

## FACTORS THAT INFLUENCE THE ADOPTION OF INTERNET BANKING AMONG HIGHER EDUCATION STUDENTS AT SEKOLAH TINGGI MANAJEMEN TRANSPORTASI TRISAKTI

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**Abstract :** This study examines the level of adoption of Internet banking in Indonesia, particularly students of higher education at Sekolah Tinggi Manajemen Transportasi Trisakti. For theoretical framework, Technology Acceptance Model is adopted by using four independent variables. The sampling method was used with a total of 100 respondents, which included students of higher education at Sekolah Tinggi Manajemen Transportasi Trisakti. To collect the data self-administered questionnaire of two parts were used: Demographic and Likert scale multi-item scale for variables under study. Based on the results, there are indications that convenience, perceived credibility, and perceived usefulness have significant positive influence among students on the intention to adopt internet banking. The findings from this research would be useful for banks in the subject area, particularly for students of higher education at Sekolah Tinggi Manajemen Transportasi Trisakti.

**Keywords :** *Adoption, internet banking, Technology Acceptance Model, students of higher education.*

**Abstrak :** Penelitian ini menguji tingkat adopsi *internet banking* di Indonesia, khususnya mahasiswa di Sekolah Tinggi Manajemen Transportasi Trisakti. Untuk kerangka teoritis, *Technology Acceptance Model* diadopsi dengan menggunakan empat variabel independen. Metode sampling digunakan dengan total 100 responden, yang termasuk mahasiswa di Sekolah Tinggi Manajemen Transportasi Trisakti. Pengumpulan data kuisioner terdiri dari dua bagian, yaitu skala multi-item Demografi dan skala Likert untuk variabel yang diteliti. Berdasarkan hasil, ada indikasi bahwa kenyamanan, dirasakan kredibilitas dan kegunaan dirasakan memiliki pengaruh positif yang signifikan antara siswa pada niat untuk mengadopsi *internet banking*. Hasil penelitian ini akan berguna untuk bank di area subyek, terutama untuk mahasiswa di Sekolah Tinggi Manajemen Transportasi Trisakti.

**Kata kunci :** *Adopsi, internet banking, Technology Acceptance Model, mahasiswa.*

## INTRODUCTION

As globalization has spread out over the world, the world is now a globalized market with trade and investment between people, firms, and industries and across countries. As a consequence, the trading and investment dimensions have altered over the years, with technological developments. Electronic commerce plays a predominant role in today's trading activities. Though electronic commerce has been carried out for long now, it has become easier and faster as a result of the spread of internet activities as well as improvement in information technologies.

One of the major forces behind the changes happenings to business today is technology, which is creating new products, services market opportunities and developing more information and system oriented business and management processes (Liao and Cheung 2002). The emergence of the Internet has changed the industry structures as well as enabled new players to enter existing industries and caused existing firms to change the ways they compete. Technology engaged in service organizations boost consumer service value and delivery, reduce expenses, and homogenize nucleus service contributions (Ibrahim et al. 2006; Gounaris et al. 2005).

Customers now demand new levels of convenience and usefulness in addition to powerful and easy to use financial management tools, products and services that traditional retail banking cannot offer. Internet banking has allowed banks and financial institutions to provide these services by exploiting a comprehensive public network infrastructure (Yiu et al. 2007). The Internet has an ever-growing importance in the banking sector, because of the advantages it brings to both the entities and their customers.

Customers' trust in Internet banking transactions has some unique dimensions, that is, the impersonal nature of the online environment, the extensive use of technology, and the inherent uncertainty of using an open infrastruc-

ture for transactions. There are also concerns about the reliability of the underlying Internet and related infrastructure with the extensive media coverage about frauds on the Internet. This provides a unique challenge for banks to find ways to initiate and foster electronic relationships with customers.

The survival of Internet banking depends on the bank's ability to convince the customers to bank online, an act that is unlikely to occur if the bank is being perceived as untrustworthy. Banks can build mutually valuable relationships with their online customers through a trust-based collaboration process (Dayal et al. 1999).

The purpose of this study is to investigate factors usage of Internet banking service among senior high school students in Indonesia. Internet banking acceptance will be studied using the factors that are critically successful, referring to the idea that consumers are using Internet banking directly. Hence, more knowledge on the factors that affect Internet banking adoption is needed in order to better understand and facilitate the adoption.

Based on the aforementioned, the researcher examined the factors that influence senior high school students in Indonesia to use the Internet for their banking transactions. In order to address the research issues in this paper, the researcher reviewed existing works on Internet banking adoption including research methods appropriate for this paper, and then applied them to the context of Indonesia.

