



UNIVERSITY OF WALES TRINITY SAINT DAVID

MASTER OF BUSINESS ADMINISTRATION

A Review on Consumers' Behavioral Intention towards Mobile Payment

during the Covid 19 Pandemic

Table of Contents

List of Tables	i
List of Figures	ii
List of Abbreviations	iii
Chapter 1. Introduction.....	1
1.1 Research Background.....	1
1.2 Research Motivation	2
1.3 Project Aim	3
1.4 Project Objectives	4
1.5 Summary	5
Chapter 2. Literature Review.....	6
2.1 Perceived Susceptibility	6
2.2 Perceived Severity	6
2.3 Government Support	7
2.4 Perceived Usefulness.....	7
2.5 Perceived Ease of Use	8
2.6 Social Influence.....	9
2.7 Facilitating Condition.....	9
2.8 Perceived Trust.....	10
2.9 Behavioral Intention	10
2.10 Formulation of Hypothesis.....	11
Chapter 3. Research Model	12
3.1 Research Design.....	12
3.2 Research Results	13
3.2.1 Quantitative Research	13
3.2.2 Qualitative Research	13
3.3 Structure of Data Collection.....	13
3.3.1 Primary Data Source	14

3.3.2	Secondary Data Source	14
3.4	Sampling Design	14
3.4.1	Focus Group.....	14
3.4.2	Design Questionnaire.....	15
3.4.3	Pilot Test	15
3.5	Formal Questionnaire	15
3.5.1	Target Population.....	16
3.5.2	Sampling Method.....	16
3.5.3	Sample Size.....	16
3.6	Analysis Techniques	16
3.7	Ethical Research.....	17
3.8	Research Method Limitations	17
3.9	Summary	17
Reference		19

List of Tables

	Page
1.2 Persons aged 15 and over who had used mobile payment during the 12 months before enumeration in Hong Kong	3
1.4 List of Objectives	4
2.1 Perceived Susceptibility	6
2.2 Perceived Severity	7
2.3 Government Support	7
2.4 Perceived Usefulness	8
2.5 Perceived Ease of Use	8
2.6 Social Influence	9
2.7 Facilitating Condition	9
2.8 Perceived Trust	10
2.9 Behavioral Intention	10
2.10 List of Hypotheses	11
3.4.2 Research Reference on Questionnaire for Each Factor	15
3.6. List of Analysis Techniques	17

List of Figures

	Page
1.1 Forecast on global transaction value of mobile payment	1
3.1 Research Model of this study	12

List of Abbreviations

HBM	Health Belief Model
UTAUT	Unified Theory of Acceptance & Use of Technology
TAM	Technology Acceptance Model
P-SUS	Perceived Susceptibility
P-SEV	Perceived Severity
GS	Government Support
PU	Perceived Usefulness
PEOU	Perceived Ease of Use
SI	Social Influence
FC	Facilitating Condition
PT	Perceived Trust
BI	Behavioral Intention

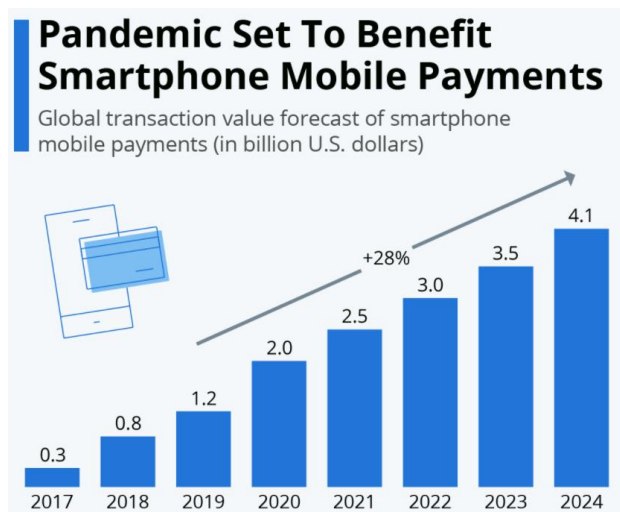
Chapter 1. Introduction

In this section, a brief overview of the expansion of mobile payment in recent years and the impact on the use of digitized payment methods during the Covid 19 pandemic era, together with how research motivation is being developed under such circumstances. The research aim and objectives are further introduced to understand the purpose of this review.

1.1 Research Background

For decades, commercial activities have been relying on cash, credit/debit cards, etc. for small amount transactions. Yet, the increase in the popularity of smartphones and the rise in the general acceptance of technology provided a favorable circumstance to the development of mobile payment. The evolution progress in payment methods has been different in every region, in which four out of five countries ranked top in the number of real time transactions in 2020 are located in the Asia-Pacific region (ACI Worldwide, 2021). In particular, the pandemic has encouraged cashless spending behavior and marked an uplift of 6% in the number of transactions globally from 2019 to 2020 (McKinsey, 2021).

Figure 1.1 Forecast on global transaction value of mobile payment



Source: Statista, 2020

By reference to Figure 1.1, the global mobile payment has been benefited from the pandemic situation and is forecasted to increase 28% within 5 years in the transaction value. It is expected that the development of cashless transactions would be largely driven by the Asia Pacific area and the number of transactions would increase by 109% from 2020 to 2025 and by 76% from 2025 to 2030, in which the region would achieve 1.8 trillion transactions in 2030, attributing 60% of the total cashless transactions around the world (PwC, 2021).

