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# Collaborative attitudes and perceived usefulness to increase the intentions to use internet banking

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**Abstract:** The purpose of this study is to investigate how attitudes and intentions toward using internet banking are affected by perceived usefulness. In this study, a questionnaire survey was used. This study was conducted in an internet-enabled national banking institution in the province of East Java. The population of this study are the people who conducted transactions through the banks BCA, BNI, Mandiri, and CIMB Niaga's internet banking in East Java region. This study discovered that all of the assessed hypotheses are significant. According to these findings, perceived usefulness has a significant effect on customer attitudes in using internet banking; perceived usefulness has a significant effect on the intention to use internet banking; and attitude has a significant effect on intention to use internet banking. The novelty of this research is merging of variables from theory of planned behaviour and variables from theory acceptance model which produces a combined variable between them.

**Keywords:** attitudes; perceived usefulness; intentions; internet banking.

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**Biographical notes:** Endang Siti Astuti is a Lecturer at the Faculty of Administrative Sciences, Universitas Brawijaya, to be precise in the business administration study program. Her scientific work is very brilliant, especially in administrative science which focuses on the context of the company/organisation. She is also a Professor at Brawijaya University. Her areas of expertise as well as her research interests are resource management and information technology governance in companies.

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## 1 Introduction

The technological revolution that resulted from the rapid progress of information technology became a sign of world development at the end of the 20th century. This is because the general goal of technological development is to influence other types of technology, change the basic rules of society, nation and state. In addition, technological advances also contribute to economic growth and the social order of society.

Information and communication technology that is increasingly advanced will have a big impact on the company. This is due to the urge to use technology that is felt by some companies who believe that technology can be the key in maintaining and keeping their business competitive in the market. Various activities in organisational processes that are important for managers and professionals in achieving the future goals of a company can be facilitated by information technology. Information technology also plays an important role in improving the quality, efficiency, and effectiveness of a company in achieving its goals. In order to be able to become a winner in a business competition today, the company must apply the use of technology.

The use of information technology in cyberspace is estimated to be able to control all company activities because it has a large impact on the company. The impact in question is that competition is becoming more intense, and businesses must increase their capacity for adaptation in order to compete with rivals. In the age of information technology, communication networks like the internet, wide area networks (WANs), and local area networks (LANs) can assist business operations which will assist in obtaining information. With the existence of information technology that is increasingly developing, it can present a chance for a company to grow stronger, more reachable, and more adaptable.

Electronic commerce, which uses the internet to distribute different sorts of goods or services physically or digitally, is one of the information technology types that can increase the power of a company in competing and selling its products. In the business field, the internet has grown and is used by companies on a large scale. Since its initial release in 1969, the internet has quickly gained a lot of attention and has the potential to be used for commerce in cyberspace (<https://www.wikipedia.org>). The internet has been used extensively because it offers businesses great benefits for managing their operations and achieving specific corporate goals.

Information technology and the internet are also applied in the banking sector as part of the de facto standard. This can be seen through the service provided by the bank in the form of internet banking features. The high demand for service makes the need for optimal services also increase. Compared to queuing at the bank, current customers prefer transactions using automated teller machines (ATMs), internet, telephone, and short message service (SMS). The existence of this internet banking feature provides useful offers for banks in carrying out their operational activities and meeting customer needs in terms of fast service, easy access, convenient, and cheap.

To maintain market dominance, every bank is required to continue to develop its internet banking site. Internet banking service can provide a new framework of thinking, new arrangements, and new strategies in the banking sector (Mukherjee and Nath, 2003; Purbawangsa et al., 2019). Internet banking can be used as an appropriate tool in revolutionising the way banks develop their competitive advantage. With banking service, customers can make transactions using only the website without having to visit the bank directly. The existence of an internet banking website can provide convenience for customers to carry out banking-related activities, where these activities can be carried out by accessing sites that have various features, checking questions, transferring funds to other accounts, making payments and others (Hutahayan et al., 2019). On the other hand, the site can also be used to check savings requests and make transactions in various places. Therefore, the internet banking feature will be able to satisfy customers.

