Conference Paper

EDC Machine Implementation Model in Traditional Market As Shopping Tourism Icon in Yogyakarta

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Abstract

Nowadays, in the technology and global era, people need easiness and simplicity in all things, including in financial transaction. One of the facilities which support financial transaction is banking EDC machine. Many banking companies are already deploying EDC machines in traditional market merchants. There is a traditional market that relatively big and already known as shopping tourism icon in Yogyakarta, that is Beringharjo. The number of transactions and sales volume that occur in this market is estimated reach out until billion rupiahs. However, there are some merchants that still enjoy doing transaction by cash and reluctant to use the EDC machine because of the same reasons. The aims of this research are 1) To find out the criteria that prioritized by merchants as considerations to use EDC machine 2)To construct the EDC machine implementation model at Yogyakarta shopping tourism traditional market. The model used in this research is the AHP (Analytical Hierarchy Process) model. The result of this research shows us that the order of criteria or factors that influence the traditional merchants' acceptance of the use of EDC (Electronic Data Capture) machines in traditional shopping tourism icons in Yogyakarta are security, usability, and convenience where the security factor has the greatest weight. The analysis shows that overall, the merchant will consider the security, usability and convenience criteria based on the sub-criteria with the following weighting order; Turnover, Age, Features and shape of the machine, Technical training on machine use, Personal attitude/opinion, Socialization from related institutions, Influence of others.

Keywords: Shopping tourism, traditional market, AHP, EDC, Yogyakarta, Beringharjo

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1. Introduction

The arrival of tourists in a place or country will encourage the development of business activities that fulfill the needs of tourists. Some goods and services are intended to meet the needs of tourists. Expenditure of tourists while in a tourist destination will undoubtedly have an impact on local economic activities (Wardiyanto and Baiquni, 2011: 10). In tourist destinations that are visited by many tourists, there will be a process of transaction/sale of goods and services.

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Yogyakarta tourism is still an attractive destination for domestic and foreign tourists. This can be seen from the trend of increasing the number of visits to Yogyakarta in the last five years (2011-2015). The total development of tourists visiting Yogyakarta Special Region from 2011 - 2015 according to the Yogyakarta Tourism Office (2016) is presented in Figure 1.
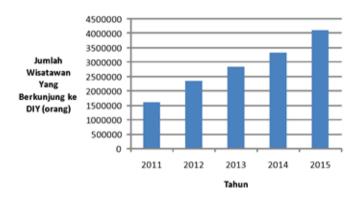

Figure 1: Developments in Tourist Total Visiting Yogyakarta Special Region in 2011-2015 (Source: Yogyakarta Tourism Office (2016)).

Figure 1.5 shows that the total number of tourists visiting the Special Region of Yogyakarta in 2015 that was 4,122,205 people, with an increase of 156.40% compared to 2011 of 1,607,694 people.

In the current era of globalization and technological progress, people need ease and practicality in everything including the process of financial transactions/payment systems. The banking sector can undoubtedly play a role in facilitating this need because it has technology-based payment facilities. One of the facilities offered is the provision of EDC (Electronic Data Capture) machines at various types of merchants.

According to information from Bank Indonesia (2017), the number of EDC machines in circulation, the number of merchants and EDC machines installed, the number of debit and credit cards and the nominal transactions made in 2016 has increased compared to previous years.

One location that is the target of implementing EDC machines is the traditional market for shopping tourism icons. Traditional markets hold great potential to serve as tourism assets. This is because traditional markets have regional characteristics that cannot be found in modern markets so that they can provide special memories and impressions for visitors. The existence of a traditional market must be maintained by making it a business and tourism node. Traditional markets must reflect the balance of traditional values with the latest trends (Republika, 2016).

Merchants in traditional markets have a heavy workload with a length of time to sell for around 12 hours per day. In their daily activities, many market merchants do various kinds of work, including buying goods, arranging merchandise, calculating retail and wholesale prices and serving and transacting with buyers. With the workload, good conditions, stamina, and concentration are needed so that no mistakes occur. The use of EDC machines is one way to increase efficiency, secure transactions, and reduce the risk of errors in transactions (Kompasiana, 2016). Payment innovations with cashless (non-cash) systems will make it easier for merchants and visitors to transact (Satria, 2017).

Based on the authors' observations, there is now an interesting phenomenon in which EDC machines are not only utilized by modern merchants such as hotels, restaurants, and modern shops/malls but are also used by merchants in traditional markets in various regions in Indonesia. Banks have started offering EDC machines to traditional merchants because they consider that some merchants in traditional markets have a large turnover and potential transactions.

One type of attraction that tourists are interested in is shopping. When at a tourist location many tourists are still looking for local shopping centers where they can see and buy items that are characteristic of certain areas, whether clothing, handicrafts or food. Shopping tours can not only be done in modern shopping centers but also in traditional markets. Spatial planning, merchandise quality, and affordable prices are an attraction for traditional markets. As a tourist destination city that has a cultural philosophy, Yogyakarta has a shopping tourism icon in the traditional market which is widely known by the public, namely Beringharjo Market. Beringharjo Market is located on Jalan Malioboro and is close to the zero kilometer point and the Sultan Palace. This area is a favorite tourist location for domestic and foreign tourists. Beringharjo Market sells a variety of interesting products such as batik clothes, artwork, souvenirs, traditional food and so on. According to the Head of Yogyakarta City Market Management Office Development, Rudi Firdaus in Bisnis Indonesia (2017), the number of traditional market visitors in Yogyakarta City in 2016 increased by 4.46% when compared to the previous year. The highest contribution that caused the increase was the increase in visitors in the Beringharjo Market.

