Personal Financial Management Affects Electronic Payment of Goods and Services through Electronic Commerce

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Abstract

The objectives of this research were 1) to study personal financial management of customers who have purchased goods and services through electronic commerce. 2) to study the choices of payment service providers used by customers who have purchased goods and services through electronic commerce. 3) to study risks perception levels and trust level in e-payment of customers who have purchased goods and services through electronic commerce. 4) to develop and examine the goodness of fit of a causal model of personal financial management describing the effects of electronic payment on customers who have purchased goods and services through electronic commerce via the choices of payment service providers, risk perception and trust. And 5) to study the operation of the public and private sector entities with regard to electronic payment for goods and service purchases through electronic commerce in Thailand.

The research methodology for the study was a mixed method approach to data collection and data analysis. It mainly employed quantitative methodology which consisted of the collection of data by using questionnaires from customers who have purchased goods and services through electronic commerce and paid with a credit card online. These populations were selected based on the fact that

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their cities represent the highest GPP in the respective 4 regions in Thailand: (Chiang Mai, Songkla, Khonkaen and Bangkok). The minimum number of samples that were used in the analysis were determined by using the structural equation model. Samples have been identified by convenience sampling. Divided quota sampling was employed to derive similar numbers for samples from the 4 regions in Thailand. 100 people were selected from the 4 regions in Thailand, for a total of 400 people, in order to study the causal relationship of the personal financial management that affects the electronic payment of goods and services through electronic commerce. Qualitative methodology included in-depth interviews with top management personnel from public and private sectors of electronic payment and electronic commerce in order to study phenomenon and apply the obtained data to describe and confirm the quantitative results.

The research findings were as follows:

1) The personal financial management of customers who purchased goods and services through electronic commerce was of a rather high level ($\overline{X}$ = 3.77, S.D.=0.51). The part of cost management was of the highest mean ($\overline{X}$=3.83, S.D.=0.63).

2) The choices of payment service provider of customers who have purchased goods and services through electronic commerce was of a rather high level ($\overline{X}$=3.93, S.D.=0.60). The part of the benefit was of the highest level ($\overline{X}$=4.00, S.D.=0.57).

3) The levels of risks perception of e-payment of customers who have purchased goods and services through electronic commerce was of a rather high level (X=3.54, S.D.=0.49). The part of time-loss was the highest ($\overline{X}$=3.89, S.D.=0.68) and the level of trust in electronic payment was of a rather high level ($\overline{X}$=3.88, S.D.=0.54). The part of purchase interaction was the highest ($\overline{X}$=3.97, S.D.=0.56).

4) A causal model of how personal financial management affects electronic payment of customers who have purchased goods and services through electronic commerce was fitted to the empirical data, as indicated by the Chi-square=214.22, p=0.155, df=196, GFI=0.971, AGFI=0.931 and RMR=0.009. The variable that directly affected electronic payment the most was trust ($p<0.01$). Next were risks perception and the choices of payment service provider with effect sizes of 0.93, 0.88 and 0.64,

respectively. The variables in the model accounted for 86%, 78%, 65% and 41% of trust, risk perception, electronic payment and payment service provider, respectively.

5) The operation of the public and private sectors involving personal financial management directly affects trust in and the choice of electronic payment service provider and the perception of risks in electronic payment. Private agencies have developed website layouts to be easy to use with real information. Card association is a network of issuing banks and acquiring banks that have electronic payment channels will have their own security system. This real-time system is modern, reliable and convenient. Sellers of ecommerce would choose an electronic payment service provider based on interest rates, fee, the length of interest free period, other benefits and the service provider's credibility. Bank of Thailand regulates commercial banks, foreign banks branches and non banks providing electronic payment services to comply with best practice and international standard. In addition, many private and public sector institutions provide electronic payment and personal financial management education for consumers.

Keywords: Personal Financial Management, Payment Service Provider, Risk Perception, Trust, Electronic Payment

การจัดการการเงินส่วนบุคคลที่ส่งผลต่อการชำระเงินทางอิเล็กทรอนิกส์ของผู้ซื้อสินค้าและบริการผ่านทางพาณิชย์อิเล็กทรอนิกส์

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บทคัดย่อ

การวิจัยเรื่องนี้มีวัตถุประสงค์ 1) เพื่อศึกษาการจัดการการเงินส่วนบุคคลของผู้ซื้อสินค้าและบริการพาณิชย์อิเล็กทรอนิกส์ 2) เพื่อศึกษาการเลือกใช้ตัวกลางการชำระเงินทางอิเล็กทรอนิกส์ของผู้ซื้อสินค้าและบริการพาณิชย์อิเล็กทรอนิกส์ 3) เพื่อศึกษาระดับการรับรู้ความเสี่ยงและความไว้ใจในการชำระเงินทางอิเล็กทรอนิกส์ของผู้ซื้อสินค้าและบริการพาณิชย์อิเล็กทรอนิกส์ 4) เพื่อพัฒนาและตรวจสอบความสอดคล้องของโมเดลเชิงสาเหตุการจัดการการเงินส่วนบุคคลที่ส่งผลต่อการชำระเงินทางอิเล็กทรอนิกส์ของผู้ซื้อสินค้าและบริการพาณิชย์อิเล็กทรอนิกส์ และ 5) เพื่อศึกษาการดำเนินงานของภาครัฐและภาคเอกชนที่เกี่ยวข้องกับการชำระเงินทางอิเล็กทรอนิกส์ในการซื้อสินค้าและบริการพาณิชย์อิเล็กทรอนิกส์ของประเทศไทย

งานวิจัยนี้ใช้ระเบียบวิธีวิจัยแบบผสมผสาน (Mixed Method) ใช้ระเบียบวิธีวิจัยเชิงปริมาณ (Quantitative Method) เป็นหลัก โดยใช้แบบสอบถามเป็นเครื่องมือในการวิจัย ประชากรเป็นผู้ชำระเงินทางอิเล็กทรอนิกส์ด้วยบัตรเครดิตในการซื้อสินค้าและบริการผ่านทางพาณิชย์อิเล็กทรอนิกส์ กลุ่มตัวอย่างที่ศึกษา คือ ผู้ซื้อสินค้าและบริการพาณิชย์อิเล็กทรอนิกส์และชำระเงินทางอิเล็กทรอนิกส์ด้วยบัตรเครดิตโดยผ่านช่องทางออนไลน์ สุ่มกลุ่มตัวอย่างจากประชากรที่ใช้ศึกษาโดยเกณฑ์ในการกำหนดขนาดกลุ่มตัวอย่างมาจากแนวทางของการวิเคราะห์โมเดลสมการโครงสร้างเชิงเส้น (SEM) เพื่อศึกษาความสัมพันธ์เชิงสาเหตุ (Causal Relationship) โดยสุ่มกลุ่มตัวอย่างโดยวิธีสะดวกจาก 4 ภูมิภาคของประเทศไทยโดยใช้การสุ่มแบบโควต้า ภูมิภาคละ 100 รวมจำนวน 400 ราย เพื่อศึกษา

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การจัดการการเงินส่วนบุคคลที่ส่งผลต่อการชำระเงินทางอิเล็กทรอนิกส์ของผู้ซื้อสินค้าและบริการผ่านทางพาณิชย์อิเล็กทรอนิกส์ ที่พัฒนาขึ้นกับข้อมูลเชิงประจักษ์ และระเบียบวิธีวิจัยเชิงคุณภาพ (Qualitative Method) โดยใช้การสัมภาษณ์เชิงลึกเพื่อศึกษาปรากฏการณ์จริง (Phenomenon Study) และนำข้อมูลมาใช้ในการอธิบายและยืนยันข้อมูลในเชิงลึกที่ได้จากการวิจัยเชิงปริมาณ