The priority of a bank is customer satisfaction. Efforts that can be made to increase customer satisfaction are by providing convenience in using web internet banking, faster data transmission, and secure financial transactions. Therefore, a good data storage and communication system is needed. This problem is the same as meeting the needs of transactions between customers from different banks. Banking services must be able to be used anywhere and anytime (Hutahayan et al., 2019; Hutahayan and Yufra, 2019). The presence of a supporting infrastructure determines how prepared a bank management team is to offer the best possible service. The infrastructure in question is the existence of applications in managing and storing data and the existence of a data communication network that connects the delivery channel with the bank's data centre. High availability of data services can be obtained by having a good backup data communication system. So, to keep customer data safe even in the worst conditions, bank managers need a data storage system and backups in disaster recovery centre (DRC).

Compare to using other types of banking service, the use of data security and internet banking efficiency provides more advantages for customers.

For customers, internet banking offers a variety of advantages. However, banks still have to consider several factors that determine the success of using internet banking technology. Experience and readings about internet banking used by users can illustrate that the success of an internet banking is obtained from the way customers use the system. Therefore, the bank must be able to find out how customers give appreciation about internet banking services. The insight can help the bank in determining the appropriate strategy so that the percentage of sales owned can increase.

An international phenomenon is now internet banking. Comparatively to industrialised nations, however, there is still room for improvement in the penetration of internet banking in emerging nations. The fact that development is more difficult in developing and underdeveloped countries than in industrialised countries is one of the barriers to technology adoption (Baraghani, 2008). The issues that arise in Indonesia, a developing nation, are also similar to those that exist in other Southeast Asian nations.

Nevertheless, the national banking sector in Indonesia has been seen as reasonably advanced due to the rapid development of information and communication technologies, especially in light of comparisons to other industries. This is demonstrated by the use of a number of technological platforms, such as internet banking, real-time gross settlement systems, ATMs, and financial application systems. The number of internet banking users is steadily rising, especially in relation to internet banking services. According to information given by the Bank of Indonesia in 2010, 2.5 million users used internet banking for financial transactions in 2009, totalling more than 250 million transactions worth roughly Rp.1.502 trillion. The number of users has dramatically expanded compared to 2008, when there were just 1.5 million internet banking customers, 79 million transactions, and roughly Rp.207 trillion in money circulation.

The growing number of banks that offer internet banking services is a response to the high public interest in it. According to a 2005 survey by Bank Indonesia, 18 banks offer both business and personal internet banking services. This number has grown to 32 in the last five years. This increase has been made possible by the widespread usage of internet push mail via mobile phones, as well as the deep penetration of both the general public and bank customers.

There is not an equal number of internet banking customers despite the fact that usage of the service has been rising significantly. In contrast to the proportion of customers that do not use internet banking, the number of active users of internet banking is quite low.

In practically all developing nations, including Thailand, the Philippines, and Indonesia, this phenomenon is frequently associated with the adoption of technology, particularly internet banking, besides the problem with the lack of a telecommunications infrastructure. The user's profile can have an impact on issues like income inequality, level of education, technological proficiency, and demographic challenges.

Since the introduction of the theory of reasoned action (TRA) developed by Ajzen and Fishbein in 1975, the technology acceptance model (TAM) developed by Davis in 1986, and the theory of planned behaviour (TPB) developed by Ajzen in 1988, researchers have been interested in the idea of technology adaptation depending on user behaviour, particularly in the current era of digital technology. Regarding the factors that influence the adoption of internet banking, numerous researchers have produced findings that are comparable, such as Sharma et al. (2020), Patel and Patel (2018), Rahi et al. (2019), Safeena et al. (2018), Jahan et al. (2020) and Kumra et al. (2019). These investigations typically produce contradictory findings. There is still no consensus regarding the variables that affect customers' decisions to use internet banking services. This issue might be brought about by the adoption of several models, which would lead to various models of technology acceptance because the outcomes rely on the variables considered when creating the model.

Goncalves et al. (2018) conducted a survey of the literature in the area of information technology and information systems, revealing that the TAM is the most widely used model for gauging consumers' acceptance of technology. Davis first presented this model in 1986 in his dissertation, *A Technology Acceptance Model for Empirically Testing for New End-User Information Systems: Theory and Results*, which was submitted to the Sloan School of Management at Massachusetts Institute of Technology. Additionally, in 1989, the *Quarterly MIS Magazine* published the dissertation as part of a scientific article titled 'Perceived usefulness, perceived ease of use, and user acceptance of information technology'. The technological acceptance model has been credited with having its origins in this study. The amount of other researchers who mentioned the papers demonstrates how well-liked Davis' model is. The Social Science Citation Index of the Institute for Scientific Information showed that Davis's two journal papers had received 517 citations as of January 2000.

