A study on consumers' perception of using PlusPay: application of Technology Acceptance Model

By

Yi-Ci Sue

蘇翊慈

Submitted to the Faculty of
Department of International Affairs in partial fulfillment
of the requirements for the degree of Bachelor of
Arts in International Affairs

Wenzao Ursuline University of Languages
2022

WENZAO URSULINE UNIVERSITY OF LANGAUGES DEPARTMENT OF INTERNATIONAL AFFAIRS

This senior paper was presented

by

Yi-Ci Sue
蘇翊慈

It was defended on

November 19, 2022

and approved by

Reviewer 1: Shao-Tzu Wu, Assistant Professor, Department of International Affairs
Signature: _____Date: _____

Reviewer 2: Margarita Sheu, Associate Professor, Dept. of International Affairs
Signature: _____Date: _____

Advisor: Ren-Her Hsieh, Associate Professor, Departmental of International Affairs
Signature: _____Date: _____

A study on consumers' perception of using PlusPay: application of Technology Acceptance Model

Yi-Ci Sue

Wenzao Ursuline University of Languages, 2022

Abstract

With the vigorous development of technology, the electronic payment market is highly competitive. FamilyMart is the first convenience store in Taiwan specializing in electronic payment with retail, financial banking, and online e-commerce industry backgrounds. Consumers can use PlusPay to store money, pay bills, transfer money, and so on through mobile devices to improve the convenience of consumption. This study explores consumers' behavior intention to use electronic payment services based on technology acceptance mode and the additional factors like corporate image and risk. Using the questionnaire survey method, a total of 214 valid questionnaires were collected. The result of this thesis showed that: (1) Perceived usefulness and perceived ease of use have significant positive effects on attitude toward use; (2) Attitude toward use and corporate image have significant positive effects on behavior intention to use; (3) Risk has a significant negative effect on behavior intention to use. From the empirical results of this study, it can be seen that if the FamilyMart wanted to increase customers' attitude to use PlusPay, they need to publicize the usefulness and easy to use of PlusPay, they also need to enhance FamilyMart's corporate image, and reduce risk of using PlusPay to make people have more behavior intention to use PlusPay.

Keywords: electronic payment, FamilyMart, PlusPay, Technology Acceptance Model

研究消費者使用全盈支付的感知:應用科技接受模型

蘇翊慈

文藻外語大學國際事務系

摘要

隨著科技的蓬勃發展，電子支付市場競爭激烈。全家是第一家推出名為全盈支付的專營電子支付應用的便利店。消費者可以透過手機程式進行存錢、支付賬單、轉賬等操作，提高消費便利性。本研究依科技接受模式為背景和企業形象和風險等附加因素探討了消費者使用全盈支付的意願。採用問卷調查法，共回收有效問卷 214 份。本論文的研究結果表明: (1) 感知有用性和感知易用性對使用態度有顯著的正向影響；(2) 使用態度和企業形像對行為使用意向有顯著正向影響；(3)風險對行為使用意向有顯著的負向影響。從本研究的實證結果來看，可以知道，全家若想增加顧客使用全盈支付的態度，就需要宣傳全盈支付的使用性和易用性。還需要提升全家的企業形象，降低使用全盈支付的風險，讓人們有更多要想要使用全盈支付的意願。

關鍵詞：電子支付、全家、全盈支付、科技接受模式

TABLE OF CONTENTS

LIST OF TABLE

LIST OF FIGURES

Introduction

Background

In recently years, the Taiwanese preference of paying has changed a lot. About three or two years ago, when it comes to electronic payment, some people may think that it is a tool used by young people. Paying in cash is more practical and safe. However, people's thoughts towards electronic payment have shifted dramatically during the epidemic.

There are two mostly important reasons behind it. The first is to prevent the spread of epidemic by avoiding contamination with banknotes and change of viruses and bacteria. The second reason is that consumer behavior has changed with e-commerce, delivery, and online ordering becoming more popular. Consumers must be pay using digital cash like electronic payment or credit card to complete transactions.

According to the "2021 Mobile Payment Consumer Survey" released by the Market Intelligence & Consulting Institute (MIC), it can be found that Taiwanese people's preference for mobile payment has increased from 37% in 2020 to 50%. The proportion of people who prefer to use credit card transactions has dropped from 35% in 2020 to 26% in 2021. It can be said that mobile payment has changed from a technological trend to a daily necessary.

Convenience stores, online stores, mass retailers, supermarkets and chain restaurants are among the most popular places for Taiwanese people to use mobile payment. Among these location, the most popular location is convenience stores. If convenience stores combined electronic payment, it could quickly change consumer behavior and open up new business opportunities. Then, this year, FamilyMart release the electronic payment called PlusPay in Taiwan. FamilyMart is the first convenience store in Taiwan specializing in electronic payment and with background about retail,

financial banking, and online e-commerce industry.

Motivation

In an era of rapid technological development, the Taiwanese still have misconception about using electronic payment, such as risk of being hacked or having personal data stolen. Electronic payment is extremely popular and is the most commonly used form of payment. However, in Taiwan, some people accustomed to paying in cash and rarely use electronic payment as they believe it is dangerous and risky. Another reason impeding development of electronic payment in Taiwan is that there are some regulations are being restrict by government in order to protect consumers. Is it good for domestic economy or people to develop electronic payment? And what are the factors that influence Taiwanese to use electronic payment? Is them still have a stigma or concern about using electronic payment in Taiwan?

Purpose

The purpose of this research is to identify the factors affect the use of electronic payment on FamilyMart's PlusPay. What are people's thought on using this electronic payment system. Then based on the Technology Acceptance Model, to find out the relation between five factors such as perceived usefulness, perceived ease of use, attitude toward use, behavior intention to use and actual system use with new factors like safety, risk and corporate image.

Research question

1. What are the situation of people use electronic payment called PlusPay?
2. What social economics' factors affect people to use electronic payment called PlusPay?
3. What are the additional factors influence people to use in addition to Technology Acceptance Model?

Limit

On the market, there are many various electronic payment brands. Every different electronic payment has many different function and way to use. Based on the author's time, energy and money, the author cannot discuss in depth in every electronic payment. It is hard for the author to explore every electronic payment.

Delimits

To deal with the problem of this paper and based on the author's time, energy and money. The author chooses the FamilyMart's PlusPay which is latest electronic payment released in Taiwan.

Literature Review

TAM and its factors

Technology Acceptance Model (TAM) was designed by Fred Davis in 1989. It was developed based on the Theory of Reasoned Action (TRA) and the Cost-Benefit Theory.[1] In 1989, in order to explain how people's intention to accept the computer system influenced by the perceived usefulness and perceived ease of use, Davis proposed the Technology Acceptance Model (TAM). TAM is a tool for predicting and assessing users' perceptions of using new technology system.[2]

There are six factors in the TAM, including Perceived Usefulness (PU), Perceived Ease of Use (PEU), Attitude toward Use (A), Behavior intention to use(BI), Actual System Use (U) and External Variables.[3]