ผลการวิจัย พบว่า 1) การจัดการการเงินส่วนบุคคลของผู้ซื้อสินค้าและบริการพาณิชย์อิเล็กทรอนิกส์ อยู่ในระดับค่อนข้างสูง ($\overline{X}$=3.77, S.D.=0.51) โดยด้านการจัดการต้นทุนมีค่าเฉลี่ยสูงสุด ($\overline{X}$=3.83, S.D.=0.63) 2) การเลือกใช้ตัวกลางการชำระเงินทางอิเล็กทรอนิกส์ของผู้ซื้อสินค้าและบริการพาณิชย์อิเล็กทรอนิกส์ อยู่ในระดับค่อนข้างสูง ($\overline{X}$=3.93, S.D.=0.60) โดยด้านสิทธิประโยชน์มีค่าเฉลี่ยสูงสุด ($\overline{X}$=4.00, S.D.=0.57) 3) ระดับการรับรู้ความเสี่ยงในการชำระเงินทางอิเล็กทรอนิกส์ของผู้ซื้อสินค้าและบริการพาณิชย์อิเล็กทรอนิกส์ อยู่ในระดับค่อนข้างสูง ($\overline{X}$=3.54, S.D.=0.49) โดยด้านความเสี่ยงสูญเสียเวลามีค่าเฉลี่ยสูงสุด ($\overline{X}$=3.89, S.D.=0.68) และระดับความไว้ใจ อยู่ในระดับค่อนข้างสูง ($\overline{X}$=3.88, S.D.=0.54) โดยความไว้ใจด้านทำการซื้อสินค้ามีค่าเฉลี่ยสูงสุด ($\overline{X}$=3.97, S.D.=0.56) 4) โมเดลเชิงสาเหตุการจัดการการเงินส่วนบุคคลที่ส่งผลต่อการชำระเงินทางอิเล็กทรอนิกส์ของผู้ซื้อสินค้าและบริการพาณิชย์อิเล็กทรอนิกส์มีความสอดคล้องกับข้อมูลเชิงประจักษ์ (χ^2 = 214.22, p = 0.155, df = 196, GFI = 0.971, AGFI = 0.931, RMR = 0.009) ตัวแปรที่มีอิทธิพลทางตรงสูงสุดต่อการชำระเงินทางอิเล็กทรอนิกส์อย่างมีนัยสำคัญทางสถิติที่ระดับ 0.01 คือ ความไว้ใจ รองลงมา คือ การรับรู้ความเสี่ยงและการเลือกใช้ตัวกลางการชำระเงิน ตามลำดับ โดยมีขนาดอิทธิพลเท่ากับ 0.93 0.88 และ 0.64 ตามลำดับ ตัวแปรในโมเดลสามารถร่วมกันอธิบายความแปรปรวนของความไว้ใจ การรับรู้ความเสี่ยง การชำระเงินทางอิเล็กทรอนิกส์ และการเลือกใช้ตัวกลางการชำระเงิน และ ได้ร้อยละ 86, 78, 65 และ 41 ตามลำดับ 5) ผลการดำเนินงานภาครัฐและเอกชนสอดคล้องกับการจัดการเงินส่วนบุคคลส่งผลทางตรงต่อความไว้ใจ การเลือกใช้บริการตัวกลาง และการรับรู้ความเสี่ยงในการชำระเงินทางอิเล็กทรอนิกส์ ด้านการความไว้ใจในการชำระเงินทางอิเล็กทรอนิกส์ส่งผลทางตรงต่อการชำระเงินทางอิเล็กทรอนิกส์ของผู้ซื้อสินค้าและบริการพาณิชย์อิเล็กทรอนิกส์ โดยภาคเอกชนมีการพัฒนาข้อมูลหน้าเว็บไซต์ และออกแบบเว็บไซต์ให้ผู้บริโภคใช้งานได้ง่าย เข้าใจง่าย รวมถึงกลุ่มเครือข่ายบัตรเครดิต (Card Association) มีเครือข่ายเชื่อมโยงกับธนาคารผู้ออกบัตร และธนาคารที่รับบัตรในการชำระเงิน มีระบบรักษาความปลอดภัย ใช้เทคโนโลยีที่ทันสมัยชำระเงินทันที บริษัทที่ขายสินค้าและบริการจะมีการเลือกตัวกลางการชำระเงิน (Payment Service Provider) โดยพิจารณาจากอัตราดอกเบี้ยและค่าธรรมเนียมที่ต่ำ ให้ระยะเวลานาน การปลอดดอกเบี้ยในระยะเวลาที่กำหนด และสิทธิประโยชน์ต่าง ๆ ซึ่งเป็นทางเลือกที่ดีให้กับผู้บริโภค รวมถึงความน่าเชื่อถือของตัวกลางในการชำระเงิน ธนาคารแห่งประเทศไทยกำกับดูแลธนาคารพาณิชย์ สาขาธนาคารต่างประเทศ และธุรกิจที่ไม่ใช่สถาบันการเงิน (Non Bank) ในการให้บริการการชำระเงินทาง

อิเล็กทรอนิกส์ให้ปฏิบัติให้ดีที่สุดและได้มาตรฐานสากล รวมทั้งหน่วยงานภาครัฐและเอกชนได้ให้ความรู้เกี่ยวกับการชำระเงินทางอิเล็กทรอนิกส์และจัดการการเงินส่วนบุคคลแก่ผู้บริโภค

คำสำคัญ: การจัดการการเงินส่วนบุคคล ตัวกลางการชำระเงิน การรับรู้ความเสี่ยง ความไว้ใจ การชำระเงินทางอิเล็กทรอนิกส์

Introduction

Electronic Commerce (e-commerce) has been rapidly growing, showing a 45.9% growth of online purchases from 2007 to 2015. Similarly, internet banking has also increased, with the number of accounts reaching 9,960,419 in 2014 (Bank of Thailand, 2014). The internet has not only brought about changes in business but has also affected behavior, lifestyle, the way we work and engage in different activities, our entertainment and consumption. Electronic payment (e-payment) can now be completed through many channels, such as internet, computers, telecommunication systems, facsimiles or mobile phones. A study conducted by VISA International showed that e-commerce in Thailand has increased 14% when compared to 2014, which is second only to Singapore in the Southeast Asian region (Thansettakij, 2015). The lack of secure online payment can provoke anxiety for consumers during electronic transactions (Tiangsoongnern, 2007). The customer's trust can be dismantled through the lack of online security, particularly in light of the instance whereby Russian hackers compromised the security of NASDAQ and payment system of various retails in the United States including, among others, 7-Eleven, Carrefour, and JC Penny during 2005- 2012, resulting in the loss of over 300 million dollars (Manager Online, 2015). The risks involved in e-commerce include the absence of conversation with the salesperson about the goods, goods delivery, correct transaction details, and customer's confidentiality.

Canada, France, Germany and the Netherlands, the assumption that cash is still the most efficient payment instrument. Despite various payment innovations, today, cash is still heavily used to pay for low-value purchases. The Netherlands has observed lower payment through cash than through credit cards transactions. (Arango et al., 2014). Cash and card users exhibit different behaviors (Sprenger & Stavins, 2008). The use of cards provides a better ability to control spending than the use of check and cash. Concerning the consumer's debt payment, the minimal amount of payment required and their confidentiality affect their debt payment differently. The minimal amount of payment required affects the consumer's payment more so than confidentiality. The recognition of loan information, including interest rates and the time limit of debt payment, did not affect the consumer's decision to pay for their debt (Martinez et al., 2011). Debt management allowed for appropriate debt payment. In Malaysia, credit card debt management led many young people under 30 years of age down the road of insolvency. This was

because they spent large amounts on entertainment and online shopping. Most showed the tendency to pay only what met the minimum requirement, leading to increasing credit card debt (Ahmad & Omar, 2010). In cost management, most consumers considered the cost effectiveness of the purchased goods and services and compared the quality of goods and services, durability, the benefits of paying by credit cards as weighted against the use of cash, paying in installments as weighted against paying the whole amount. Apart from this, credit card business became competitive with the advent of different types of cards and corresponding promotions to keep existing customers and expand the customer base. (Krithivasan & Baskar, 2014).

Therefore, expansion of credit cards as a medium for payment and electronic payment transactions increased as a product of personal financial management of consumers during the purchase of goods and services via e-commerce, financial cost and debt management. Even though the purchase of goods and services with credit card payment have significantly increased, cash payment is still higher. To turn cash payment into electronic payment, it is important to emphasize personal financial management, electronic payment service as provided by electronic payment service provider, credibility of the goods and services, convenience in access to goods/service and payment information and the perception of risks of electronic payment. In this research, personal financial management of customers who have purchased goods and services electronically via credit cards served as important information in the development of an e-payment system.

This article is organized as follows. Section Two presents the objectives of the research. Section Three introduces the literature review and hypotheses. Section Four presents the research methodology. Section Five contains an analysis of the results. Finally, Section Six contains the conclusion, policy recommendations and recommendations for future research.