The TRA, a major hypothesis in the study of attitude and perceived usefulness first out by Fishbein and Ajzen (1975), is the source of the TAM theory (TRA). The Davis model, which is based from TRA, makes the assumption that a person's decision to accept technology is typically influenced by cognitive processes and attempts to maximise the technology's usefulness or satisfy his use. In other words, users' assessments of the technology's utility are the primary factor in determining whether or not it is accepted. Additionally, according to Davis, the perceived usefulness and perceived ease of use are the two personal perceptions that most strongly influence whether or not information technology is adopted. TAM has been widely employed in the study of technological adoption because it offers a straightforward theory (parsimony) that is backed by reliable data and can be used to forecast how technological innovation products will be received and used in a variety of industries.

The TPB's acceptance model for technology, which was made popular by Ajzen (1989), is an alternative technology adoption model to the TAM model. In forecasting and comprehending the motivational factors on conduct which are not or will not be controlled by an individual, this theory offers a clear purpose and advantages. In addition

to indicating how and where to focus behavioural change initiatives, this theory also explains every significant component of human behaviour, such as the motivation for someone's intention to use internet banking.

Studies on the relationship between attitudes and behaviour can be framed within the TPB paradigm. The will to behave is the most significant factor in determining a person's behaviour. The mix of attitudes toward displaying subjective conduct and norms shapes each person's purpose to act in a particular way. Individuals' attitudes about conduct are comprised of their opinions on particular behaviours, assessments of their effects, subjective norms, normative beliefs, and compliance motivation (Ajzen et al., 2018). Someone is more likely to exhibit a positive attitude toward an activity if they believe that the outcome of doing so will be favourable, and the opposite is also true.

When someone thinks that displaying certain characteristics is beneficial, he or she becomes compelled to live up to other significant people's expectations. This is when positive subjective norms emerge. However, if someone is acting in a way that other people find unfavourable while they are trying to live up to their expectations, this is an example of a negative subjective norm. Usually, the Likert scale is employed to gauge subjective opinions and standards. Terms like like/dislike, good/bad, and agree/disagree are used on the scale. Depending on the findings of the measurement of attitudes and subjective norms, one may or may not intend to exhibit a particular behaviour.

The TPB is based on the premise that people are logical creatures who use information consistently. Before engaging in particular acts, people consider the consequences of their choices. In the context of TPB, Ajzen and Fishbein (1989) sought to understand behaviour as well as forecast it. They also sought to uncover the factors that contributed to these behavioural goals. Intention, according to their theory, depends on two key factors:

- a attitude toward behaviour
- b subjective norms of behaviour.

Since the theory's originators started publishing it, there has also been extensive research and discussion on it, including by the theory's originators themselves. As an illustration, Ajzen and Fishbein (1975) investigated the process of anticipating behaviour in a predetermined circumstance in 1969. In 1985, Ajzen and Madden conducted research on the use of TPB components to predict directed behaviour in goal achievement (Ajzen and Madden, 1986). Ajzen and Driver looked at ways to anticipate someone's beliefs in 1991. The TPB was improved as decomposed TPB (DTPB) in 1995. In 2002, Ajzen and Fishbein carried out additional research to improve their theories. They continued to write in a journal in 2005 to offer feedback to other professionals who used their idea as a theoretical foundation for researching technological adoption (Ajzen and Fishbein, 2005). The large number of research in the area of information technology that used TPB as a theoretical foundation show how adaptable this theory is to use in different areas of study.

Along with Ajzen (2002), numerous other researchers, such as Utama et al. (2022), Abbasi et al. (2021), Nayak (2022), Wu et al. (2021), Mimaki et al. (2022), Won and Park (2021) and Choong and Goh (2021), also used TPB as a framework to test the theory in various contexts and locations. The two models most commonly used to forecast end-user adoption of new technology are the TAM and the TPB. Currently, TPB and TAM make significant theoretical contributions to understanding how an information

system is used and accepted. The TPB and TAM basic research paradigm has been revisited, expanded upon, and applied in several studies examining the adoption of internet banking.

According to the definition above, it is deemed vital to employ a model with the proper strategy to influence consumers' perceptions of certain information technology in a favourable way (Fernandes et al., 2014a, 2014b). Along with identifying the variables that may affect customers' intentions to use internet banking, it's critical to ensure that customer feedback offers reliable hints that will help the banking sector develop effective marketing tactics, including initiatives to promote new variations of the internet banking system.