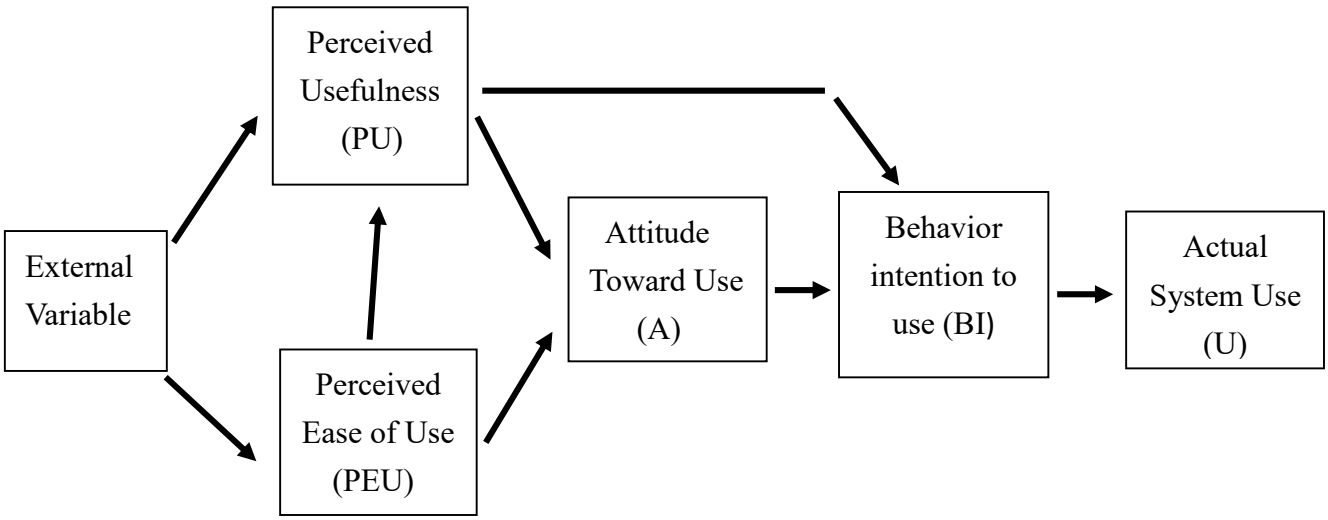

Figure 1: Technology Acceptance Model (TAM) Davis

Source: Fred D Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology," *MIS quarterly* (1989).

---

[1] Jui-Hsiu Chang :Jui-Ying Chiang, "Investigating Consumers Acceptance Behavior on Mobile Payment by TAM Model," 15, no. 2 (2017).

[2] Fred D Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology," *MIS quarterly* (1989).

[3] Priyanka Surendran, "Technology acceptance model: A survey of literature," *International journal of business and social research* 2, no. 4 (2012).

Perceived Usefulness (PU) refers to whether the user can understand the specific application system and generate perceptions that make it more efficient to work.[4] The higher the degree of cognitive usefulness, the more willingness to use the system. However, Perceived Usefulness indirectly or directly affects users' acceptance of information systems through attitudes.[5]

Perceived Ease of Use (PEU) refers to the user's awareness of whether a specific application system is easy to use or not. [6]The higher the awareness of ease of use, the more willingness to use the system. That is to say, when the user's perception of the ease of use of the system is higher, it means that when using the system, it can make users learn without much effort to learn a new system.[7]

Attitude toward Use (A) refers to an individual's positive or negative evaluation of the performance of a particular behavior.[8] It also means the users' attitude on using technology. Simultaneously, the attitude is influenced by perceived usefulness (PU) and perceived ease of use (PEU), when the user realized the higher perception of usefulness and ease of use of the technology system, the more positive the attitude towards the system.[9]

---

[4] Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology."
[5] Yu-Chieh Tsai, "The Study of Behavior Intention to Accept the DVD Rental Machine in Technology Acceptance Model " (2007).
[6] Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology."
[7] Chiang, "Investigating Consumers Acceptance Behavior on Mobile Payment by TAM Model."
[8] Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology."
[9] Tsai, "The Study of Behavior Intention to Accept the DVD Rental Machine in Technology Acceptance Model ".

Behavior intention to use(BI) means that the intention is to determine the user's usage of the technology system. Among them, Davis proposed that perceived usefulness and attitude play a pivotal role in behavior intention to use.[10] Based on the TAM, the behavior intention to use is influenced by attitude and perceived usefulness.

Actual System Use (U) means the people actually uses the new technology. The stronger the intention, the greater the behavioral intensity of the actual system's use.[11]

External variables are factors that affect users' perceived usefulness and perceived ease of use, mainly including differences of users, system characteristics, environmental variables and other variables. Depending on the researcher's study, external variables will also have different choices.[12]

Davis pointed out in his theory that among the variables that affect the use of the system, the two most important determinants are perceived usefulness (PU) and perceived ease of use (PEU).[13] Therefore, this model is mainly based on the user's perceived usefulness and perceived ease of use to analyze users' willingness to use new technology system. Then its theory also pointed out that perceived ease of use will affect users' perceived usefulness of new technology, and the two factors are positively rationed. That is to say, when a user thinks a new technology is easy to use, it will also increase the user's perception of the usefulness of the new technology.

---

[10] Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology."
[11] Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology."
[12] Tseng, Wei-Chih. "A Meta-Analysis of TAM." *International Conference on Information Management*, 2014. https://nccur.lib.nccu.edu.tw/bitstream/140.119/74349/1/404442.pdf.
[13] Davis, "Perceived usefulness, perceived ease of use, and user acceptance of information technology."

The application of TAM

Recently, the Technology Acceptance Model (TAM) has been widely used by many researchers and practitioners. The following articles are all related to the technology acceptance model. The research done by Liu using TAM to explore employee acceptance of new technology and reasons that affect the effectiveness of online execution in this increasing development of network technology and the popularization of technology applications[14]. Online learning has been widely used in many corporate education and training courses in the company. The researcher Liu used questionnaire survey to do the research. The questionnaire survey is containing 25 questions divided into 6 sections and use a five-point Likert Scale to allow respondents to response. The results are analyzed using statistical software SPSS. There are three results in this finding. The first result shows that behavior intention to use are significantly positively related to perceived usefulness, perceived ease of use, and actual system use. The second is employees' feelings about online teaching are affected by factors such as age, job type, job title, learning effectiveness and effective learning time. The last result is employee's behavioral behavior intention to use help improve online-learning system effectiveness.

The research done by Wu intends to explore what factors affect the willingness to use smart mobile devices.[15] If the researcher can know the factors that influence consumers' use of smart wearable devices, it will be helpful to understand their intention behavior of using smart wearable devices. The study used questionnaire survey and five-point Likert Scale to collect 600 questionnaires. The result of the findings are as

[14] Chen, Liu Su. "Technology Acceptance Model to Explore the Learning Effectiveness of Using Online Course of Insurance Business Marketing." 2022.
[15] Meng-Yen Wu, "Using TAM Model to Analyze the Purchase Intention on Smart Wearable Device – An example of Jarvish" (master Chung Yuan, 2021).

follows. The first is perceived usefulness and perceived ease of use have a significant positive relationship with behavioral behavior intention to use and attitude toward use. The second is that convenience has a significant positive relationship with usage behavior and attitude. The last result is that attitude toward use has a significant positive relationship with behavior intention to use.

The research done by Tang intends to discuss the actual situation of aborigine adults who use digital learning and their acceptance of using new technology.[16] To understand aboriginal adults real use in digital learning, the study use questionnaire survey and five-point Likert Scale to collect 282 questionnaires and through the SPSS12.0 software to find out the results. The key finding is aboriginal adults' technology acceptance variables are different by age, education, job, years of using Internet, average weekly time of computer use, and e-Learning courses taken.

The research done by Fang intends to use TAM to find out what the workers' using electronic official document system.[17] A total of 180 questionnaires were distributed, and 175 valid questionnaires were recovered. Following SPSS statistical, the key findings are the that user's acceptance of the electronic document system is based on personal perception, as measured by perceived usefulness and perceived ease of use, and then affects the behavior, including behavior intention to use and actual system use.

The research done by Shen used TAM to know what factors that affect consumers in using Pi Wallet Payment in Taiwan.[18] Pi Wallet Payment is Taiwan's sizable

---

[16] Tang. "The Study of Probing into Aborigine Adult E-Learning with Technology Acceptance Model-Take "Aborigine Cyber Institute" for Instance." Chi nan university, 2008.

[17] Huang-Chun Fang, "The Study of Electronics Official Document System User's Accept Degree of Government Agencies with Technology Acceptance Model" (Chung Yuan Christian university, 2010).

[18] Qian-Yang Shen, "Apply Technology Acceptance Model to Explore the Impact of Consumers' Intentions of Pi Payment" (master Tamkang University, 2021)

e-commerce group, released by "PChome". The researcher Shen also wanted to understand consumers' willingness to use Pi Wallet Payment. Shen collected 375 valid questionnaires to analyze. The study findings are as follows. The first is that Pi Wallet's corporate image has a significant positive effect on perceived usefulness and perceived ease of use. The second finding is that Pi Wallet Payment 's perceived ease of use has a positive important influence on perceived usefulness. The third finding that is Pi Wallet Payment 's perceived usefulness has a significant positive effect on attitude toward use. The fourth finding is that the perceived ease of use of the Pi Wallet Payment has an important positive effect on attitude toward use.