1.2 Research Motivation

In Hong Kong, the extension of cashless transactions has been facing obstacles due to the citizens' immunity in the use of digital payment resulting from security concerns and contentment in the traditional payment methods (Sendingan, 2018). Mobile commerce in Hong Kong has been lagged behind the rest of China in the past, with record attributing 36% of all e-commerce transactions as compared to 76%, together with a low utilization rate of 14% in the use of mobile app transactions in contrast to 67% in the mainland in 2018 (JPMorgan, 2019).

The sudden attack of the Covid 19 pandemic in 2020 has shifted the consumers' spending behavior from offline to online and the government further encouraged digital payment by the rollout of HK\$5,000 Consumption Scheme in 2021, has provided favorable conditions for mobile payment in Hong Kong to expand (HKGCC, 2021). Amidst the pandemic period, nearly 50% of the total population aged over 15 has adopted mobile payment within 12 months in 2020 as illustrated in Table 1.2.

Table 1.2 Persons aged 15 and over who had used mobile payment during the 12 months before enumeration in Hong Kong

年齡組別／性別 Age group / Sex	人數 No. of persons (’000)	百分比 %	比率* Rate*
年齡組別 Age group			
15 - 24	401.3	13.1	62.7
25 - 34	730.5	23.8	78.8
35 - 44	753.0	24.6	73.4
45 - 54	625.6	20.4	58.3
55 - 64	429.5	14.0	35.4
≥ 65	123.6	4.0	9.4
性別 Sex			
男 Male	1 441.9	47.1	49.3
女 Female	1 621.6	52.9	49.5
合計 Overall	3 063.5	100.0	49.4

Source: C&SD, 2021(a)

It is expected that digital wallets will takeover credit cards, accounting for 37% of transactions, as the most popular online payment in the economy by 2024 (InsideRetail, 2021), and at the same time a reduction of less than 1.6% of cash transactions at point-of-sales which would rank the lowest in the Asia-Pacific region (Forbes, 2021). This report would focus on the factors that affect the consumers’ behavioral intention in Hong Kong that generate such a turnaround in the use of mobile payment under the Covid 19 pandemic.

1.3 Project Aim

The aim is to capture the factors, including perceived susceptibility (“P-SUS”), perceived severity (“P-SEV”), government support (“GS”), perceived usefulness (“PU”), perceived ease of use (“PEOU”), social influence (“SI”), facilitating condition (“FC”) and perceived trust (“PT”), that positively influence the consumers’ behavioral intention (“BI”) in the use of mobile payment in Hong Kong by adopting the Health Belief Model (“HBM”), the Unified

Theory of Acceptance & Use of Technology (“UTAUT”) model and the Technology Acceptance Model (“TAM”) under the Covid 19 Pandemic condition.

1.4 Project Objectives

The accelerating popularity in the use of mobile payment under the Covid 19 pandemic in Hong Kong has given a ground in this study to identify the factors affecting the citizens’ intention in such cashless transactions. By modifying and merging various models, i.e., HBM, TAM and UTAUT, factors such as P-SUS, P-SEV, GS, PU, PEOU, SI, FC and PT which applied in the previous literature are selected in this study to ingratiate the existing market condition.

This study focused on behavioral intention on the use of mobile payment in the pandemic era, in which the project objectives are developed as follow:

Table 1.4 List of Objectives

i	To verify the eight factors: P-SUS, P-SEV, GS, PU, PEOU, SI, FC and PT that have positive influence on behavioral intention of mobile payment users;
ii	To identify eight factors relationship with behavioral intention on the use of mobile payment which impacting cashless transactions through interview with focus group and conducting questionnaire; and
iii	To analyze the existing development of mobile payment and provide adequate recommendations based on the findings for mobile payment service providers, retailers and regulators for evolving the capacity in the use of such advanced transaction method.

Source: this report

1.5 Summary

The use of mobile payment is seen as a global trend and the Asia Pacific region is predicted to be the driving engine for such development. Although the adoption of digital payment in Hong Kong is yet to take the lead position within the region, it is expected that the city is turning into a near-cashless society in the foreseeable future. This report will capture the positive factors that influence consumers' behavioral intention on mobile payment in Hong Kong and make recommendations to accelerate such a trend within the economy.

Chapter 2. Literature Review

The factors correlated to the use of mobile payment are introduced in this section. The definition and measurement of these factors are also identified to understand the relevance to the research topic.

2.1 Perceived Susceptibility

Perceived susceptibility is one of the fundamental factors that formulate HBM to measure the acceptance of susceptibility when facing a health issue (Rosenstock, 1974).

Table 2.1 Perceived Susceptibility

		Reference
Definition	Perceived susceptibility refers to the level of vulnerability to a health crisis by different individuals which can identify one's subjective perception of preventive health behavior. Amidst Covid 19 pandemic, individuals with high perceived susceptibility would increase the likelihood to take more measures to reduce the risk of infection, in which the use of contactless payment could provide sense of hygiene and comfort to the consumers.	Janz & Becker, 1984; Kim & Kim, 2020, and Sahinaslan, Sahinaslan & Gunes, 2021
Measurement	The factor is measuring to what extent an individual is susceptible to the infection of Covid 19.	Eichenberg et al., 2021

Source: this report

2.2 Perceived Severity

Perceived severity is another variable that constructs HBM which assess an individual's psychological readiness in relation to a health condition (Maiman & Becker, 1974).