Beringharjo Market is one of the shopping tourism objects in Yogyakarta that has managed to get the most popular shopping attraction predicate in the Anugerah Pesona Indonesia 2017 (Kedaulatan Rakyat, 2017a). According to the Chair of the Association of Indonesian Tours and Travel Agencies (ASITA) DIY, Bobby Ardyanto in Kedaulatan Rakyat (2017b), traditional markets in Yogyakarta have an attraction for foreign tourists.

Some Travel Agencies have included Beringharjo Market as part of the shopping tour packages offered, both for domestic and foreign tourists. One of the attractions possessed by Beringharjo Market is the preservation of its traditional value which is still maintained in the modern era today.

In Beringharjo Market, many EDC machines are requested by merchants of fabrics, batik and souvenirs. These merchants feel that the existence of EDC machines is a must because they also serve tourists who shop both domestic and foreign tourists (Sugiarto, 2015). According to the results of the interview with the Chairman of the Pasar Beringharjo Association, Ujun Junaedi, several kiosks owned by merchants have provided EDC banking machines to facilitate visitor transactions.

Until now the implementation program of EDC machines in traditional markets is still being carried out and the banks involved are increasing. The socialization and implementation program of EDC machines in traditional markets continues to date with various attractive joint promo facilities. According to Chairman of the Metro Beringharjo Association, Ujun Junaedi in Rusqiyati (2014) the increase in turnover at the Beringharjo Market took place during a long holiday. The types of goods that are in great demand are fashion, accessories, batik, and traditional food.

From the explanation above, it appears that the use of EDC machines is very suitable for use by traditional market merchants who have become shopping objects in the Yogyakarta area. However, despite the relatively large transaction turnover in some traditional markets and supported by an increase in the number and nominal transactions using debit and credit cards, there are still some merchants who are reluctant to use EDC banking machines and still transact using traditional (cash) methods. The reasons for the reluctance include (Diptara, 2011):

a. Security problem

Some merchants refuse to accept payments using credit/debit cards with the reason that they are unsure about security issues, including scam and carding.

b. Not willing to be paid in delayed/credit/installments

Merchants do not always have large capital so that some of them want the transaction to be done directly/cash and the money from the transaction is immediately received at hand. Therefore, banks will also be selective in choosing merchants and placing EDC machines at merchants with large turnover.

c. Charges (charge rate) in using EDC machines

From every shopping transaction carried out at the EDC machine, the merchant will be charged a charge rate with a certain percentage according to the agreement at the beginning.

Meanwhile, according to the Chairman of the Beringharjo Market Association, Ujun Junaedi in a direct interview with the author, reluctance to use EDC machines in traditional markets is caused by:

1. Traditional cultural/habit/mindset factors of merchants who still feel comfortable carrying cash. By bringing cash, the merchant feels that he will be quicker in allocating his money to various interests

2. Reluctant to learn new things, especially those related to technology utilization

Based on the background and formulation of the problems described above, this research has the following research objectives:

1. To find out the criteria that prioritized by merchants as considerations to use EDC machine.

2. Develop an implementation model for banking EDC machines in traditional shopping tourism icon markets in Yogyakarta.

2. Literature Review

Throughout the writer's observation of the results of the literature study, there have not been many studies that have reviewed traditional shopping tourism markets. Moscardo (2004: 294-307) conducted research on the relationship between shopping activities with destination choices. Hurst and Niehm (2012: 194-208) conducted research to find out the factors that influence a person's interest in buying and selling transactions at shopping attractions. Chen (2013: 617-628) conducts research that aims to determine the patterns of consumer behavior when shopping as tourists and non-tourists as well as to find out the preferences of consumers/tourists to ideal shopping places. Research on tourist spending was also carried out by Litrell et al. (2004: 348-362). In this study, Litrell et al. (2004: 348-362) develop profiles of senior tourists based on tourism activities. Suhartanto et al. (2015: 84-102) conducted research to determine the relationship between tourist loyalty and choice of tourist destinations. Shopping satisfaction factor is one of the parameters of tourist loyalty

From the literature study, researchers also see that research on the adoption of EDC technology has not been widely done. Previous researches discussed more about

adoption and utilization of other e-banking facilities such as ATMs, Credit Cards, Internet Banking, Mobile Banking, and Phone Banking. Rahman et al. (2015: 201-220) conducted research to find out the critical factors perceived by consumers in using banking products in general. Mishra and Singh (2015: 223-242) conducted research to find out the main criteria of the community in choosing various e-banking services. Rondovic et al. (2016: 100-109) conducted a study to determine the factors that influence the use of Internet banking in Montenegro. Elbadrawy et al. (2014: 1462-1471) conducted a study to determine consumer perceptions of ATM, Banking and Internet Banking services in Egypt. Amin (2013: 245-263) conducted a study to find out the factors that influence the selection of Islamic Credit Cards in Malaysia. Li (2013) conducted a study to find out the factors that influence the use of Internet Banking in Taiwan. Therefore, the writer can conclude that research on behavior in using EDC (Electronic Data Capture) machines or more specifically, the behavior of using EDC banking machines by traditional market merchants, especially for markets in the Yogyakarta area has never been done. Table 1 shows us the research on shopping tourism and adoption of E-Banking technology.

TABLE 1: Research on Shopping Tourism and Adoption of E-Banking Technology.