Objectives of the Research

1. To study personal financial management of customers who have purchased goods and services through electronic commerce.

2. To study the choice of payment service provider of customers who have purchased goods and services through electronic commerce.

3. To study the risk perception levels and trust level in electronic payment customers those who have purchased goods and services through electronic commerce.

4. To develop and examine the goodness of fit of a causal model of how personal financial management affects electronic payment of customers who have purchased goods and services through electronic commerce.

5. To study the operation of the public and private sector entities with regard to electronic payment for goods and service purchases through electronic commerce in Thailand.

Literature Review

The purchase of goods and services involves a variety of choices in payment, such as cash, cheque, credit card or debit card. The consumers then need to think of fee, impulse buying, or payment control, in order to avoid errors in cash management (Kapoor, Dlabay, Hughes, 2012). Consumers need to manage their cash to maximize their budget (Arango et al., 2014).

The influence of personal financial management on the choice of electronic payment service provider, the perception of risks and trust through electronic commerce.

1. Personal financial management directly affects electronic payment, payment service provider, and the perception of risks in e-payment through electronic commerce.

Effective use of credit cards requires appropriate personal financial management for the incurred debt. Credit card re-payment behavior and personal financial management are significantly related to attitudes toward debt. Additionally, it has been observed that work experience and credit card re-payment behavior are significantly related to the card holder's financial management (Atthaphol Jirotmontree, 2011). Debt would need to be coupled with planning and financial management in order to repay the debt incurred. A study of failure of self-control in credit card use (Limerick & Peltier, 2014) showed that debt management should involve the consideration of a number of factors. 1) Leverage. The Bank of Thailand has defined rules, procedures and conditions in the credit card business of banks, commercial banks registered in the country and commercial banks registered abroad regarding re-payment and collection (Bank of Thailand, 2016). 2) Re-payment

ability (Wang, 2006), which depends on lifestyle and accumulated wealth. Older people would normally have more credit card experience than younger people; older people would aim to maintain their credit and have different ways to manage debt. Navarro-Martinez et al. (2011) studied customers' behaviors in repaying the minimum balance and the effects of providing information on customers' re-payment of credit card debt. It was found that the minimal re-payment and providing re-payment information had different effects on the customers' re-payment. Providing information about taking loans, such as interest rates and the due date for re-payment, did not affect re-payment. The US study of Avery et al. (2011) found that 11 percent of credit card users repaid credit card debt or a portion of the credit card debt when it was due. Navarro-Martinez et al. (2011) found that the minimal re-payment and providing loan information had effects on the debt re-payment. Sprenger and Stavins (2008) found that half of credit card holders in the USA had credit card debt. The credit card users felt that cards were convenient and allowed them to manage their payment each month. Credit card users and cashier cheque users were different in a statistically significant way; credit cards were easier to use and allowed more financial control, cost management and lower transaction costs than cashier cheques (Stewart et al., 2014). An efficient payments system reduces the cost of exchanging goods and services. (Kaur & Pathak, 2015)

As a public sector entity, the Bank of Thailand sets policies to control the incursion of debt, the leverage, and the interest rate. They also control the fee so that the bank will not charge an annual fee. (Bank of Thailand, 2014). These charges varied from one service company to another (Krithivasan & Baskar, 2014). E-commerce involved providing payment options to customers to increase sales and customer satisfaction. These choices need to be transparent during planning and communicating with customers. Li et al. (2012) studied risks, costs and online payment choices using a probit and nested logit model based on the survey data collected from eBay transactions and found that cost and inconvenience were related to the method of online payment. It appears that risk, convenience, and cost are among the most important issues in online payment transactions. In addition, products with questionable attributes were more related to payment type than the sellers' attributes when engaging in online payment. Pre-transaction risks in e-commerce involved the customers' inability to directly ask about the goods with the salesperson. Post transaction risks involved waiting for the goods to arrive,

correctness of the transaction, and confidentiality; all of these demonstrate a relationship between risk and trust. This agrees with the work of Hamid and Cheng (2013) on e-commerce services, that stated that there are 5 types of risks perception: 1) The perception of physical risks of losing cash or stolen cards such as buyers' fear that their credit card information may be intercepted by a malicious party during transmission over the Internet, or that the sellers may misuse their credit card information (Li, Ward and Zhang, 2012), 2) the perception of procedural risks of paying in a wrong amount or medium, 3) the perception of psychological risks of the images associated with different types of payment, 4) the perception of time-loss and 5) the perception of financial risks. The perception of insecurity and lack of privacy and incomplete information may lead to dissatisfaction and the cancellation of an e-payment. Customers who have made an online e-payment encountered one of the four dimensions of risks, namely, performance risks, psychological risks, financial risks, and time-loss risks.

2. Personal financial management indirectly affects electronic payment via the choice of payment service provider, risks perception and trust.

The concept of trust is important to electronic services where the level of trust varies according to the type of electronic services. It has been shown in previous studies that trust did not affect the intention to use social networks; however, it affected the purchase intention. Another factor influencing purchase is the user's experience. Factors affecting online purchases not only rely on trust (Beldad De Jong and Steeholder, 2010). Other factors could be divided into two groups: 1) Concerns regarding product information, type of internet marketing strategies, privacy and security and 2) Pre-purchase information, which includes perceived reputation, internet fraud processing, assurance and risk perception. Risks regarding security and privacy were influential to the choice of goods and services (Martin & Camarero, 2008). The presentation of the organization and the organization's website were also influential. Clear and complete information keeps risk perception low (Roselius, 1971). Hamid and Cheng (2013) studied the perception of risks of e-payment, young people's perception of e-payment risks and behaviors toward different tyes of payment. Services with e-payment were highly popular. The results showed significant differences. The perceived differential risk between cash and electronic payments had a lesser effect on the volume of buying. It is recommended that these findings be presented to service providers and policymakers and serve as a basis for

suggestions to improve the quality of electronic payment systems. For any digital payment system to succeed. The criteria given acceptability, anonymity, convertibility, efficiency, integration, security, reliability, usability, scalability to be satisfied. (Kaur & Pathak, 2015) Abrazhevich (2004) conducted a survey of user attitudes towards electronic payment systems, and found that ease of use, convertibility of funds, security and trust are among the most important features.

A study of online payment in Yokyakarta, Indonesia focused on risks of online business, (Surbakt, 2014) found that consumers were most satisfied with the convenience of e-payment. Hamid, Raihan, & Cheng (2013) found that an e-payment system involved different levels of acceptance. The payment system was believed to be one of the contributing factors to the perceived risks in payment by cash and electronically. However, it was significantly related to a small amount of buying. Success of e-commerce payment systems also depends on consumer preferences, ease of use, cost, industry agreement, authorization, security, authentication, non-refutability, accessibility and reliability and anonymity and public policy. (Kaur & Pathak, 2015) Karnik (2009) studied the effect of perception of risks on buying behavior. Online shopping has become very popular among Indians who have access to the internet and technology. The variables of consumers' perceived risks included social image risk, quality risk, long time risk and information misuse risk. The research revealed that customers were willing to make a purchase but were, however, worried about inaccurate product information, privacy and inappropriate distribution of their information. Based on the discussed B2S online purchase, this study formulated the following hypothesis.

3. Trust in electronic payment, the choice of payment service provider and risks perception in electronic payment directly affect e-payment for goods and services through electronic commerce.

The retail banks of the future need to transform themselves to serve customers in their channel of choice and at their convenience. In the future, banks need to be able to provide the most appropriate offers by taking into account the context of customer's life state and needs. To achieve this, banks need to harness the power of personal financial management solutions (Krithivasan & Baskar, 2014) In 2013, Thailand witnessed a major shift of payment systems towards digitalization. Both banks and non-banks introduced

new payment innovations to the market through smart phone and tablet applications as well as other advanced technologies (Bank of Thailand, 2015). E-payment service providers require the license from the Payment Systems Committee of Bank of Thailand before providing services. An applicant for the license shall be the limited company or the limited public company having paid the appropriate capital prescribed by Bank of Thailand. (Bank of Thailand, 2014) The customers' decision to use various methods of e-payment depended on the comparison they made on reward options of different banks, real time systems and other benefits such as re-payment options (Krithivasan & Baskar, 2014). Different payment media set different interest rates with offers and re-payment options as incentives for people to buy through their service (Bank of Thailand, 2016). The preliminary prerequisite for consumers is registration with the bank's website such as Verified by Visa (VBV), Master Card Secure Code (MCSC) or JCB J/Secure.

