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篇名:

Discussion of Factors Which Impact on Consumers' Intention to Use Mobile Payment

(影響消費者使用行動支付的因素探討)

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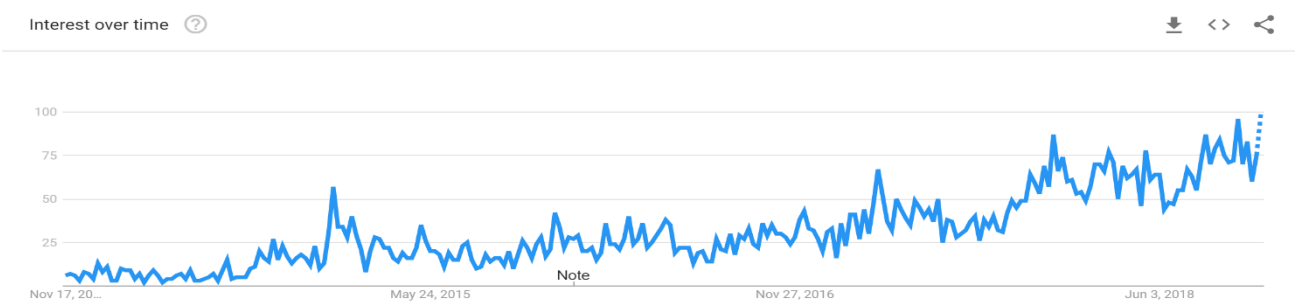
Mobile Payment has changed every aspect of our life, since the mobile payment was developed. A research about the willingness of consumers using mobile payment was conducted in 2016, the research revealed that the willing was 80% at that time. However the actual percentage of using mobile payment was extremely low. Therefore, in this study Technology Acceptance Model (TAM) and conformity was applied to find the latent factors that affect customer intention. We conducted our research online to gather the data. Then the result was presented after we analyzed our data with regression.

I. Introduction

A. Research Motivation & Background Information

Over the past years, smartphones have become one's indispensable companion. We utilize them to stay in touch with our acquaintances, search information any time or play games to ease our stress. Thanks to the platforms like Apple Pay, Samsung Pay or Alipay, we can even purchase our commodities with our phones - this innovation is Mobile Payment. Mobile Payment comes in different forms such as near-field communication (NFC), far-field communication (FFC), bar code and Quick Response Code. Most of the mobile payment services support NFC only. On the other hands Taiwan's local mobile payment service "Taiwan Pay" supports NFC and barcode. Moreover, users can also pay tax through Taiwan Pay, while other mobile payment services can only support mere payment service. According to JHAO, YANG-CING the border of Taiwan Pay said that "Our end goal is to build a mobile payment platform that is easily and widely accessible to the public and the retailer." (吳韻儀, 2018) The reason why customers utilize Mobile Payment is because "Mobile Payment is faster, easy to use, more convenient and need no purse anymore." (PwC 2017) On the other hand, more factors are considered like security and data protection, lower fees than other payment methods or easy and fast use (PwC 2017). In Taiwan, the willingness of applying Mobile Payment has already exceeded 80% of consumers. In fact, the term Mobile Payment has been widely searched since 2014. Moreover, in 2018 the term has been searched over 100,000 times on a monthly basis. Willingness to apply Mobile Payment or related payment methods has been widely accepted by populace (MIC 2016). Despite the high willingness, the usage percentage is extremely low compared to other methods. Therefore, we've utilized more approaches such as interviewing, questionnaire and data analyses to find the latent factors that might influence consumers' intention to adopt Mobile Payment.



B. Research Purpose

As the research motivation and background information proposed, the main object of this study is to explore the latent factors that might affect customers' intention toward mobile payment. Therefore the purpose of this study as follow:

- Discuss about the status quo of the Mobile Payment market.
- Find out the latent factors that might have impact on consumers' intention of using Mobile Payment.

C. Process

The research processes of this study are listed below:

- Define the research problem
- Secondly, we'll review the literature in the past.
- Thirdly, we'll have our research design followed by data collection and analysis.
- Lastly, we'll interpret the analysis result and make the conclusion based on the interpretation.