No	Author	Research Topic	Location	Research Purposes	Analytical Method	Result
1	Moscardo (2004: 294-307)	Shopping as A Destination Attraction:An Empirical Examinatioan of The Role of Shopping In Tourists' Destination Choice and Experience	Queensland, North, Australia	Knowing the relationship between tourist shopping habits and destination choices	Chi-Square Test	Tourist shopping needs arise on the basis of three things, those are: for social needs (souvenirs for family, colleagues, neighbors etc.), for personal needs / pleasures and to understand local culture

No	Author	Research Topic	Location	Research Purposes	Analytical Method	Result
2	Hurst &Niehm (2012: 194-208)	Tourism Shopping in Rural Markets: A Case Study in Rural Iowa	Iowa	Knowing the factors that influence a person to visit a tourist village, knowing the factors that motivate residents and tourists to make buying and selling transactions in shopping attractions and to find out the right strategy for merchant in shopping attractions to satisfy their customers	Dilman Survey Technique	Experience in shopping tourism activities more satisfies tourists than local residents. Merchant do not provide excellent service when interacting and carrying out sales transactions with consumers, especially local consumers
3	Chen, R.J.C. (2013: 617-628)	How Can Stores Sustain Their Business? From Shopping Behaviors and Motivations to Environment Preferences	Nine states in southeastern USA	Knowing consumer behavior patterns when shopping as tourists and non-tourists and to find out consumer preferences for ideal shopping	Mann Whitney& Chi-Square Test	Consumers will use different shopping channels in different environments; and consumptions with different backgrounds have different preferences about ideal shopping environments
4	Litrell, Paige & Song (2004: 348-362)	Senior Travellers: Tourism Activities And Shopping Behaviours	USA	Developing senior tourism professionals based on tourism activities and adding tourist profiles based on patterns and shopping habits	ANOVA Test	The profile of tourists that can be developed are active outdoor / cultural tourists, cultural tourists and moderate tourists. Tourist profiles based on shopping patterns are shopping at retail merchants, shopping at malls and limited to just looking for information about shopping tourism

No	Author	Research Topic	Location	Research Purposes	Analytical Method	Result
5	Suhartanto, Ruhadi&Triyuni (2015: 84-102)	Tourist Loyalty Toward Shopping Destination: The Role of Shopping Satisfaction And Destination image	Indonesia	Know and evaluate the relationship between tourist loyalty to tourist destinations	SEM (PLS)	Tourist loyalty to tourist destinations is influenced by shopping satisfaction and destination images
6	Rahman, Qureshi & Kumar (2012: 201-220)	Identifying And Ranking Critical Success Factors of Customer Experience in Banks	India	Knowing the critical factors that can affect the experience felt by consumers in using banking products	AHP	Comfort (convenience) factors are the factors that have the highest weight
7	Mishra & Singh (2015: 223-242)	Selection of Appropriate Electronic Banking Channel Alternatif	India	Knowing the criteria of the Indian community in choosing various kinds of e-banking services	AHP	Knowing the criteria of the Indian community in choosing various kinds of e-banking services
8	Rondovic, Dragase-vic&Rakocevic (2016: 100-109)	Ranking of User Expectations Which Influence The Level of Adoption and Use of Internet Banking Service	Montenegro	Knowing the factors that influence the use of Internet Banking in Montenegro	AHP	Perceptions of security and politics have the highest weight and are the most important criteria in the adoption of Internet Banking in Montenegro
9	Elbadrawy, Moneim&Fors (2014: 1462 - 1471)	A Hybrid Model AHP and PROMETHEE for Evaluation of E-Banking Services	Mesir	Knowing consumer perceptions of ATM services, Phone Banking and Internet Banking	AHP and PROMETHEE	Perception of security is the basis of community awareness in using E-Banking services
10	Amin (2013: 245-263)	Factors influencing Malaysian Bank Customers to Choose Islamic Credit Cards Empirical evidence from the TRA Model	Malaysia	Knowing the factors that influence bank customers in Malaysia in choosing Islamic Credit Cards	TRA	Attitudes and influences of others significantly influence the willingness to use Islamic Credit Cards.

No	Author	Research Topic	Location	Research Purposes	Analytical Method	Result
11	Li (2013: 96-119)	The Revised Technology Acceptance Model and the Impact of Individual Differences in Assessing Internet Banking Use in Taiwan	Taiwan	Knowing the factors that influence the use of Internet Banking in Taiwan	ETAM	The addition of age, education, income and experience by Li (2013) is expected to improve the TAM model

From some of the literature referred to, it appears that many previous researchers used the AHP (Analytical Hierarchy Process) model to complete their research. According to Saaty (1980) in Rahman et al. (2012: 204), AHP is a multi-criteria decision-making method that can solve complex problems both qualitative and quantitative. AHP will help elaborate complex problems into several levels so that the resolution of problems will become more practical and easy. Rahman, et al. (2012: 201-230) chose to use AHP for the following reasons:

1. AHP is able to measure parameters that are subjective and also analyze quantitative and qualitative data simultaneously. This is the basis for Rahman et al. (2012: 201-230) considering the variable consumer experience is very subjective.

2. AHP is known as the only multi criteria decision making method that can measure consistency of decision making.

3. AHP has the ability to analyze large criteria and sub-criteria.

4. AHP is able to estimate critical factors

5. AHP has the ability to divide complex problems into several criteria and sub-criteria so that the results obtained will be systematic.