Table 2.2 Perceived Susceptibility

		Reference
Definition	Perceived severity is the feelings about the seriousness of facing a health threat or the consequences of leaving the illness untreated . Applying to the recent health crisis, individuals with high perceived severity are more engaged in adopting non-pharmaceutical interventions in preventing the virus, in which is expected that the use of electronic transactions would increase since payment without physical intervention is seen as an alternative measure to contain the pandemic.	Champion & Skinner, 2008; Frangkaki et al., 2021, and Abu Daqar et al., 2021
Measurement	The factor identifies how severe would the consequences of an individual if the patient got infected with Covid 19.	Gaube, Lerner & Fischer, 2019

Source: this report

2.3 Government Support

Government support in the use of mobile payment could add creditability to potential users for the acceptance on the use of technology (Tan &Teo, 2000).

Table 2.3 Government Support

		Reference
Definition	The development of a business could make differences according to the government's attitude towards the industry in which supportive policies and infrastructure impose could enhance the incentive in the use of mobile payment. Government support of mobile payment could be in a way of the construction of IT facilities and the adoption of related laws and regulations.	Appiah et al., 2019; and Dawi, 2019
Measurement	Government support refers to the degree of understanding in the importance of mobile payment and the level of involvement in such development.	Al Haderi, 2014

Source: this report

2.4 Perceived Usefulness

Perceived usefulness is one of the core variables developed under the TAM to assess the user motivation on the use of technology (Davis, 1985).

Table 2.4 Perceived Usefulness

		Reference
Definition	Perceived usefulness has been first defined as an individual's believes in the use of a particular system that could enhance job performances. The expansion in the adoption of technology in decades does not limit to the on-job performance but also brought perceived usefulness in the discussion relating to the public's daily application, which further apply to the use of mobile payment during the Covid 19 pandemic.	Davis, 1989; Cho, Chi & Chiu, 2020; and Yan et al., 2021
Measurement	Perceived usefulness assesses the beliefs of users to adopt mobile payment could enhance values during transactions such as efficiency, effortless and time-saving.	Daragmeh, Lentner & Sági, 2021

Source: this report

2.5 Perceived Ease of Use

Perceived ease of use is another core variable in the TAM that influence on the use of technology (Davis, 1985).

Table 2.5 Perceived Ease of Use

		Reference
Definition	Davis (1989) originally defined perceived ease of use as the degree of free of effort that an individual believes in the adoption of a system. The ability to make use of mobile payment would affect the level of perceived ease of use, in which consumers will use the advanced payment method only when they feel the adaptation will lead to a better payment experience.	Davis, 1989; Al Kurdi, Alshurideh & Salloum, 2020; and Kamal, Shafiq & Kakria, 2020
Measurement	Perceived ease of use is a measurement of both mentally and physically feeling free from effort to use mobile payment.	Rafique et al., 2018

Source: this report

2.6 Social Influence

Social influence is a variable further developed under UTAUT, which is an extension on TAM, to identify the correlation with the behavioral intention on the use of technology (Venkatesh et al., 2003).

Table 2.6 Social Influence

		Reference
Definition	Social influence relates to an individual's change of behavior due to the effect from another, and such influence could be varied according to the relations among individuals, network distances, time effect and characteristics of networks and individuals. As such, it can be simplified as an individual influencing others by performing certain actions. Applying the variable to mobile payment, many studies have been identified social influence has a positive influence on the consumers' behavioral intention.	Chen, Mao & Liu, 2014; Peng et al., 2017; and Slade et al., 2015
Measurement	Social influence measures such influence would change an individual's perceptions of the use of mobile payment.	Jung, Kwon & Kim, 2020

Source: this report

2.7 Facilitating Condition

Facilitating Condition is another variable developed under UTAUT that have significant influence on the acceptance of technology (Venkatesh et al., 2003).

Table 2.7 Facilitating Condition

		Reference
Definition	Facilitating condition refers to consumers' perceptions of the resources and support available when performing a task. For recent development, the variable could be defined as the support of mobile payment such as infrastructure, internet connection and mobile devices and studies have found that facilitating conditions has positive influence to the consumer's behavioral intention on technology.	Venkatesh, Thong & Xu, 2012; Dhiman & Arora, 2018; and Alam et al., 2020(a)
Measurement	Facilitating conditions measure the availableness of resources and support services to perform mobile payment.	Sharma, Singh & Sharma, 2020

Source: this report

2.8 Perceived Trust

Perceived trust is an important element in the use of technology to build relationship between consumers and services provider (Reichheld & Schefter, 2000).

Table 2.8 Perceived Trust

		Reference
Definition	Perceived trust refers to an emotion that can encourage an individual to place trust based on the satisfaction level on other's behavior, and it is examined to be one of the critical factors in the adaptation of mobile technology. Due to the nature of mobile payment, the concern of users on the confidentiality and security of data storage would significantly influence the level of perceived trust in such a payment method.	Singh & Sinha, 2020; Alalwan, Dwivedi & Rana, 2017; and Sharma & Sharma, 2019
Measurement	Perceived trust measures the level of worry-free and the secured feeling to make use of mobile payment.	To & Trinh, 2021

Source: this report

2.9 Behavioral Intention

Behavioral Intention is a common dependent variable developed under TAM and UTAUT which identify consumers' attitude in the use of technology (Davis, 1985; Venkatesh et al., 2003).

