

FP-MCI-002-ID005

# Consumer's Awareness and Adoption for QR Payment at Traditional Trade in Bangkok

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Received: 6 July 2018; Accepted: 20 December 2018; Published: 6 January 2020

**Abstract:** e-Payment is now becoming a significant mean of business transaction in Thailand since the government has set up a national e-Payment master plan for enhancing Thai economy. In marketing aspect, the research on consumer's adoption for QR payment to reveal the application environment has limited. This research aims to investigate the awareness and adoption of consumers and other stakeholders toward the QR payment service in Bangkok. The depth interviews and survey research are conducted at the traditional trade including flea market, weekend market, grocery stores and street food shops based on Technology Acceptance Model (TAM). The data is analyzed using mix methods including qualitative and quantitative approach. The result indicates that consumer's knowledge, perceived ease of use and perceived trust are main factors affecting consumer's adoption of QR payment. The implications of the research will provide the deep understanding and guideline for the relevant stakeholders and extend the body of marketing research.

**Keywords:** awareness; adoption; QR payment; traditional trade; TAM

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## 1. Introduction

The human lifestyle has changed according to the advancement of technology that has developed consistently to seek for more comfort in life [1]. Technology changes play a vital role in financial transactions from time to time. Commercial banks need to adapt to digital economy to create a competitive advantage by using different technologies to service their customer [2]. Since the customers prefer convenient services, they would not rather to spend more time to do financial transactions. While commercial banks want to expand their businesses, they need to invest large amount of budget to propose other new alternatives to customers [3]. Regarding to Thailand, one of the financial transaction services have evolved to become popular and growing continuously is electronic payment system or e-Payment [4]. The financial transaction statistical of the Bank of Thailand during 2010-2015 indicated that both of volumes and value of electronic payments were growing continuously, especially in 2015, up to 34.9% over the previous year. The proportion of electronic payment through financial institutions and non-financial institutions accounted for 64.1% and 35.9%, respectively [4].

e-Payment is a part of the national e-Payment master plan that Thai government is currently encouraging. This policy was set up for creating consumer's awareness to reduce cash usage and to prevent counterfeit banknotes [5]. In 2017, Thailand has launched a new financial transaction service known as QR code payment or QR payment. The users will be able to use banking application through smartphone to scan QR code at the point of purchase for paying [6]. Currently, there are eight banks in Thailand which are licensed by the Bank of Thailand to launch QR payment service [7]. As a result, QR payment service has been adopted by many traditional trades as well as modern trades in Bangkok. However, on the consumer side, the number of users are limited due to lack of trust in financial transaction service. Therefore, most consumer still rely on the traditional payment system. This research aims to investigate the awareness and adoption of consumers and other stakeholders toward

the QR payment service in traditional trades in Bangkok. Understanding the awareness and adoption of consumers would help the relevant stakeholders of QR payment to develop the guidelines that easy to understand and proper for consumer's payment behaviors for increasing financial transaction.

## 2. Materials and methods

### 2.1 Qualitative approach

The depth interviews were conducted with relevant stakeholders including eight financial service providers or commercial banks and ten merchandisers in the traditional trade. The 54 information from depth interviews were analyzed by content analysis method. Several key factors affecting consumer's adoption of QR payment was explored.

### 2.2 Quantitative approach

The survey research using structural questionnaire was conducted by face to face interviews. The questionnaire was developed from content analysis result as a guideline based on Technology Acceptance Model: TAM [8]. The questionnaire was divided into four parts; demographic information, consumer's payment behavior, consumer's awareness and consumer's adoption of QR payment. The third and fourth part of questionnaire applied a five-point likert scale. The consumer survey was conducted at flea market, weekend market, grocery stores and street food shops in Bangkok. The demographic was analyzed by descriptive statistics. The relationship between payment behavior and consumer's adoption was analyzed by one-way ANOVA. Finally, logistics regression analysis was conducted to investigate the factors affecting the consumer's adoption of QR payment.