The remainder of the paper is set out in six sections. The first section introduces the introduction, and in the second section literature review has been presented on adoption of Internet banking. Third section highlighted research methodology that was employed. Fourth, statistical analysis on data collected through survey questionnaire is presented, and in the fifth section the researcher discussed the main findings. The last one, sixth, the researcher concluded, drew the paper implications for theory and practice, with research limitation, and guidelines for future research.

## LITERATURE REVIEW

As part of financial institutions, banks hold important role in economy. To be able to generate the economy, banks have to run business as good as possible and as part of service industry, they have to pay attention to their service. In current situation when technology holds important role in all aspects of business, banks also need it to support their service. Banking has always been a highly information intensive activity that relies heavily on information technology (IT) to acquire, process, and deliver the information to all relevant users (Tan & Teo, 2000). Without good IT, banking as service business provider cannot run its business well and will be obsolesce.

Among technology development used by banks, internet banking (IB) is the latest in the series of technological wonders of the recent past (Safeena, Date and Kammani, 2011). The application of IB gives many benefits for banks. By offering internet banking services, traditional financial institutions seek to lower operational costs, improve consumer banking services, retain consumers and expand share of customer (Lichtenstein & Williamson 2006).

According to Alam et al. (2009) where the research was conducted in Klang Valley Malaysia, most of the respondents who preferred Internet banking already have Internet access in their organization. Internet access will make customer easier to use internet banking. However, an innovation that results in major disruptions of the adopters' lifestyle has lower chance to be adopted (Moga et al. 2012).

Jones, Hecker and Holland (2002) argue that market-orientated firm behaviors were essential requirements to optimizing the development of web-based commerce in small firms within which resource (time, finances and knowledge) constraints commonly occur. One factor that is very important for adopting IB is capability of IT particularly internet. As mentioned by Niehaves and Plattfaut (2013), the Internet is an important

case of information technology (IT) and can be seen as a basic technology that has to be mastered prior to using other IT-based service offerings. The more sophisticated IT, the more sophisticated internet use that in turn more supportive in using IB.

The benefit of IB is not only determined by the sophisticated or updated of IT, but also the capability of users or customers in using technology. Customers of a bank have different capability in using internet, could be based on the age. According to Eze, U.C., Yaw, L. H., Manyeki, J. K. and Lee, C. H (2011), this meant that users who are confident in their abilities to use the internet banking services were more likely to adopt such services. Thus, Internet-driven development initiatives should initially focus less on individual access to the Internet and more on creating business and commerce opportunities through the Internet (Albirini 2008).

This could be as the students have ready access to Internet; most of their time is spent on studies, so they opt for Internet banking as compared to conventional systems (Kazi, 2013). Chimeke (2006) says that it also was identified security and inadequate operational facilities including proper telecommunications and power as the major inhibiting factors to internet banking.

Based on research conducted Ajam and Nor (2013) in Yemen, the results support the view that perceived relative advantages, perceived ease of use Internet banking trust are predicting variables. They have played a significant role in influencing individuals' attitudes toward adoption of Internet banking. At the same time, the result showed that attitude has a significant and positive effect on individuals' intention to adopt Internet banking services.

Internet delivery channel and the traditional delivery channel are not mutually exclusive. Checking an account balance, transferring funds, paying bills and applying for credit cards do not require personal contact or a large physical space, and hence, are well suited for delivery

over the Internet channel. But setting up a new account, applying for business loan, retirement planning, closing a mortgage and other complex transactions often require a secure physical space and/or person-to-person communication.

The results support the view that Computer Self-Efficacy and Convenience are important factors that determine the Perceived Ease of Use for internet banking customers in the UAE, supporting hypothesis been identified as not having a positive impact on either Perceived Usefulness or internet banking product/service on the market and the level of adoption of the banking consumers (Rusu and Shen 2012).

In spite of finding e-banking system useful, convenient, and easy to use by customers, there is low level of trust in the security measure of e-banking technology and the ability of e-Banking systems to protect privacy. Based on this point, advertising and personal promotion of e-banking should emphasize the trustworthiness and reliability of the web site in its message (Abadi and Nematizadeh 2012).

Customers perceive more value and satisfaction in conventional banking system as compared to internet banking, customer-banker communication gap seems to be the most significant factor behind it. (Aslam 2011). To promote internet banking, there is a need to devise new marketing campaign so as to target more elderly people informing them of the facilities of this service. Banks can include a chat forum on their websites so as to solve this problem. (Ragoobur et al. 2010).