Mishra and Singh (2015: 223-242) conducted research on the selection of alternative e-banking services by communities in India. The purpose of this study is to find out the main criteria of Indian society in choosing various types of e-banking services. Mishra and Singh (2015: 223-224) argue that in the current era of information technology, business people have applied information technology services to facilitate their services to consumers. A bank is an institution that massively utilizes information technology by using its e-banking services (electronic banking). With e-banking services, consumers do not need to come directly to the bank's office to conduct financial transactions. The

e-banking facilities provided are quite diverse, such as ATMs, Internet Banking and Mobile Banking. Each service has different features and ways to operate.

Mishra and Singh (2015: 224) see that consumers do not use all types of services. Consumers have their own preferences to choose the type of service that they will use. The decision to use a service depends on several criteria. Based on the literature study conducted, Mishra and Singh (2015: 225-228) proposed several criteria that were considered to be the consideration of consumers to choose the type of service. These criteria include demographic factors, technological factors, service components, and willingness.

With the quantitative and qualitative criteria used, the multi-criteria decision-making method used by Mishra and Singh (2014: 223-242) is the AHP model. With the AHP model, Mishra and Singh (2015: 223-242) can rank the aspects of criteria that are expected to affect the choice of e-banking services. The AHP model compiled by Mishra and Singh (2014: 231) can be seen in Figure 2.2.
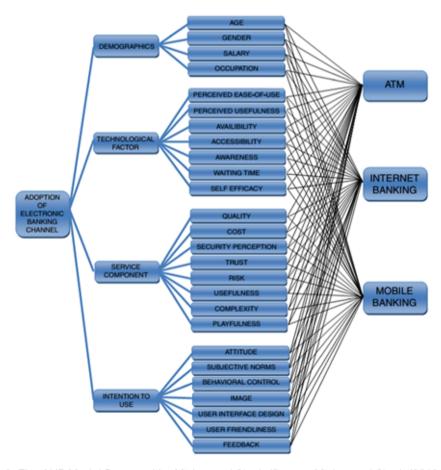

Figure 2: The AHP Model Proposed by Mishra and Singh (Source: Mishra and Singh (2014: 231)).

Internet Banking is one of the e-banking services offered by the banking industry to facilitate services to consumers, but not everyone has the willingness to utilize

this service, especially people in developing countries. Rondovic et al. (2016: 100-109) conducted research on factors that influence the use of Internet Banking services in Montenegro. In this study, Rondovic et al. (2016: 100-109) using the factors contained in the concept of Theory Acceptance Model (TAM) and Theory of Planned Behavior (TPB). Based on the literature study conducted, Rondovic et al. (2016: 100-109) see that these two concepts are most often used to examine the problem of technology adoption. The factors used to explain technology adoption are expected profit, ease of use, risk, self-management, the influence of others and self-willingness.

Because of research conducted by Rondovic, et al. (2016: 100-109) aims to rank the factors that influence the adoption of Internet Banking, then Randovic et al. (2016: 100-109) use the AHP model. The AHP model is used by Rondovic et al. (2016: 100-109) because of its applicative nature for multi-criteria problems, able to determine weights for criteria and sub-criteria ranking, flexible, and have been widely used in various decision-making situations. The results show that perceptions of security and risk have the highest weight and become the most important criteria in the adoption of Internet Banking in Montenegro.

In the study, Rondovic et al. (2016: 100-109) explains that AHP is proven to be reliable in solving problems that require multi-criteria analysis, characteristics of problems that require multi-criteria analysis, including:

1. There are many criteria

2. There is a discrepancy between criteria

3. Different measurement units between criteria

4. There are many alternative solutions to be chosen

The solutions that AHP can offer related to these problems are:

1. Decomposition, which is the ability to decipher complex criteria to be simpler.

2. Comparative judgment, which is comparing and giving weighting between criteria/ sub-criteria (pairwise comparison).

3. Determine the ranking/priority (synthesis of priorities).

To answer the research problem, the authors propose a framework for the implementation of EDC banking models in traditional markets in the Yogyakarta. The goal of the model framework is adjusted to the purpose of the research, namely the use of banking EDC machines by traditional market merchants in the Yogyakarta. Of the several

research models reviewed and initial interviews with the Chair of the Market Association, the authors took several criteria that were considered relevant as summarized in Table 2.

The authors also use the factors in the previous research model to determine sub-criteria. In order to facilitate the understanding of respondents, supported by the results of the initial interview with the Chairperson of the Market Association, the authors modified these factors to be specific and easy to understand. The proposed sub-criteria are summarized in Table 3. In this study, demographic factors are represented by sub-criteria of age and turnover. Turnover is used to replace income that used in previous research. Considering that this research was conducted at the level of traditional merchants, turnover was considered more relevant to use.

TABLE 2: Criteria Used in Research.

No	Kriteria	Pustaka
1	Convenience (*Perception of Ease of Use*)	Rondovic et al. (2016: 100-109) Mishra & Singh (2015: 223-242) Jeong & Yoon (2013: 31-40) Echchabi (2011: 1-13)
2	Usability (*Perception of Benefits*)	Rondovic et al. (2016: 100-109) Mishra & Singh (2015: 223-242) Jeong & Yoon (2013: 31-40) Echchabi (2011: 1-13) Jaruwachirathanakul & Fink (2005: 295-311)
3	Security (*Safety and Security Risk*)	Rondovich et al. (2016: 100-109), Ramachandran et al. (2014: 319-345) Elbadrawy et al. (2014: 1462-1471) Mishra & Singh (2015: 223-242) Yousafzai et al. (2003: 847-860) Elbadrawy et al. (2014: 1462-1471)

Whereas to facilitate the understanding of the comfort factor, the author divides this factor into two sub-criteria, those are:

a. feature/shape of the machine

b. technical training on the use of EDC machines.