Risks, convenience, costs and online payment options in eBay constituted cost and inconvenience and were related to the methods of payment. The product attributes and product qualities were more related to how the goods and services were paid for than the attributes of sellers. The repetition of the seller did not affect the payment itself, instead the channel of online payment was influential (Li, Ward and Zhang, 2012). Arango et al. (2014) found that companies with good reputation had good security systems and goods and services warranties. The lack of trust was normally associated with confidentiality of personal and credit card information. Heightened worries of consumers lead to less electronic purchases of goods and services (Tiangsoongnern, 2007). The factors that encouraged the increased e-payment for online shopping included reputation of the company, trustworthy storage of information and the existence of goods and services warranties (Hamid & Cheng, 2013). Most online shoppers only buy from websites they trust. Those who do not normally buy online did not do so because of lack of trust in the website, product quality, debit system, or goods delivery. Combined with these factors, the lack of security and customers' trust in internet payment together formed one of the biggest hindrances of e-commerce (Centeno, 2002; Teoh et al., 2014). Usefulness, effectiveness and convenience of use affected consumers' perception of e-payment in a significant manner. In an insignificant manner, trust and security affected the consumers' perception. Ming-Chi Lee's work, "Factors influencing the adoption of internet banking: An integration of TAM 3 and TPB with perceived risk and perceived benefit Internet banking"

(2008) has been one of the most prominent studies in the area of e-commerce. The study was done through a convenience survey of online banking to examine the perceived benefits and perceived risks including financial, security, procedural, importance and time-loss risks. This researcher was synthesized with perceived benefits, taking the Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB) models discussed above into account.

Conceptual Framework

The literature review and concepts focused on personal financial management, electronic payment, the choices of payment service provider, risks perception and trust. The results of the review were used to create a causal model to describe how personal financial management affects electronic payment of goods and services through electronic commerce, as shown in Figure 1.

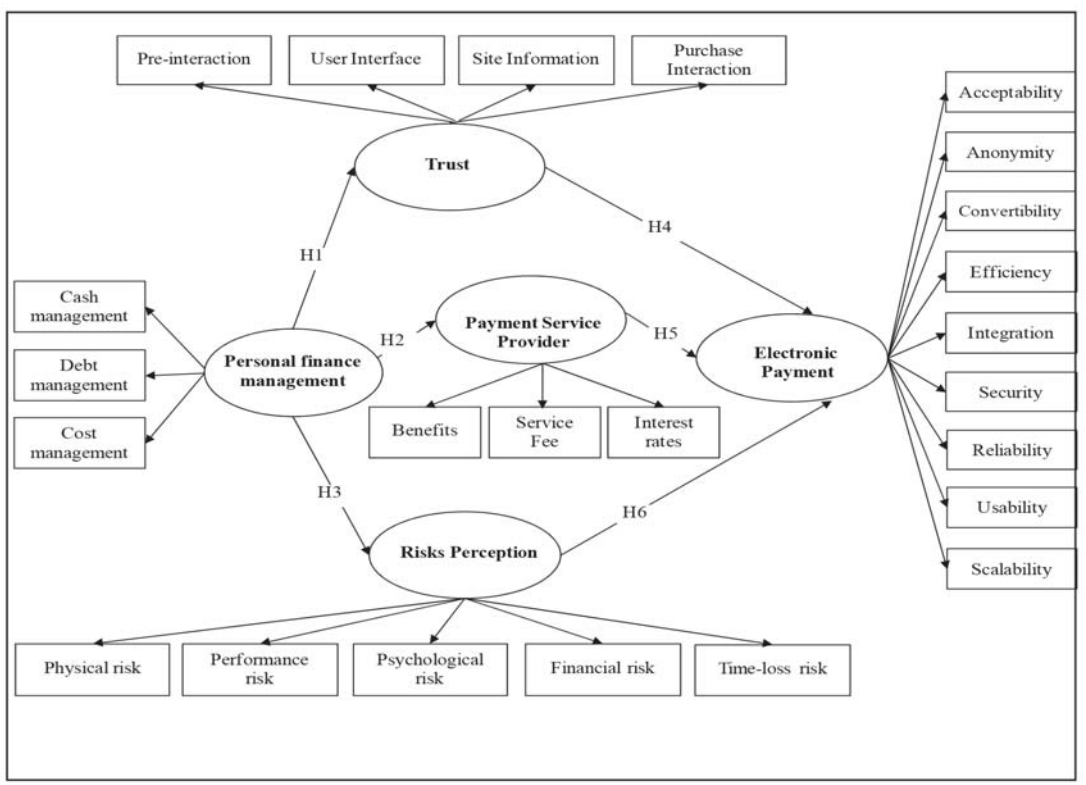

Figure 1: Conceptual Framework

Hypotheses

H1: Personal financial management directly affects trust in electronic payment.

H2: Personal financial management directly affects the choice of payment service provider.

H3: Personal financial management directly affects risks perception in electronic payment.

H4: Trust in electronic payment directly affects electronic payment for goods and services through electronic commerce.

H5: The choice of payment service provider directly affects electronic payment for goods and services through electronic commerce.

H6: Risks perception in electronic payment directly affects electronic payment for goods and services through electronic commerce.

H7: Personal financial management indirectly affects electronic payment via the choice of payment service provider, risks perception and trust.

Research Methodology

The research methodology for the study was mixed methods. Firstly, the quantitative methodology consisted of data collection by using questionnaires in order to study causal relationships of how personal financial management affects the electronic payment of goods and services through electronic commerce. Qualitative methodology utilized in this research included in-depth interviews with top management personnel associated with e-payment and e-commerce in order to study phenomenon. Data obtained from these interviews was used to describe and confirm the quantitative results; the details are as follows.

1. Quantitative Method

The population included customers who have made a purchase of goods and services through electronic commerce and paid with a credit card online. They were from 4 regions of Thailand: Northern Thailand (Chiang Mai); Southern Thailand (Songkla); Northeastern Thailand (Khon Kaen); and Central Thailand (Bangkok). These populations were selected based on the fact that their cities represented the highest GPP in the respective regions (Office of the national economic and social development board, 2015).

The Study Sample

The number of samples was important, as a sufficient number of samples would increase the reliability of results. The minimum number of samples that were used in the analysis were determined by using the structural equation model in accordance with Lindeman, Merenda and Gold (1980), and Weiss, (1972); the suggested ratio between the number of samples and parameters was 20 to 1. Therefore, since this study used 20 parameters, the number of samples shall not less than 400.

Sampling was employed to derive similar numbers for samples from the 4 regions in Thailand: (Chiang Mai, Songkla, Khonkaen and Bangkok). Divided quota sampling was employed to derive similar numbers for samples from the 4 regions in Thailand. The researcher selected each sample from consumers who were willing to answer the questionnaire through convenience sampling; 100 people were selected from each region.

Research tool. The questionnaire was used to collect the primary data. The questionnaire content validity was determined by three experts; the questions had an Index of Congruence (IOC) between 0.60 to 1.00. The questionnaire's reliability was assessed using a sample of 30 e-commerce consumers who paid electronically with credit cards online in order to calculate Cronbach's alpha coefficient (Cronbach, 1990). The result showed that Cronbach's alpha coefficient of the questionnaire was 0.899 to 0.913 and the reliability of total variables was 0.901. The coefficient confirmed that the questions were reliable and suitable to use as a data collection tool.

Data collection. Data for this study was collected by the researcher by personally ask their customers who used the bank's credit cards to buy goods and services, using questionnaires from customers who have purchased goods and services through electronic commerce and paid with a credit card online. Questionnaire sent to the customers concerned with request to answer the questions and return the questionnaire. Each of the four regions was equally represented: 1) 100 questionnaires were from Chiang Mai in Northern Thailand 2) 100 questionnaires were from Bangkok in Central Thailand 3) 100 questionnaires were from Khon Kaen in Northeastern Thailand and 4) 100 questionnaires were from Songkhla in Southern Thailand as shown in Table 1 below.

Table 1: The Number of Samples

Regions	Province	Number of samples
Northern	Chiang Mai	100
Central	Bangkok	100
Northeastern	Khon Kaen	100
Southern	Songkhla	100
Total		**400**

Data analysis. The examination of the fitted relation of the hypothesis model and empirical data was done by using the Structural Equation Modeling (SEM).