The variables suggested by TPB and TAM were used in this study, including perceived usefulness, attitude, and intention to utilise internet banking. This study looked into how TPB and TAM models were created in order to pinpoint the key elements that drive users to use internet banking. This study was conducted to investigate the relationship between perceived usefulness, attitude, and intention based on the background and issues.

The TPB will be empirically tested in this study. Ajzen developed the TPB in 1988 as a hypothesis for the technology adoption model. According to Ajzen (1989) in TPB, a customer's intention to engage in a conduct influences whether or not that conduct will really be done. The attitude has an impact on whether or not a person intends to engage in a particular conduct. It is anticipated that the findings of this study will advance research on the effects of considering the idea of planned conduct. Additionally, the TAM theory is empirically examined in this work. The TAM is a hypothesis that Davis (1989) developed to explain the TAM that users of technology should employ.

## **2 Literature review**

The uniqueness of the study is to integrate the TPB and TAM in a conceptual framework. Since both the TPB and TAM models can be used to anticipate end-user adoption of newly applied technology, these models are both used as the foundational model in this study. TPB and TAM have made significant theoretical advances in our understanding of the adoption and use of particular information systems. Some scholars who study the adoption of internet banking have re-examined, expanded, and used TPB and TAM as a fundamental paradigm.

According to Troise et al. (2020) and Ha and Nguyen (2019), TPB and TAM are helpful behavioural models that explain why some information systems fail to work because users' intentions to use the technology are not strong enough. This statement forms the basis of the underlying theory of the use of TPB and TAM as the basic model in this study. There are not many models for information system applications that take psychological elements or actions into account. In order to better understand the elements that influence consumer approval of using internet banking services, a study was done. This conceptual framework, the results of empirical research, and a literature study served as its foundation. It also adhered to how the previously put forward study challenges and objectives had been formulated. One of the aspects is how customers view the ease of use, perceived benefit, subjective norms, perceived behavioural control, and intention to use (Fernandes, 2017).

## 2.1 *Perceived usefulness*

According to Davis (1989), the degree to which a person believes that applying a given subject could improve work performance is known as usefulness. Contrarily, usefulness, based on Malhotra (1999), relates to the degree to which a person thinks that using a certain technology will enhance his or her performance. Technology will be helpful to those who enjoy utilising the internet easily. According to this definition, using internet banking is being used to enhance both one's performance at work and in the community.

Chin and Todd (1995) identify a number of aspects of IT's utility. Chin and Todd (1995) categorise the advantages into two groups, in the following order: one estimated factor and two estimated factors, as well as usefulness (benefit and effectiveness). The following dimensions are included in the usefulness with one factor evaluated:

- 1 simplifying the work
- 2 useful
- 3 increasing output
- 4 increasing efficacy
- 5 boosting employee performance.

The benefits clients experience in finishing their chores or work are referred to as internet banking's perceived usefulness. If an internet banking service is easy to use and can improve communication between banks and users, it will be beneficial. Therefore, the bank is attempting to connect with its clients in person as a service provider. For instance, some banks offer flyers with simple instructions for users to learn how to utilise internet banking services at home. Additionally, banks offer 24-hour services to assist clients with a range of issues relating to internet banking. Customers get access to banking facilities like financial transfers, inquiry checking, and currency exchange, and more via mobile using the effective internet banking feature without wasting a lot of time or money, and the option is also available on holidays. Conclusion: customer attitudes and intentions for using the internet banking service system are influenced by the extent of internet banking usage.

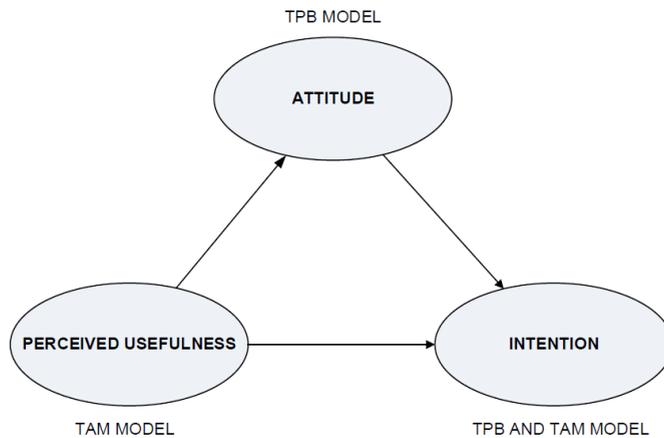
An individual's overall evaluation of their cognitive views based on technologically linked traits is referred to as their attitude. The cognitive assumption that shapes one's attitudes is perceived usefulness. Cognitive beliefs and attitudes are positively correlated, therefore the more positive the beliefs, the more favourable the attitude toward internet banking. The findings of studies by Iriani and Andjarwati (2020) revealed that perceived usefulness has a substantial impact on attitudes. According to certain studies, one's inclination to use technology is significantly influenced by the perceived usefulness of various technologies, including Malik and Annuar (2021), Ismail and Purwani (2021) and Yang et al. (2021). The explanation leads to the testing of the following hypothesis:

- H<sub>1</sub> Perceived usefulness have a significant effect on customer attitudes in using internet banking.
- H<sub>2</sub> Perceived usefulness have a significant effect on the intention to use internet banking.

## 2.2 Attitude

When utilising technology, positive or bad behaviours can be referred to as attitude (Davis, 1989). In psychology, an attitude refers to a set of emotions, beliefs, and behaviours toward a particular object, person, thing, or event. Attitudes can strongly affect behaviour and are frequently the product of experience or upbringing. Although attitudes are persistent, they can also shift (Cherry, 2021). Direct observation cannot be used to study the research variable of attitude. Instead, it can be deduced from how someone responds. Although attitudes cannot be directly observed, they do require the subject to reveal themselves. This response’s disclosure reveals if someone has good or negative feelings about a particular thing. Sanford and Bhattacharjee (2007) contend that one’s general opinion of whether they enjoy or detest using a certain piece of information technology is referred to as their attitude. The degree to which a person assigns positive or negative judgments to a number of actions listed in some questions serves as an expression of attitudes toward one’s plan to use internet banking (Dewi, 2021).

**Figure 1** The conceptual framework



According to Dewi’s research from 2021, clients’ intentions to use internet banking services can reveal their views toward embracing it. It is likely that the consumer will be interested in utilising this internet banking service again if their attitude toward it is positive. The expansion of the bank’s revenue will be significantly impacted by these client behaviours. The findings of the study by Nguyen-Viet and Ngoc Huynh (2021) show that perceived utility, attitude, perceived risk, intrinsic innovativeness, domain-specific innovativeness, and internet experience all have a direct impact on the adoption of internet banking in Vietnam. The following hypotheses for this study were developed based on the research gap:

H<sub>3</sub> Attitude has a significant effect on intention to use internet banking.

Additionally, based on the theory as perceived by the researcher, the researcher has developed a fresh set of connections from the models of the aforementioned hypotheses, as shown in Figure 1.

It has never been done before to combine the TPB and TAM models in the study the adoption of online banking technology in Indonesia. The creation of TPB and TAM

models has allowed for the identification of a number of factors that influence customer acceptability of using internet banking services.

### **3 Research method**

In this study, samples from a population were chosen using a survey method. The primary tool for gathering data was a set of questionnaires. This study was conducted in an internet-enabled national banking institution in the province of East Java. Individuals who used internet banking served as the study's analytical units. The clients mentioned in this study were those who used internet banking services or adopted technology after the pre-adoption stage. The population of this study are the people who conducted transactions through the banks BCA, BNI, Mandiri, and CIMB Niaga's internet banking in East Java region.

Given that there was no information on the number of internet banking subscribers in East Java, samples were chosen using a convenience sampling method and a non-probability sampling strategy. The population of this study are the people who conducted transactions through the banks BCA, BNI, Mandiri, and CIMB Niaga's internet banking in East Java region. The sample size that take in this research are 100 respondents.

The objective of the research model was to determine how the independent variable affected the dependent variable. To concurrently describe this causal relationship in its current form, an analytical tool was needed. Structural equation modelling (SEM) was used in this study to meet these criteria (Sumardi and Fernandes, 2018; Fernandes and Solimun, 2017).

According to Solimun et al. (2017), SEM is an expansion or synthesis of a number of multivariate approaches. A group of methods known as SEM enable the simultaneous assessment of numerous reasonably complex relationships. One or more dependent variables may coexist with one or more independent variables to generate this complex connection. Each dependent and independent variable may take the shape of a factor or a variable constructed using a number of indicator variables (Solimun and Fernandes, 2017; Fernandes et al., 2014a, 2014b). These variables can, of course, take the shape of a single variable that is recorded or that is physically monitored during a study procedure. On the other side, SEM also combines data analysis and design principles in its approach. In SEM, researchers can perform three tasks at once: confirming the instrument's validity and reliability (equivalent to confirmatory factor analysis), figuring out how latent variables relate to one another (equivalent to path analysis), and creating a model that can be used to measure something (comparable to a regression or model structural analysis) (Solimun et al., 2017; Fernandes et al., 2019; Fernandes and Taba, 2019).