The research done by Chen used TAM to explore three possible factors that would affect consumers' consumption intentions, namely "efficiency risk ", "privacy risk", and "security". [19] The research method used questionnaire surveys to collect data and also used SPSS and AMOS statistical software to analyze. The key finding is that if electronic payment is easy to use, it will reduce the system risk caused by operator error.

In general, in the table1, we can see that the researches done by Liu, Tang, Fang and Chen all used statistical software called SPSS to analyze data. Then all the researches which I wrote above used questionnaire survey to collect data and information. In first essay done by Liu, the second research performed by Wu, the third research done by Tang proposed they all used five-point Likert Scale. In the result of finding, the research done by Liu, Wu and Fang all mentioned behavior intention to use is positive significantly related to perceived usefulness, perceived ease of use. The research done by Liu and Tang mentioned in their research findings. People who use new technology, are affected by factors such as age, time and different job.

[19] CHIEN-MING CHEN, "Exploring the Impact of customer about pay online security:using Technology Acceptance Model." (Soochow University, 2021).

Table 1: same factors form

Same\ Researcher	Tang	Fang	Shen	Chen	Wu	Liu
SPSS	✔	✔		✔		✔
questionnaire	✔	✔	✔	✔	✔	✔
behavior intention to use is positive significantly related to perceived usefulness, perceived ease of use		✔			✔	✔
when people use new technology, they are affected by factors such as age, time and different job	✔					✔

Source: sorted by author

We can learn the technology acceptance model (TAM) which widely used in many fields are related to the new technology system, through these example. Many researchers and scholars have used TAM to find out people's perception of using new technology system in past years. TAM is a model for developing a simple, effective and suitable tools for assessing and predicting users' acceptance of new technology systems. However, my topic is related to electronic payment which released by convenient store called FamilyMart in Taiwan, the newly released namely PlusPay[20]. I want to explore the relation between these six factors which are perceived usefulness, perceived ease of use, attitude toward use, behavior intention to use, actual system use and external variables with PlusPay. This is why I want to incorporate the technology acceptance model in my topic

[20] Lin. "'PlusPay Payment' of the Family Mart Officially Opened, the Only Combination of Physical Retail, Banking and e-Commerce." ettoday news, April 25, 2022. https://finance.ettoday.net/news/2237366.

PlusPay

PlusPay is an electronic payment system which was co-created by Family Mart, E.SUN COMMERCIAL BANK, LTD and PChome. It was officially put into use on April, 25 2022 and it's also the first electronic payment brand to use "Payment Inside".[21] FamilyMart is also the first convenience store in Taiwan specializing in electronic payment and with background about retail, financial banking, and online e-commerce industry. The chairman of PlusPay said: "Driven by the epidemic and new regulations called the Act Governing Electronic Payment Institutions is announced, he quite optimistic about the development of the electronic payment's market in Taiwan".[22]

Consumers registered to use "PlusPay" through the Family Mart App. Consumers can also use the four exclusive value-added services launched by "PlusPay". However, the first exclusive value-added services are that Family Mart's points can be accumulated across different channels from corporates shop. The second is that E.SUN Bank released a new type of loan, which takes less time to take out an unsecured loan online by using personal name and company name. The third is that used PlusPay can apply for a E.SUN bank's digital account, digital deposit in foreign currency, opening of E.SUN bank's securities account, and apply for financial and credit cards. The last function is called buy now, pay later (BNPL)[23] which is an innovative consumption way.

---

[21] Wu. "There Is Already Have My FamiPay, Why Does Family Mart Launch 'PlusPay,'" May 11, 2022. https://www.managertoday.com.tw/articles/view/65102

[22] Chen. "'PlusPay' Is Officially Launched! Not Only Scan the Code to Pay, Accumulate Points, but Also Connect More External Apps," April 25, 2022. https://technews.tw/2022/04/25/pluspay-officially-launched/.

[23] Lin. "Why BNPL Is Popular?," October 13, 2021. https://www.bnext.com.tw/article/65540/why-bnpl-is-popular-now.

It is also having another payment function such as cross-channel payment, transfer, payment flow horizontal integration, payment of water bill and etc.[24] There are two advantages in PlusPay. The first advantage is no exclusive app for consumer to use PlusPay, through horizontal integration, users can use the PlusPay to payment in corporate shop's app which they are accustomed. The second advantage is it can through horizontal integration share members' information such as consuming behavior, consumer trends and consumer preferences etc.

Until the end of last year, in the electronic payment's market, the number of JKOPAY 's member reaches over five million in Taiwan. The number of using electronic payment almost over fifteen million. Then the Family Mart's members are reaches almost fifteen million which almost more than half of Taiwan's population until the end of last year. If the FamilyMart can use their member's resource to attract more people to use PlusPay, it would be the largest electronic payment market in Taiwan.[25] With this advantage of member's resources, FamilyMart released the PlusPay to enter the electronic payment market in Taiwan.

FamilyMart quiet looked forward to building an ecosphere which connects life with consumer behavior and financial services through PlusPay in this electronic payment's market.[26]

---

[24] Ling. "What Channels Are Available for PlusPay? What Are the Discounts for New Member of PlusPay?," May 26, 2022. https://www.money101.com.tw/blog/%E5%85%A8%E7%9B%88pay.

[25] Liao. "The Number of Electronic Payment Users in Taiwan Exceeded Fifteen Million," December 9, 2021. https://udn.com/news/story/7239/5950078.

[26] Chen, Gao. "See How the Family Mart and PX Mart Transform Their Stores into 'Micro-Banks,'" Summer 1, 2022. https://www.bnext.com.tw/article/63561/digital-payment-new-era.

The modification of TAM

In recent years, Technology Acceptance Model combines other theories, applies different methods and explores different issues in different essays. This TAM causes the divergence of research conclusions. Recently, some experts have suggestion about the theory.

Legris et al aggregated relevant research and found that Technology Acceptance Model theory can only explain about 40% information systems.[27] Thus when applying, it must incorporate important variables and arguments such as the process of human and social change, and innovative dishes. In the essay, they discovered that adding some factors would increase the explanation of behavior intention to use. But the finding also mentioned that when researchers applied Technology Acceptance Model, they carefully examined the relation between six factors and new factors. Then the essays which I mentioned above also added new factors to the technology acceptance model to investigate with their topics.[28] The form is as follows.

Table 2 : different factors form

researcher	New factors
Liu	online teaching system, gender, age, education level, income, tools for using communication technology
Tang	system degeneration, hardware, gender, age, education level, income, average time of using computer

[27] Paul Legris, John Ingham, and Pierre Collerette, "Why do people use information technology? A critical review of the technology acceptance model," *Information & management* 40, no. 3 (2003).
[28] SY Hung, TP Liang, and CM Chang, "A meta-analysis of empirical research using TAM," *Journal of Information Management* 12, no. 4 (2005).

Fang	electronics official document system
Shen	Corporate image, perception of risk, perception of credence
Chen	risk, privacy risk, security
Wu	information and entertainment, sports and fitness, medical and nursing, safety and security, professional and special

Source: the author sorted

Summary

This study uses the Technology Acceptance Model theory to explore the behavior intention to use those who are using PlusPay on a FamilyMart's electronic payment system. Then I would add the new factor to be external factors such as risk, corporate image and the personal background.

The meaning of the risk in this study is that when consumers make a purchase, they would think uncertainty, unsafe and have various risk factors in the process of conducting transaction using electronic payment services. In this study, I will explore the relation between risk and behavior intention in order to know whether they have significant difference or not.

The meaning of corporate image in this study is t the impression of the policies, personnel, and operations of a corporation that is imparted to its employees and the public. The author would explore the relation between corporate image and behavior intention in order to know whether the corporate image will influence the public to use their electronic payment or products.

Below is my new research structure based on Technology Acceptance Model. The difference between Technology Acceptance Model is that I add the new factors such as risk, corporate image and the personal background.

