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Intelligent Banking Chatbot: Intention to Continue Through Millennial Customer Satisfaction in Indonesia Using the TAM Method

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Abstract: This study examines the impact of perceived usefulness and ease of use on the intention to continue utilizing banking chatbots in Indonesia. The sample comprises Generation Millennials enrolled in Master's degree programs in Tangerang Raya, Banten Province. These individuals have utilized the banking chatbots MITA, VIRI, AISYAH, CINTA, and SABRINA. The sample comprised 230 individuals, and the sampling method employed was simple random sampling. Data collection employs a survey methodology with a questionnaire instrument. The data underwent processing utilizing path analysis techniques facilitated by SPSS Version 26 software. The study yielded findings indicating that both partial and simultaneous judgment of usefulness and ease of use had a favorable and substantial impact on customer satisfaction and intention to continue. Customer satisfaction was discovered to impact the level of ongoing interest. Similarly, the ongoing attraction of millennials towards utilizing banking chatbots in Indonesia is driven by their perception of the chatbots' usefulness and ease of use, with customer satisfaction as a mediating factor. The coefficient of determination for customer satisfaction is 74.4%, while the coefficient of determination for intention to continue using chatbots is 83.2%.

Keyword: Perceived Usefulness, Perceived Ease of Use, Service Quality, Intention to Continue Using Chatbot.

INTRODUCTION

How people live and do commercial enterprise has changed a lot due to the time people spend on the net and advances in generation (Kwangsawad & Jattamart, 2022). This means consumer conduct is usually changing, and businesses use unique virtual marketing strategies to keep up with what customers want in the virtual world (Hosseini et al., 2015). Because robots are to be used 24 hours an afternoon, seven days a week, and may handle a massive variety of questions, they could assist customers quickly and easily. For instance, this enables

the client to enjoy the right (Hosseini et al., 2015) by making materials accessible to discover speedily. Businesses have time-honored and used facts and conversation technology (ICT) to make their patron offerings better and handier (Pillai & Sivathanu, 2020), (Kwangswad & Jattamart, 2022), (Calvaresi et al., 2023). Customers can get the offerings they want faster in this era, and it also makes managing organizational assets more efficient and offers workers more time to do other matters (Ceccarini & Prandi, 2019) (Olivia & Marchyta, 2022).

Artificial intelligence (AI) has grown in importance in advertising and business over the last decade, owing primarily to the availability of low-cost yet powerful computation and enormous data sets (Huang & Chueh, 2021). The advancement of AI enables businesses to use chat services for customer assistance. Managers have a rising interest in implementing chatbots to automate activities linked with client dating services (Sheehan et al., 2020) (Sands et al., 2021). There may be clear evidence that chatbots are being used in a variety of industries, including banking and financial services (Nguyen et al., 2021), (Eren, 2021), (Bagana et al., 2021), (Cardona et al., 2021), and (Sarbabidya & Saha, 2020).

With 24/7 availability and the ability to address significant inquiries, chatbots can effectively and efficiently help with customer needs. This helps create a fantastic customer (Selamat & Windasari, 2021), together with supplying fast and handy admission to records. AI chatbots can boost consumer loyalty and satisfaction. More than half of businesses have already implemented or plan to implement chatbot technology (Sands et al., 2021), and it is expected that by 2025, over 95% of online service encounters will use AI chatbots or stay chat (Clark, 2020). According to (Fokina, 2024), 88% of customers have had at least one conversation with a chatbot. Statistik Chatbot 2021: Pasar Dan Peluang (2022) suggest the significance of utilizing statistics and era (IT) for banking, of the route in keeping with the increasingly more complicated capabilities and operational activities of banks which might be presently required if you want to satisfy digital-primarily based carrier systems to be able to offer a spread of progressive, technology-primarily based services. They were primarily based on examination with the aid (Capgemini.com, 2019) centered at the pinnacle of a hundred players in banking & coverage, retail, and automobile. The results of their investigation indicated that nearly half of banking and insurance leaders now utilize intelligent assistants (Przegalinska et al., 2019). The banking quarter sees this situation as a project and a possibility to improve the first-class quality of its services. The huge potential of the virtual economy shows that virtual channels are necessary and have emerged as one of the most important aspects in the banking boom (*Roadmap Pengembangan Perbankan Indonesia 2020 - 2025*, 2021). Blessings and the benefits acquired from AI generation will increase purchaser hobby using AI-based offerings by 20– 40% (Ledignan, 2020).