## 3. Results

### 3.1 Descriptive analysis

A total of 358 completed questionnaires are collected. All respondents are aware of QR payment. Among total respondents, 53% are QR payment adopters and 47% are non-adopters. The demographic information of adopters and non-adopters are slightly differences in all attributes. About 67% of total respondents are female and 33% are male. In addition, 35% of female and 18% of male are non-adopters, while 32% of female and 15% of male are adopters. Half of respondents (49%) are generation Y who are between 23 and 40 years old [9], in which 25% are non-adopters and 24% are adopters. The majority of respondents (68%) have obtained the bachelor degree, in which 37% are non-adopters and 31% are adopters. Most respondents (43%) are graduate students, while the percentage of adopters is equal to non-adopters (21.5%). Monthly income shows that respondents mostly earn less than 10,000 Baht per month, in which 17% are non-adopters and 14% are adopters.

Table 1 describes the consumer's payment behavior in details. All respondents who have indicated their payment behaviors are QR payment adopters. Siam commercial bank (SCB) was the most preferable for financial transaction service by majority of adopters (35%). The reason for using QR payment about 63% was convenience, while 20% was cash reduction. Over a half of the adopters (57%) indicated that the influencer encouraging them to use QR payment was themselves, followed by merchandiser (23%), friend (8%) and bank staff (7%). The majority of adopters (32%) used QR payment at the flea market or weekend market, which was slightly higher than modern trade and restaurant. Most adopters (51%) used QR payment when purchased foods or beverages, followed by clothes. The highest proportion of adopters (84%) revealed that they were loyalty customer with only one bank. In term of the frequency of using QR payment, most of customers (73%) used QR payment 1-2 times per month.

**Table 1.** The payment behaviors of QR payment adopters

| <b>Payment behaviors</b>              |  | <b>Proportion (%)</b> |
|---------------------------------------|--|-----------------------|
| 1. Most preferable bank of QR payment | Siam Commercial Bank                                       | 35.3                  |
|                                       | Kasikorn Bank  | 22.4                  |
|                                       | Bangkok Bank   | 15.9                  |
|                                       | Krungthai Bank   | 15.3                  |
|                                       | Thai Military Bank   | 7.6                   |
|                                       | Others   | 3.5                   |
| 2. The reason for using QR payment    | Convenience  | 63.5                  |
|                                       | Cash reduction   | 20                    |
|                                       | Modern   | 10.6                  |
|                                       | Promotion  | 5.9                   |
| 3. QR payment influencer              | Themselves   | 56.5                  |
|                                       | Merchandiser   | 22.9                  |
|                                       | Friend   | 8.2                   |
|                                       | Bank staff   | 7.1                   |
|                                       | Others (family, boyfriend/girlfriend)                      | 5.3                   |
| 4. Channel of QR payment              | Flea market/weekend market                                 | 32.3                  |
|                                       | Others (modern trade, restaurant)                          | 28.8                  |
|                                       | Grocery  | 21.8                  |
|                                       | Street food shop   | 15.9                  |
|                                       | Fresh-food market  | 1.2                   |
| 5. Product purchased by QR payment    | Food/beverage  | 51.2                  |
|                                       | Clothes  | 32.3                  |
|                                       | Others (cosmetics, accessories)                            | 16.5                  |
| 6. QR payment style                   | Use only 1 bank  | 83.5                  |
|                                       | Change to use other banks when they launched new promotion | 14.1                  |
|                                       | Use multiple bank  | 2.4                   |
| 7. Frequency of using QR payment      | 1-2 times/month  | 73                    |
|                                       | 3-5 times/month  | 18.8                  |
|                                       | More than 10 times/month                                   | 8.2                   |

### 3.2 The relationship between payment behavior and consumer's adoption of QR payment

The relationship between payment behavior and consumer's adoption was explored by one-way ANOVA. The independent variables were seven payment behaviors which were most preferable bank of QR payment, the reason for using QR payment, QR payment influencer, channel of QR payment, product purchased by QR payment, QR payment style and frequency of using QR payment. The dependent variable was consumer's adoption of QR payment. The result of the relationship between payment behavior and consumer's adoption was shown in table 2. The reason for using QR payment and product purchased by QR payment had significantly effected on consumer's adoption.