For the influence of others, the author divides the influence in two aspects, those are:

a. influence of others, that is the influence of people/individuals who are around the merchants, including fellow merchants, families and relatives,

b. socialization from related institutions, that is socialization from institutions related to the use of EDC machines, including from banks, Industry Offices, Tourism Offices, etc.

For the attitude factor there is no change made by the author. The author only adds an attitude word with personal opinions to be more easily understood by respondents.

TABLE 3: Sub-Criteria Used in Research.

No	Factors	Sub-criteria	Modification /additional Sub-Criteria	Reference
1	Demography	- Age	- Turnover	Mishra & Singh (2015: 223-242)
		- Income		Filotto et.al (1997: 13-21)
				Kolodinsky et.al. (2004: 238-259)
				Li & Lai (2011: 55-92)
				Kolodinsky et.al. (2004: 238-259)
2	Convenience	- Technical training on machine use	- Features and shape of the machine	Rahman et.al. (2012: 215)
				Centeno (2004: 293-315)
				Elbadrawy et.al. (2014: 1462-1471)
3	Subjective norms	- Influence of others	Socialization from related institutions	Lee (2009: 130-141)
4	Attitude	Personal Attitude		Lee (2009: 130-141)
				Shih & fang (2004: 213-233)

Based on the research model framework summarized in Table 2.3 and Table 2.4, the theoretical framework that can be proposed as a model in this study is as presented in Figure 3.

In this study, the author will observe the criteria and sub-criteria that play a role in the decision making of traditional market merchants to use EDC machines. The criteria and sub-criteria that are compared in this model consist of quantitative, qualitative and subjective (multi-criteria) elements that have different measurement units. To overcome these differences, the authors use the AHP (Analytical Hierarchy Process) model. With this model, the writer can determine the weight and ranking of the criteria that affect the objectives and sub-criteria that affect the criteria.

With the AHP model, the author will get weights for each criterion and sub-criteria. From the dominant criteria and sub-criteria, the author will compile an implementation model of the EDC Banking machine in the traditional market of shopping tourism icons. The model is expected to provide benefits for the community and related institutions, including the tourism department, the banking sector, and the traditional market merchants community to make policies for implementing EDC machines in traditional
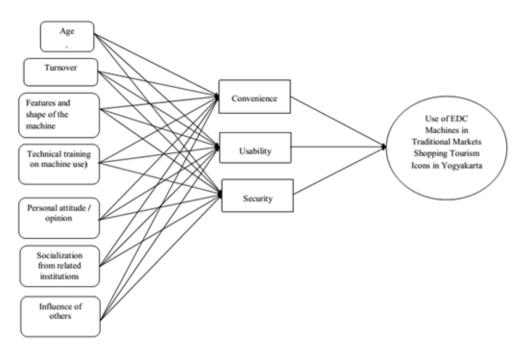
Figure 3: Theoretical framework.

markets for shopping tourism icons so that they can advance regional tourism and national tourism.

3. Methods

Location selection is done using a purposive method, that is the Yogyakarta area. The chosen traditional market is a market that has become an icon of shopping in the city of Yogyakarta, that is Beringharjo Market. This research uses a non-probability sampling method. It does not provide equal opportunities for each member of the population to be chosen as a sample (Sugiyono, 2008). The sampling technique used in this study was purposive sampling. In this study, respondents selected as samples were those considered to understand and master the problem (expert) and can represent variables that have been formulated in the theoretical basis. The selected respondents came from various elements considered to be related to the research theme; those are the Chairperson of the Market Association and senior merchants. From the results of the initial discussions and interviews with relevant parties, the number of respondents considered appropriate (expert) to fill the questionnaire was as many as 20 respondents. The research tool used in this study was a questionnaire. In this study, the author will use the AHP (Analytical Hierarchy Process) analysis method so that the questionnaire is arranged in a format that is easy to understand to fill the criteria and sub-criteria

weights according to the opinion of each respondent. The closed questionnaire used was measured using the Saaty Scale 1 - 9 with details according to Table 4.

TABLE 4: Saaty Scale.

Scale Value	Scale Value Description
1	Criteria A and B are equally importance
3	Criteria A is moderately importance than B
5	Criteria A is strongly importance than B
7	Criteria A is very strongly importance than B
9	Criteria A is extremely importance than B
Source: Saaty (1990: 15)	

The questionnaire will be used to see the tendency of respondents in comparing two criteria based on weighting, so that the questionnaire submitted can be arranged in a format according to Figure 4.
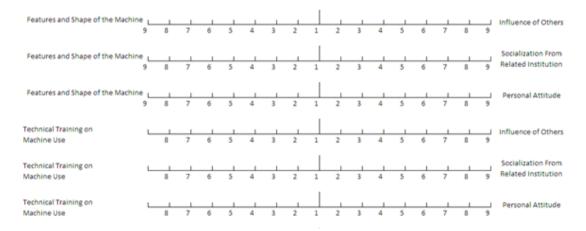

Figure 4: AHP questionnaire format.