Figure I: Research Process

Figure 1: This flowchart presents the processes of this study

D. Study Method

This study used an online survey conducted in August 2018. Participants were asked about their willingness of participation. Participants have no incentives. Research Model were designed based on TAM with conformity added in as presented in figure 3. One advantage of using the TAM to examine mobile payment acceptance is that it has a well validated measurement inventory has been developed. The constructs perceived ease of use, perceived usefulness, and intended use were measured using scales adapted from Davis and modified to fit the specific purpose of the study. (Key Pousttchi, Dietmar G. Wiedemann, 2010)

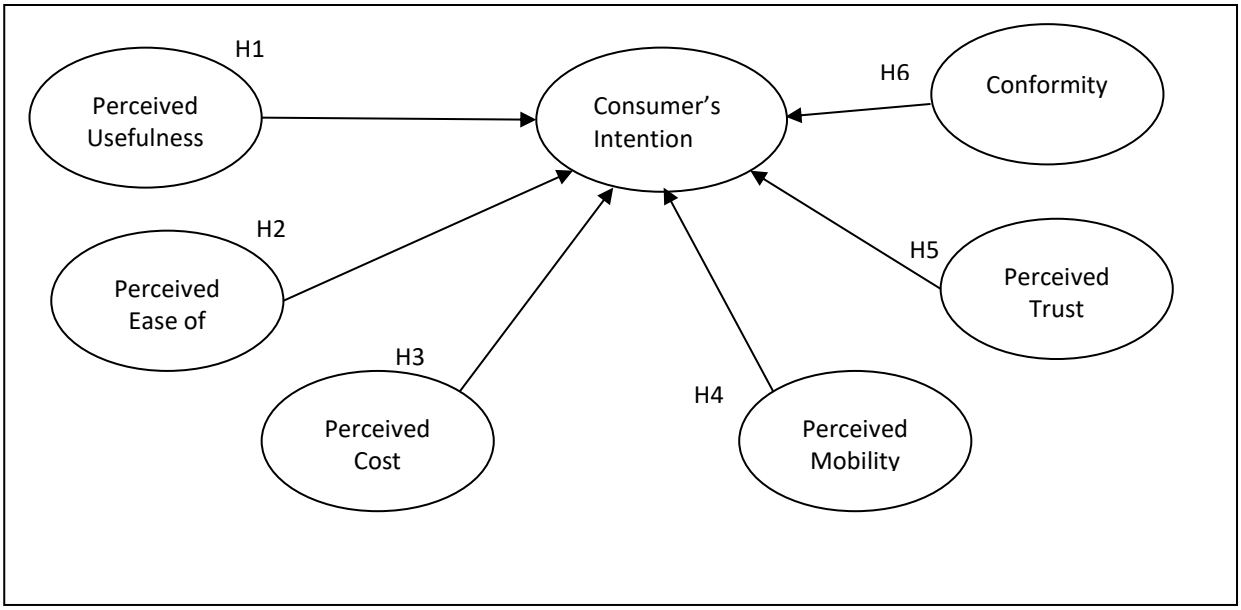


Figure 2 Research Model: The chart given above is the research model

H1. Perceived Usefulness has a positive influence on customer intention

H2. Perceived Ease of Use has a positive influence on customer intention

H3. Perceived Cost has a positive influence on customer intention

H4. Perceived Trust has a positive influence on customer intention

H5. Perceived Trust has a positive influence on customer intention

H6. Perceived Ease of Use has a positive influence on customer intention

II. Thesis

A. Literature Review

a. Mobile Payment

Mobile Payment is a transaction that consumers utilize mobile terminal to purchase commodities, services or pay bills (吳中志, 2014). Amoroso & Watanabe (2012) define Mobile Payment as a commercial transaction that consumers use mobile web connectable mobile devices like cellular phone or another portable gadget to pay. By virtualizing solid card, Mobile Payment can be adopted in two different ways (A) Far Field Communication (FFC) and (B) Near Field Communication (NFC).

a. Far-Field Communication (FFC)

Far Field Communication refers to the commercial transactions without letting mobile devices getting close to connector or Radio-Frequency Identification (RFID) (翁世吉 、田育任 2014). In other words, the payments are made by applying credit cards, debt cads or third-party accounts etc. and are under the classification of Far-Field Communication (FFC).

b. Near-Field Communication (NFC)

Near-Field Communication (NFC) was jointly developed by Philips and Sony in late 2002 for contactless communication (NFC Forum). It's a short-range half communication. In accordance with Lin Y. S., NFC is distinct from Far-Field Communication that is used in personal area and longer-ranger wireless networks.

