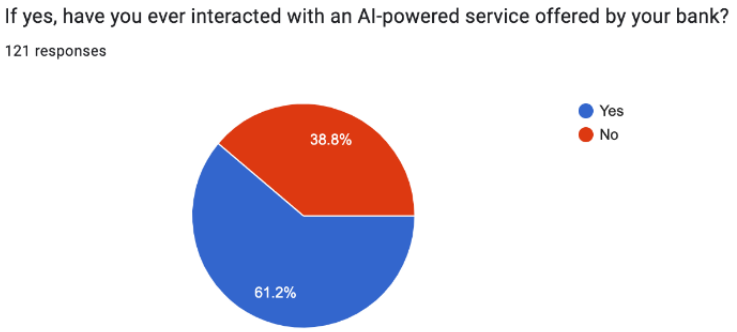

Figure 4.4 AI Interactions of Users

Data from a sample of 125 respondents reveal that nearly 84% are aware of and have used AI-powered services offered by their banks, indicating that AI technology is widely adopted in Indonesia. Specifically, 105 people have interacted with AI services, while only 20 are unaware of these technologies. Additionally, 61.2% have previously used AI-powered services from their banks, demonstrating that Indonesians are adapting well to current technological trends. This aligns with McKinsey's 2021 report, which found that 78% of Indonesian customers are actively using digital banking. Overall, the data suggests that Indonesian banks have successfully integrated AI platforms, which are well-received and utilized by the public.

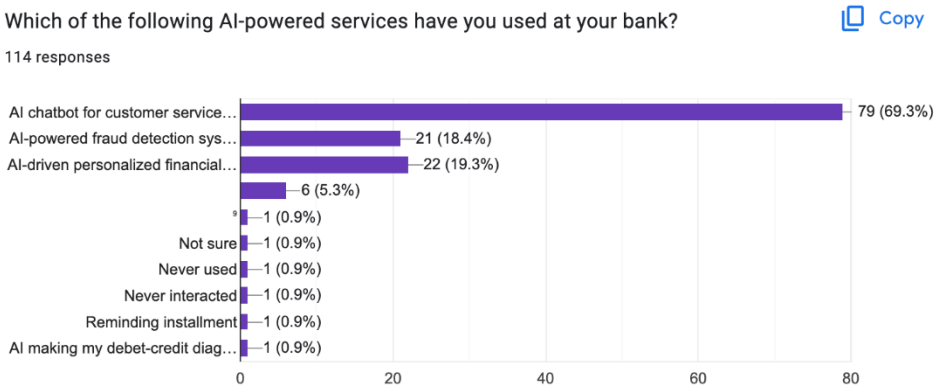

Figure 4.5 AI Usage of Users

The next part of the questionnaire consists of seeking what kind of services that they have used previously at the bank. The respondents were allowed to select this question with more than one answer. They were given options such as AI chatbot for customer services, AI powered fraud detection system, AI driven personalized financial recommendations,and reminding installments. Based on their response, 69.3% of the respondents which means around 79 people have mostly used AI chatbot for customer service. AI chatbot is one of the essential tools that a bank can provide for their customers as unlike humans, chatbots are available 24/7. This allows customers to get rapid answers and assistance anytime, regardless of their location or time zone. Chatbots are able to handle common and frequently asked questions of the customer quickly and efficiently. For banking services, chatbots can provide information on account balances, transaction history, bill payments, and more. Not only this is a time saver for customers but also eliminates the waiting time compared to traditional banking services. Moreover, AI-powered chatbots also benefit the bank as it allows them to reduce labor costs. Chatbots enable the automation of simple tasks therefore reducing the need for human tasks for handling routine inquiries. Leading to significant cost savings in customer service operations. In addition, chatbots can gather customer's valuable data from its interactions that includes common pain points and increased room for improvement in the services. The data collected can be analyzed to enhance customer service and needs.

The data reveals that 19.3% of respondents have utilized AI-driven personalized financial recommendations, highlighting the importance of AI in tailoring banking services to individual needs by analyzing past customer data and adapting to current trends. Machine learning, a subset of AI, helps develop algorithms to predict future behaviors and recommend actions. Personalized recommendations enhance customer satisfaction by meeting specific needs, while segmentation by age—such as prioritizing security for older generations and digital support for younger ones—can increase banking efficiency. Additionally, 18.4% of respondents have used AI-powered fraud detection, which helps prevent phishing and identity theft by recognizing unusual activity and requiring two-factor authentication for added security.