2. Qualitative Method

In-depth interviews were conducted with 12 key informants associated with e-payment and e-commerce from both public and private sectors in order to study phenomenon and apply the obtained data to describe and confirm the quantitative results as shown in Table 2 below.

Table 2: Key Informants

Key informants	Number of key informants
Governmental sector	
1 E-payment and e-money division of the Bank of Thailand	1
2 Financial Protection Center	1
3 Electronic Transactions Development Agency (Public Organization): ETDA	1
Private sector	
3 The Thai Bankers' Association	1
4 Non-financial institutional companies	2
5 Companies selling goods and services through e-commerce	5
6 Thai e-Commerce Association	1
Total	**12**

The research tools. A semi-structured interview was utilized to collect information. The structure of questions was adapted from the quantitative research. The purpose of the interview was to obtain the perspectives of consumers who worked in policy implementation of organizations.

Data collection. Data collection was accomplished through an in-depth interview to gain deeper insights of indirect and direct causal relationships. Since the informants included high-level executives who did not have similar availability in their schedules, small group discussions and small group interviews could not easily be arranged. In such cases, the researcher either scheduled appointments through telephone or the informants' acquaintances. The interviews conducted through telephone consisted of conversations of around 30-60 minutes. The conversations were recorded either by hand or an electronic recorder.

Data analysis. The recording was transcribed and categorized through content analysis. Following transcription, certain data was extracted through the means of induction.

Analysis of Results

1. The analysis of personal financial management of customers who purchased goods and service through electronic commerce.

The results report that the personal financial management of customers who purchased goods and services through e-commerce was of a rather high level ($\overline{X}$=3.77, S.D.=0.51) where cost management was of the highest mean ($\overline{X}$=3.83, S.D.=0.63) followed by cash management ($\overline{X}$=3.77, S.D.=0.54) and debt management ($\overline{X}$=3.71, S.D.=0.62) as can be seen in Table 3.

Table 3: Mean and Standard Deviation of Personal Financial Management (n=400)

Variable	$\overline{X}$	S.D.	meaning
Cash management	3.77	0.54	Rather high
Debt management	3.71	0.62	Rather high
Cost management	3.83	0.63	Rather high
Total	**3.77**	**0.51**	**Rather high**

2. The analysis of the choices of payment service provider of consumers who have purchased goods and services through electronic commerce.

The results report that the choices of payment service provider of customers who have purchased goods and services through e-commerce were of a rather high level ($\overline{X}$=3.93, S.D.=0.60), where the benefits were of the highest level ($\overline{X}$=4.00, S.D.=0.57) followed by fee ($\overline{X}$=3.93, S.D.=0.72) and interest rates ($\overline{X}$=3.85, S.D.=0.79) as shown in Table 4.

Table 4: Mean and Standard Deviation of the Characteristics of Payment Service Providers (n=400)

Variables	$\overline{X}$	S.D.	meaning
Benefits	4.00	0.57	Rather high
Service fee	3.93	0.72	Rather high
Interest rates	3.85	0.79	Rather high
Total	**3.93**	**0.60**	**Rather high**

3. The analysis of risks perception levels and trust level in electronic payment of customers who have purchased goods and services through electronic commerce.

The results report in the analysis of risks perception was of a rather high level ($\overline{X}$ =3.54, S.D.=0.49), where the risk of time-loss was the highest ($\overline{X}$=3.89, S.D.=0.68). This was proceeded by physical risk ($\overline{X}$=3.70, S.D.=0.62) and performance risk ($\overline{X}$=3.38, S.D.=0.66) as shown in Table 5.

Table 5: Mean and Standard Deviation of Risks Perception in e-Payment (n=400)

Variable	$\overline{X}$	S.D.	Meaning
Physical risk	3.70	0.62	Rather high
Performance risk	3.38	0.66	Medium
Psychological risk	3.37	0.89	Medium
Financial risk	3.36	0.68	Medium
Time-loss risk	3.89	0.68	Rather high
Total	**3.54**	**0.49**	**Rather high**

The analysis of trust revealed that the e-payment for goods and services through e-commerce was of a rather high level ($\overline{X}$=3.88, S.D.=0.54) with trust in purchase interaction being the highest ($\overline{X}$=3.97, S.D.=0.56). Site information was second ($\overline{X}$=3.90, S.D.=0.61), followed by user interface ($\overline{X}$=3.88, S.D.=0.67) as shown in Table 6 below.

Table 6: Mean and Standard Deviation of Trust in e-Payment (n=400)

Variable	$\overline{X}$	S.D.	Meaning
Pre-interaction	3.78	0.71	Rather high
User interface	3.88	0.67	Rather high
Site information	3.90	0.61	Rather high
Purchase interaction	3.97	0.56	Rather high
Total	**3.88**	**0.54**	**Rather high**

The analysis of e-payment showed that trust in e-payment of customers who have purchased goods and services through e-commerce was rather high ($\overline{X}$=3.81, S.D.=0.43) with acceptability being the highest ($\overline{X}$=4.07, S.D.=0.62), followed by scalability ($\overline{X}$=3.98, S.D.=0.64) and convertibility ($\overline{X}$=3.92, S.D.=0.61) as shown in Table 7 below.

Table 7: Mean and Standard Deviation of e-Payment (n=400)

Variable	$\overline{X}$	S.D.	Meaning
Acceptability	4.07	0.62	Rather high
Anonymity	3.38	0.83	Medium
Convertibility	3.92	0.61	Rather high
Efficiency	3.90	0.55	Rather high
Integration	3.90	0.64	Rather high
Security	3.59	0.66	Rather high
Reliability	3.73	0.69	Rather high
Usability	3.81	0.57	Rather high
Scalability	3.98	0.64	Rather high
Total	**3.81**	**0.43**	**Rather high**

4. The develop and examine the goodness of fit of a causal model of personal financial management affects electronic payment of customers who have purchased goods and services through electronic commerce.

The fitted test of the developed causal model with the empirical data. The result showed that a goodness of fit indices of model with the empirical data was a Chi-square index of 214.22, the degree of freedom (df) was 196 and the p-value (p) was 0.155. There was no significant difference between the Chi-square number and zero which indicated that the research hypothesis was correct. The GFI was 0.971, the AGFI was 0.931 and the RMR was 0.009.

Direct Effect: DE

Considering the direct effects on the variable of trust, payment service provider, and perception of risks in e-payment, it was found that these variables were directly affected at the significance level of 0.01 by the variable of personal financial management respectively at the numbers of effect size being 0.93, 0.64, and 0.88, respectively; these values correspond to hypothesis 1, 2 and 3.

Considering the direct effects on the variables of e-payment, it was found that the e-payment variable was directly affected at the significance level of 0.01 by trust, the choices of payment service provider, and perception of risks in e-payment variables with effect sizes of 0.41, 0.32 and 0.48 respectively; these values correspond to hypothesis 4, 5 and 6.

Indirect Effect: IE

Considering indirect effects on the variables of electronic payment revealed that the electronic payment was affected by the indirect effects at the significance level of 0.1. This was based on the variable of personal financial management via trust, the choices of payment service provider, and risks perception in electronic payment at the numbers of effect size 0.76; this corresponded to hypothesis 2 as shown in Table 8 and Figure 2.