Source: 3 Chatbot Perbankan Terbaik, 2020

Figure 1. Performance Chatbot MITA, VIRA and AISYAH

In line with Bank Indonesia's evaluation results, Several Indonesian banks have begun to use virtual banking technology to service their clientele. In Indonesia, some banks have started chatbot offerings, in which clients can get the right of entry via several online messenger packages along with LINE, WhatsApp, and FB Messenger. A few names of chatbots in banking in Indonesia are MITA, VIRA, CINTA, SABRINA, MILA, AISYAH,

LISA, etc. As chatbots broaden in the banking financial offerings chain, their pleasant capabilities continue to be delicate to satisfy customer expectancies if you want them to emerge as digital offerings that are easy to use. Some banking chatbot service features are statistics and promos, stability assessments, nearest ATM places and department places, credit score card information, account mutations, exchange costs, card blocking off, and other services. The advantages of the banking generation are used mainly by Generation Z and millennials, who prioritize ease in gaining access to banking services whenever and everywhere. Internet consumption stages in 2020. They are strongly supported by using net get right of entry, which is done by 93.9% by using technology Z, and 88.4% with the aid of the millennial era, at the same time as era 98.4% (Ali et al., 2020).

Even though chatbots are growing in popularity, wrong and frustrating reviews have additionally been said (Følstad et al., 2018), (Goot et al., 2020). (Sladden, 2022) argues that customers are dropping acceptance of chatbots as accurate, with 42 percent keeping off chatbots for complex questions and 15 percent reporting a loss of trust in using chatbots to communicate with companies. The outcomes of the writer's search show that respondents are still not interested in persevering with banking chatbots because of the lack of excellent emotional experience while interacting with chatbots. The statistics provided are of the worst quality, are not updated, and are no longer relevant, so customers want more time and effort to get solutions. Banking chatbots have not changed the position of customer support in responding to customers, so customers do not widely use them. Chatbots are nevertheless not consumer-friendly, so it's miles indicated that it cause customer dissatisfaction, so they're reluctant to use chatbot services.

Based totally on studies conducted by (Ashfaq et al., 2020) (Pereira et al., 2021) in the context of intelligent chatbots, pleasure is undoubtedly inspired by the perceived usefulness of satisfaction. Likewise, studies (Duy Phuong et al., 2020) determined that perceived advantages significantly impact customer satisfaction. Satisfaction and continued interest in generation are based totally on perceived usefulness or the number of users who experience that using new technology (chatbot e-services) is beneficial to guide their performance and assist them in performing specific duties efficiently. The expected uses and advantages of the statistics machine ought to be capable of satisfying customers by meeting consumer expectations. Research studies also show that perceived usefulness and ease of use are significant for measuring consumer satisfaction (Davis, 1989a); (Venkatesh & Davis, 1996). (Mawhinney & Lederer, 1990) stated that user satisfaction is closely associated with perceived advantages. . (Davis, 1989a) also, all different things being the same, an application perceived by cease customers as more uncomplicated to use than others is much more likely to be frequent. Different research results also verify many findings from previous research showing that perceived usefulness has an impact on stopping user pleasure (Davis, 1989a) (Davis, Bagozzi, & Warshaw et. al., 1989a) (Igarria et al., 1995).

This is why the author is interested in the utility of AI, such as chatbots, to millennial customers. However, studies on the attractiveness of chatbots are still confined (Sarbabidya & Saha, 2020), and just a few research have investigated consumer conduct regarding chatbots (Aslam et al., 2023). Based on these problems, the writer is inquisitive about studying the factors that affect continued interest in using Indonesian banking chatbots regarding the TAM model amongst millennials (Davis, 1989a).