Table 2.9 Behavioral Intention

		Reference
Definition	Ajzen & Fishbein (1980) has determined that behavioral intention is a subjective probability that a person will demonstrate a behavior. Yet, behavioral intention as defined under TAM and UTAUT is more content-specific on the acceptance of technology rather than a more general and content-free measurement on any behavior of interest used in other theories like the theory of planned behavior. By implementing various core variables in the research model could evaluate the behavioral mechanism in the use of technology.	Ajzen & Fishbein, 1980; Ajzen, 2020; and Ye, Zheng & Yi, 2020
Measurement	It is to measure the level of tendency behavior to keep using mobile payment.	Rachmawati et al., 2020

Source: this report

2.10 Formulation of Hypothesis

By reference to various literature, the relationship of the factors as mentioned above is established in this study as listed below:

Table 2.10 List of Hypotheses

Hypothesis	Relationship	Reference
H1	P-SUS to Covid 19 will have a positive impact on PU of mobile payment	Puriwat & Tripopsakul, 2021
H2	P-SEV of Covid 19 will have a positive impact on PU of mobile payment	C.C. & Prathap, 2020
H3	GS for mobile payment will have a positive impact on PU of mobile payment	Aji, Berakon & Md Husin, 2020
H4	PU will have a positive effect on BI	Scherer, Siddiq & Tondeur, 2019
H5	PEOU will have a positive effect on BI	Rafique et al., 2020
H6	SI will have a positive effect on BI	Wang et al., 2020
H7	FC will have a positive effect on BI	Alam et al., 2020(b)
H8	PT will have a positive effect on BI	Chao, 2019

Source: this report

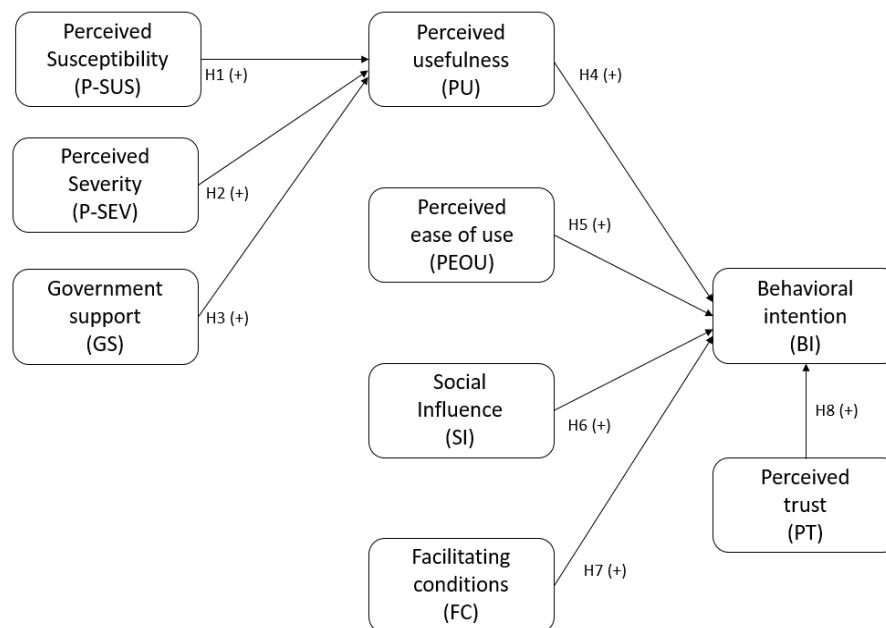
Chapter 3. Research Model

The research model in this report is constructed by adopting the concept under HBM (Rosenstock, 1974), TAM (Davis, 1985) and UTAUT (Venkatesh et al., 2003) together with factors appropriate to the development of mobile payment in the existing conditions.

3.1 Research Design

To establish a study on the development of mobile payment amidst Covid 19 pandemic, the correlation of perceived susceptibility, perceived severity and government support towards perceived usefulness on the use of mobile payment is examined, and further performing a discussion on the effect on the behavioral intention by a list of selected factors namely perceived usefulness, perceived ease of use, social influence, facilitating conditions and perceived trust.

Figure 3.1 Research Model of this study



Source: this report

3.2 Research Results

The research result in this study is being analyzed by adopting quantitative research method and qualitative research methods.

3.2.1 Quantitative Research

Such research method will be performed by collecting and analyzing numerical data on the use of mobile payment to establish accurate and reliable measurements for statistical analysis (Goertzen, 2017), in which descriptive statistics, reliability test, correlation test and regression test are performed to analyze the obtained data and demonstrate an evaluation on the research result.

3.2.2 Qualitative Research

Non-numerical data in relation to the use of mobile payment is collected and analyzed under qualitative research to obtain information on a different dimension that goes beyond numbers and get a better understanding on the research topic through personal experiences (Castleberry & Nolen, 2018). An interview with a focus group will be performed to illustrate their mobile payment experience for an in-depth analysis to support the research result.

3.3 Structure of Data Collection

The research result relay on obtaining relevant information to the research topic, in which data collection in this report mainly comprises primary data source and secondary data source on the use of mobile payment.

3.3.1 Primary Data Source

Primary data is information obtained directly and original without going through any sources that are already published (Mazhar et al. 2021). Primary data in this report is collected from individuals and a focus group through performing questionnaires and interviews to gather first handed opinions on the research topic for evaluating the research result.