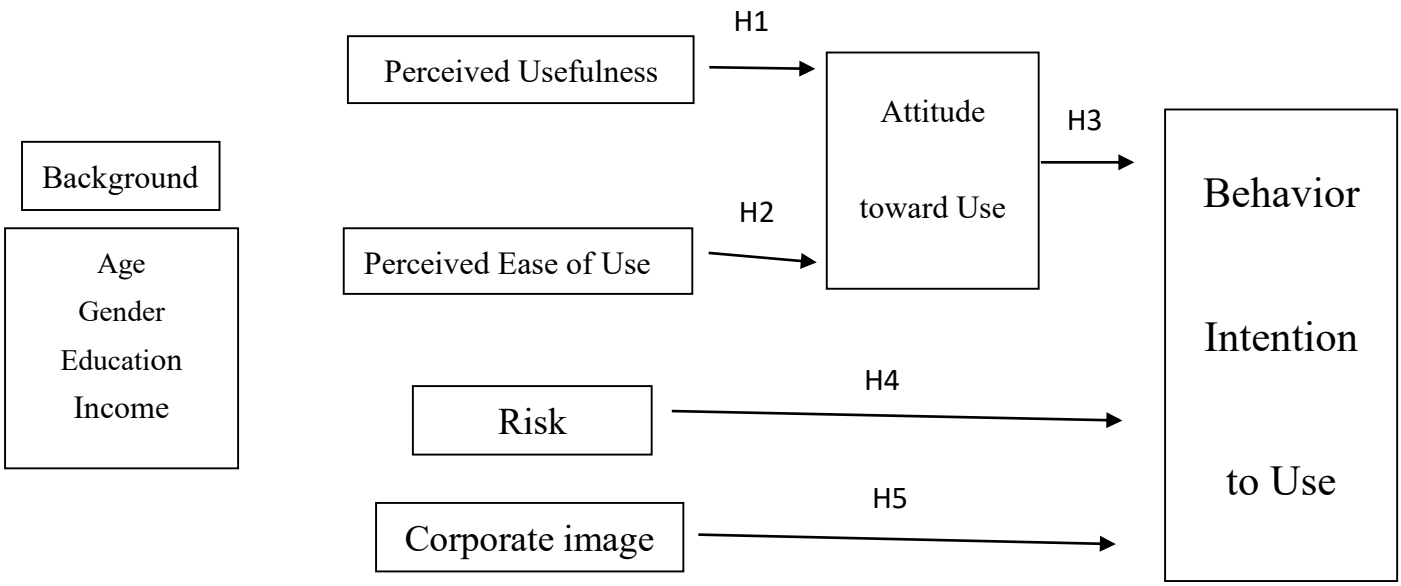

Figure 2: new research structure based on Technology Acceptance Model

Source: the author sorted

H1: Perceived usefulness has a significant positive effect on attitude toward use.

H2: Perceived ease of use has a significant positive effect on attitude toward use.

H3: Attitude toward use has a significant positive effect on behavior intention to use.

H4: Risk has a significant negative effect on behavior intention to use.

H5: Corporate image has a significant positive effect on behavior intention to use

Methodology

Definition of survey research

A survey is a research method used for collecting data from a predefined group of respondents to gain information and insights into different topics of interest. They can have multiple purposes, and researchers can conduct it in many ways depending on the methodology chosen and the study's goal.

Research Design

The researcher designed and developed the questions based on the technology acceptance model and the information of PlusPay.

Using the quantitative research is the way to find out what people thought on using PlusPay in Taiwan. I used the online tool called Google form to collect data. However, I also changed the Google form's link became a QR code to ask people whether they used PlusPay at the convenience store entrance. If they have used, I would ask them help me to fill in the form. The motivation to use this tool is that it is more comfortable to click, and it is familiar with people to fill in the questionnaire. Most of the questions were using "Five-point Likert Scale" ranging from strongly agree, agree, neutral, disagree and strongly disagree. Using an online questionnaire can convenient access the potential respondents quickly, and without the time and locations limit, it is also easy for me to collect and analyze.

The definition of factor

In this section, in the table 3, what is meaning of the definition factor? In this table, we can see in the first column talked about the factor based on Technology Acceptance Model and the additional factors such as risk and corporate image. Then in the second column explained the operational definition of each factors. The last column explained the more detail explanation and key point's key point's words of each factors.

Table 3: The definition of factor

Factor	Operational Definition	Indicators
Perceived usefulness	Assessing users' belief that using PlusPay will effectively enhance the sense of technology use.	improve efficiency, Improve the sense of technology operation, beneficial, increase influence, integration
Perceived ease of use	Assess the degree which users' perceive of PlusPay to be easy to operate.	simplicity, convenience, learnability, ease
Attitude toward use	Evaluate user attitudes towards technology after using PlusPay.	like, pleasant, think highly of technology
Behavior intention to use	Assessing users' intentions towards technology after using PlusPay.	willing to use, continuous use, affirmative, recommend
Risk	Assess the degree which users' perceive of PlusPay to be risk to operate.	risk, theft the data, steal the data, hacked, repeat debit
Corporate image	Assess the users' thought of using PlusPay's corporate image to operate.	company image, enterprise spirit, company culture

Source: the author sorted

Data Collection

The quantitative research takes one month for data collection. After one month, the survey has received 214 responses. After check and examine the data, all of them are valid. Almost seventy percent of the total responses is collect from the online and the almost thirty percent of the total responses is collect from the author ask people who use PlusPay to fill in the form at the FamilyMart door. Moreover, the author put the google form on Facebook group called electronic payment or PlusPay, the reason that I chose to use Facebook is because it is the tool which has more different ages of people using and it would have specific groups. I also shared the link to Line and Instagram. and the reason that I chose to use Instagram is because most of my friends used Instagram, and they can share the link to others who also used PlusPay; the reason that I chose to use Line is because some of my friends seldom used Facebook and Instagram, and Line is more convenient instrument that we can contact with, so it is why I chose to use it. I posted the link every day on Facebook, Instagram and Line in order to get more responses.

The study population in this paper is that who used PlusPay's electronic payment system in Taiwan. In order to make the study population's location evenly distributed in Taiwan, I tried to use google form on inline to collect the data of people live in the west, east or north of the Taiwan. After collect the data, I will use the SPSS statistical software to analyze the data.

Data Analysis

There are four sections in this chapter. The author would divide into four part to analyze, answer the three questions and provide summary and discussion. The first section used descriptive statistics to understand the first question about the situation of people using PlusPay. The second section would use One Way ANOVA to know the situation about the social economics' factors affect people who using PlusPay. The third section would use liner regression to find out the additional factors influence people to use in addition to Technology Acceptance Model. In the last section, the author would discuss about what are the common result between literal review's thesis and my finding.

The situation of people used PlusPay

Reliability Analysis

Before doing data analysis, the author checks whether the data is reliable. According to the scholar DeVellis, the acceptable number of reliabilities should obtain 0.7 or above, and this research achieves the standard. In this thesis, the Cronbach' Alpha is 0.815 is higher than the 0.7.

In this section, the author collects the 214 respondents. To understand the respondents' background is an important part to analyze the following question. The reason is that respondents' background can make us know different people would have different thought on using PlusPay. First the author needs to know the situation

of Taiwanese uses PlusPay in order to carefully find out and realize the second question what are the social economics' factor affect people to use it. In this section, I would discuss the people's background such as age, location, income, education level, the frequency and the amount of consumption when people going FamilyMart. Through the data, we can know the habit or behavior of people using PlusPay.

In the table 4, we can know there are 82 males (38.3%). There are 132 females (61.7%). Most of respondents are from the female.

Table 4: The amount of Gender from the questionnaire

Gender	Amount
Male	82 (38.3%)
Female	132 (61.7%)

Source: the author sorted

About the age, in the table 5, most of respondents are from 21-29 years old. There are 21 people (9.8%) who are 20 years old and below. There are 132 people (61.7%) who are 21-29 years old. There are 29 people (13.6%) who are 30-39 years old. There are 24 people (11.2%) who are 40-49 years old. There are 8 people (3.7%) who are over 50 years old. Through the data, we can know there are more young people use PlusPay. Over 50 years old people seldom use PlusPay. In order to appeal over 50 years old people interesting, the FamilyMart should publicize the more information or advantage on using PlusPay.