The analysis reveals that respondents perceive the greatest benefit of AI services in banking as improved efficiency and faster service, with 71.5% indicating this advantage. AI's ability to enhance speed in banking operations through rapid data processing and automation is highly valued. The second most appreciated benefit is 24/7 availability, chosen by 50.4% of respondents, highlighting the importance of constant access facilitated by AI through chatbots and automated interfaces. Personalized recommendations were valued by 21.1% for improving customer experiences, while 16.3% noted AI's role in analyzing transaction data to prevent fraud. The least valued benefit was improved accuracy in financial decision-making, selected by only 1.6% of respondents. Overall, customers prioritize AI enhancements that improve service speed, availability, and personalization, with security and financial decision-making seen as less significant.

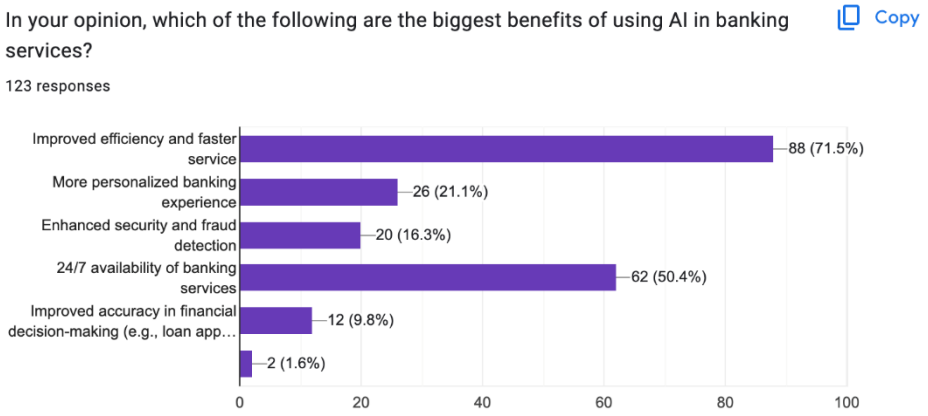

Figure 4.6 Acknowledgement of AI Benefits to Users

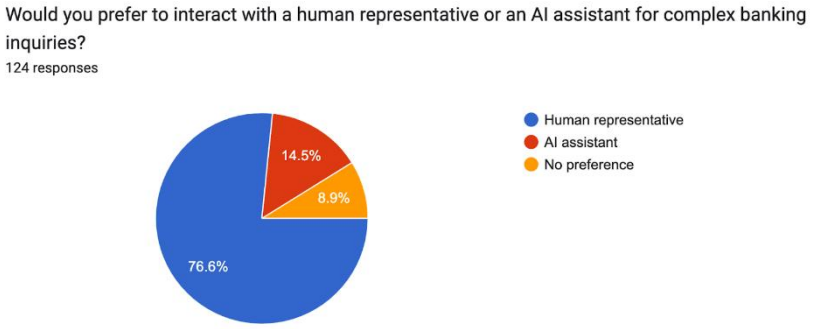

Figure 4.7 Preferences of Users to Banking Services

It turns out after a series of questions testing their awareness and usage of AI powered banking services, this final question in this section indicates that the majority of the respondents' behavior still chose the assistance of human representatives compared to AI assistants. 76% of the total respondents (95 out of 124) are rather still more comfortable to use human assistance for complex banking inquiries. Only 14.5% chose AI assistant which means only 18 out of 124 respondents feel that AI are able to ease their banking affairs. However, looking back at the demographic data of the questionnaire itself, most of the respondents come from the age group of 45-54. This can also suggest that the older population still trusts more human representatives for helping their banking needs. Supported by how the older population are less knowledgeable compared to younger generations regarding the implementation of AI and technological advancements for banking services.