### **4 Results and discussion**

The null hypothesis was used to evaluate the causal relationship suggested by the model's hypotheses, which demonstrated the correlation between two contractual ties was identical to zero according to the t-test used in the regression analysis. The test findings for the structural model suggested in this study are listed in Table 1. The structural

model’s outputs show that hypothesis testing and the regression coefficient test performed on each created path shows in Table 1.

**Table 1** The results of SEM analysis

<i>Relationship</i>		<i>Coefficient</i>	<i>SE</i>	<i>CR</i>	<i>P-value</i>	<i>Std. coef.</i>	<i>Hypo. theses</i>	<i>Decision</i>
<i>From</i>	<i>To</i>							
Usefulness	Attitude	0.136	0.056	2.410	0.016	0.164	H <sub>1</sub>	Accepted
Usefulness	Intention	0.194	0.089	2.182	0.029	0.197	H <sub>2</sub>	Accepted
Attitude	Intention	0.452	0.082	5.509	0.000	0.379	H <sub>3</sub>	Accepted

#### 4.1 *The effect of perceived usefulness on attitude*

According to Hypothesis 1, the attitude toward using internet banking is significantly influenced by perceived utility. According to Table 1 (p = 0.016), the regression coefficient was found to be 0.136 and CR 2.410. The estimated CR is more than the CR table, demonstrating the significance of the regression coefficient. The significance level was set at 0.05, yielding a CR table of 1.96. These findings are consistent with the idea that attitude is directly influenced by perceived usefulness. According to research Hypothesis H<sub>4</sub>, it is possible to accept the claim that consumers’ attitudes about using internet banking are directly and significantly influenced by the perceived utility. These findings corroborate those made by Iriani and Andjarwati (2020), which demonstrate that perceived usefulness has a direct, significant impact on attitude.

Customer attitudes toward using internet banking are significantly positively influenced by perceived usefulness. According to Davis (1989), usefulness is the degree to which a person thinks that using a certain subject can enhance work performance. Internet enhances performance and provides easier access to information. Internet banking offers users greater advantages than conventional types of banking services in terms of data security and transaction speed. According to Karjaluoto (2002), there are two advantages for customers using internet banking services. The first advantage is that they do not need to purchase any software because all transactions take place on the bank’s server. The availability of banking services to consumers around-the-clock, wherever they are, is the second advantage. Customers can gain a lot from using internet banking as well.

Additionally, the benefit realised by users in finishing their tasks is referred to as the perceived utility of internet banking. If an internet banking service is simple to use and comprehend, it will be of great use in facilitating communication between clients and banks. Banks should therefore directly introduce this capability to their clients as service providers. As an illustration, numerous banks in Indonesia distributed pamphlets to each customer that had simple instructions on how to use internet banking, which customers could study at home. Additionally, consumers can always contact 24-hour support to get answers to their many internet banking related questions. Customers can benefit from internet banking by checking their balances, transferring funds, checking exchange rates, and other tasks immediately via telephone without spending a lot of time or money, even when on vacation. Customers with a good outlook are those who believe that internet banking is very helpful in assisting them with financial transaction operations. Some characteristics inherent in technology shape the attitude, which is an individual’s overall

evaluation of cognitive beliefs. An attitude is formed by a cognitive concept called perceived usefulness. Cognitive belief and attitude are positively correlated, suggesting that having more positive beliefs will result in having a more positive attitude regarding internet banking. As a result, the extent of internet banking benefits influences users' attitudes and intentions regarding the use of the service.

#### *4.2 The effect of perceived usefulness on customers intention in using internet banking*

According to Hypothesis 2, the intention to use internet banking is significantly influenced by perceived utility. According to Table 1, the CR is 2.182 and the regression coefficient of perceived usefulness toward users' goal is 0.194 ( $p = 0.029$ ). A CR table of 1.96 was produced using a significance level of 0.05, meaning that the estimated CR value exceeded the CR table. The regression coefficient can therefore be inferred to be significant. The findings of this study thus provide credence to the idea that perceived usefulness and intention to utilise internet banking are directly and significantly correlated. As a result, Hypothesis H<sub>5</sub>, which asserts that perceptions of perceived usefulness have a direct significant influence, is accepted. This finding is consistent with those made by Malik and Annuar (2021), Ismail and Purwani (2021) and Yang et al. (2021), who discovered a substantial direct relationship between perceived usefulness and users' propensity to utilise internet banking.