METHOD

This study uses quantitative methods with a descriptive approach (Rosdakarya, 2013) and verification, primarily based on the historical past and definition of the problem. In the realm of studies methodology, quantitative studies (Sugiyono, 2012) can be understood as a method based on the philosophy of positivism. This method aims to discover a particular population or sample by utilizing study tools for statistics series and quantitative statistics

processing. (Rosdakarya, 2013) Descriptive research is studies that aim to obtain the value of an independent variable, either one or more variables (independent), without making comparisons or connecting one variable with any other. The verification technique involves researching a particular populace to check out a hypothesis. This study investigates the impact of perceived usefulness and perceived ease of use on the intention to continue using banking chatbots in Indonesia through customer satisfaction as a mediating variable. The sample used is Gen Millennials pursuing Master's degree studies in Tangerang Raya, Banten Province, who have used the banking chatbots MITA, VIRA, AISYAH, CINTA, and SABRINA. The pattern is 230 human beings. The pattern calculation is as follows: the range of variables (exogenous and endogenous) is three, and the total indicators are 46, so the pattern wished is three variables * the wide variety of indicators in the device is 46, so the sample wished = 230 people. Samples were taken using a simple random sampling technique. Data changes accumulated using a survey technique with a questionnaire device, which, before being distributed, were examined for validity and reliability (Arikunto, 2019). The collected information was then processed using path analysis techniques with the assistance of SPSS version 26 software (Ghozali I, 2013) and a Sobel test to determine whether or not the customer satisfaction variable becomes a mediating variable.

RESULTS AND DISCUSSION

Path Coefficient Analysis I

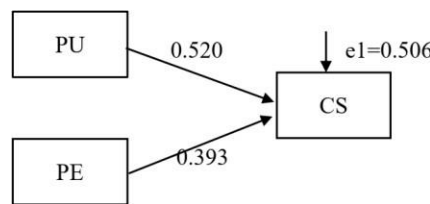


Figure2. Path Diagram I

Table 1. Path Analysis Results of Perceived Usefulness and Perceived Ease of Use on Customer Satisfaction

Variable	Regression Coefficients	T Value	Sign	Result	F Value	Sign	R Square
PU → CS	0.520	9.973	0.00	Accepted	330.068	0.000	0.744
PE → CS	0.393	7.359	0.00	Accepted			

Inside the path coefficient analysis I, the value of R square is 74.4%, which means that the customer satisfaction variable may be defined utilizing the variable perceived usefulness and perceived ease of use of 74.4%. In comparison, the remaining 25.6% is the contribution of other variables not included in the studies.

Path Coefficient Analysis I

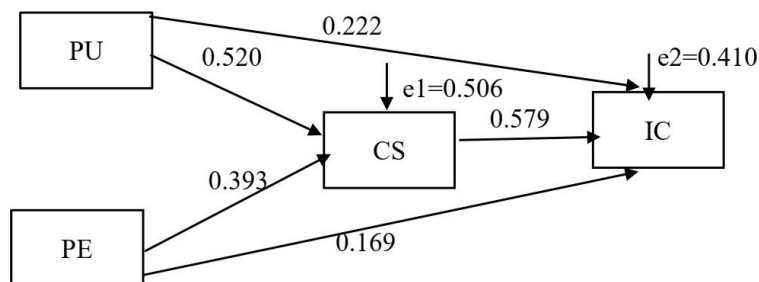


Figure 3. Path Diagram II

Table 2. Path Analysis Results of Perceived Usefulness, Perceived Ease of Use and Customer Satisfaction on Intention to Continue

Variable	Regression Coefficients	T Value	Sign	Result	R Square
PU → IC	0.222	4.305	0.000	Accepted	0.832
PE → IC	0.169	3.492	0.001	Accepted	
CS → IC	0.579	10.664	0.000	Accepted	

Within the path II analysis coefficient, the value of R square is 83.2%, which means that the sustainable interest variable may be defined by the variables' perception of usefulness, perceived ease of use, and customer satisfaction of 83.2%. In comparison, the remaining 16.8% is the contribution of these variables. Others are now not included in the observation.