4.3 Security and Privacy Findings

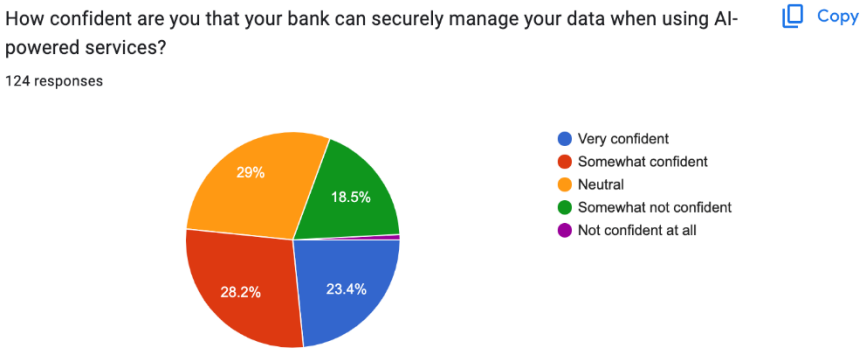

Figure 4.8. Level of User's Confidence Using AI

The pie chart reveals a varied level of confidence among respondents regarding data security in AI-powered services, with proportions ranging from 18.5% to 29%. The largest segment, at 29%, shows that most respondents feel neutral about AI's data security, indicating either a lack of understanding or uncertainty about AI's implications. Close behind, 28.2% of respondents feel somewhat confident in AI's data protection, suggesting trust but with some reservations. A slightly smaller group, 23.4%, expresses strong confidence in their bank's ability to safeguard data through AI, reflecting overall positive sentiment towards AI-powered banking. The smallest group, at 18.5%, feels somewhat unconfident, indicating ongoing concerns about data security despite technological advancements. This mixed confidence underscores the need for banks to enhance both customer service and data security assurances.

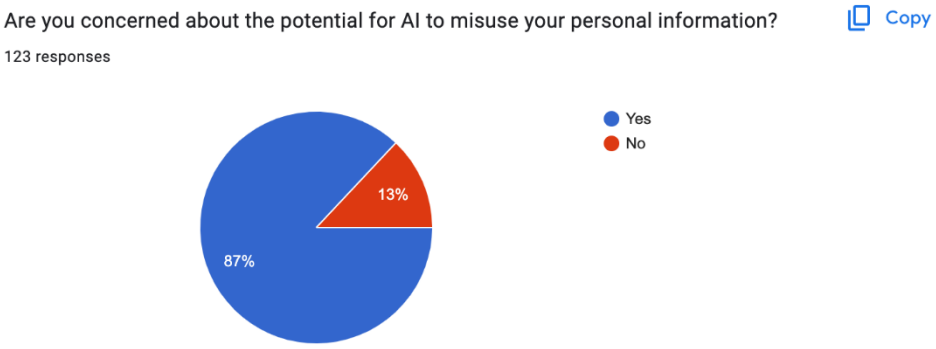

Figure 4.9 Concerns for AI Data Protection

Though the previous question has shown a positive attitude coming from the respondents regarding their feeling of how banks are able to secure the data, however the majority of them are still in doubt that there is a possibility of data misuse. The analysis for this shows that there are certain limitations and challenges that most banks need to overcome. AI does not only improve the livelihood of banks and customers but there are also certain drawbacks related to it. Security risks are related to the potential of malicious attacks resulting from digitized online platforms which can affect the bank's operation and also customer financial loss. Arising concerns are also shown through lack of transparency coming from the bank side. According to this questionnaire, banks are still unable to reassure their customers, which in this case are the respondents that their data are being secured and chances of possible leak of personal information are eliminated.