Table 5: The age distribution from the questionnaire

Age	Amount
20 years old and below	21(9.8%)

21-29 years old	132(61.7%)
30-39 years old	29(13.6%)
40-49 years old	24(11.2%)
over 50 years old	8(3.7%)

Source: the author sorted

About the location background, in the table 6, the most of respondents are southerner. There are 79 people (36.9%) who lived in northern of Taiwan. There are 41 people (19.2%) who lived in the middle of Taiwan. There are 85 people (39.7%) who lived in the south of Taiwan. There are 4 people (1.9 %) who lived in the east of Taiwan. There are 5 people (2.3 %) who lived in the offshore islands.

Table 6: The location distribution from the questionnaire

Location	**Amount**
northern of Taiwan	79(36.9%)
middle of Taiwan	41(19.2%)
south of Taiwan	85(39.7%)
east of Taiwan	4(1.9%)
offshore islands	5(2.3%)

Source: the author sorted

About the education background, in the table 7, most of the respondents are have bachelor's degree. There are 1 people (0.5%) with primary school. There are 7 people (3.3%) with junior high school. There are 13 people (6.1%) with senior high school/vocational high school. There are 159 people (74.3%) with bachelor's degree. There are 34 people (74.3%) with over master degrees. Refer to the data, we can learn

many people with over bachelor's degree use PlusPay.

Table 7: The education distribution from the questionnaire

Education	Amount
primary school	1 (0.5%)
junior high school	7 (3.3%)
senior high school/vocational high school	13 (6.1%)
bachelor's degree	159 (74.3%)
over master degrees	34 (74.3%)

Source: the author sorted

About the job, in the table 8, most of the respondents are student. There are 5 people (2.3%) who are police or soldier. There are 7 people (3.3%) who are government employee. There are 18 people (8.4%) who are merchant. There are 14 people (6.5%) who are worker. There are 1 people (0.5%) who are farmer. There are 30 people (14%) who are in service industry. There are 135 people (63.1%) who are student. There are 3 people (1.4%) who are retirement. There are 1 people (0.5%) who are no job.

Table 8: The job distribution from the questionnaire

Job	Amount
police or soldier	5 (2.3%)
government employee	7 (3.3%)
merchant	18 (8.4%)
worker	14 (6.5%)

farmer	1 (0.5%)
service industry	30 (14%)
student	135 (63.1%)
retirement	3 (1.4%)
no job	1 (0.5%)

Source: the author sorted

About the income, in the table 9, most of the income are below 10,000 NT dollars per month; there are 79 people (36.9%). There are 34 people (15.9%) earning 10,000-15,000 NT dollars of income per month. There are 14 people (6.5%) earning 15,001-20,000 NT dollars of income per month. There are 10 people (4.7%) earning 20,001-25,000NT dollars of income per month. There are 5 people (2.3%) earning 25,250 NT dollars of income per month. There are 21 people (9.8%) earning 25,251-30,000 NT dollars of income per month. There are 17 people (7.9%) earning 30,001-35,000 NT dollars of income per month. There are 6 people (2.8%) earning 35,001-40,000 NT dollars of income per month. There are 8 people (3.7%) earning 40,001-45,000 NT dollars of income per month. There are 18 people (8.4%) earning over 45,001 NT dollars of income per month. There are 2 people (0.9%) no income per month.

Table 9: The income distribution from the questionnaire

Income	**Amount**
below 10,000 NT dollars	**79 (36.9%)**
10,000-15,000 NT dollars	34 (15.9%)
15,001-20,000 NT dollars	14 (6.5%)
20,001-25,000NT dollars	10 (4.7%)

25,250 NT dollars	5 (2.3%)
25,251-30,000 NT dollars	21 (9.8%)
30,001-35,000 NT dollars	17 (7.9%)
35,001-40,000 NT dollars	6 (2.8%)
40,001-45,000 NT dollars	8 (3.7%)
over 45,001 NT dollars	18 (8.4%)
no income	2 (0.9%)

Source: the author sorted

About the frequency of going FamilyMart's convenience store, in the table 10, the most of people are going FamilyMart once or twice a week; there are 100 people (46. 7%).There are 25 people (11.7%) going FamilyMart every day. There are 28 people (13.1%) going FamilyMart Three to four times a week. There are 25 people (11.7%) going FamilyMart less than five times a month. There are 36 people (16.8%) going FamilyMart less than once a month.

Table 10: The frequency of going FamilyMart distribution from the questionnaire

Frequency	**Amount**
every day	25 (11.7%)
once or twice a week	100 (46.7%)
three to four times a week	28 (13.1%)
less than five times a month	25 (11.7%)
less than once a month	36 (16.8%)

Source: the author sorted

About the amount of per consumption, in the table 11, most of the people spend less than 100 NT dollars per consumption; there are 95 people (44.4%). There are 93 people (43.5%) spend 101-200 NT dollars per consumption. There are 21 people (9.8%) spend 201-300 NT dollars per consumption. There are 5 people (9.8%) spend over 301 NT dollars per consumption. Refer to the data, we can know when people going FamilyMart shopping, they usually spent less than 100 NT dollars.

Table 11: The amount of per consumption distribution from the questionnaire

amount of per consumption	**Amount**
less than 100 NT dollars	95 (44.4%)
101-200 NT dollars	93 (43.5%)
201-300 NT dollars	21 (9.8%)
over 301 NT dollars	5 (9.8%)

Source: the author sorted

The data analysis of questionnaire questions

In this study, the author wants to realize the current situation of the FamilyMart's consumers using PlusPay in terms of perceived usefulness, perceived ease to use, attitude toward use, behavior intention to use, risk, corporate image. Then describe the mean and standard deviation of each dimension

Perceived usefulness

The average and standard deviations of survey questions on perceived usefulness of PlusPay are shown in Table 12. The overall average of " perceived usefulness" is

4.07(M=4.07). Among all questions, the questions “the use of PlusPay makes consumer payments more convenient” has the highest degree of recognition(M=4.13).

Table12: the situation of perceived usefulness

Question	M	SD	M*	SD**
1. The use of PlusPay makes consumer payments more convenient.	4.13	.908	4.07	.886
2. The use of PlusPay can improve the quality of payment.	3.97	.869		
3. Using PlusPay is more efficient than other payment methods.	4.03	.916		
4. When I use PlusPay for consumer payment, I can complete payments faster than when I use cash.	4.12	.869		
5. Using PlusPay service is helpful for me.	4.10	.879		

*: average of five questions **: average of the standard deviations of the five questions

Source: the author sorted

Perceived ease of use

The current distribution on technology acceptance mode of perceived ease to use is shown in Table 13. The overall average of " perceived ease of use " is 3.80(M=3.80). Among of the question, which question is that overall, PlusPay is easy to use with the highest degree of recognition (M=3.93).

Table13: the situation of perceived ease of use

Question	M	SD	M*	SD**
1. The page design of PlusPay is simple and straightforward.	3.64	.967		
2. The use of PlusPay is easy for me.	3.87	.987		

3. The usage and functions of PlusPay are clear.	3.79	.922	3.80	.958
4. Overall, PlusPay is easy to use.	3.93	.959		

*: average of four questions **: average of the standard deviations of the four questions

Source: the author sorted

Attitude toward use

The current distribution on technology acceptance mode of attitude toward use is shown in Table 14. The overall average of " attitude toward use " is 3.89(M=3.89). Among of the question, which question is that overall, the use of PlusPay is a positive attitude with the highest degree of recognition (M=4.00).

Table14: the situation of attitude toward use

Question	M	SD	M*	SD**
1. Using PlusPay service is attractive.	3.86	.870	3.89	.841
2. Feel good when using PlusPay services to make purchases.	3.87	.846		
3. It very interesting to use PlusPay for consumption.	3.85	.867		
4. Overall, the use of PlusPay is a positive attitude.	4.00	.784		

*: average of four questions **: average of the standard deviations of the four questions

Source: the author sorted

Behavior intention to use

The current distribution on technology acceptance mode of behavior intention to use is shown in Table 15. The overall average of " behavior intention to use" is

3.80(M=3.80). Among of the question, which question is that when spending, I think it's worth using PlusPay service with the highest degree of recognition (M=3.93).