Intention to use virtual banking was determined by attitude, subjective norms and perceived behavioral control (Liao, S., Shao, Y. P., Wang, H. and Chen, A, 1999). For the perception of high security and privacy to exist, the customer must believe that the bank has both the ability and motivation (perceived trustworthiness) to reliably deliver online banking services (Yousafzai et al. 2009). Mobile technologies support banking experience that is collaborative, accessible and integrated with the

world beyond the boundaries of a regular bank (Awadhi 2013).

In order to know the intention of people to adopt Internet banking is based on the theory of Technology Acceptance Model (TAM), that is the originally proposed by Davis (1989), one of the most important theories used by researchers when studying consumer's intention to adopt Internet banking. In this theory, the demand side issues of IT (Hewer and Howcroft 1999; Rogers 1995) is more important rather than the supply one. Based on TAM, the intention of people to adopt Internet banking is affected by:

1. Perceived Usefulness (PU). Davis (1989) argues that the degree to which a person believes that using a particular system would enhance his or her job performance.
2. Perceived Ease of Use (PEOU). Davis (1989) says that the degree to which a person believes that using a particular system would be free of effort.
3. Perceived Credibility (PCRED). Jacoby and Kaplan (1972) propose that a user feels the certainty and pleasant consequences of using an electronic application service, when there is no financial risk, physical risk, functional risk, social risk, time-loss risk, opportunity cost risk, and information risk.
4. Convenience (CONV). According to Copeland (1923) convenience goods is a class of consumer products that were intensively distributed and required minimal time and physical and mental effort to purchase.

The conceptual model is as followed:

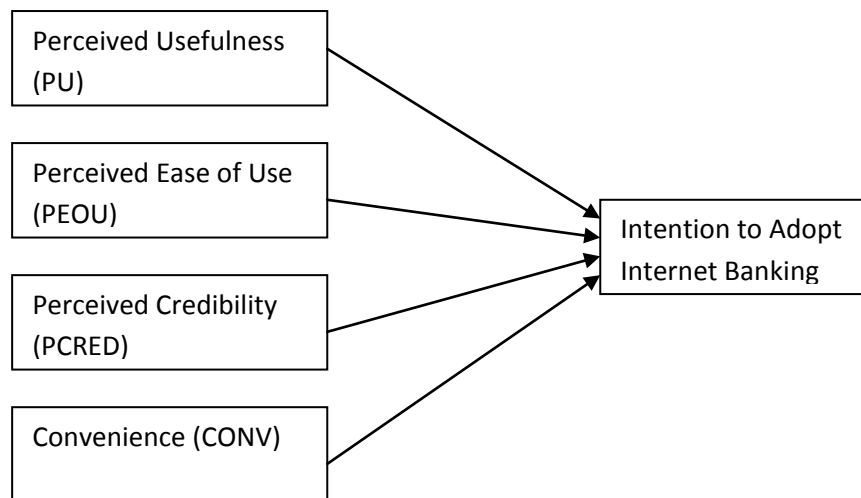


Figure 1 Research Model

Regarding TAM mentioned above, the hypothesis can be proposed as follows:

- H<sub>1</sub> PU has a positive influence on the intention to adopt Internet banking services among senior high school students.
- H<sub>2</sub> PEOU has a positive influence on the intention to adopt Internet banking services among senior high school students.
- H<sub>3</sub> PCRED has a positive influence on the intention to adopt Internet banking services among senior high school students.
- H<sub>4</sub> CONV has a positive influence on the intention to adopt Internet banking services among senior high school students.

## RESEARCH METHOD

This study focuses on how the senior high school students in Indonesia perceived the adoption of Internet banking. The main motivation for this research was that there was no study conducted that involved senior high students' intention to adopt Internet banking in Indonesia. Therefore, a current enrollment of 1000 students of senior high school in Jakarta as of August 2012 was the population for the study. A convenience sampling method was used as survey instrument for this study. Convenience sampling is a type of non-probability sampling which in-

volves the sample being drawn from that part of the population which is close to hand. Convenience sampling method cost effective, and this method has been used in many information systems research (Eze et al. 2011).