However, the result from one-way ANOVA would not be able to provide the detailed information on the differences among the study groups. The test of the differences among each variable using post hoc multiple comparison [10] must be conducted to understand the group differences as a result of ANOVA. According to four groups of the reason for using QR payment, the results showed that there were the significant differences among the consumers who used QR payment because of promotion and the consumers who used QR payment because of modern, convenience and cash reduction.

Considering the average of adoption score, it was found that the consumers who had the reason for modern, convenience and cash reduction tended to adopt QR payment more than the influence by promotion. In addition, the result of the types of product purchased by QR payment showed the significant differences either. The consumers who purchased food or beverage by QR payment had adoption behavior which differentiated from the consumers who purchased other products which were cosmetics and accessories. The average adoption score of the consumers who purchased cosmetics and accessories was relatively higher, therefore they tended to be a QR payment adopter more than the consumers who purchased clothes and food or beverage.

**Table 2.** The results of testing the relationship between payment behaviors and adoption score

| Payment behaviors                  | Sig    | The average of adoption score |
|------------------------------------|--------|-------------------------------|
| 1. The reason of using QR payment  | 0.001* |                               |
| 1) Modern                          |        | 4.06 <sup>a</sup>             |
| 2) Convenience                     |        | 4.00 <sup>a</sup>             |
| 3) Cash reduction                  |        | 3.88 <sup>a</sup>             |
| 4) Promotion                       |        | 3.20 <sup>b</sup>             |
| 2. Product purchased by QR payment | 0.044* |                               |
| 1) Other products                  |        | 4.17 <sup>a</sup>             |
| 2) Clothes                         |        | 3.96 <sup>ab</sup>            |
| 3) Food/beverage                   |        | 3.83 <sup>b</sup>             |

Note: \*p-value  $\leq 0.05$ ; <sup>a,b</sup> different letters show significantly difference in adoption score

### 3.3 Factors affecting the consumer's adoption of QR payment

The logistic regression model was used to examine factors affecting the consumer's adoption. The independent variables included consumer's knowledge, communication strategy, perceived ease of use, perceived usefulness and perceived trust. The dependent variable was consumer's adoption. The consumer's adoption of QR payment was measured by binary choices of respondents where 1 was adopted and 0 was non-adopted. The results from binary logistics regression was shown in table 3. The predictive efficiency was 70.1%. Therefore, this model was accuracy classification. Consumer's knowledge, perceived ease of use and perceived trust significantly affected on the consumer's adoption of QR payment.

More specifically, the odd ratio or odds could interpret the probability of interesting event [11]. The results of odds or Exp(B) of consumer's knowledge, perceived ease of use and perceived trust were greater than one, as a result these three factors had positive effect on the adoption of QR payment. This mean that when these factors increased then the adoption of QR payment increased. For example, the odds of consumer's knowledge was 2.079. Therefore, when the consumer's knowledge increased by 1 unit, the consumer's adoption increased 2.079 times, regardless of other factors. Other factors could be described as the same pattern as consumer's knowledge.

**Table 3.** Logistics regression analysis of consumer's adoption of QR payment

| Factors       | B      | S.E. | Wald   | df | Sig.  | Exp(B) | 95% C.I. for EXP(B) |       |
|---------------|--------|------|--------|----|-------|--------|---------------------|-------|
|               |        |      |        |    |       |        | Lower               | Upper |
| Knowledge     | .732   | .214 | 11.726 | 1  | .001* | 2.079  | 1.367               | 3.160 |
| Communication | -.012  | .172 | .005   | 1  | .945  | .988   | .706                | 1.384 |
| Ease of use   | .484   | .232 | 4.338  | 1  | .037* | 1.622  | 1.029               | 2.556 |
| Usefulness    | .168   | .214 | .616   | 1  | .432  | 1.183  | .777                | 1.801 |
| Trust         | .664   | .203 | 10.713 | 1  | .001* | 1.942  | 1.305               | 2.890 |
| Constant      | -7.563 | .972 | 60.592 | 1  | .000  | .001   |                     |       |