Table15: the situation of behavior intention to use

Question	M	SD	M*	SD**
1. When spending, I think it's worth using PlusPay service.	3.93	.816	3.80	0.920
2. When making purchases, I will actively use PlusPay service to pay.	3.87	.960		
3. When consumption, I will choose this PlusPay compared to other brands of electronic payment.	3.55	1.000		
4. Overall, my willingness to use PlusPay services for consumption is quite high.	3.85	.904		

*: average of four questions **: average of the standard deviations of the four questions

Source: the author sorted

Risk

The current distribution on technology acceptance mode of risk is shown in Table 16. The overall average of " risk" is 2.84(M=2.84). Among of the question, which question is that I believe that using PlusPay for transactions, mobile phone's data may be leaked or stolen with the higher degree of recognition (M=2.66).

Table16: the situation of risk

Question	M	SD	M*	SD**
1. I think there is no legal protection for using PlusPay.	2.66	.988		
2. I think PlusPay's transaction may result in outflow of bank or credit card information.	2.90	1.055		

3. I think using PlusPay for transaction, may be repeated debited.	2.84	1.054	2.84	1.050
4. I believe that using PlusPay for transactions, mobile phone's data may be leaked or stolen:	2.96	1.096		

*: average of four questions **: average of the standard deviations of the four questions

Source: the author sorted

Corporate image

The current distribution on technology acceptance mode of corporate image is shown in Table 17. The overall average of " corporate image " is 3.85(M=3.85). Among of the question, which question is that I think the FamilyMart has a good corporate image with the highest degree of recognition (M=3.85).

Table17: the situation of corporate image

Question	M	SD	M*	SD**
1. I think the FamilyMart has a good corporate image.	3.85	.784	3.85	0.844
2. When consumption, a good corporate image would make me to use electronic payments:	3.83	.890		
3. When consumption, a good corporate image is an important factor for me to use electronic payment	3.80	.980		

*: average of three questions **: average of the standard deviations of the three questions

Source: the author sorted

The social economics' factors affect people to use PlusPay

After realize the situation and the background of the people using PlusPay, we can do more detail know what are some social economics' factors in each factor based on the Technology Acceptance Model affect people.

There are a lot of situation would influence people to use electronic payment. Were people from different age in Taiwan may affect people in using PlusPay? In the table18, a one-way ANOVA was performed to compare the effect of age on perceived usefulness and perceived ease of use and risk. The finding is shown on table19. It revealed that there was a statistically significant difference in mean perceived usefulness score between at least one subgroups (F (4,210) = 3.398, p = .010). It revealed that there was a statistically significant difference in mean perceived ease of use score between at least one subgroups (F (10,204) = 4.893, p = .0.01). It revealed that there was a statistically significant difference in mean risk score between at least two subgroups (F (4,210) = 8.786, p = .0.00).

Table18: A one-way ANOVA compared the effect of age on perceived usefulness, perceived ease of use and risk

		df	**Mean square**	**F**	**P**
perceived usefulness	between group	4	1.943	3.398	0.01
	within group	210	0.572		
perceived ease of use	between group	10	3.827	4.893	0.01
	within group	204	0.672		
risk	between group	4	6.477	8.786	0.00
	within group	210	0.737		

Source: the author sorted

In the table 18, we can know use the A one-way ANOVA compared the age on perceived usefulness, perceived ease of use and risk are both significant. Then the author wants to depth understanding what group would have significant in each person with different background.

In the table 19, Tukey's HSD Test for multiple comparisons found that the mean perceived usefulness score for respondents from 21-29 years old (4.18) is significantly higher than that of respondents from 30-39 years old (3.64), p = .000, 95% C.I. = [.10, .96].

In the table 19, Tukey's HSD Test for multiple comparisons found that the mean perceived ease of use score for respondents from 21-29 years old (3.96) is significantly higher than that of respondents from 30-39 years old (3.29), p = .000, 95%C.I. = [.21, 1.13].

In the table 19, Tukey's HSD Test for multiple comparisons found that the mean risk score for respondents from 20 years old and below (3.31) is significantly higher than that of respondents from 30-39 years old (2.13), p = .000, 95%C.I. = [.31, 1.67]. From 21-29 years old (3.03) is significantly higher than that of respondents from 30-39 years old (2.13), p = .000, 95%C.I. = [.40, 1.37]. From 21-29 years old (3.03) is significantly higher than that of respondents from over 50 years old (2.15), p = .000, 95%C.I. = [.01, 1.73].

Table 19: Post Hoc of different factors on years

	Year 1=20 years old and below 2= 21-29 years old 3=30-39 years old, 4= over 50 years old.
perceived usefulness	2 > 3

perceived ease of use	2 > 3
risk	1 > 3
risk	2 > 3
	2 > 4

Source: the author sorted

Were people from different income in Taiwan may affect people in using PlusPay? A one-way ANOVA was performed to compare the effect of income on perceived usefulness and perceived ease of use and risk. The finding is shown on table20. It revealed that there was a statistically significant difference in mean perceived usefulness score between at least one subgroups (F (10.204) = 1.949, p = .041). It revealed that there was a statistically significant difference in mean perceived ease of use score between at least one subgroups (F (10.204) = 2.239, p = .0.01). It revealed that there was a statistically significant difference in mean perceived risk score between at least two subgroups (F (10.204) =4.524, p = .0.00).

Table 20: A one-way ANOVA compared the effect of income on perceived usefulness and perceived ease of use and risk.

		df	**Mean square**	**F**	**P**
perceived usefulness	between group	10	1.115	1.949	0.04
	within group	204	0.572		
perceived ease of use	between group	10	1.525	2.239	0.01
	within group	204	0.681		
risk	between group	10	3.280	4.524	0.00
	within group	204	0.725		

Source: the author sorted

In the table 21, Tukey's HSD Test for multiple comparisons found that the mean perceived usefulness score for respondents from below 10,000 NT dollars (3.80) is significantly lower than that of respondents from 10,000-15,000 NT dollars (4.13), p = .000, 95%C.I. = [-0.51, 0.15].

In the table 21, Tukey's HSD Test for multiple comparisons found that the mean risk score for respondents from below 10,000 NT dollars (3.80) is significantly higher than that of respondents from 25,251-30,000 NT dollars (2.34), p = .000, 95%C.I. = [-.08, 0.2]. From below 10,000 NT dollars (3.80) is significantly higher than that of respondents from 30,001-35,000 NT dollars (2.14), p = .000, 95%C.I. = [-1.0, 0.2].

Table21: Post Hoc of different factors on income

	Income 1= below 10,000 NT dollars 2= 10,000-15,000 NT dollars 3= 25,251-30,000 NT dollars
perceived usefulness	1 > 2
perceived ease of use	1 > 3

Source: the author sorted

The additional factors influence people to use PlusPay

The author in order to find out the relationship with five factors based on Technology Acceptance Model and the additional factors. Beside the relationship, the author also in order to learn whether the additional factors affect people to use PlusPay. The author would use the simple linear regression and multiple linear regression to analyze the data.

Simple linear regression

This part is going to elaborate the hypothesis testing, from H1 to H5, by simple linear regression. First the author would like to know the impact of perceived usefulness on attitude toward use. Simple linear regression was used to test if perceived usefulness significantly predicted attitude toward use. The fitted regression model was: attitude toward use = 1.297 + .638* (perceived usefulness). The overall regression was statistically significant (R2= .476, F (1,214) = 192.270, p < .000). It was found that perceived usefulness significantly predicted attitude toward use (β= .638, p<.000). In the table 22, we can know the Standardized Coefficients (**β**) is 0.690, it shows that perceived usefulness positive affected on attitude toward use. From the above analysis results, the hypothesis 1 (H1: Perceived usefulness has a significant positive effect on attitude toward use.) of this study is supported.