C. Technology Acceptance Model (TAM)

Technology Acceptance Model explains how new technologies are accepted by users. The model was proposed by Fred Davis and Richard Bagozzi (1989) by developing Theory of Reasoned Action (TRA), which was formulated by Fishbein and Ajzen. The theory was based the on Perceived Usefulness (PU) and Perceived Ease of Use (PEU). The Technology Acceptance Model has been continuously researched and expanded two major upgrades. Technology Acceptance Model 2 (or TAM2, Venkatesh & Davis 2000 & Venkatesh 2000) and Unified Theory of Acceptance and Use of Technology (or UTAUT, Venkatesh et al. 2003). Technology Acceptance Model 3 (TAM 3) has also been proposed in accordance with the context of e-commerce with the conclusion of the effects of trust and perceived risk on system use (Venkatesh & Bala 2008).

(a). Perceived Usefulness (PU)

Fred Davis (1989) defined Perceived Usefulness as "the degree to which a person believes that using a particular system would enhance his or her job performance."

(b). Perceived Ease of Use (PEOU)

Perceived Ease of Use was defined as "the degree to which a person believes that using a particular system would be free from effort" (Fred Davis 1989)

b. Perceived Cost

'Perceived cost' was proposed by Amberg et al. (2003). It seems to be a critical clairvoyant of M-payment. Not having to purchase a new mobile phone was rated as 'very important' or 'important' by 83% of respondents in Pousttchi's (2003) survey. In related study only 8.5% of the respondents were willing to accept more than €5 as a yearly fee. Only one third of respondents accepted the use with a transaction fee of €0.10. 'Perceived cost' category can also include non-monetary costs such as health hazards. Some health risks are believed to issue from mobile phones use include microwave radiation thermal effects, and the greater risk of accidents while driving and using a mobile phone (Maier et al., 2000).

c. Perceived Mobility

Mobility is a factor proposed by Amberg et al. (2003) that is specific to mobile services. Mobility is also a unique feature of mobile payments compared to other types of payments. This factor may not be satisfied if there are not enough network coverage areas, the device discharges too fast, or there is not enough operators offering the service (Robert Steele, 2004).

d. Perceived Trust

Personal information can be obstructed and used for fraudulent purposes. When an online transaction occurs, superlative caution is demanded than traditional ones. Users need a sense of security when managing transactions, and it is still one of the major barriers to e-commerce growth (Wang et al., 1998; Furnell and Karweni, 1999; Jarvenpaa et al., 1999; Gefen, 2000; Lee and Turban, 2002). Perceived security was defined as the threat that creates the condition with the latent

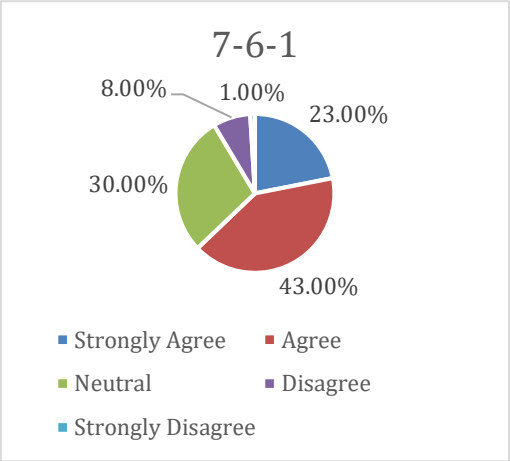
causes of destruction or disclosures of network resources (Kalakota and Whinston, 1997, p. 853)(Kalakota and Whinston, 1997, p. 853).