3.3.2 Secondary Data Source

Secondary data is information that has been made available by individuals and researchers through different published media, such as journals, books, reports, websites, etc. for learning and investigating materials that have been previously conducted (Johnston, 2014). The use of secondary data in this report could bring new insights to support the ordinary data obtained only through questionnaire and interview from a limited amount of interviewees.

3.4 Sampling Design

The research work in this study comprises questionnaire and interview and the content of the work will be constructed as mentioned in this section.

3.4.1 Focus Group

Interview on focus group is conducted to obtain qualitative data for this study, in which a group of individuals will be invited to form a group discussion on their experience in the use of the mobile payment, to collect different elements influencing their perceived intention on adopting this advanced payment method.

3.4.2 Design Questionnaire

A set of pre-designed questionnaire is formulated to access the sample data relating to the research topic. The collected information will transform into numerical data to perform qualitative research. Questionnaire based on each research variable will be constructed based on published journals to support the relevancy of the designed questions to the corresponding factors.

Table 3.4.2 Research Reference on Questionnaire for Each Factor

Types of Questionnaire	Reference
P-SUS	Daragmeh, Sági & Zéman, 2021
P-SEV	
GS	Chen, Chen & Chen, 2019
PU	Franque, Oliveira & Tam, 2021
PEOU	Wu et al., 2019
SI	Cao & Niu, 2019
FC	Patil et al., 2020
PT	Al-Saedi et at., 2020
BI	Zhao & Bacao, 2021

Source: this report

3.4.3 Pilot Test

A pilot test on a small pilot study is first performed before constructing a full-scale distribution of questionnaire to the targeted population to ensure the feasibility of the set of questions to obtain relevant results for the selected variables (Gani et al., 2020).

3.5 Formal Questionnaire

A formal questionnaire will be released after the pilot test is confirmed to be successful and collect the information according to the sampling size from the target group as designed in this report.

3.5.1 Target Population

Since the research topic is the development of mobile payment in Hong Kong, the target population of the questionnaire will target individuals aged 20 or above, which is estimated to be approximately 6,285,800 by mid-2021 (C&SD, 2021(b)), who have mobile payment experiences in Hong Kong.

3.5.2 Sampling Method

Snowball sampling is chosen in the selection of sampling through networking and referral (Park, Scott & Geddes, 2019) due to limitation in resources allocated to the study.

3.5.3 Sample Size

The sample size will be calculated based on the latest population statistic, i.e. 6,285,800 by mid-2021 (C&SD, 2021(b)), in Hong Kong by calculating sample size based a finite population (Etikan & Babetope, 2019), i.e. 385, in this study.

3.6 Analysis Techniques

Different types of statistic analyses are conducted in this study under the quantitative research are mentioned as follow:

Table 3.6 List of Analysis Techniques

Techniques	Descriptions	Reference
Descriptive Statistics	Descriptive statistics are measures of central tendency, including mean, media and mode, and measure of variability, including standard deviation and variance on the collected primary data.	Mishra et al., 2019
Reliability Test	Reliability test is performed after conducting the questionnaire to reduce the measurement error through expanding the true interindividual variability amount in the obtained sample	Matheson, 2019
Correlation Test	Correlation test is demonstrated to verify the correlation between the independent and dependent variables as selected in Chapter 2	Sacceti, Hendriks & Smilde, 2020
Regression Test	Regression test is an estimation on the relationship between one or more independent variables and the dependent variables, in which are the identified factors constructed under the research model in this study.	Schmidt & Finan, 2017

Source: this report

3.7 Ethical Research

The research result is conducted under honest report data and all personal information will be kept only for six months after the submission of this report.

3.8 Research Method Limitations

The time restriction and limitation on resources allocated to the preparation of questionnaire, together with restraint in accessible interviewees could affect the quality of the research outcome. By extending the sampling size could enhance the data accuracy of this study and might construct new insights on the same research topic.

3.9 Summary

The research model is conducted by reference to HBM, TAM and UTAUT with eight vital factors, i.e. P-SUS, P-SEV, GS, PU, PEOU, SI and FC, to investigate BI on the use of mobile payment under the pandemic era in Hong Kong. The research result is analyzed with quantitative and qualitative research through obtaining primary and secondary data on the

research topic. In particular, primary data is collected through focus group as well as questionnaire with a sampling size based on the Hong Kong population.

Reference

Academic reference

Abu Daqar, M., Constantinovits, M., Arqawi, S., & Daragmeh, A. (2021). 'The role of Fintech in predicting the spread of COVID-19', *Banks and Bank Systems*, 16 (1), pp. 1-16. DOI: 10.21511/bbs.16(1).2021.01.

Aji, H. M., Berakon, I., & Md Husin, M. (2020). 'COVID-19 and e-wallet usage intention: A multigroup analysis between Indonesia and Malaysia', *Cogent Business & Management*, 7(1), 1804181. DOI: 10.1080/23311975.2020.1804181

Ajzen, I. & Fishbein, M. (1980). 'Understanding Attitudes and Predicting Social Behavior', Prentice-Hall.