The independent variables of this study are perceived usefulness (PU), perceived ease of use (PEOU), perceived credibility (PCRED) and convenience (CONV). These independent variables may be the determinants that influence dependent variable, i.e. intention to adopt (ADOP) Internet banking among high school students in Indonesia. A self-administered questionnaire was used in this research, which consists of two sections. The first section contains the demographic information such as gender, age group, program of study, and the second section consists of the conceptual variables identified earlier. The conceptual variables were measured by using multi-item seven point Likert scales. For example, "1" denoted as strongly disagree, "2" denoted as disagree, "3" denoted as somewhat disagree, "4" as neutral, "5" as somewhat agree, "6" as agree, and "7" as strongly agree. The questionnaire items were adapted from different sources PU was measured with five items adapted from (Goodhue and Thompson, 1995; Wang et al, 2003). PEOU with five items was adapted from (Nysveen et al, 2005; Goodhue

and Thompson, 1995). PCRED with five items was adapted from (Liao and Cheung, 2002; Jaruwachirathanskul and Fink, 2005). CONV with five items was adopted from (Cunningham et al, 2005). Finally, students' intention to adopt Internet banking with five items was adapted from (Venkatesh and Morris, 2000).

The questionnaire was distributed to 300 students during classes in morning, evening, and weekend sessions. Out of 300 questionnaires 240 were returned to the researcher. However, 20 questionnaires were removed because they included missing values for at least 1 of the questions. Correlation and multiple linear regression analysis was engaged by researcher to ascertain a set of independent variables; PU, PEOU, PCRED, and CONV, which explains a part of the variance in the dependent variable of behavioral intention to adopt Internet banking services at a significant level and used for hypotheses testing. The data from the 220 valid questionnaires was analyzed.

## RESULT OF RESEARCH

Demographic profile of students is gender, age group, and program of study. The gender distribution of respondents is 75.5 percent for male and 24.5 percent for female. Majority of the respondents were male which is 166 respondents while female is 54 respondents so that the grand total respondents are 220. The breakdown of age groups is dominated by the group of up to 25 consisting of 147 students (59.4%). The number of respondents in age group of 26-40 years was 60 students (27.3%), and finally there were 13 respondents who were above the age of 40 representing 5.9% of total 220 students sample for this study. The breakdown for program of study consists 144 students of Natural Science program representing 65.5%, 54 students of Social Science program representing 24.5%, 17 students of SMK Technology Program representing 7.7% and finally 5 students of SMK Agriculture program representing 2.3% of total 220 students sample for this study.

We use Cronbach's Alpha that is used to determine the internal reliability of the multi item variables. Nunnally (1967) indicated that a value of 0.7 Cronbach's Alpha or higher is considered acceptable. The statistics show that all variables exhibited values ranging 0.822 to 0.921, which suggests that the data is reliable and consistent with acceptable research standards.

Multiple regression analysis is used to analyze the relationship between one dependent variable to several independent variables (Hair et al. 2005). Therefore, the researcher employed multiple regression analysis to test the hypotheses under study. The following table shows the analysis of coefficients for specific relationships.

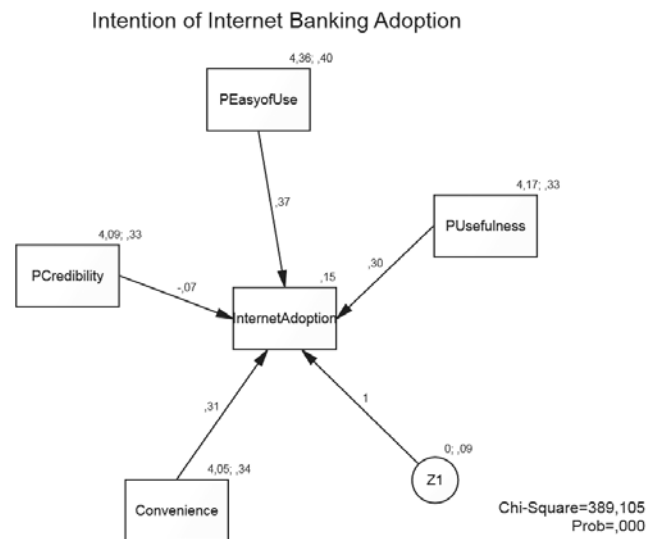


Figure 2 Research Result

### Computation of degrees of freedom (Default model)

Number of distinct sample moments:	20
Number of distinct parameters to be estimated:	14
Degrees of freedom (20 - 14):	6

### Result (Default model)

Minimum was achieved  
 Chi-square = 389,105  
 Degrees of freedom = 6  
 Probability level = ,000

**Group number 1 (Group number 1 - Default model) Estimates (Group number 1 - Default model) Scalar Estimates (Group number 1 - Default model) Maximum Likelihood Estimates Regression Weights: (Group number 1 - Default model)**