Table 8: The Path Analysis of the Causal Model in the Research

Dependent variable	Trust			Payment Service Provider			Risks Perception			Electronic Payment		
Independent variable	TE	IE	DE	TE	IE	DE	TE	IE	DE	TE	IE	DE
Personal finance management	0.93** (0.06)	-	0.93** (0.06)	0.64** (0.05)	-	0.64** (0.05)	0.88** (0.10)	-	0.88** (0.10)	0.76** (0.07)	0.76** (0.07)	-
Trust	-	-	-	-	-	-	-	-	-	0.41** (0.13)	-	0.41** (0.13)
Payment Service Provider	-	-	-	-	-	-	-	-	-	0.32** (0.15)	-	0.32** (0.15)
Risks Perception	-	-	-	-	-	-	-	-	-	0.48** (0.13)	-	0.48** (0.13)

*p < 0.05 **p < 0.01

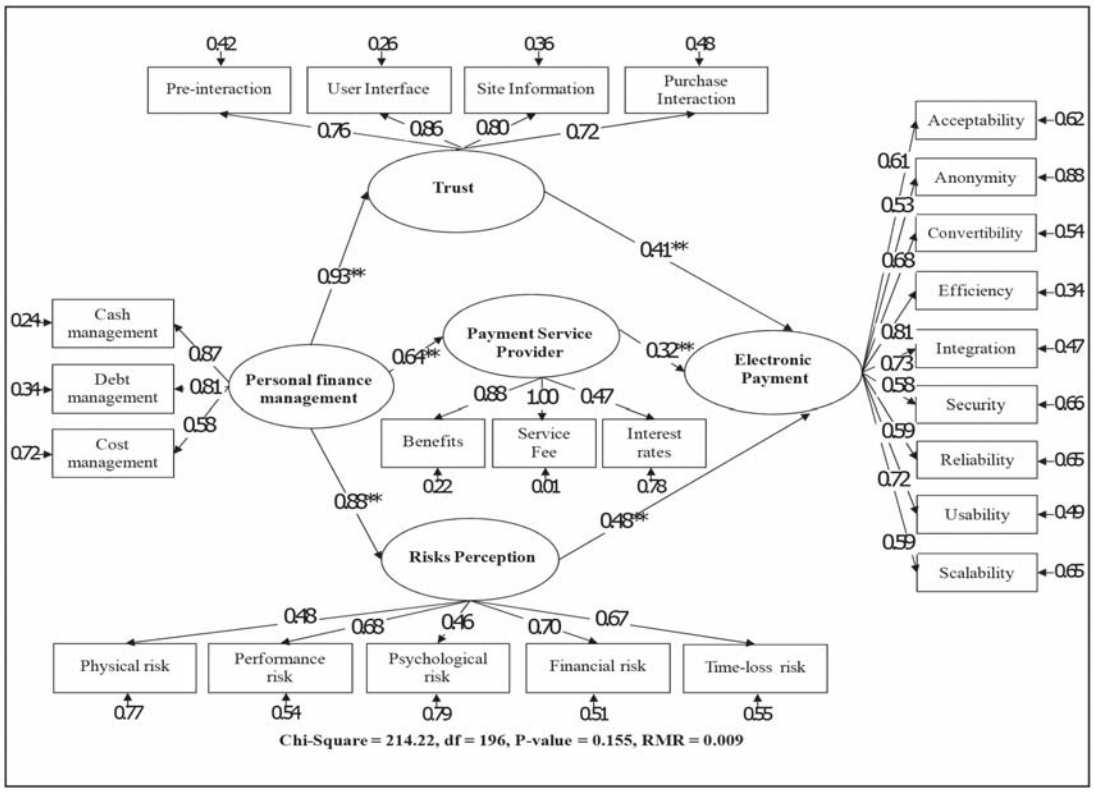

Figure 2: The Analysis of a Causal Model of How Personal Financial Management Affects Electronic Payment of Customers Who Have Purchased Goods and Services through Electronic Commerce

The analysis of the R-Square value of the structural equation model of trust showed that the R-Square was equal to 0.86 which shows that personal financial management variable in the model accounted for 86% of the trust in the electronic payment model. The R-Square of the choices of payment service provider was equal to 0.41 which shows that personal financial management variable in the model accounted for 41% of the choices of payment service provider model. The R-Square of risk perception was equal to 0.78 which shows that personal financial management variable in the model accounted for 78% of the risk perception model. The R-Square of electronic payment was equal to 0.65 which showed that the trust variable, the choices of payment service provider, and the risk perception variable in the model accounted for 65% of the choices of electronic payment model as shown in Table 9 below.

Table 9: Coefficient of Determination

Variable	R^2
Trust	0.86
Payment Service Provider	0.41
Risks perception	0.78
Electronic payment	0.65

The result of the research hypothesis test showed that a causal model of personal financial management affects electronic payment of customers who have purchased goods and services through electronic commerce and supports the research hypothesis number 7. The details are shown in Table 10 below.

Table 10: The Results of the Research Hypothesis Test

Hypotheses	Result
H1: Personal financial management directly affects trust in electronic payment.	support
H2: Personal financial management directly affects the choice of payment service provider.	support
H3: Personal financial management directly affects risks perception in electronic payment.	support
H4: Trust in electronic payment directly affects electronic payment for goods and services through electronic commerce.	support
H5: The choice of payment service provider directly affects electronic payment for goods and services through electronic commerce.	support
H6: Risks perception in electronic payment directly affects electronic payment for goods and services through electronic commerce.	support
H7: Personal financial management indirectly affects electronic payment via the choice of the payment service provider, risks perception and trust.	support

5. Analysis of the operation of the public and private sector entities with regard to electronic payment for goods and service purchases through e-commerce in Thailand.

The analysis in this section supports the hypothesis of the quantitative research its affirmations and providing deeper insight into the underlying reasons behind the operation of the public and private sectors concerning e-payment for purchase of products and services through e-commerce system that lead to the relationship between factors.

To make the analysis coherent with the results of the quantitative research, information gained from the interview was categorized according to the research hypothesis. Details of the analysis were as follows.

Hypothesis 1, 2, 3: Personal financial management directly affects trust, the choice of payment service provider, and perception of risk and Hypothesis 7: Personal financial management indirectly affects electronic payment via the choice of the payment service provider, risks perception and trust.

Results of the quantitative research show that personal financial management directly affects trust in making an e-payment. This supports the hypothesis and agrees with information gained from the interview.

Most of the interviewees believed that contemporary consumers' demands to make an electronic payment and the number of credit card holders have increased because electronic payment and credit cards are convenient and easy to use. Both of these two services help people manage their personal finance. People can put off their spending and keep cash for other plans such as emergency cases and investments. People can also better manage their spending by paying with credit than using check or cash mediums. This creates financial liquidity which allows them to easily manage cash.

With respect to debt management, consumers will have a good amortization plan if they pay by credit cards. This provides a method to develop good discipline to spend and amortize.

With respect to cost management, most interviewees said consumers categorically consider value of cost by comparing advantages of electronic payment and ordinary

payment. They think about the privileges gained from credit card payment such as saving points that give them discounts on future purchases and think of the differences between paying by installment and paying the entire sum at once.

For the above reasons, public and private sectors try to encourage people to engage in electronic payment transactions. Their operations take into account the following aspects.

Trust. As private sectors, companies who are selling products and services try to make their operations trustworthy and reliable to all e-commerce consumers. To raise consumer trust, they provide information on their websites such as their current locations, email addresses, LINE IDs, phone numbers, board of committee lists, related links, regulations, as well as policies. The websites are easy to navigate, provide clear information, and are equipped with SSL security system. They also give details about payment and non-refund policies. They employ modern real-time technology and offer different payment channels. After the purchase has been made, the system instantly informs the consumers about the payment and confirms the shipping date. These are the ways companies raise trustworthiness among consumers.

As a public sector entity, The Bank of Thailand raises trustworthiness among customers by employing an internationally standardized verification system. They ask the consumer to enter their credit card number, the expiration date, and the Card Verification Value (CVV), the 3 last digits printed on the back of the credit card, on the last page of the payment website to prevent falsification. The CVV numbers are not printed on the front of the credit card, so they will not be shown on original receipts printed by the outlets. Furthermore, a personal authentication system is operated. The bank also permits card holders to have personal pin numbers for doing electronic transactions. This system is called “Verified by VISA” or “Master Card Secure Code”, depending on the type of the card. This agrees with Hypothesis 1: Personal financial management directly affects trust in making an electronic payment.

> *“Most customers compare the credit card payment with the cash payment, thinking about which is more worthwhile and which offers them more privileges. For instance, if they pay with credit cards, they will gain more points, discounts, and they can amortize. I think it’s fast and more*

convenient to pay by credit cards. The customers can keep money for other plans like savings or investments. So, our company offers another choice to pay by credit cards, but what's more important is to make them trust in our system. The website must give them our e-mail address, LINE ID, and telephone numbers. The website must be easy to access, equipped with a security system and provide directions for payment. After payment is made, we must provide confirmation to our customers instantly." (Private Sector)

"We will make our system internationally standardized. To prevent falsification, we ask the customers to fill in the numbers, the expiration date, and the CVV number, the three digits at the back of the card, before making payment." (Public Sector)

The choice of Payment Service Provider. As private sector entities, companies consider the interest rates, the fees, the payment period, interest-free season of the banks, as well as the privileges for their consumers. The consumers will consider the cost, the amortization, and the reliability of the banks, as well as other matters concerning their financial management.