Ajzen, I. (2020). 'The theory of planned behavior: Frequently asked questions', *Hum Behav & Emerg Tech*, 2, pp. 314 – 324. DOI: 10.1002/hbe2.195

Alam, M. Z., Hu, W., Kaium, M. A., Hoque, M. R. & Alam, M. M. D. (2020a). 'Understanding the determinants of mHealth apps adoption in Bangladesh: A SEM-Neural network approach', *Technology in Society*, 61, 101255. DOI: 10.1016/J.TECHSOC.2020.101255

Alam, M. Z., Hoque, M. R., Hu, W. & Barua, Z. (2020b). 'Factors influencing the adoption of mHealth services in a developing country: A patient-centric study', *International Journal of Information Management*, 50, pp. 128-143. DOI: 10.1016/J.IJINFOMGT.2019.04.016

Al Haderi, S. M. (2014). 'The influences of government support in accepting the information technology in public organization culture', *International Journal of Business and Social Science*, 5(5), pp. 118–124.

Al Kurdi, B., Alshurideh, M., & Salloum, S. A. (2020). 'Investigating a theoretical framework for e-learning technology acceptance', *International Journal of Electrical and Computer Engineering*, 10(6), pp. 6484-6496. DOI: 10.11591/ijece.v10i6.pp6484-6496

Al-Saedi, K., Al-Emran, M., Ramayah, T. & Abusham E. (2020). 'Developing a general extended UTAUT model for M-payment adoption', *Technology in Society*, 62. DOI: 10.1016/j.techsoc.2020.101293.

Alalwan, A. A., Dwivedi, Y. K. & Rana, N. P. (2017). 'Factors influencing adoption of mobile banking by Jordanian bank customers: Extending UTAUT2 with trust', *International Journal of Information Management*, 37 (3), pp. 99-110. DOI: 10.1016/j.ijinfomgt.2017.01.002

Appiah, K., Osei, C., Selassie, H., & Osabutey, E. (2019). 'The role of government and the international competitiveness of SMEs: Evidence from Ghanaian non-traditional exports', *Critical Perspectives On International Business*, 15(4), pp. 296 –322. DOI: 10.1108/cpoib-06-2018-0049

Castleberry, A. & Nolen, A. (2018). 'Thematic analysis of qualitative research data: Is it as easy as it sounds?', *Currents in Pharmacy Teaching and Learning*, 10 (6), pp. 807-815. DOI: 10.1016/j.cptl.2018.03.019.

Cao, Q. & Niu, X. (2019). 'Integrating context-awareness and UTAUT to explain Alipay user adoption', *International Journal of Industrial Ergonomics*, 69, pp. 9-13. DOI: 10.1016/j.ergon.2018.09.004.

C.C., S. & Prathap, S.K. (2020). 'Continuance adoption of mobile-based payments in Covid-19 context: an integrated framework of health belief model and expectation confirmation model', *International Journal of Pervasive Computing and Communications*, 16(4), pp. 351-369. DOI: 10.1108/IJPC-06-2020-0069.

Champion, V. L. & Skinner, C. S. (2008). 'The Health Belief Model', in Glanz, K. Rimer, B. K. & Viswanath K. (ed.) *Health behavior and health education: theory, research, and practice*. John Wiley & Sons

Chao, C. M. (2019). 'Factors Determining the Behavioral Intention to Use Mobile Learning: An Application and Extension of the UTAUT Model', *Frontiers in Psychology*, 10, pp. 1652. DOI: 10.3389/fpsyg.2019.01652

Chen, M., Mao, S. & Liu, Y. (2014). 'Big data: A survey', *Mobile networks and applications*, 19(2), pp. 171-209. DOI: 10.1007/s11036-013-0489-0

Chen, W. C., Chen, C. W. & Chen, W. K. (2019). 'Drivers of Mobile Payment Acceptance in China: An Empirical Investigation', *Information*, 10 (12), pp.384. DOI: 10.3390/info10120384

Cho, H., Chi, C. & Chiu, W. (2020) 'Understanding sustained usage of health and fitness apps: Incorporating the technology acceptance model with the investment model', *Technology in Society*, 63, 101429. DOI: 10.1016/J.TECHSOC.2020.101429

Daragmeh, A., Lentner, C., & Sági, J. (2021). 'FinTech payments in the era of COVID-19: Factors influencing behavioral intentions of "Generation X" in Hungary to use mobile payment', *Journal of Behavioral and Experimental Finance*, 32, 100574. DOI: 10.1016/J.JBEF.2021.100574

Daragmeh, A., Sági, J. & Zéman, Z. (2021). 'Continuous Intention to Use E-Wallet in the Context of the COVID-19 Pandemic: Integrating the Health Belief Model (HBM) and Technology Continuous Theory (TCT)', *Journal of Open Innovation: Technology, Market, and Complexity*, 7 (2), pp.132. DOI: 10.3390/joitmc7020132

Davis, F. D. (1985). 'A technology acceptance model for empirically testing new end-user information systems: Theory and results', *Massachusetts Institute of Technology*.

Davis, F. D. (1989). 'Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology', *MIS Quarterly*, 13(3), pp. 319-340. DOI: 10.2307/249008.

Dawi, N. M. (2019). 'Factors influencing consumers intention to use QR code mobile payment – A proposed framework', *International Journal of Recent Technology and Engineering*, 8(2S), pp. 114–120.