			Estimate	S.E.	C.R.	P	Label
InternetAdoption	<---	PUsefulness	,297	,054	5,486	***	
InternetAdoption	<---	PEasyofUse	,374	,049	7,651	***	
InternetAdoption	<---	PCredibility	-,066	,054	-1,225	,220	
InternetAdoption	<---	Convenience	,312	,053	5,867	***	

**Squared Multiple Correlations: (Group number 1 - Default model)**

	Estimate
InternetAdoption	,565

For the coefficient of correlation, R stated 0.866, for coefficient of determination, R stated 0.785, indicating that 78.5 percent of the variance in dependent variable "ADOP" explained by four independent variables, i.e. PU, PEOU, PCRED, and CONV. The F-statistics for this study was significant at 0.01 level (p-value < 0.01), showing the fitness of the model. The individual model variables indicate that unstandardized coefficients for PU (p-value < 0.01), PCRED (p-value < 0.01), and CONV (p-value < 0.01) positively and significantly affect dependent variable "ADOP" of Internet banking. However, the independent variable PEOU (p-value > 0.01) had no significant relationship with intention to adopt Internet banking among senior high school students in Indonesia. H<sub>1</sub>, H<sub>3</sub> and H<sub>4</sub>, were supported in that PU, PCRED, and CONV all had a significant effect on the intention to adopt Internet Banking among senior high school students in Indonesia. However, H<sub>2</sub> was not supported as PEOU had no significant influence on the intention to adopt Internet banking among senior high school students in Indonesia.

The findings in this paper revealed that convenience has the strongest positive significant relationship in examining the intention to adopt Internet banking among senior high school students in Indonesia. This result is consistent with the study by Eastin (2002) and Nasri (2011) where perceived convenience was the strongest predictor of online banking usage. This could be as the students have ready access to Internet; most of their time is spent on studies, so they opt for Internet banking as compared to conventional systems.

This study also reveals that perceived credibility has second most positive significant influence after convenience on the intention to adopt Internet banking among senior high school students in Indonesia. Therefore the result is consistent with previous studies such as Gerrard and Cunningham (2003), Ramayah and Ling (2002), and Sathye (1999) who claimed that perceived credibility was a determinant of intention to adopt Internet banking. Again, as most of the senior high school students are intermediate to expert users of Internet, they generally are somewhat concerned about risks of privacy and security, but overall they believe Internet banking is trustworthy. The independent variable perceived usefulness included in this study also had a significant positive relationship with intention to adopt Internet banking. The findings indicated that respondents were keen on the benefits a system would offer them if they

used it relative to other systems. This result is consistent with several past studies of Venkatesh and Morris (2000), Chiu et al (2005), Hernandez et al. (2011), and Weisberg et al (2011), who claimed that perceived usefulness has a significant relationship with behavioral intention to use an IB. The results of data analysis point out that senior high school students in Indonesia who were eager on the benefits of Internet banking services would offer them if they used it relative to other systems. Consumers must realize that in today's fact paced life style, the use of Internet related applications should be readily adopted in order to stay abreast with latest trends. Specifically, the results showed that hypothesis H2 which predicted a positive relationship between perceived ease of use and behavioral intention to adopt Internet banking services was not supported. Similar results of non-significant effect of independent variable perceived ease of use on behavioral intention to adopt Internet based application has been demonstrated in the past. According to (Gefen and Straub 2000; Gardner and Amoroso 2004; Saade and Gallo-way 2005; Sihombing 2007), the factor ease of use would be perceived as less important when analyzed along with factor usefulness. The strong relative importance and usefulness of Internet banking services among senior high school students in Indonesia has over powered the overall effect of ease of use of Internet based application.

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#### CLOSING

The primary objective of this study is to analyze the determinants affecting intention to adopt Internet banking among senior high school students in Indonesia. This study identified some variables that are more dominant than others in Internet banking adoption. The empirical results showed that the perceived convenience, perceived credibility, and perceived usefulness all have significant effects on behavioral intention to use Internet banking. However, perceived ease of use was not a significant factor in the intention to adopt Internet banking.

The outcomes of this research can also be used to help banks better recognize education intention of senior high school students in Indonesia to adopt Internet banking. This could facilitate banks to devise valuable techniques to attract this group to use this service. One of the limitations of this study was that the respondents were from only senior high school students in Indonesia, and may not represent the entire student population in Indonesia. Therefore, future research should consider the responses from this population as well. Researchers can compare the results and look the gap in order to further investigate the students of higher education (university level) behavioral intention to adopt Internet banking. This will enable a stronger and a more reasonable standpoint on the research issues.



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