As a public sector entity, the Bank of Thailand sets policies to control the incursion of debt, the leverage, and the interest rate. They also control the fee so that the bank will not charge an annual fee. The credit card fee is normally higher than that of the debit and the e-money cards. If the payment is overdue, the fee must be reasonable because banks operate in a highly competitive industry. All of these measures are done to protect the consumers. This agrees with Hypothesis 2: Personal financial management directly affects the choice of payment service provider.

"The Bank of Thailand will set the policy to control the incursion of debts, the interest rate as well as the fees such as the annual fee because normally the fee of the credit card is higher than that of the debit and the e-money cards. If the payment is overdue, the fee must not be too high." (Public Sector)

Risk perception of the electronic payment

As private sector entities, companies operate with the modern and reliable security system called SSL Verified e-payment which is a real-time electronic payment.

As a public sector entity, Card association operates with risk settlement. They set a policy for the banks to install a chip on the credit card to reduce the risk of information hacking. They also help reduce the risk of payment so that the payment will be safe and reliable, according to international standards. They protect and educate the consumers so that the consumers will realize their own rights and duties and will be able to choose the appropriate service. The Bank of Thailand will make the payment reliable to all consumers. This agrees with Hypothesis 3: Personal financial management directly affects risks perception in electronic payment.

> *"Normally, Card Associations that have electronic payment channels will have their own security system called SSL Verified e-payment. This real-time system is modern, reliable, and convenient."* (Private Sector)

> *"Bank of Thailand regulates commercial banks, oversea banks and non banks providing electronic payment services to comply with best practice and international standard and to educate consumers."* (Public Sector)

Operations of the public and private sectors to raise trust among consumers, to set the policy to control the selection of the electronic payment, and to reduce risk that may happen to the consumers are the mediators that indirectly affect the electronic payment to purchase goods and services through the e-commerce system. This agrees with Hypothesis 7.

H4: Trust in electronic payment directly affects electronic payment for goods and services through electronic commerce.

For the private sector. The companies that sell products and services, such as agoda.com and booking.com, cooperate with banks. The process of using credit cards to pay the electronic system requires more information about the card holder such as full name-last name, account number, card expiration date and VC, an OTP code which will be sent as a message to the consumer's mobile phone to confirm the payment through

credit cards in real-time, resulting in increased consumer safety. To encourage consumer trust, private sector entities should develop cognate websites so that consumer can see and feel confident submitting sensitive information like address, phone number, e-mail, and Line user ID. Providing management directories, URL links to the related policies and regulations, transparent system operations (i.e. SSL security) and payment processes, and refund policies, in well-design websites are relatively simple suggestions to increase consumer confidence. A real-time system allows for immediate confirmation and provision of a receipt of sales builds trust with consumers. In the government sector, the Bank of Thailand can help build more trust with consumers in purchasing products and services through e-commerce. The system checks the validity before confirming successful electronic payment. The consumer must verify cardholder status by the card expiration date, and CVV (Card Verification Value), which is the three digits printed on the back of the credit card. Counterfeiting is difficult to achieve because the CVV number is not printed on the front is the cards and thus will not appear on receipts from stores. In order to check card holder identity (Authentication), consumers must apply for an application code to use for each electronic transaction; examples are the "Verified by VISA" or "Master Card Secure Code".

> *"Nowadays, electronic payment is practical and commonly used. Government sectors support and encourage trust in consumers. Additionally, private sector entities also foster reliability and trust by maintaining websites, easy to access email addresses, line user addresses, and security protocols for their payment system such as a prompt alert report when there is transfer activity."* (private sector agent)

> *"We emphasize a validation service based on international standards such as the requirement of providing the expiration date of cards and the 3 digit CCV number on the back of the card before processing payment which makes it more difficult to make fraudulent transactions. Shops who received credit card payment will not have the expiration number and CCV digits on the payment slip. The bank will provide an authentication system such as Verified by VISA or Master Card Secure Code."* (government sector agent)

"Risk perception of each client is particular different, depending on what degree of risk is acceptable and their own valuations of cost from losses; the more they know about the risks, the less effect these risks will have on electronic card usage." (private sector)

H5: The choice of payment service provider directly affects electronic payment for goods and services through electronic commerce.

From the results of the quantitative research, it was found that the means selected for electronic payment have a direct effect on customers' electronic payment which supports the research hypotheses; the interviews further confirmed the hypotheses. Most interviewees agreed that the credit card closely rivals cash as an effective medium for trading. The credit card is not only a substitution for cash, but also provides many privileges to the card holders which make it more popular. Historically, the credit card was a service provided only from select commercial banks. In contemporary times, financial institutions and foreign banks have also become interested in providing credit card service; this increase in providers has made the credit card industry aggressively competitive. Companies provide a variety of incentives such as credit cards tailored to the customers' needs, waiver of annual fees, clear and concise requirements, bonus points for spending, etc. These privileges are provided in order to attract customers to use credit cards as a mean of payment. The customers will tend to use credit cards more frequent in order to receive promotions; additionally, some products cost less when purchased by credit card. The credit limits given to the customers depend on their income. If the incomes of the customers are high, their credit limits are also high. The credit limit can be adjusted according to the customer's income. The credit card providers are very competitive, for example, if service provider A has more promotions and discounts with more participating shops than service provider B, the customers will tend to use the credit card from service provider A more often than the credit card from service provider B.

As for the part of private sector companies that provide electronic payment services for customers to facilitate electronic commerce, it was found that the private sector companies selected a bank as a mediator according to the low rate of interest charge and fees, the period of free interest, privileges for customers, monthly installment that helps customer manage their finances and reliability of the bank that can gain

customers trust. Most public sector companies are mainly aiming to conduct appropriate supervision to prevent any damages that may occur, maintain financial and commerce stability, as well as enhance the credibility and acceptance of electronic data systems or prevent the damages from the consumers. This supervision helps build credibility for the electronic payment system.

> "*The company would choose the bank that offers a low rate of interest, low rate of fees and privileges for the customers, because the customers are likely to think of the capital, installment and the reliability of the bank.*" (Private sector)

> "*There are many mediators, the highly competitive fee rates, interest, and privileges that customers may get make the use of credit cards higher. The customers can buy products for a low price. Also, the credit limit depends on the income of the customers, if they have high income, they get high credit limit. Therefore, the use of credit cards for electronic payment is also increased.*" (Public sector)

H6: Risks perception in electronic payment directly affects electronic payment for goods and services through electronic commerce.

From the results of the quantitative research, it was found that risk perception in electronic payment affects the customers and electronic commerce; this supports the research hypotheses and the interview confirmed the hypotheses. Most interviewees agreed that electronic payment made by credit card is more popular because it is convenient and fast. However, even though the electronic payment systems are regularly improved, still the risks of electronic payment are present. The risks have a direct effect on electronic payment. The risks can occur from many factors such as the system or the payment. For example, a risk that occurs before the payment is that customers cannot ask for the product information directly with the salesperson; a risk that occurs after the payment involves delivery of the product; risks of technology include the accuracy of the transaction, the customer's personal details and IT security. There are other types of risk including the business risk of asking customers' personal details for the purchase or misuse of the customers' personal information. Also, the risk from financial status of the

parties and the risk from the differences between the laws regulated for payment system in each country are included. Risks can potentially cause damage to the parties and the reliance on the electronic payment may result in mistakes or delay of payment that can cost extra charge of transfer fees, daily interests, etc. In case the payment has not been made or fully made (principal loss), or in the case that the damage is considered high value and affects a lot of people, the credibility of a financial institution may suffer and may cause a chain reaction to others which ultimately leads to systemic risk in the stability of the financial system. The risks perception level of each consumer is different depending on the individual standard values, the level of risk that is acceptable to them or what standard they use for risk comparison. Most consumers evaluate risk by considering the expenses that they are going to make. The more risk they are aware of, the less electronic payment they are willing to make.