According to Malik and Annuar (2021), behavioural intention is a measurement of one's intention to carry out specific activities. In this situation, the term 'intention' refers to the customers' desire to use internet banking. The findings of this study demonstrate that customers' inclination to use internet banking is significantly positively influenced by perceived advantage. The desire to gain advantages sparks personal motivation. The advantages of using internet banking include increased productivity and easier access to information. The use of internet banking is significantly influenced by perceived benefit. Utilisation of technology is directly tied to users' attitudes toward using it to carry out specific activities. Internet banking provides individuals with advantages in performing their financial transaction-related activities, its usage frequency, intensity, and level can be used to gauge utility, and the number of applications or software used.

The usage of technology represents a person's choice towards its utilisation while carrying out a number of duties. The ideal way to gauge how well task technology works together is to look at the percentage of clients who choose to use internet banking. The action indicates the user's choice to utilise technology based on their assessment of the applicability of technical tasks, resulting in a situation where the use of technology is voluntary. Utilisation is a notion that represents a person's acceptance of the system. Customers with stronger cognitive views will also see internet banking as being particularly helpful in assisting them with financial transaction operations. A cognitive assumption that affects one's intention to use internet banking is perceived utility. It can be deduced that consumers' intentions to use the internet banking service system are stronger the more positive their cognitive beliefs are.

#### *4.3 The effect of attitude on customers intention in using internet banking*

The intention to use internet banking is significantly influenced by attitude, according to the sixth hypothesis. At a significance level of 0.05, Table 1 demonstrates that the

regression coefficient of attitude on intention is 0.452 and the computed CR value is greater than the CR table at 5.509 ( $p = 0.000$ ) and 1.96, respectively. This finding suggests that the regression coefficient is important.

The analysis's findings are consistent with the idea that attitude directly affects one's intention to use internet banking. As a result, it is believed that attitude has a direct, considerable impact on users' intentions to use internet banking, according to research Hypothesis H<sub>6</sub>. This conclusion lends support to Dewi's (2021) research findings, which establish a direct relationship between attitudes and intentions to use internet banking.

According to Dewi (2021), boosting customer value can improve internet banking consumers' attitudes. In this instance, the term 'customer value' means that the relationship between the client's perceived utility and the price they pay to use internet banking (perceived sacrifice). While the perceived utility of customers depends on both product and service factors. The benefits that customers receive from certain products are referred to as product attributes, and they typically combine the functional characteristics of particular goods and services with the features that are made available by those goods and services. Details about the services offered through internet banking are included in the service qualities. While the client makes a sacrifice (perceived usefulness), there is a cost (considered reasonable price) that includes transaction costs, risk, and costs associated with the life cycle of the product. When using internet banking to conduct transactions, the customer is required to pay transaction expenses.

According to the study's findings, consumer attitudes are important factors to take into account while implementing internet banking technology. The study examined how attitudes affected participants' intentions to use the service. If customers believe that using the internet would make their work easier, they will use internet banking. Customers who think there are good things about internet banking are almost certain to remain thinking positively about it as long as they continue to use it. Positive attitudes about internet banking will cultivate devoted consumers, which will undoubtedly be advantageous for the bank.

The advantages of using internet banking must be continually highlighted in commercials for banks to establish an effective marketing strategy to help customers feel good about using it. For example, using advertisements can be used to effectively create long-term perceptions of specific products and businesses and can also lead to immediate purchases. Additionally, advertisements are used to inform and shape consumer preferences for a brand. Advertising can increase consumer awareness of specific products. In order to improve favourable attitudes and a higher frequency of using internet banking technology, advertising in the context of internet banking is fairly essential in shaping customers' good views about the benefits of the service.

#### *4.4 Research findings*

The majority of the coefficients in this study's findings were found to be significant, and the findings offer solid evidence in favour of most of the postulated variables. The validity of TPB and TAM as useful models for elucidating individual attitudes toward the adoption of internet banking is further supported by this study.

The goal of this study was to develop a model expansion that takes the TAM model with TPB in a more thorough way, and simultaneously forecasts user acceptance of internet banking. By taking into account the environmental aspects of internet banking,

this study merged TPB and TAM. This study suggests that the adoption of technology theory can influence customers' decision to use internet banking.