Table 22: simple linear regression

Dependent variable	**Independent Variable**	**Unstandardized Coefficients(B)**	**Standardized Coefficients(β)**	**P**
attitude toward use	constant	1.297		.000
	perceived usefulness	0.638	0.690	.000
	R^2=0.476, Adjusted R Square=0.473, F= 192.270			

Source: the author sorted

In this section, the author would like to know the impact of perceived ease of use on attitude toward use. Simple linear regression was used to test if perceived ease of use significantly predicted attitude toward use. The fitted regression model was: attitude toward use = 1.889 + .526* (perceived ease to use).The overall regression

was statistically significant (R2= .390, F (1,214) = 135.538, p<.000). It was found that perceived ease of use significant predicted attitude toward use (β= .624, p<.000). In the table 23, we can know the Standardized Coefficients (**β**) is 0.624, it is show that perceived ease of use is positive effect on attitude toward use. From the above analysis results, the hypothesis 2 (H2: Perceived ease of use has a significant positive effect on attitude toward use.) of this study is supported.

Table 23: simple linear regression

Dependent variable	**Independent Variable**	**Unstandardized Coefficients(B)**	**Standardized Coefficients(β)**	**P**
attitude toward use	constant	1.889		.000
	perceived ease of use	0.526	0.624	.000
	R^2= 0.390, Adjusted R Square=0.387, F= 135.538			

Source: the author sorted

In this section, the author would like to know the result and impact of attitude toward use on behavior intention to use. Simple linear regression was used to test if attitude toward to use significantly predicted behavior intention to use. The fitted regression model was: behavior intention to use=.577 + .832* (attitude toward to use).The overall regression was statistically significant (R2= .597, F (1,214) = 313.705, p<.000). It was found that attitude toward use significant predicted behavior intention to use(β= .772, p<.000).

In the table 24, we can know the Standardized Coefficients (**β**) is 0.772, it is show that attitude toward use is positive effect on behavior intention to use. From the above analysis results, the hypothesis 3 (H3: Attitude toward use has a significant positive effect on behavior intention to use.) of this study is supported.

Table 24: simple linear regression

Dependent variable	Independent Variable	Unstandardized Coefficients(B)	Standardized Coefficients(β)	P
behavior intention to use	constant	0.557		.003
	attitude toward use	0.832	0.772	.000
	R^2=0.597, Adjusted R Square=0.595, F= 313.705			

Source: the author sorted

In this section, the author would like to know the result and impact of the risk on behavior intention to use. Simple linear regression was used to test if risk significantly predicted behavior intention to use. The fitted regression model was: behavior intention to use= 4.378 + -.204 * (risk). The overall regression was statistically significant (R2= .059, F (1,214) =13.359, p<.000). It was found that risk significant predicted behavior intention to use(β= -.243, p<.000). In the table25, we can know the Standardized Coefficients (**β**) is -0.243, it is show that risk is negative effect on behavior intention to use. From the above analysis results, the hypothesis 4 (H4: Risk has a significant negative effect on behavior intention to use.) of this study is supported.

Table 25: simple linear regression

Dependent variable	Independent Variable	Unstandardized Coefficients(B)	Standardized Coefficients(β)	P
behavior intention to use	constant	4.378		.000
	risk	-0.204	-0.243	.000
	R^2=0.059, Adjusted R Square=0.055, F= 13.359			

Source: the author sorted

In this section, the author would like to know the result and impact of corporate image on behavior intention to use. Simple linear regression was used to test if corporate image significantly predicted behavior intention to use. The fitted regression model was: behavior intention to use=1.771 + .527 * (corporate image).The overall regression was statistically significant (R2= 260, F (1,214) = 74.532, p<.000). It was found that corporate image significant predicted behavior intention to use(β= 510, p<.000). In the table26, we can know the Standardized Coefficients (**β**) is 0.51, it is show that corporate image is positive effect on behavior intention to use. From the above analysis results, the hypothesis 5 (H5: Corporate image has a significant positive effect on behavior intention to use.) of this study is supported.

Table 26: simple linear regression

Dependent variable	**Independent Variable**	**Unstandardized Coefficients(B)**	**Standardized Coefficients(β)**	**P**
behavior intention to use	constant	1.771		.000
	corporate image	0.527	0.510	.000
	R^2=0.260, Adjusted R Square=0.257, F= 74.532			

Source: the author sorted

Multiple linear regression

In this section, the author would like to know the result and impact of perceived usefulness and perceived ease of use whether have a significant positive effect on attitude toward use. Multiple linear regression was used to test if perceived usefulness and perceived ease of use significantly predicted attitude toward use.

The fitted regression model was: attitude toward use = 1.104 + .456* (perceived

usefulness) + .245* (perceived ease to use).

The overall regression was statistically significant (R2 = .522, F (1,214) = 114.993, p< .000). It was found that perceived usefulness significantly predicted attitude toward use (β = .493, p< .000). It was found that perceived ease of use significantly predicted attitude toward use (β = .291, p< .000).

In the table 27, if the respondents are influenced by perceived usefulness and perceived ease to use at the same time, we can know the Standardized Coefficients (**β**) is 0.493 and 0.291, it is show that perceived usefulness and perceived ease of use are positive effect on attitude toward use.

Table 27: multiple linear regression

Dependent variable	**Independent Variable**	**Unstandardized Coefficients(B)**	**Standardized Coefficients(β)**	**P**
attitude toward use	constant	1.104		.000
	perceived usefulness	0.456	0.493	.000
	perceived ease of use	0.245	0.291	.000
	R^2=0.522, Adjusted R Square=0.517, F= 114.993			

Source: the author sorted

In this section, the author would like to know the result and impact of attitude toward use, risk and corporate image whether have a significant effect on behavior intention to use. Multiple linear regression was used to test if attitude toward use, risk and corporate image significantly predicted behavior intention to use.

The fitted regression model was: behavior intention to use= .664 + .731* (attitude toward use) + .145* (corporate image)−.095*(risk). The overall regression was statistically significant (R2 = .623, F (1,214) = 115.802, p< .000). It was found that

attitude toward use significantly predicted behavior intention to use(β = .678, p< .000). It was found that risk significantly predicted behavior intention to use (β = -.113, p= .009).It was found that corporate image significantly predicted behavior intention to use(β = .140, p= .005).

In the table 28, if the respondents are influenced by attitude toward use, corporate image and risk at the same time, we can know the Standardized Coefficients (**β**) is 0.678 and 0.140, it is show that attitude toward use and corporate image are positive effect on behavior intention to use. Then the risk's standardized coefficients (**β**) is -0.113, it is show that risk is negative effect on behavior intention to use.

Table 28: multiple linear regression

Dependent variable	**Independent Variable**	**Unstandardized Coefficients(B)**	**Standardized Coefficients(β)**	**P**
behavior intention to use	constant	0.664		.006
	attitude toward use	0.731	0.678	.009
	risk	-0.95	-0.113	.005
	corporate image	0.145	0.140	.000
	R^2=0.623, Adjusted R Square=0.618, F= 115.802			

Source: the author sorted

Discussion

Through the information and result of literal review and the data analysis. We can learn that my finding on behavior intention to use is positive significantly related to perceived usefulness, perceived ease of use and attitude toward use is the same with the author who are Fang[29], Wu[30] and Liu.[31]. Fang explored the users' perception on using electronics official document system. Wu talked about the smart wearble device. Last, Liu talked about the online courses. We can know they all apply the theory of Technology Acceptance Model on different technology products or apps. All of them used Technology Acceptance Model to explore the people's thought. This is more certain that the author can take Technology Acceptance Model on this thesis because this topic is related to electronic payment. The people perceived usefulness, perceived ease of use and attitude toward use are positive significantly effect on behavior intention to use. However, the data analysis showed that it is same as them. Hence, we also can know that the Technology Acceptance Model is reliable theory to use. But if I put the additional factors like risk and corporate image into Technology Acceptance Model, I will know more about what influences people using technology or could increase more validity in this theory. Then in the findings, we know that risk and corporate image did really influence people to use and these two factors might be added into the Technology Acceptance Model as supplements.