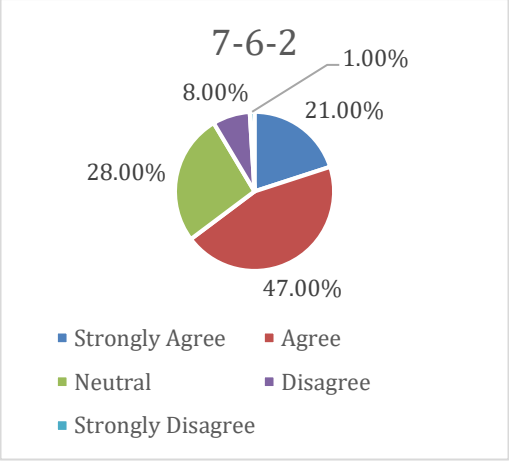
e. Conformity

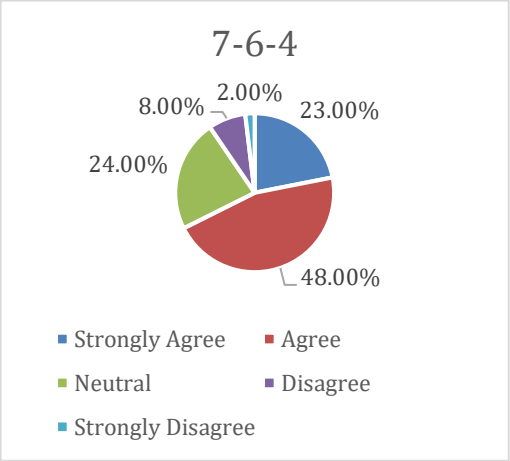
Conformity refers to the act of changing one's behavior to match the responses of others. Circa fifty years ago Deutsch & Gerard (1955) distinguished differences between informational and normative conformity motivations; the former based on the desire to form an accurate interpretation of reality and behave correctly, and the latter based on the goal of obtaining social approval from others (Robert B. Cialdini & Noah J. Goldstein 2004).

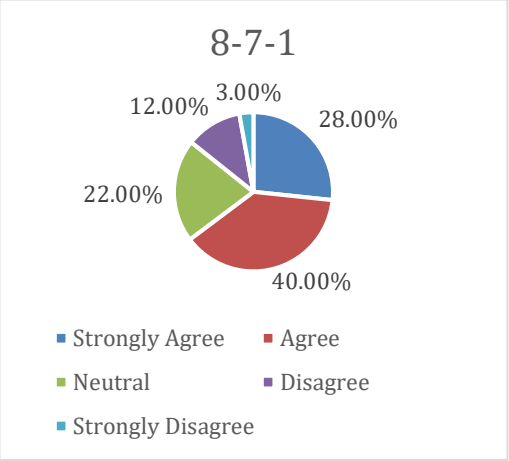
B. Data Collection & Analysis

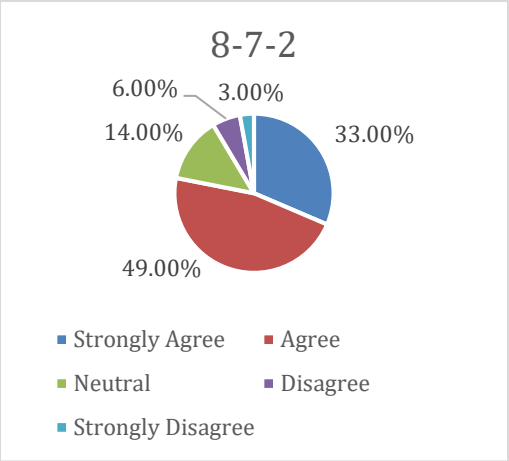
We checked the integrity and completeness of our received responses. 80 out of 105 can be used for further analysis. The sample of Factors Impact on Consumers' Intentions to Use Mobile Payment consisted of 55% of Male and 45% of Female and most of our participants are aged under 18. The statistical result is shown below