Note: \*p-value  $\leq 0.05$

## 4. Discussion

The relationship between payment behavior and consumer's adoption indicated that the reason for using QR payment had significantly impact on consumer's adoption as shown in the process of adoption [12] which was the decision process to accept or reject the innovation. In this regard, there were five stages; awareness, interest, evaluation, trial and adoption stage. In evaluation stage, people who would like to try innovative product will consider about advantage and disadvantage by comparing the new product with the traditional one. Therefore, product information would be considered as a reason to adopt it. In trial stage, consumers would try the innovative product/service if they perceived that the benefit was higher, then they decided to adopt it.

Moreover, the type of product purchased by QR payment had significantly effected on consumer's adoption. The analysis of payment behaviors showed that most adopters used QR payment to purchase food or beverage and clothes because the main product selling in traditional trade was consumer goods as food and clothes [13]. Since the consumer goods was easy to find, consumers were familiar with QR payment, that may caused the consumer adopted QR payment. Furthermore, the consumers tended to use QR payment at the channel with large number of adopted merchandiser. Currently, QR payment service in Thailand was widespread in modern trade and traditional trade including grocery store, flea market, weekend market and street food shop [14]. Therefore, it was convenient for consumers to purchase food and consumer goods by using QR payment in several traditional markets.

The result of logistics regression analysis revealed that perceived ease of use and perceived trust were significantly effect on consumer's adoption of QR payment. It was obviously understand that consumers often welcome and quickly adopted new innovative product/service which were beneficial and not too complicated to use [15], as proposed in previous research. Author [16] found that perceived ease of use became the most significant factor affecting the adoption of Internet banking in Mauritius. Furthermore, author [17] revealed that there was a positive relationship between perceived ease of use and acceptance of e-banking by customers. In addition, perceived trust was the important factor for financial transactional service. The results from this study was consistent with author [18] who identified that online services needed the trust element, since trust was one of the main factors influencing the electronic setting. It was implied that the consumers had concerned about safety of banking service. Trust in electronic channels was very important because of some risks involved in using electronic media for financial transaction [19]. As security was the main concern in online transactions, commitments and promises such as keeping private information and transactions safe and secure must be fulfilled [19]. If consumers had a trust in banking service, they would be willing to adopt it.

Consumer's knowledge was one of the awareness factors. This research found that the knowledge had significantly impact on consumer's adoption of QR payment. The same effect was found in the work of author [20] who showed that awareness was positively related to the adoption and usage of online services in Oman. According to author [12] which explained about process of adoption in awareness stage that was often accidental perception. The consumer may need to learn more because the product/service may solve the weakness of traditional product. Therefore, awareness was leaded to adopt or non-adopt for innovative product.

## 5. Conclusions

This study aimed to investigate the awareness and adoption of consumers toward the QR payment service in Bangkok. The depth interviews and consumer survey were conducted at the traditional trade including flea market, weekend market, grocery stores and street food shops. Regarding the relationship between payment behavior and consumer's adoption of QR payment, the result revealed that the reason for using QR payment and the type of product purchased by QR payment had significantly related to consumer's adoption. For factors affecting the consumer's adoption, the logistics regression analysis indicated that consumer's knowledge, perceived ease of use and perceived trust had significantly effected on consumer's adoption of QR payment.

As limitations, since QR payment service was launched in Thailand in 2017, this service was widespread in Bangkok but not much popular in other provinces. This study is only focus on the sample group who live in Bangkok metropolitan. Therefore, further research suggests if the sample should be

cover consumers who live in other provinces, particularly main provinces of each regional Thailand. The result will lead to more understandings of Thai consumers' QR payment adoption behavior throughout the country. Finally, it might be interesting for future investigation of consumer adoption of QR payment across the different categories of the product as well as considering other aspects regarding the lifestyle or psychological variables which could be influence the consumer's adoption behavior.

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