

# Exploring Factors Influencing Electronic Money Adoption (Qualitative Study of Line Pay E-Cash in Jabodetabek)

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**Abstract:** LINE is the biggest chat application affiliate with Mandiri bank to launched LINE Pay e-cash. This study aims to explore factors driving LINE Pay adoption in the users' life. Variable examined from Bezovski which are Relative Advantage, Compatibility, Complexity, Cost, Trust, and Security Risk. Primary data was gained from in-depth interview within 17 interviewees, observation and documentation. Purposive sampling was conducted due to condition of this research. This research carried out through the triangulation method. The research conclude that first withdraw features and additional cost transaction have negative effect in adoption LINE Pay. Second, Promotion Price is become another reason of adopting LINE Pay.

**Keywords:** Electronic Money, Electronic Money Adoption, Mobile Application, Chat Application

## 1. Introduction

Non-cash payment system keeps growing in Indonesia, as reflected in the rise of the noncash payment system index from 249 in 2015 to 288 in 2016, which electronic money (e-money) experiences the highest increase comparing to debit and credit card payment instruments. The volume of electronic money transactions in 2016 stood at 662.9 million transactions with a value of USD 522 million, up 23.8% and 34.3% respectively compared with the corresponding figures from 2015 of 535.6 million transactions with a value of USD 390 million[1].

LINE Pay launched in Japan in December 2014 and is currently available in four main country focus of Line: Japan, Taiwan, Thailand, and Indonesia. LINE Pay users in global significantly increasing and reach 10 billion registered users in 2015[2]. In Indonesia, it attracts four hundred thousand registered users in its first month of launching and is targeted to have 3 million users from total 30 billion LINE active users[3]. Since LINE is targeted to be no 1 smart portal in Indonesia which means LINE is not only playing a role as messaging app but also all-in-one lifestyle application, LINE Pay needs to have a significant role among LINE users.

This paper aims to propose the measurement tools of LINE Pay adoption by using qualitative study that is guided by Modified Diffusion of Innovation Model. The qualitative model is proposed to explore the factors that supporting and inhibiting LINE Pay adoption in Indonesia. Adoption theory examines the individual and the choices an individual makes to accept or reject a particular innovation [4].

## 2. Literature Review

Bank Indonesia divides payment system in Indonesia into cash and non-cash payment system. Cash payment system is a payment that is made using bank notes and coins. Meanwhile, non-cash payment system is payments by which a payer gives its bank authorization for funds to be transferred or by which

a payee gives its bank instructions for funds to be collected from a payer. Electronic money (e-money) is one type of non-cash payment and keeps growing in Indonesia.

E-money is a payment instrument that involves the following elements (1) issued based on the amount of money paid initially by the user to the issuer; (2) the amount of money is stored electronically in media such as a server or chip; (3) used as a means of payment to merchants who are not electronic money issuers; and (4) the amount of electronic money paid by the user and managed by the issuer does not constitute savings as stipulated in the legislation governing banking[1]

To evaluate the effect of perceived attributes and the adoption of e-money that is still perceived as an innovation in Indonesia, Diffusion of Innovation Theory by Rogers is used. There are five adopter categories are defined as the classification of members of a social system based on innovativeness: innovator, early adopter, early majority, late majority, and laggards.

Research model was modified from Diffusion of Innovation theory regarding to consumer adoption of mobile payments as shown in Figure 1.

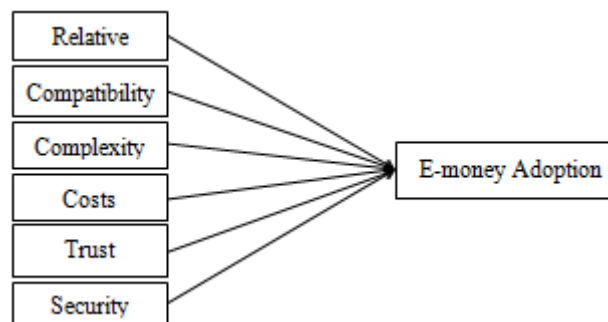


Figure 1: Research Framework

- *Relative Advantage* - the degree to which an innovation is perceived as being better than the idea it supersedes [5].

- *Compatibility* - The degree to which an innovation is perceived as consistent with the existing values, past experience, and needs of potential adopters[5].
- *Complexity* - The degree to which an innovation is perceived as relatively difficult to understand and use[5].
- *Cost* - Electronic money users really consider to the cost of the electronic transaction should be low enough to make the total cost of the purchase competitive with physical world prices[6].
- *Trust* - The dimension of a business relationship that determines the level to which each party feels can rely on the integrity of the promise offered by the other[7].
- *Security Risk* - Security risk is one of instruments to make consumer's trust on some tools because it can protect and concerns which can be divided more into three characteristics such as integrity, availability and confidentiality that is used in technical practice as solutions and in managerial activity[8].