From the effects based on facts processing, an evaluation of the impact of perceived usefulness on customer satisfaction acquired a significance value of $0.000 < 0.05$. This indicates that hypothesis H1 is accepted. The findings of this study align with the research conducted by Ngubelanga & Duffett, 2021, which indicates that the perceived usefulness of information technology has a beneficial impact on the satisfaction levels of early adopters and short-term users. The utility derived from utilizing technology results in happiness, with utility manifesting as enhanced production or efficiency, encompassing both financial and non-financial aspects. The findings of Amin et al., 2016 also corroborate these results. Perceived usefulness refers to the user's perception that the technology is beneficial and will result in satisfaction when utilizing it. The perceived ease of use on customer satisfaction is evaluated with a significance value of $0.000 < 0.05$. So, it can be concluded that hypothesis H2 is accepted. This study aligns with prior research undertaken by Malik & Rao, 2019; Duy Phuong et al., 2020; Olivia & Marchyta, 2022 which found that the perceived ease of use had a substantial impact on consumer satisfaction. User acceptance and happiness can be enhanced by the implementation of user-friendly information technology that requires minimal effort to operate. Duy Phuong et al., 2020; Olivia & Marchyta, 2022 contend that the perceived ease of use plays a crucial role in influencing customer satisfaction within the realm of technological applications.

From the results of the F calculation, it turned into received that the significance became $0.000 < 0.05$, so hypothesis H3 was accepted, stating that directly perceived usefulness and perceived ease of use together had a positive and significant impact on customer satisfaction. The information from the research findings is stated to have proved empirically that perceived usefulness and ease of use together have a positive and significant effect on banking customer satisfaction in Indonesia. The consequences of this study complement several preceding research effects, such as studies outcomes from Ashfaq et al., 2020; Pereira et al., 2021 which state that customer perceived usefulness and perceived ease of use significantly affect customer satisfaction in using chatbot application services in employee services, and in research by (Ngubelanga & Duffett, 2021) on mobile commerce applications (MCA). Research by (Sachan et al., 2018) on e-government services shows that customers' perceived ease of use and usefulness positively affect consumer satisfaction while using government websites. Furthermore, studies by Shao & Yin, 2019 show that perceived usefulness and ease of use significantly impact consumer satisfaction with mobile e-commerce.

Analysis of the impact of perceived usefulness on intention to continue obtained an importance value of $0.000 < 0.05$, so it may be concluded that directly perceived usefulness has a positive and significant effect on sustainable interest, so hypothesis H4 is accepted. In the analysis of perceived convenience in the direction of sustainable interest, an essential result of $0.001 < 0.05$ was obtained, so hypothesis H5 was accepted, and it concluded that perceived convenience directly had a positive and significant impact on sustainable interest.

The effects of these studies supplement several preceding studies' consequences, including the outcomes of research by way of Kasilingam, 2020 which stated that perceptions of usefulness and convenience together affect interest in sustainability. Those consequences additionally enhance studies from Darmawan & Setyorini, 2020; Ashfaq et al., 2020; Nguyen et al., 2021; Selamat & Windasari, 2021; Cardona et al., 2021; Gümüş & Çark, 2021 state that perceived usefulness has power on interest in the use of and studies Darmawan & Setyorini, 2020; Ashfaq et al., 2020; Gümüş & Çark, 2021 which states that perceived ease of use influences interest in the usage of information systems.

It can be visible from the evaluation of customer satisfaction with sustainable interest, which is shown with a significance value of $0.000 < 0.05$, so it can be concluded that hypothesis H6 is accepted immediately. Customer satisfaction has a positive and significant impact on sustainable interest. Consequently, the research has demonstrated that consumer satisfaction positively and significantly impacts continued interest in using banking chatbots in Indonesia. The results of this study are consistent with the outcomes of research performed by Brill et al., 2019 that sustainable interest is considered a core antecedent in marketing literature, which performs a critical position in developing and maintaining long-term dependable customers. Research by Ashfaq et al., 2020 shows that consumer satisfaction is a crucial determinant of continued interest in the use of technology.