4.4 Overall Impression Findings

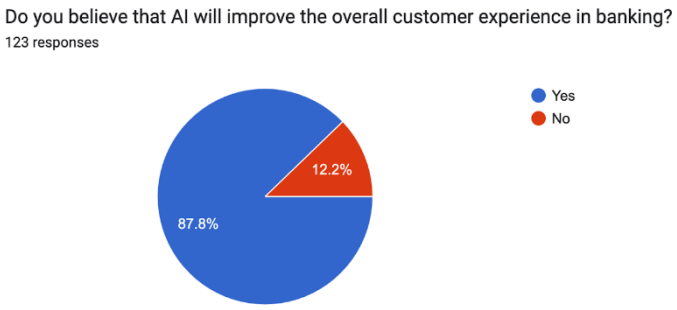

Figure 4.10 User's Perspective on AI

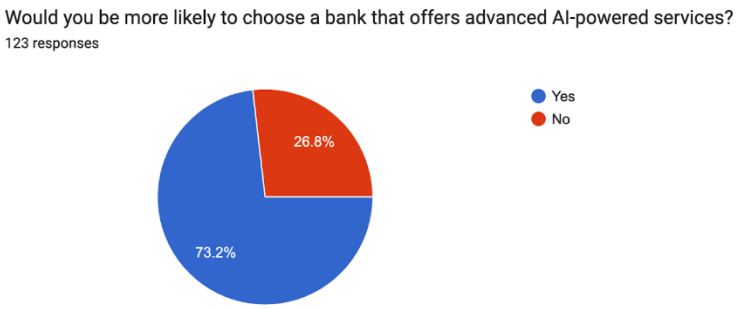

Figure 4.11 Future of AI-Powered Services in Banking

Findings based on the pie chart gathered on the survey has shown that AI implementations are able to increase the overall customer experience in banking. Results show that 87.8% support the statement before (108 out of 123). The high percentage suggests customers have strong optimism and trust about the benefits that AI can bring to them. Benefits include things that have been discussed before such as increased efficiency, personalization, 24/7 availability and more. The remaining 12.2% of the total population (15 out of 123) does not believe that overall customer experience would improve though AI powered banking services. Arising concerns are due to the fear of privacy issues and errors that are undetected by human supervision. Though this is rather a small number compared to the population that agrees, banks need to tighten their security measures to gain customer's trust and increase the engagement. In general, the result shows that there is positive behavior coming from the customer's perspective that AI-powered services in the banking industry are able to expand and innovate to replace traditional banking processes. To support the previous question of how comfortable respondents feel about AI, the next question is to identify whether they actually want a banking service that offers AI powered services. From the questionnaire, the result shows that the majority of them, 73.2% (90 out of 123) would be more likely to choose a bank that offers AI powered banking services. This suggests a strong preference that they are adapting with current technological advancements. Conversely, 26.8% (33 out of 123) are more reluctant to change. Meaning they would like to stay at their comfort zone of using banking services traditionally and would still choose human representatives on their service.

To conclude the discussion, the result reflects a clear pattern that respondents are leaning towards services that are driven by technology for banking solutions. Further integration of AI would be much needed to generate more innovative solutions to provide their customers and increase customer satisfaction.

CONCLUSION

The research project with the title of "AI in the finance and banking industry in Indonesia : Analysis of effects for the economy and greater productivity" seeks to find how AI is used in the banking industry and how it can improve customer satisfaction. In order to reach conclusive research I have gathered data coming from both primary and secondary research. Primary data collection that I have obtained is coming from a structured questionnaire to be handed out to the respondents coming from Indonesia. Meanwhile supporting secondary data comes from various journals and is listed on the reference. The main research question is How do customers feel about the help of AI in the bank they are using and improve the services? The drivers for this research question is because although banks are transforming their services into an AI-powered system, it is also important to consider the customer's point of view by this integration. Customer is a crucial external point for determining the success of certain banks.

The result of the research coming from the questionnaire shows that the majority of Indonesians are already highly familiar with the integration of AI systems in most banking companies. Proved by how they have used most of the services such as AI chatbots, personalized financial recommendations, and fraud detection system. Respondents believe that using AI powered systems has led them to a much more beneficial situation for banking purposes compared to doing it traditionally. It is proven that AI has increased their efficiency and effectiveness as it does not take a lot of time compared to before. However, it does not rule out that the respondents still in fact have doubts of possible data misuse. Respondents are still concerned regarding the data security. This behavior has led the majority of them to still trust human representatives more than AI powered services for a much more complex banking purpose. For simple inquiries they are quite comfortable using AI powered banking services and are willing to choose a bank that is AI powered for future bank developments. Overall, the respondents do feel that AI powered banking services to improve their customer experience and ease their banking matters.

Recommendations

Future technological advancement for the banking industry should focus on reducing chances for cybersecurity. Based on the result of the questionnaire, respondents have concerns on the possibility that their data would be used or stolen. This led to further developments of banks to focus their subject area of improvement in this sector. By strengthening their security wall and promoting it. Banks should actively promote that through AI powered services customers data won't get stolen to gain customer's trust. Further work to strengthen security measures can also be done by collaborating with strong IT companies and receiving the best software to prevent cybersecurity.

Acknowledgements or Notes

Though the study is completed with both primary and secondary data however this does not close the possibility of data incompletion. Other external sources that are not included in this research would lead to missing additional information. This study wishes to see the behavior of Indonesian people with AI integration in most banking services. Yet it is hard to discover thoroughly how everyone feels as the data collection method is limited to only structured questionnaires. To delve deeper into a much more elaborated response, open ended questions and interviews need to be conducted. This research is only limited to only a few samples collected, therefore a conclusive result based on this might not be able to represent all the population of Indonesia. Especially Indonesia consists of many divided islands and it is hard to reach all of it. Based on the questionnaire, most of the respondents come from the oldest age group which is 45-54, meaning most of the influence for the final result of the questionnaire does not represent all the age groups of the total samples selected. Different age groups might have different knowledge regarding the technological advancement of AI. In addition, the questionnaire does not allow me to assist the respondents when filling out the form. Hence, I would not be able to help in case of respondents not understanding the question and needing further explanations. Limitations of this research would be lack of sample diversity and limited scope collected.

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