In this study, the data analysis method that will be used is the AHP (Analytical Hierarchy Process) with the following steps (Hamali, 2015):

1. Arranging a hierarchical model

2. Creating a pairwise comparison matrix

3. Synthesizing comparisons

4. Measuring consistency

The software program used to conduct AHP analysis is "Expert Choice 11".

4. Results and Discussions

After all data from the respondent has been completed, then the authors calculate the Geometric Mean of each criterion and sub-criteria. This number is then inputted in the Expert Choice program. From the results of the data analysis, it appears that the order of criteria or factors that influence the traditional merchants' acceptance of the use of EDC (Electronic Data Capture) machines in traditional shopping tourism icons in Yogyakarta is security, usability, and convenience where the security factor has the greatest weight. The inconsistency rate is 0.00025 and the overall consistency number is 0.01 indicating that the inputted data is consistent and feasible to use. Explanation of each criterion is as follows:

a. Security

From the results of the analysis, the security criteria are the criteria that have the greatest weight in influencing the traditional merchants' acceptance of the use of EDC (Electronic Data Capture) machines in traditional shopping icon tourism markets in Yogyakarta. This shows that merchants are still very concerned with the security of the use of EDC machines. Many EDC machines issued by banks now use dip systems (cards are inserted into the EDC machine and the machine will read the chip data on the card). Dip systems are provided by banks to facilitate credit cards and debit cards that have started using chip data. Chip data is considered safer when compared to magnetic stripe data used by the old edition debit/credit cards.

b. Usability

As part of the shopping tourism icon in Yogyakarta City, Beringharjo Market is always crowded with tourists. The number of tourists visiting will increase during holidays, both during weekends and national holidays. With the increasing number of visitors, the number of transactions that occur will also increase. EDC banking machines are considered to provide a lot of benefits for merchants when visitors are crowded. From the results of the field survey, it can be found several things related to the existence of EDC machines that are considered to provide benefits, those are:

- Service speed

By using an EDC machine, visitors do not need to pay in cash. Conversely, merchants also do not need to accept cash and give money back because the number of transactions entered in the EDC machine is in accordance with the number of transactions.

1. Ease of money management

By using an EDC machine, the money from the transaction will be sent directly to the savings/checking account holding EDC transactions owned by the trader in the bank. This will make it easier for merchants to manage their finances because they do not need to arrange money, tidy up and deposit them into the bank.

- Greater transaction potential

By using EDC machines, merchants feel more benefited because there is a possibility that visitors will transact more. This is especially true for tourists who shop and only carry a limited amount of cash.

- Asset security

By using an EDC machine, merchants will not feel worried about the possibility of receiving counterfeit money. Trader's assets will also be safer because the money from the transaction goes directly to the escrow account so that it will reduce the possibility of being a victim of crime (theft and robbery).

c. Convenience

From the results of the analysis, the ease criteria also become criteria or factors that influence traditional merchant acceptance of the use of EDC (Electronic Data Capture) machines in traditional shopping icon tourism markets in Yogyakarta. From the observations of the researchers, the EDC machine feature is not too complicated because the shape is simple, it only consists of buttons and screens. When first installed, the bank also conducted technical training on how to use the machine. Every EDC machine also has a special call center for merchants if there is a problem when the transaction occurs or there is a mechanical failure. The results obtained can be seen in Figure 5.

From the results of data analysis, it can be made an implementation model of EDC banking machines in traditional markets which become an icon of shopping tourism in the Yogyakarta area. The analysis shows that overall, the merchant will consider the security, usability and convenience criteria based on the sub-criteria with the following weighting order:

1. Turnover

Turnover is considered by merchants in assessing security criteria because with increasing turnover through EDC transactions, the merchant will demand more security. Turnover is also a consideration for merchants in assessing usability criteria. Merchants believe that by utilizing EDC machines, the potential for transactions will increase because it can facilitate tourists who have limited cash. Turnover is also considered to have contributed to the convenience criteria because with increasing turnover, the
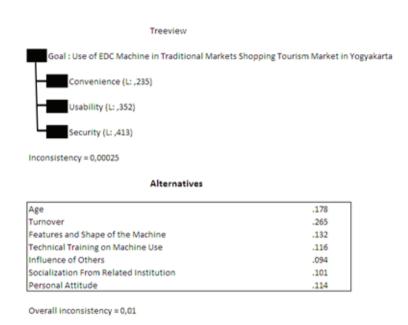
Figure 5: Results Obtained From AHP analysis.

number of transactions will also increase. This will help merchants to become more familiar with operating EDC machines.

2. Age

The analysis shows that age has a contribution to the decision to use EDC machines. EDC is relatively considered safe, useful and easy to use by young merchants, but otherwise, older merchants will be more difficult to educate. Old-age merchants usually have a low level of education and are not familiar with the use of technology. In terms of transaction activity, they also feel more comfortable with cash transactions. This is very different from young merchants who are familiar with the use of technology in their daily lives.

3. Features and shape of the machine

The features and form of the machine have an important role to assess security. Merchants must believe that inside the EDC machine there is a reliable security system and there are certain buttons or codes when executing transactions. In addition to being safe for its assets, the bank must also guarantee the security of debit cards or credit cards for tourists who transact. Features and form of machines also become sub-criteria that are considered to assess usability. EDC machines will be deemed useless if the buttons or steps that must be done by the merchant when the transaction is difficult or troublesome.

4. Technical training on machine use

Technical training is usually carried out by banks when starting EDC machines. This needs to be done so that the merchant can more easily understand the security system,

uses and also the ease of using EDC machines. Merchant will feel more confident if they are educated directly. In this training, the bank also needs to deliver a call center or emergency service in case of trouble in use.