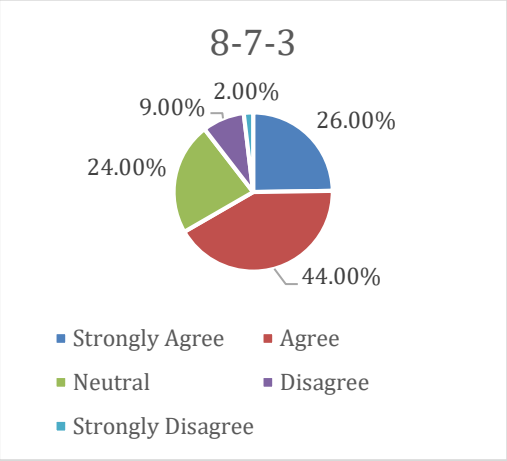












SUMMARY OUTPUT								
Regression Statistics								
Multiple R	0.842143513							
R Square	0.709205696							
Adjusted R Square	0.683164415							
Standard Error	0.535684194							
Observations	74							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	6	46.88984377	7.814973962	27.23390205	0			
Residual	67	19.22615623	0.286957556					
Total	73	66.116						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	-0.408285953	0.429992276	-0.949519274	0.345769117	-1.266554128	0.449982221	-1.266554128	0.449982221
Mean A	0.117235719	0.149465362	0.784367141	0.43558918	-0.181098392	0.415569829	-0.181098392	0.415569829
Mean B	0.104979105	0.160298281	0.654898509	0.514775243	-0.214977602	0.424935812	-0.214977602	0.424935812
Mean C	-0.002225733	0.149734044	-0.014864578	0.988184395	-0.301096137	0.29664467	-0.301096137	0.29664467
Mean D	0.087816292	0.131459415	0.668010671	0.506421503	-0.174577799	0.350210383	-0.174577799	0.350210383
Mean E	-0.004025969	0.139287395	-0.028904045	0.977027044	-0.282044774	0.273992836	-0.282044774	0.273992836
Mean F	0.794909836	0.094522422	8.40974892	0	0.606242292	0.98357738	0.606242292	0.98357738

According to the question 7-6-1, there are 23% of our participants strongly agree that they will use the mobile payment platform that most people use, followed by 43% of participants agree with the statement while there are 8% disagree the statement and 1% strongly disagree the statement. Moreover in question 7-6-1 there are one third of our participant are neutral of this statement. In question 7-6-2, there are 21% of our participants strongly agree the statement, 47% agree the statement while there are 8% disagree and 1% are strongly disagree with the statement. In question 7-6-4, there are 23% of our participants strongly agree the statement, 48% agree the statement while there are 8% disagree and 2% are strongly disagree with the statement. In question 8-7-1, there are 22% of our participants strongly agree the statement, 40% agree the statement while there are 12% disagree and 3% are strongly disagree with the statement. In question 8-7-2, there are 33% of our participants strongly agree the statement, 49% agree the statement while there are 6% disagree and 3% are strongly disagree with the statement. In question 8-7-3, there are 26% of our participants strongly agree the statement, 44% agree the statement while there are 9% disagree and 2% are strongly disagree with the statement.

Moreover, we can infer that those who have a high school degree and those who possess a college degree have a different thought about the perceived cost, furthermore, from the perspective of perceived usefulness, perceived cost. Perceived cost, perceived trust, and conformity those who earn 500K (or less) compared to the annual salary level at one million to 1.35 million have a significant difference. Similarly earning level between 760k to 1 million and those who earn between 1 million to 1.25 million has a significant difference on perceived mobility, perceived trust, and conformity. In addition, in perceived mobility, perceived trust and mobility those who earn 760k to 1 million and those who earn over 1.26 million have a significant difference.

As the result shown above, we can infer that only factor conformity (Mena F) has impact on consumers' intention to use mobile payment.

III. Conclusion

A. Discussion & Result

a. Review of Research Finding & Application

Previous studies had shown that perceived usefulness was significant in explaining usage intention. (Aw Wai Yan, Khalil Md-Nor, Emad Abu-Shanab and Janejira Sutanonpaiboon 2009), however, with the linear regression applied to find the factors that impact customer intention to use Mobile Payment. This study indicates that peer influence has a strong impact to potential users. It's also process the strongest influence to latent users. The Mobile Payment providers may want to initial referral marketing campaign and provide high service quality service among the young.

b. Limitations of the study

Over 50 percent of our participants were underaged, therefore, we can't gain the result that represents most of the users.

B. This study has examined the factors that impact consumers' intention to use mobile payment. Conformity was identified to be the factor that impact customer intention. The regression coefficient also revealed that peer influence was the most influential factors in explaining users' usage intention. Implication were given to formulate the strategies to enhance the adoption of Mobile Payment.