Dhiman, N., & Arora, N. (2018). 'Adoption of E-Recruitment mobile apps: a study based on UTAUT2 framework', *Journal of Organisation and Human Behaviour*, 7(2&3), pp. 55-63

Eichenberg, C., Grossfurthner, M., Andrich, J., Hübner, L., Kietaihl, S., & Holocher-Benetka, S. (2021). 'The Relationship Between the Implementation of Statutory Preventative Measures, Perceived Susceptibility of COVID-19, and Personality Traits in the Initial Stage of Corona-Related Lockdown: A German and Austrian Population Online Survey', *Frontiers in psychiatry*, 12. DOI: 10.3389/fpsyt.2021.596281

Etikan, I., & Babetope, O. (2019). 'A basic approach in sampling methodology and sample size calculation', *Med Life Clin*, 1 (2), 1006.

Fragkaki, I., Maciejewski, D. F., Weijman, E. L., Feltes, J. & Cima, M. (2021). 'Human responses to Covid-19: The role of optimism bias, perceived severity, and anxiety', *Personality and Individual Differences*, 176, 110781. DOI: 10.1016/j.paid.2021.110781.

Franque, F. B., Oliveira, T. & Tam, C. (2021) 'Understanding the factors of mobile payment continuance intention: Eempirical test in an African context', *Heliyon*, 7. DOI: 10.1016/j.heliyon.2021.e07807

Gani, A., Imtiaz, N., Rathakrishnan, M., & Krishnasamy, H. N. (2020). 'A pilot test for establishing validity and reliability of qualitative interview in the blended learning English proficiency course', *Journal of critical reviews*, 7 (5), pp. 140 -143. DOI: 10.31838/jcr.07.05.23

Gaube S., Lerner E. & Fischer P. (2019). 'The Concept of Risk Perception in Health-Related Behavior Theory and Behavior Change'. in Raue M., Streicher B., Lerner E. (eds) *Perceived Safety. Risk Engineering*. Springer, Cham. DOI: 10.1007/978-3-030-11456-5_7

Goertzen, M. J. (2017). 'Applying Quantitative Methods to E-book Collections', *ALA TechSource*, 53 (4), pp. 1-31

Kamal, S. A., Shafiq, M., & Kakria, P. (2020). 'Investigating acceptance of telemedicine services through an extended technology acceptance model (TAM)', *Technology in Society*, 60, 101212. DOI: 10.1016/J.TECHSOC.2019.101212

Kim, S. & Kim, S. (2020). 'Analysis of the Impact of Health Beliefs and Resource Factors on Preventive Behaviors against the COVID-19 Pandemic', *International Journal of Environmental Research and Public Health*, 17 (22):8666. DOI: 10.3390/ijerph17228666.

Janz, N. K. & Becker, M. H. (1984). 'The health belief model: A decade later', *Health Education & Behavior*, 11(1), pp. 1–47. DOI: 10.1177/109019818401100101.

- Johnston, M. P. (2014). 'Secondary data analysis: A method of which the time has come', *Qualitative and quantitative methods in libraries*, 3 (3), pp. 619-626.
- Jung, J. H., Kwon, E. & Kim, D. H. (2020). 'Mobile payment service usage: US consumers' motivations and intentions', *Computers in Human Behavior Reports*, 1, 100008. DOI: 10.1016/J.CHBR.2020.100008
- Matheson, G. J. (2019). 'We need to talk about reliability: making better use of test-retest studies for study design and interpretation', *PeerJ*, 7. DOI: 10.7717/peerj.6918
- Maiman, L. A. and Becker, M. H. (1974). 'The Health Belief Model: Origins and Correlates in Psychological Theory', *Health Education Monographs*, 2(4), pp. 336-353.
- Mazhar, S. A., Anjum, R., Anwar, A. I. & Khan, A. A. (2021). 'Methods of data collection: A fundamental tool of research', *Journal of Integrated Community Health*, 10 (1), pp. 6-10. DOI: 10.24321/2319.9113.202101.
- Mishra, P., Pandey, C. M., Singh, U. Gupta, A., Sahu, C. & Keshri, A. (2019). 'Descriptive Statistics and Normality Tests for Statistical Data', *Annals of Cardiac Anaesthesia*, 22 (1), pp. 67-72. DOI: 10.4103/aca.ACA_157_18
- Peng, S., Yang, A., Cao, L., Yu, S. & Xie, D. (2017). 'Social influence modeling using information theory in mobile social networks', *Information Sciences*, 379, pp. 146-159. DOI: 10.1016/J.INS.2016.08.023
- Rachmawati, I. K., Bukhori, M., Majidah, Y., Hidayatullah, S. & Waris, A. (2020). 'Analysis Of Use Of Mobile Banking With Acceptance And Use Of Technology (Utaut)', *International Journal of Scientific and Technology Research*, 9 (8), pp. 534 – 540.
- Rafique, H., Anwer, F., Shamim, A., Minaei-Bidgoli, B., Qureshi, M. A., & Shamshirband, S. (2018). 'Factors affecting acceptance of mobile library applications: Structural equation model', *Libri*, 68(2), pp. 99-112. DOI: 10.1515/libri-2017-0041
- Rafique, H., Almagrabi, A. O., Shamim, A., Anwar, F. and Bashir, A. K. (2020). 'Investigating the Acceptance of Mobile Library Applications with an Extended Technology Acceptance Model (TAM)', *Computers & Education*, 145, 103732. DOI: 10.1016/j.compedu.2019.103732.
- Reichheld, F. F. & Schefter, P. (2000). 'E-loyalty: your secret weapon on the web', *Harvard business review*, 78 (4), pp. 105-113.
- Rosenstock, I. M. (1974). 'Historical origins of the Health Belief Model', *Health Education Monographs*, 2(4), pp. 328–335.