5. Personal attitude / opinion

Merchant subjectivity still has an influence on the decision to use or not use EDC machines.

6. Socialization from related institutions

The socialization of the use of EDC machines has been carried out by various parties. Apart from banks, the socialization of the use of EDC machines has also been carried out by the Industry and Tourism Office. Non-cash transactions using EDC machines are considered very relevant to advance Yogyakarta tourism and to increase business from the merchants themselves. Socialization from related parties is essential to convince merchants.

7. Influence of others

The success of the socialization of the EDC machine can also be influenced by the presence of other parties, in this case, family, fellow merchants, senior merchants who act as opinion leaders and leaders of the market community. Merchants will usually be more confident in accepting EDC machines if there are other merchants use or there is encouragement from a respected person.

An implementation model of EDC banking machines in traditional markets which become an icon of shopping tourism in the Yogyakarta area is illustrated in the conceptual framework as presented in Figure 6.

5. Conclusions

The order of criteria or factors that influence the traditional merchants' acceptance of the use of EDC (Electronic Data Capture) machines in traditional shopping tourism icons in Yogyakarta is security, usability, and convenience where the security factor has the most significant weight. The analysis shows that overall, the merchant will consider the security, usability and convenience criteria based on the sub-criteria with the following weighting order; 1. Turnover, 2. Age, 3. Features and shape of the machine, 4. Technical training on machine use, 5. Personal attitude/opinion, 6. Socialization from related institutions, 7. Influence of others.
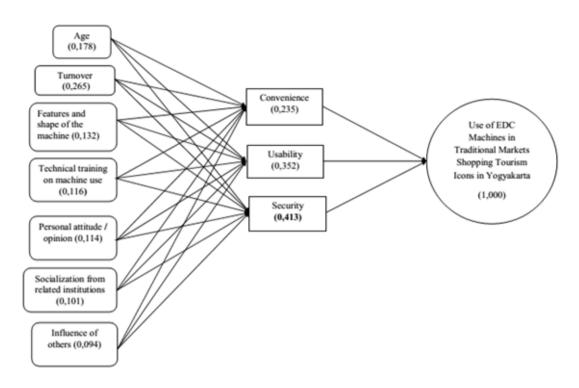
Figure 6: Model of EDC Banking Machines in Traditional Markets Which Become an Icon of Shopping Tourism in Yogyakarta.

References

[1] Amin, H., 2013, "Factors influencing Malaysian Bank Customers to Choose Islamic Credit Cards Empirical evidence from the TRA Model", *Journal of Islamic Marketing*, Vol. 4 No.3, hal. 245

[2] Bank Indonesia. 2017, *Statistik Sistem Pembayaran*. <www.bi.go.id> *(*Diakses tanggal 13 Februari 2017)

[3] Bisnis Indonesia, 2016, *Wisata Belanja Yogyakarta: Pasar Beringharjo Tetap Jadi Favorit,* <http://industri.bisnis.com/read/20160511/100/546259/javascript> (Diakses tanggal 10 November 2017)

[4] Centeno, C., 2004, "Adoption of Internet Services in The Acceding and Candidate Countries, Lessons From The Internet Banking Case", Telematics and Informatics, Vol.21 No.1, hal 293-315

[5] Chen, R.J.C., 2013, "*How Can Stores Sustain Their Business? From Shopping Behavior and Motivations to Environment Preferences*", Center for Sustainable Business and Tourism, hal. 617.

[6] Yogyakarta Tourism Office, 2016, *Perkembangan Total Wisatawan Yang Berkunjung ke Daerah Istimewa Yogyakarta Tahun 2011 – 2015* <https://visitingjogja.com/> (Diakses tanggal 13 Februari 2017)

[7] Diptara, 2011, *Inilah 3 Alasan Mengapa Merchant Menolak Pembayaran Kartu Kredit*, <http://www.diptara.com/2011/04/inilah-3-alasan-mengapa-merchant.html> (diakses tanggal 03 Juli 2015)

[8] Echchabi, A., 2011, "Online Banking Prospects in Morocco: An Extension of Technology", Journal of Internet Banking and Commerce, Vol.16 No.3, hal 1-13

[9] Elbadrawy, R., Moneim, A.F.A., Fors, M.N., 2014, "A Hybrid Model AHP and PROMETHEE for Evaluation of E-Banking Services", *Proceedings of the 2014 Industrial and Systems Engineering Research Conference,* hal. 1462-1471

[10] Filotto, U., Tanzi, P.M., dan Saita, F., 1997, "Customer Needs And Front-Office Technology Adoption". *The International Journal of Bank Marketing*, Vol.15 No.1, hal 13-21

[11] Hamali, S., 2015, Pengambilan Keputusan Manajemen Menggunakan Analytical Hierarchy Process (AHP), http://sbm.binus.ac.id/2015/05/25/pengambilan-keputusan-manajemen-mengunakan-analytical-hierarchy-process-ahp/ (Diakses tanggal 1 Januari 2018)

[12] Hurst, J.L. and Niehm, L.S., 2012, "Tourism Shopping in Rural markets: A Case Study in Rural Iowa", International Journal of Culture, *Tourism and Hospitality Research*, Vol. 6 No.3, hal. 194.