To determine whether customer satisfaction is a mediating variable, it may be analyzed as follows:

Table 3. Results of Direct and Indirect Analysis Towards Intention to Continue

Variable	Direct	Indirect Customer Satisfaction Variable	Result	Conc	Sobel Test	Sign
PU → IC	0.222	$0.520 \times 0.579 = 0.301$	L < TL	Mediating	12.027	Accepted
PE → IC	0.169	$0.393 \times 0.579 = 0.228$	L < TL	Mediating	11.421	Accepted

A Sobel test may be used to answer hypothesis H7, whether consumer satisfaction is a mediating variable among perceived usefulness and perceived ease of use on intention to continue. From these effects, it may be concluded that customer satisfaction is a significant mediating variable, so hypothesis H7 is accepted. Several research has found a positive relationship between user satisfaction and continued use interest (Pereira et al., 2021) (Zhao et al., 2012). Previous studies have additionally determined that user satisfaction positively influences interest in continued use (J. Zhang et al., 2022) (Olivia & Marchyta, 2022) (Ariani, 2022) . Research has determined that consumer satisfaction will affect customers' interest in reusing chatbot services (Ashfaq et al., 2020) (Nguyen et al., 2021) (Eren, 2021) consequently, delight is the principal driver of continued use interest (W. Zhang et al., 2021).

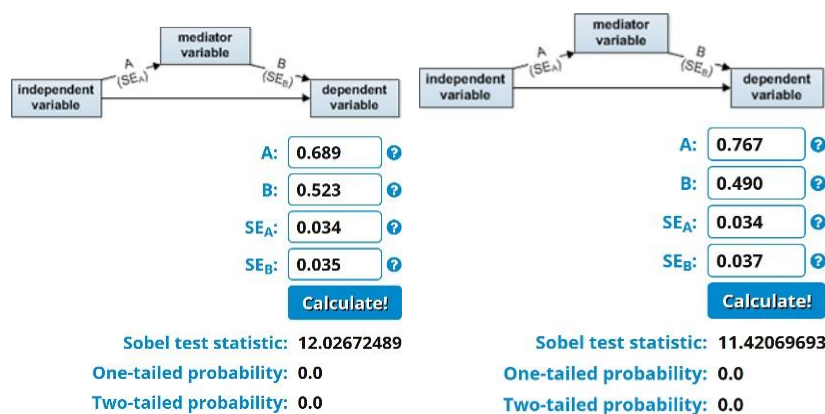


Figure 4. Sobel Test Calculation Results

Accordingly, the common thread that may be drawn from this study is that continued interest in using chatbots could be accelerated if banks in Indonesia can increase customer satisfaction. In contrast, customer satisfaction will increase if banks in Indonesia can increase the perceived usefulness of banking chatbots.

CONCLUSION

From the outcomes of this study, the author can conclude that directly perceived usefulness and perceived ease of use, each partially and simultaneously, have a positive and significant effect on consumer satisfaction. Perceived usefulness and perceived ease of use partially directly affect continued interest. It was observed that customer satisfaction influences continued interest. The research outcomes show that millennials' continued interest in using banking chatbots in Indonesia is influenced by using perceived usefulness and perceived ease of use through customer satisfaction as a mediating variable. The results of the Sobel test indicate that customer satisfaction is a mediating variable. Customer satisfaction was 74.4%, and the R square value of continued interest in using chatbots was 83.2%. The limitation of this research is that the chatbot is most effectively used in five banks in Indonesia, namely MITA, VIRA, AISYAH, CINTA, and SABRINA. In future studies, chatbots may be introduced to different banks.

Additionally, respondents' pattern characteristics have been simple millennials, and the variables used can also use other variables, such as system quality, information quality, service quality, and so on. Suggestions are given to banking industry organizations to increase continued interest in using chatbots to preserve and increase customer satisfaction. Customer satisfaction will increase if the perception of chatbot usefulness is improved.

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