---

[29] Huang-Chun Fang, "The Study of Electronics Official Document System User's Accept Degree of Government Agencies with Technology Acceptance Model" (Chung Yuan Christian university, 2010).
[30] Meng-Yen Wu, "Using TAM Model to Analyze the Purchase Intention on Smart Wearable Device – An example of Jarvish" (master Chung Yuan, 2021).
[31] Chen, Liu Su. "Technology Acceptance Model to Explore the Learning Effectiveness of Using Online Course of Insurance Business Marketing." 2022.

Conclusion

In the era of advanced technology, the technology products or apps are constantly evolving. With the continuous advancement of technology, what are people perceptions of using technology product or app? What factors would influence people using technology products or apps? In order to find out the reasons, then the author used Technology Acceptance Model to explore the FamilyMart's electronic payment called PlusPay. The Technology Acceptance Model mainly explored whether people perceived usefulness, perceived ease of use, attitude toward use would have significant effect on people's intention to use. By Technology Acceptance Model, we know more about the reasons what influence people to use.

The researcher first made a questionnaire based on previously studied literature and Technology Acceptance Model. Next, the researcher distributed the online questionnaire to social media (such as Facebook, Instagram) to collect, after that the researcher analyzed the database on the questionnaire and made a supplementation with the previous works of literature to strengthen and support each concept.

According to the results of the questionnaire, to answer the research question 1 and 2, we can find out that people's background such as income and age have some significant effect on perceived usefulness, perceived ease to use and risk. However, in the result of data, first we can know the perceived usefulness and perceived ease of use have significant positive effect on attitude toward use, second the attitude toward use has significant positive effect on intention to use. Combined those results, it would help consumers and encourage more people to use PlusPay, if the FamilyMart could offer news or information about how useful PlusPay is for them to use
For example, the FamilyMart can make consumers feel when using PlusPay, they can

more efficient, improve quality and more convenient. It also showed that in the perceived ease of use, the consumers want PlusPay be more ease to use. If the company can provide convince consumers about that PlusPay is an ease tool to consumers, for example, the FamilyMart can design easy-to-use pages and use and function of PlusPay is clear, it would increase more consumers to use it.
Lastly, FamilyMart can make consumers feel "usefulness" and "ease to use" of PlusPay through specific services or experience trial activities, they would have an opportunity to influence consumers' attitudes towards to use PlusPay, which in turn influences consumers' behavior intention to use it.

In this paper, related to the research question 3, the author also wanted to find out the additional factors in addition to the existed factors of the Technology Acceptance Model. Therefore, the author added risk and corporate image to analyze whether influence people to use. In the finding, we can learn they would affect people. The risk has significant negative effect on intention to use, conversely the corporate image has significant positive effect on intention to use. From the above results, it showed that the consumers focus on their mobile phone’s data, if the FamilyMart can make their app of PlusPay more safety to use and have protection mechanism, it would have more consumers to use it. It can be seen from the above that when a user is aware of using a product or service, the more risks there are, the user will be negative affected and be hesitated to use. It also explained that FamilyMart can moderately reduce or control consumers' perception of risks through specific measures or instructions, however, consumers' behavior intention to use PlusPay can be improved. We also can understand that a good corporate image is an important point for people to use. If FamilyMart can build that they have a good corporate image, a good company spirt or do more charity activities, the more people may feel more willingness to use PlusPay.

At last, we can learn that the factors based on Technology Acceptance Model are significant positive affect on intention to use. And the additional factors such as risk and corporate image is different effect on intention to use. On the risk, it is significant negative affect on people to use PlusPay. However, on the corporate image, it is significant positive affect on people to use it. The result that we find out that two additional factor like risk and corporate image affected people behavior intention to use PlusPay.

Bibliography

CHEN, CHIEN-MING. "Exploring the Impact of Customer About Pay Online Security:Using Technology Acceptance Model.", Soochow University, 2021.

Chen, Liu Su. "Technology Acceptance Model to Explore the Learning Effectiveness of Using Online Course of Insurance Business Marketing." 2022.

Chiang, Jui-Hsiu Chang :Jui-Ying. "Investigating Consumers Acceptance Behavior on Mobile Payment by Tam Model." 15, no. 2 (2017): 36-54.

Davis, Fred D. "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology." *MIS quarterly* (1989): 319-40.

Fang, Huang-Chun. "The Study of Electronics Official Document System User's Accept Degree of Government Agencies with Technology Acceptance Model." Chung Yuan Christian university, 2010.

Hung, SY, TP Liang, and CM Chang. "A Meta-Analysis of Empirical Research Using Tam." *Journal of Information Management* 12, no. 4 (2005): 211-34.

Legris, Paul, John Ingham, and Pierre Collerette. "Why Do People Use Information Technology? A Critical Review of the Technology Acceptance Model." *Information & management* 40, no. 3 (2003): 191-204.

Shen, Qian-Yang. "Apply Technology Acceptance Model to Explore the Impact of Consumers' Intentions of Pi Payment." master, Tamkang University, 2021.

Surendran, Priyanka. "Technology Acceptance Model: A Survey of Literature." *International journal of business and social research* 2, no. 4 (2012): 175-78.

Tang. "The Study of Probing into Aborigine Adult E-Learning with Technology Acceptance Model-Take "Aborigine Cyber Institute" for Instance." Chi nan university, 2008.

Tsai, Yu-Chieh. "The Study of Behavior Intention to Accept the Dvd Rental Machine in Technology Acceptance Model ", 2007.

Wu, Meng-Yen. "Using Tam Model to Analyze the Purchase Intention on Smart Wearable Device – an Example of Jarvish." master, Chung Yuan, 2021.

Appendix 1

使用全家的全盈支付的感知與知覺

第一部分: 意見(使用非常同意，同意，普通，不同意，非常不同意)

知覺有用性:

(1)我覺得使用電子支付使消費更便利：

(2)我覺得使用電子支付可以提升消費的品質：

(3)我覺得使用電子支付比其他消費方式更有效率：

(4)跟使用現金相比，當我使用電子支付時，能夠更快完成支付

(5)我覺得使用電子支付服務對我是有幫助的

知覺易用性:

(1)電子支付的頁面設計是簡單明瞭:

(2)我覺得電子支付的使用對我而言是容易的：

(3)我覺得電子支付的使用方式跟功能是清楚明瞭：

(4)整體而言，電子支付是易於使用的：

使用風險

(1) 我認為使用此電子支付進行交易，沒有法律保障：

(2) 我認為用此電子支付交易，可能會造成銀行或信用卡資訊外流：

(3) 我認為使電子支付進行交易，可能會出現重複扣款的問題:

(4) 我認為使用此電子支付進行交易，手機資料可能外流或遭盜用：

使用態度

(1)使用電子支付是吸引人的:

(2)使用電子支付進行消費時，心情是愉快的:

(3)使用電子支付服務進行消費讓我感到十分有趣：

(4)整體而言，我覺得使用電子支付是保持面的態度:

使用意願

(1)消費時，我認為使用此電子支付是值得的:

(2)消費時，我會主動此使用行動支付服務來付款：

(3)消費時，跟其他品牌電子支付相比，我還會選此電子支付:

(4)整體而言，我使用電子支付服務進行消費的意願是相當高的：

企業形象

(1)我覺得全家擁有良好的企業形象:

(2)消費時，良好的企業形象會使我使用電子支付:

(3)消費時，良好的企業形象對我使用電子支付是個很重要的因素:

第二部分 基本資料

1. 性別：□ 男 □ 女

2. 年齡：□ 20 歲以下 □ 20-29 歲 □ 30-39 歲 □ 40-49 歲 □ 50 歲以上

3. 教育程度：□國小 □國中 □高中（職） □大專〈學〉 □研究所〈以上〉

4. 職業：□軍警 □公務人員 □教育 □商 □工 □農 □醫療 □服務業 □家管 □學生 □退休 □無 □藝術家 其他____

5. 收入: □ 1 萬以下 □ 1 萬-2 萬 □ 2 萬-3 萬 □ 3 萬-4 萬 □ 4 萬以上

6. 消費頻率: □ 幾乎每天 □ 每星期 1-2 次 □ 每星期 3-4 次 □ 每月不到五次 □ 不一定每月都去

7. 單次使用行動支付消費金額: □ 100 元以下 □ 100 元-200 元 □ 200 元-300 元 □ 300 以上