### 3. Methodology and Data Collection

This study is a qualitative study whereas the study is focusing on small numbers of individuals in certain situations and preserves the individuality of each of these in the analyses. The study is not collecting data from large samples and aggregating the data across individuals. The result of the study is expected to find out and explore the reasons why the adopters want to use LINE Pay as a payment system since the total of registered user of LINE Pay compare to total registered LINE user in Indonesia is still low. So that descriptive qualitative study is chosen in order to understand deeper regarding the consumers' behavior in using LINE Pay. The researcher does not want limit the study in to limited questionnaire items, but the respondents are wished to explain in detail the way they really feel about LINE Pay. The closeness relationship between the researcher and respondent is the strength of the study. As the researcher and the subject spend more time together the data are more likely to be honest and valid[9]

In-depth interview and observations are tools to conduct this study. The author gain the data sample until reaches the saturation and the researcher conducts total 25 interviews with 5 interviewees in each of Jakarta, Bogor, Depok, Tangerang, and Bekasi (JABODETABEK). The interviewees need to meet specific criteria which are 1) LINE Pay User 2) live in Jakarta, Bogor, Depok, Tangerang or Bekasi 3) age range of 17 – 25. The five cities are chosen due to its highest number of e-money user distribution in Indonesia (92%)[11]. Methodological triangulation is chosen to use in this research, since it is suitable with the need of this research, which must be done in a short time but with the analysis as detail as possible. This research will use multiple methods of data collection and analysis which are in-depth interview, observation, documentation, and literature reviews from trusted resources.

### 4. Discussion

The purpose of the discussion below is to analyze factors that affect the adoption of LINE Pay among its users. Based on

the proposed model regarding electronic money adoption, there are some determinants that positively contribute the adoption of LINE Pay, while some avoid LINE Pay adoption. To gain different point of views, three respondents from each city (Jakarta, Bogor, Depok, Tangerang, and Bekasi) had been chosen to provide key information needed so that the best understandings regarding the LINE Pay can be achieved. The totals of respondents are 17 for the interview, which in line with (Bricki, 2002) stated, "A more practical method for short term studies is to estimate this point as around 15 people for any homogenous group." The detail of the interview result will be discussed on each of the adoption determinant below [10].

**Table 1: Interviewees Demographics Distribution**

	Characteristic	Frequency	Percentage
Gender	Male	8	47%
	Female	9	53%
Age	Young adult ( $\leq 25$ )	13	65%
	Adult ( $> 25$ )	4	24%
Education	Bachelor	15	88%
	Master	2	12%
Job	Employee	6	35%
	University student	6	35%
	Entrepreneur	3	18%
	Others	2	12%
No. of Months LINE Pay Used	$< 7$	15	88%
	$\geq 7$	2	12%
Reason for Registered LINE Pay	Line User	5	29%
	Advertisements	10	59%
	Others	2	12%

#### 4.1 LINE Pay use

The study that is conducted in Jakarta, Bogor, Depok, Tangerang, and Bekasi brings some findings regarding LINE Pay users' adoption. The study is done to 17 interviewees, which consists of 8 males (47%) and 9 females (53%). Most interviewees are student and employee (35% each) in age of less than equal to 25 years old (65%) with bachelor degree educational background (88%).

Line pay is considered easy to use due to its simplicity of whole payment process; started from registering the account, top up, and balance check, until payment is made. The payment process is also considered fast since it does not take much time to successfully complete the payment

#### 4.2 Relative Advantage

Relative Advantage of LINE Pay mentioned and explained by interviewees included ease of use (100%), productivity increase (82%), time efficiency (65%), LINE capability as one-stop messenger (59%), and ability to make ubiquitous purchases (53%)

*"Yes. First, when we want to do a payment, we only need to type the total amount of bills and LINE Pay will sent the OTP Code, the rest will processed by cashier. So LINE Pay is easy to use and be used anywhere"* (R12, Tangerang)

*"Besides out of curiosity, using LINE Pay is also quite easy. For phone credits, I do not need to open another application because I am a LINE user. If we use other application, it will be complicated. So when open LINE, just open LINE Pay feature"* (R5, Tangerang)

Further, a friendly user interface supports the ease of use among the interviewees. LINE chat app has a simple and interesting look that is suitable for youth, it even has theme feature so that users can change the look of interface and feel more personalized because of it. The LINE fresh look also happens in LINE Pay. LINE Pay is specially designed for young generation with easy-to-understand features on it.

*"My opinion is LINE pay have a great features, easy to register, simple user interface and easy to use in daily activity. So it is nice to use."* (R6, Tangerang)

Next, by using LINE Pay, the interviewees can cut the unnecessary works that used to be needed to conduct purchases or payments through conventional way. Moreover, it provides flexibility, efficiency, and customization to its users. In result, the interviewees can allocated their time to other more important things. All the benefits offered by LINE Pay will result in higher productivity of its users.