According to this study, customers are more likely to accept internet banking if both the technological adoption are acknowledged. The following are the specifics of the study's findings, which also include the usage of internet banking:

- 1 The direct correlation between attitude and intention to utilise internet banking suggests that while implementing internet banking technology, clients' differing attitudes must be taken into account. If customers believe that using the internet will benefit them in their jobs, they will use internet banking. These findings demonstrate that users who realise the benefits of internet banking will continue to utilise the service while retaining a favourable outlook. Positive attitudes about internet banking will produce devoted consumers, which will undoubtedly be advantageous for the bank.
- 2 Perceived usefulness has a significant effect on whether people use internet banking. The way people use technology to achieve tasks is related to the use of technology. Customers look forward to using internet banking to fulfil their obligations associated to financial transactions. Customers' cognitive confidence will rise if they believe that using internet banking for financial transactions is particularly advantageous. Cognitive assumptions that influence the intention in using internet banking include perceived utility. This implies that a customers intention to use the internet banking service system will be influenced by how favourable they perceive the advantages of doing so.

This study investigates the impact of the link between variables that was created using a variety of ideas, defences, and theories. The findings of this investigation should evaluate and clarify the plausibility of these notions and show coherence with earlier research. The following are the research's theoretical ramifications:

- 1 The study's findings also support the idea that alterations to the TPB and TRA model. The findings of this study demonstrate that TPB can be used to forecast the factors that influence the adoption of information technology since it has the characteristics of both straightforward theories and has supporting data.
- 2 The findings of this study support the validity of the theory of the technology adoption curve, which claims that the perception of a technology's perceived utility is what triggers behaviour to use it. The findings of this study demonstrate that TAM can be used to forecast the factors that influence the adoption of information technology since it has the characteristics of both straightforward theories (parsimony) and is supported by evidence (verifiability). This practical implication also concerns domestic banking organisations, particularly those that have offered internet banking services. In order for banks to more effectively decide on banking strategies and policies in the future, this study adds to the body of knowledge about the factors that affect customers' use of internet banking services. The findings of this study show that the majority of the coefficients are significant and offer solid evidence in favour of the majority of the proposed correlations.

Due to the researchers' limitations and the difficulties they encountered while conducting this research, the findings and conclusions have not yet been able to provide a complete and comprehensive explanation of the various problems relating to the models of internet banking technology adoption in Indonesia., including those listed below:

- 1 The core information for this study were gathered by a questionnaire, with the answers chosen based on the opinions of the respondents. The social desirability bias, which develops when respondents give answer they judge to be appropriate or good based on their measurement, can affect this perception-based judgment. Consequently, it is possible that the data does not precisely reflect the desired factors (Arnold and Feldman, 1981). Despite the fact that the questionnaire cover letter included information on the confidentiality of customers' data, this problem prevented researchers from assessing the sincerity and honesty of consumers' responses in light of the circumstances and realities.
- 2 A larger sample size is still required in order to apply the study's findings to the actual pattern of Indonesian consumers' adoption of internet banking, even though the study's sample size met the SEM assumption.

Based on the aforementioned findings, the model employed in this study can be enhanced in the following investigation by the addition of new variables or indicators. As a result, the findings of later research may be more accurate, and the conclusions drawn may be different from or identical to those of this study. The adoption model for internet banking utilised in this study is highly reliable and can be used in Indonesia if the results are demonstrated to be the same. It is advised that additional researchers use more research samples. As a result, the outcomes of further study will be more accurate, and the conclusions drawn regarding Indonesian internet banking customers' actual usage patterns will be broader.

## **5 Conclusions**

Based on the results of the descriptive and inferential studies that have been performed, inferences can be drawn that perceived usefulness have a significant effect on customer attitudes in using internet banking; Perceived usefulness have a significant effect on the intention to use internet banking; and Attitude has a significant effect on intention to use internet banking.

This research reveals that each customer's attitudes and intentions toward using the internet banking service system are influenced by the level of benefit that they receive from it. The consumer decides whether to utilise technology based on the findings of his assessment of the task appropriateness factor, hence the use of technology occurs voluntarily. The concept of utilisation indicates the individual's decision to institutionalise the system or adopt it. Customers' cognitive confidence will rise if they believe that using internet banking for financial transactions is particularly advantageous. This implies that a customer's intention to use the internet banking service system is influenced by their cognitive view about the advantages of doing so being more positive.

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