[13] Jaruwachirathanakul, B. and Fink, D., 2005, "Internet Banking Adoption Strategies For A Developing Country: The Case of Thailand", Internet Research,Vol.15 No.3, hal. 295-311

[14] Jeong, B.K. and Yoon, T.E., 2013, "An Empirical Investigation on Consumer Acceptance of Mobile Banking Services", Business and Management Research, Vol.2 No.1, hal 31-40

[15] Kedaulatan Rakyat, 2017a, Beringharjo Sebagai Destinasi Wisata, Pasar Tradisional DIY, Jadi Surga Belanja, Edisi 30 Desember 2017.

[16] Kedaulatan Rakyat, 2017b, Wisman Memburu Keunikan Pasar, Edisi 30 Desember 2017.

[17] Kolodinsky, J.M., Hogarth, J.M. and Hilgert, M.A., 2004, "The Adoption of Electronic Banking Technologies by US Consumers", International Journal of Bank Marketing, Vol.22 No.4, hal 238-259

[18] Kompasiana, 2016, Lebih Baik Non-Tunai Daripada uang Dagang Diambil Jurig, <https://www.kompasiana.com/mariahardayanto/lebih-baik-non-tunai-daripada-uang-dagang-diambil-jurig_58529f3fb07e611f2617f602> (Diakses tanggel 05 Maret 2017)

[19] Lee, M., 2009, "Factors Influencing The Adoption of Internet Banking: An Integration of TAM and TPB With Perceived Risk and Perceived Benefit", Electronic Commerce Research and Applications, Vol.8 No.3, hal 130-141

[20] Li, C.F., 2013, " The Revised Technology Acceptance Model and the Impact of Individual Differences in Assessing Internet Banking Use in Taiwan". *International Journal of Business and Information*, Vol. 8 No.1, hal 96, 101

[21] Littrell, M.A., Paige, R.C., and Song, K., 2004, "Senior Travellers: Tourism Activities And Shopping Behaviours", Journal of Vacation Marketing, Vol.10 No.4, hal 348-362

[22] Mishra, V and Singh,V, 2015, "Selection of Appropriate Electronic Banking Channel Alternative ", *International Journal of Bank Marketing,* Vol.33 No.3, hal. 223-242

[23] Moscardo, G., 2004," Shopping as A Destination Attraction: An Empirical Examination of The Role of Shopping in Tourists' Destination Choice and Experience". *Journal of Vacation Marketing*, Vol. 10 No. 4, hal 294-307

[24] Rahman, Z., Garg, R., Qureshi, M.N., Kumar, I., 2012, "Identifying And Ranking Critical Success Factors of Customer Experience in Banks, An Analytical Hierarchy Process (AHP) Approach", *Journal of Modelling in Management,* Vol.7 No.2, hal. 201-220

[25] Ramachandran, N dan Sivaprakasam, P., 2014, "Selecting A Suitable Cloud Computing Technology Deployment Model For An Academic Institute", *Campus-Wide Information Systems*, Vol.31 No.5, hal 319-345

[26] Republika, 2016, Mendag Resmikan Pasar Tradisional Percontohan di Malang, <http://republika.co.id/berita/nasional/daerah/16/04/01/o4yh6d280-mendag-resmikan-pasar-tradisional-percontohan-di-malang> (Diakses tanggal 05 Maret 2017)

[27] Rondovic, B., Dragasevic, Z., Rakocevic, S., 2016, "Ranking of User Expectations Which influence The Level of Adoption and Use of Internet Banking Service", *17th International Scientific Conference on Economic and Social Development, Managerial Issues in Modern Business,* hal. 100-109

[28] Rusqiyati, E.A., 2014, Omzet Pedagang Beringharjo Naik 30%. <http://www.antarayogya.com/berita/322609/omzet-pedagang-beringharjo-naik-30-persen> (Diakses tanggal 13 Februari 2017)

[29] Saaty, T.L., 1990, "How To Make A Decision: The Analytic Hierarcy Process: The Analytic Hierarchy Process", *European Journal of Operational Reasearh*, Vol.48, hal 9-26

[30] Satria, D., 2017, *Membangun Pasar Tradisional Dengan Konsep Wisata*, <http://feb.ub.ac.id/id/membangun-pasar-tradisional-dengan-konsep-wisata.html> (Diakses tanggal 14 September 2017>

[31] Shih, Y.Y. and Fang, K., 2004, "The Use of A Decomposed Theory of Planned Behavior To Study Internet Banking in Taiwan", Internet Research, Vol.14 No.3, hal 213-233

[32] Sugiarto, 2015, Minat *Pedagang Beringharjo Miliki EDC* Tinggi, http://berita. suaramerdeka.com/minat-pedagang-beringharjo-miliki-edc-tinggi (diakses tanggal 13 Februari 2017)

[33] Sugiyono, 2008, Metode Penelitian Kuantitatif, Kualitatif dan R&D. Bandung:Alfabeta

[34] Suhartanto,D., Ruhadi., and Triyuni, N.Y., 2015, "Tourist Loyalty Toward Shopping Destination: The Role of Shopping Satisfaction and Destination Image ", *European Journal of Tourism Research* 13, hal. 84.

[35] Wardiyanto and Baiquni, 2011, *Perencanaan Pengembangan Pariwisata*, Bandung: Lubuk Agung, hal. 5, 10, 31, 32

[36] Yousafzai, S.Y., Pallister, J.G., dan Foxall, G.R., 2003, "A Proposed Model of e-Trust for Electronic Banking", Technovation, Vol.23 No.11, jal 847-860