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Appendix I:

問卷內容

您好：

我們是某私立高中的學生，以下為探討「影響消費者使用行動支付的主要因素」的純學術問卷，目的在於了解哪些因素對於消費者使用行動支付的意願造成影響。本問卷僅作為學術研究資料分析之用，決不會公開或挪用，敬請放心填答。感謝您的熱心參與。

一、基本資料

1.性別

□男性 □女性

2.年齡

□18 歲以下(含 18 歲) □19-25 歲 □26-30 歲 □31-35 歲 □36-40 歲 □41-45 歲
□46-50 歲 □51-55 歲 □56-60 歲 □61-65 歲 □66 歲以上

3.最高學歷

□國小以下 □國中 □高中/高職 □大專含以上

4.年收入

□50 萬以下 □51-75 萬 □76-100 萬 □101-125 萬 □126 萬以上

二、行動支付題向之知覺有用

	非常同意	同意	沒意見	不同意	非常不同意
2-1-1 行動支付在很多方面都能使用	□	□	□	□	□
2-1-2 我對於行動支付的接受度是高的	□	□	□	□	□
2-1-3 我對於行動支付的接受度是高的	□	□	□	□	□
2-1-4 行動支付的消費金額範圍是足夠我使用的	□	□	□	□	□
2-1-5 到不同地方容易更換貨幣單位(例如:台幣換韓幣)	□	□	□	□	□
2-1-6 行動支付在不同的地方有不同的服務	□	□	□	□	□
2-1-7 使用行動支付是有好處的(例如：優惠折扣、消費集點)	□	□	□	□	□

三、行動支付題向之知覺易用

	非常同意	同意	沒意見	不同意	非常不同意
3-2-1 註冊行動支付的系統過程是容易的	□	□	□	□	□
3-2-2 設定行動支付的系統是容易的	□	□	□	□	□
3-2-3 取得交易的詳細內容是簡單的	□	□	□	□	□
3-2-4 完成行動支付的必須步驟是少的	□	□	□	□	□
3-2-5 指示是有幫助且清楚的	□	□	□	□	□
3-2-6 客戶服務是很方便的	□	□	□	□	□
3-2-7 我享受使用行動支付的過程	□	□	□	□	□
3-2-8 使用行動支付的過程容易成交	□	□	□	□	□

四、行動支付題向之知覺便利

	非常同意	同意	沒意見	不同意	非常不同意
4-3-1 很多手機業者都提供此服務	□	□	□	□	□
4-3-2 使用行動支付系統所耗費的網路傳輸額度是合理的	□	□	□	□	□
4-3-3 我可以隨時攜帶可進行行動支付的裝置	□	□	□	□	□
4-3-4 行動載具(例如：手機、平板)通常支援行動支付的系統	□	□	□	□	□
4-3-5 網路(例如:Wi-Fi、行動數據)通常是可取得的	□	□	□	□	□

五、行動支付題向之知覺信任

	非常同意	同意	沒意見	不同意	非常不同意
5-4-1 系統提供者是值得信任的	□	□	□	□	□
5-4-2 交易可以輕易的退款	□	□	□	□	□
5-4-3 錯誤可以輕易的被解決	□	□	□	□	□
5-4-4 我認為行動支付業者對於個資是非常保密的	□	□	□	□	□
5-4-5 我可以立即得到交易的確認資料	□	□	□	□	□
5-4-6 即使更換行動裝置，登入原先帳戶仍可找回先前的紀錄	□	□	□	□	□
5-4-7 過去交易資料可以輕易地取得到	□	□	□	□	□
5-4-8 交易的完成需要我本人同意	□	□	□	□	□

六、行動支付題向之知覺成本

	非常同意	同意	沒意見	不同意	非常不同意
6-5-1 硬體必要成本是可接受的	□	□	□	□	□
6-5-2 如因註冊行動支付而產生所得相關費用是可接受的	□	□	□	□	□
6-5-3 如使用行動支付而產生所需的手續費是可接受的	□	□	□	□	□

七、行動支付題向之從眾

	非常	同意	沒	不	非常

	同意		意見	同意	不同意
7-6-1 我想使用大多數人所選擇使用的支付平台 (如:Apple Pay)	□	□	□	□	□
7-6-2 在身邊多數人都有使用行動支付的情況下，我也會使用行動支付	□	□	□	□	□
7-6-3 在政府推廣行動支付下，我也會跟著使用行動支付	□	□	□	□	□
7-6-4 我會因親朋好友的推薦而選擇使用行動支付	□	□	□	□	□

八、行動支付題向之使用意願

	非常同意	同意	沒意見	不同意	非常不同意
8-7-1 我極有可能會使用行動支付	□	□	□	□	□
8-7-2 有需要時，我會使用行動支付	□	□	□	□	□
8-7-3 我嘗試使用行動支付機會很高	□	□	□	□	□