#### 4.3 Compatibility

Compatibility of LINE Pay is about how compatible it is used for daily needs as well as what type of payments and purchases are made using LINE Pay. The findings find that LINE Pay is most compatible with payments on mobile phone credit purchases (94%), electricity credit voucher payment (59%), merchant purchases (53%), and LINE Shopping payment alternatives (24%)

*"Compatible. Since I only need for buying electricity-bill. I don't want to go to Indomaret only for buying electricity-bills. By LINE Pay, I could buy it while I'm in chat."* (R7, Jakarta)

*"I used for phone credits and LINE Shopping. But, phone credits is more often"* (R17, Jakarta)

#### 4.4 Complexity

All of interviewees state that doing payment and purchase through LINE Pay is easy and does not take much time for the interviewees to get used to it. The only feature that is considered as complex is the withdraw feature. 65% of interviewees mention that the feature is hard to be understood

*"There's a feature that I'm not interested yet-withdraw. Because not everyone understands what withdraw is. But, for other features I'm quite understand."* (R5, Tangerang)

*"For using LINE Pay, it's not so hard. But I still not understand yet with withdraw and transfer features. Not really understand to use it because there is no detail information for these features. Moreover, others e-money didn't have those features so I'm not really*

*familiar. Actually I'm curious with these features.* (R7, Jakarta)

#### 4.5 Costs

82% interviewees are considering current LINE Pay cost is still affordable since it is still same with other banking apps that has similar service. The cost is considered worth with the product and the service that interviewees pay for, as long as it does not exceed IDR 3,500 per transaction. While the rest 18% interviewees' mention its objection to current LINE Pay additional transaction fee.

*"Yes, I still use it. Mandiri also take additional cost, 3500 if I'm not mistaken. So it doesn't matter."* (R17, Jakarta)

*"I still use it, because technologies also need operational cost. Since the service facilitate us.* (R14, Bekasi)

#### 4.6 Trust

Trust towards the issuer of electronic money is important to promote the users' adoption of electronic money as it is described by 82% of interviewees. Bank Mandiri, one of the well-known private bank in Indonesia, successfully build the trust to use LINE Pay as their electronic money. It is also supported by the brand of LINE that is embedded by LINE Pay.

*"Yes I trust. At the beginning of the registration, LINE Pay said integrated with Mandiri as well, so I trust. LINE is also the largest mobile messenger in Indonesia and Mandiri is also one of the largest banking institutions in Indonesia."* (R14, Bekasi)

*"I trust LINE Pay as payment media because it supported by Mandiri Bank, so I already believe with the bank system."* (R4, Tangerang)

#### 4.7 Security Risk

82% of interviewees explain that they have no issue with data security as long as the payment process conducted through LINE Pay. The secure feeling comes from some reasons which are 1) the encrypted system of LINE Pay, 2) safe payment by using OTP numbers that are directly sent to users' phone number, and 3) the reputability of bank Mandiri and LINE.

*"Based on my used experience, and LINE Pay also includes e-money. What I know the system is encrypted, and this is from Mandiri. So I think it is safe enough to make a transaction."* (R4, Bogor)

*"Secure. Because the process is easy and also it uses OTP which is directly sent to our mobile number, so I feel safe. There is a passcode as well."* (R16, Bekasi)

*"Yes it safe. Because LINE is a big corporate and affiliate with Mandiri, definitely safe. Probability to*

*cheating is rare. It also business to consumer in term of LINE to users, so I think the process is safe” (R17, Jakarta)*

price promotions, is also characteristic to other electronic money or mobile payments.

#### 4.8 Additional Finding

29% interviewees stated that one of the reason to adopt LINE Pay because of price promotion. While 71% of interviewees were confirmed that price promotion strategy will increase the decision to adopt the LINE Pay. Price Promotion for LINE Pay become critical factor to attract the non-adopter and starts to experience LINE Pay.

*“I’m looking for merchant who gives discount when I’m using LINE Pay.” (R12, Tangerang)*

*“Yes, add more discounts on merchants and I’ll be fine to use.” (R3, Bogor)*

*“For future, add more discount on affiliate merchant and total merchant it-self” (R15, Bekasi)*

#### 5. Conclusion

**Table 2: Conclusion**

Adoption Determinant	Contributing Factor	Effect on Adoption
Relative Advantage	Ease of use	+
	Productivity Increase	+
	Time Efficiency	+
	One-Stop Messenger	+
	Ubiquitous Purchase	+
Compatibility	Micropayment Purchases	+
	LINE Pay compatibility	+
Complexity	Register Process	+
	Top Up Process	+
	Payment Process	+
	Withdraw process	-
Cost	Additional Cost of transaction	-
Trust	Trust in Issuer	+
Security Risk	Payment System Process	+
Price Promotion	Price Promotion Strategy	+

LINE Pay becomes new electronic money products in Indonesia have some factors that inhibiting users to adopt, which is additional transaction cost and understandable of the features. Interviewees consider to choose another products and looking for the lowest additional transaction cost.

Maintaining the benefits also necessary because technology changes rapidly and the issuer need to adapt the changes. Since the most feature that interviewees used is phone credits, the promotion strategy can be started from give some discount in buying phone credits.

In the future, the adoption determinants founded in this study (relative advantage, compatibility, complexity, costs, security risks, trust, and price promotion) should be validated by testing those using quantitative methods with large sample. Especially in new determinant, further research need to find out what kind of price promotion that has significant impact of price promotion. Further study could be about analyzing and investigating whether the additional finding in this study,

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