As for the part of the private sector concerning the risks perception in electronic payment that affects the customers and electronic commerce, it was found that the companies or service providers use the payment security system called SSL Verified Electronic payment. SSL Verified Electronic payment is modern and reliable. It is a fast real time electronic payment. There is a charging system which connects directly to the bank of the credit card. As for the public sector, such as Bank of Thailand, there exists a settlement risk prevention policy which mandates that banks must issue credit cards with chips to prevent the risk of the cards information being stolen. Furthermore, the supervision on the payment system ensures reliability and compliance with universal standards for electronic payment service and includes consumer protection and provision of information to consumers regarding their rights and duties. The customers can use the service appropriately and trust the reliability of the electronic payment.

> *"The credit card has its own initial risk that may arise from system and payment procedures such as a misunderstanding of product details before the transaction. Following the payment transaction there may also be problems such as delivery of the product. Challenges to overcome include accuracy of transactions and confidentiality of information; any inconsistencies may provoke challenge from the customer."* (government sector agent)

"There are risks in individual financial liquidation which could be caused from contract partner, different state financial laws such as cost from delay or redemption, cost from interests or another fee. None or an incomplete paid amount can cause principal loss, if they are high in value or involve many people it could affect the stability of financial institutes in cycles." (government sector agent)

Conclusions

It was found that the developed causal model of the effects of personal financial management for electronic payment of customers who have purchased goods and services through electronic commerce corresponded with the empirical data derived from the variable of personal financial management that heightened trust, payment service provider and risks perception in e-payment. Personal financial management had the highest direct effect on trust. This was followed by risks perception and the choice of payment medium because, for the consumers to be able to efficiently manage or control spending and manage cash, debt and costs, they need to be aware of trust and perception of risks in e-payment. That was because in an electronic transaction customers tend to feel they were in danger of being scammed by providing credit card information to unfamiliar websites. Trust and risk perception were then needed to prevent the loss of money (Arango et al., 2014). Li, Ward and Zhang (2012) also found similar results where personal financial management of cash, debt, costs and inconvenience bore some relationship with e-payment. Products with risky attributes highly affected how they were paid for. This corresponds with qualitative studies by interviewees which indicate that electronic payment, in terms of cash management assistance, can defer expense. Cash can be stored for emergency use or invested. Using credit is also good for expense management and allows more financial liquidity than cash or cheque. In debt management, credit cards can facilitate debt management. For investment management consumers usually consider cost and benefit from using credit card as an electronic payment method relative to cash because of motivations like points collection, privileges, and discounts provided by the former. In light of consumer affinity for credit cards, both private and government sector entities provide the option of electronic credit card payment. 1) Trustworthy. For private sector companies who sell products and services can develop their website to build

consumer trust. Key characteristics of successful websites include ease of use, transparent contact information (email, phone number, staff directory), URL links to information regarding regulations and policies, a secured payment system (SSL), and real-time communication for the government sector, the Bank of Thailand has been building consumer trust for electronic trading and services by validating the payment system before electronic payment processing based on international standards. 2) Payment channel alternative choices. Private sector entities will choose the bank as the channel by consideration of low interest, free interest phases, and other privileges which will be good for the consumer's cost-benefit analysis and debt re-payment period. The government sector regulates the amount of debt and annual fee control, in order to protect consumer from inappropriate debt collection and decreasing high debt risk. 3) Acknowledgement of risks. Card Association operates by security system called "System SSL Verified e-payment" using advanced reliable technology that can perform fast real time credit card. The government will focus on settlement risk by regulating security policy; every credit card must contain the chip to prevent scamming and maintain the e-payment system based on international standards.

Apart from this, the choice of payment service provider that offers the most rewards/privileges allowed consumers to be able to manage their liquidity and made personal financial management significant to the choice of payment service provider, which is in line with the research work of Krithivasan & Baskar (2014). The research found that the customer's decision to pay electronically was normally based on rewards and privileges offered by the banks that would help them maximize their money.

The variable with the highest direct effect to e-payment of consumers who have made an electronic purchase of goods and services was risks perceptions. This was followed by trust and the choice of payment service provider. This was because risks perception directly translated to less purchase of goods and services electronically (Tiangsoongnern, 2007). It was also in line with the work of Martin & Camarero (2008) that found that e-payment with a security and confidentiality system and a website with clear and complete information lowered risks perceptions, which increased the frequency of e-payment of electronic purchases of goods and services. Consideration of low interest rates and fees. Interest-free periods and privileges are factors consumers reflect upon regarding the cost of installments related to financial management.

The credibility of the bank can build trust for consumers. The government sector, including Bank of Thailand, operates by controlling the debt, interest rates, and annual fee growth because most credit card banks have more interest rates and fees than other debit cards or e-money services. This is done in order to prevent consumers from inappropriate debt collection fees.

The consumers' trust did not depend on the e-commerce. It was a personal view, formed by their attitude toward the website, product and service presentation, brand management, quality of service and warranty, that could increase the electronic payment and thus electronic purchase of goods and services. McKnight and Choudhury (2006) studied the hesitation and distrust toward e-payment in the BSC purchase of goods and services. They found that such hesitation and distrust affected willingness, and the lack of it thereof, in e-payment for purchasing of goods and services electronically, which was in line with qualitative studies by many interviewees view risk as multifaceted and able increase under different circumstances; this perception certainly affects electronic payment by various factors such as the electronic system and payment method. Risk is especially evident when consumers are unable to contact the seller directly or if there are problems with the deliver following a transaction. Technological safety problems such as accuracy, maintenance of client's confidentiality, spamming, and information abuse are all recognized risks of electronic service. The resulting effect can be counted as failure in value or financial trust. In some case there are missing or delayed payment that result in a re-transfer fee, redemption and interest (replacement cost), and principal lost from no payment or incomplete payment. In some cases where there is a high amount of value or many people involved it could affect the stability of financial system (systemic risk).

The consumer's decision to undertake an e-payment normally had to do with payment service provider. Most consumers considered the fee, interest rates, rewards, and privileges offered by banks. When these offers are better for the customers, e-payment would then increase (Krithivasan & Baskar, 2014). Such corresponded with qualitative studies done by interviewees view that credit cards have unique value beyond cash, in that there are associated privileges and promotions with their use. The consumer appeal factors explain why many financial institutes and banks engage in the credit card business. Consumer acceptance of credit cards is highest when there are no fees

associated with credit card ownership and complicated obligations are minimized. Points collected from using credit cards as payment motivate consumers to choose credit cards for electronic payments.

Recommendations

Policy Recommendations

1. The study found that personal financial management affected trust, payment service provider, and heightened perception of risks in e-payment and that it indirectly affected e-payment through trust, payment service provider and heightened perception of risks in e-payment. In this light, related agencies, both governmental and private sectors, such as the Bank of Thailand, Electronic Transactions Development Agency (Public Organization): ETDA, commercial banks, credit card companies, The Thai Bankers' Association, and online sellers should promote electronic transactions through the use of electronic media such as the credit card in place of cash because it helps consumers have better control over their money, estimate and plan on cash flow quickly and efficiently. This reduces the problem of cash shortage and urgent need for cash. The consumers are able to repay in installments and stand to gain from credit card privileges. The agencies need to have risk management measures and to promote people's understanding of payment. This allows consumers the ability to choose the appropriate payment service, understand their rights and duties and the agencies involved in consumer protection. Agencies should also regulate and build consumer confidence in using secured electronic payment.

2. The study found that trust, payment service provider and risks perception in electronic payment affected the e-payment of consumers who have paid for good and services electronically. Related agencies, public and private sector, such as the Bank of Thailand, Electronic Transactions Development Agency (Public Organization): ETDA, The Thai Bankers' Association, commercial banks, credit card companies and online sellers should attach importance to the analysis to consumers' needs and systematically build their confidence through increasing the security of credit card payment and payment data with the standardized security measures credit cards need to have. Such measures can be communicated to the public. Apart from this, an upgraded payment system that allows for faster and more available channels of payment should encourage people to undertake more e-payments.

Recommendations for Future Research

1. The model developed by the researcher is in the initial stage of conceptualization and requires further refinement. More variables from other theories, works and models such as personal financial knowledge, credit card practices, and purchase intention could be integrated to increase the model's explanatory power for phenomena related to e-payment of customers who have made electronic purchases of goods and services.

2. This study of electronic payment was concerned with only the credit card medium. Other mediums such as debit cards were not included. The developed model can be used for such other mediums.

3. This study is cross-sectional and confined to a limited time frame; results may differ by examining longer time frames. Longitudinal studies should be conducted to gain the data on the development of customers behavior in electronic purchase of goods and services.

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