Saccenti, E., Hendriks, M.H.W.B. & Smilde, A.K. (2020). 'Corruption of the Pearson correlation coefficient by measurement error and its estimation, bias, and correction under different error models', *Sci Rep*, 10, 438. DOI: 10.1038/s41598-019-57247-4

Sahinaslan, O., Sahinaslan, E., & Gunes, E. (2021). 'Review of the contributions of contactless payment technologies in the COVID-19 pandemic process', *AIP Conference Proceedings*, 2334 (1), pp. 070002. DOI: 10.1063/5.0042225.

Scherer, R., Siddiq, F. & Tondeur, J. (2019). 'The technology acceptance model (TAM): A meta-analytic structural equation modeling approach to explaining teachers' adoption of digital technology in education', *Computers & Education*, 128, pp. 13-35. DOI: 10.1016/j.compedu.2018.09.009.

Schmidt, A. F. & Finan, C. (2018). 'Linear regression and the normality assumption', *Journal of Clinical Epidemiology*, 98, pp. 146-151. DOI: 10.1016/j.jclinepi.2017.12.006.

Sharma, R., Singh, G., & Sharma, S. (2020). 'Modelling internet banking adoption in Fiji: A developing country perspective', *International Journal of Information Management*, 53, 102116. DOI: 10.1016/J.IJINFOMGT.2020.102116

Sharma, S. K. & Sharma, M. (2019). 'Examining the role of trust and quality dimensions in the actual usage of mobile banking services: An empirical investigation', *International Journal of Information Management*, 44, pp. 65-75. DOI: 10.1016/J.IJINFOMGT.2018.09.013

Singh, N. & Sinha, N. (2020). 'How perceived trust mediates merchant's intention to use a mobile wallet technology', *Journal of Retailing and Consumer Services*, 52, 101894. DOI: 10.1016/J.JRETCONSER.2019.101894

Slade, E. L., Dwivedi, Y. K., Piercy, N. C., & Williams, M. D. (2015). 'Modeling Consumers' Adoption Intentions of Remote Mobile Payments in the United Kingdom: Extending UTAUT with Innovativeness, Risk, and Trust', *Psychology and Marketing*, 32 (8), pp. 860-873. DOI: 10.1002/mar. 20823.

Tan, M., & Teo, T. S. (2000). 'Factors influencing the adoption of Internet banking', *Journal of the Association for information Systems*, 1(5), pp.1-42.

To, A. T. & Trinh, T. H. M. (2021). 'Understanding behavioral intention to use mobile wallets in vietnam: Extending the tam model with trust and enjoyment', *Cogent Business & Management*, 8 (1), 1891661. DOI: 10.1080/23311975.2021.1891661

Parker, C., Scott, S., & Geddes, A. (2019). 'Snowball sampling', *SAGE research methods foundations*. DOI: 10.4135/

Patil, P., Tamilmani, K., Rana, N. P. & Raghavan, V. (2020). 'Understanding consumer adoption of mobile payment in India: Extending Meta-UTAUT model with personal innovativeness,

anxiety, trust, and grievance redressal', *International Journal of Information Management*, 54, 102144. DOI: 10.1016/j.ijinfomgt.2020.102144.

Puriwat, W. & Tripopsakul, S. (2021). 'Explaining an Adoption and Continuance Intention to Use Contactless Payment Technologies: During the COVID-19 Pandemic', *Emerging Science Journal*, 5 (1). DOI: 10.28991/esj-2021-01260.

Wang, H., Tao, D., Yu, N. & Qu, X. (2020). 'Understanding consumer acceptance of healthcare wearable devices: An integrated model of UTAUT and TTF', *International Journal of Medical Informatics*, 139, 104156. DOI: 10.1016/j.ijmedinf.2020.104156.

Wu, R., Wu, Z., Wen, J., Cai, Y. & Li, Y. (2019). 'Extrinsic and intrinsic motivations as predictors of bicycle sharing usage intention: An empirical study for Tianjin, China', *Journal of Cleaner Production*, 225, pp. 451-458. DOI: 10.1016/j.jclepro.2019.04.016.

Venkatesh, V., Morris, M.G., Davis, G.B. & Davis, F.D. (2003). 'User acceptance of information technology: toward a unified view', *MIS Quarterly*, 27 (3), pp. 425–478. DOI: 10.2307/30036540

Venkatesh, V., Thong, J. Y. & Xu, X. (2012). 'Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology', *MIS quarterly*, 36 (1), pp. 157-178. DOI: 10.2307/41410412

Yan, L. Y., Tan, G. W. H., Loh, X. M., Hew, J. J., & Ooi, K. B. (2021). 'QR code and mobile payment: The disruptive forces in retail', *Journal of Retailing and Consumer Services*, 58, 102300. DOI: 10.1016/J.JRETCONSER.2020.102300

Ye, J., Zheng, J. & Yi, F. (2020). 'A study on users' willingness to accept mobility as a service based on UTAUT model', *Technological Forecasting & Social Change*, 157, 120066. DOI: 10.1016/J.TECHFORE.2020.120066

Zhao Y & Bacao F. (2021). 'How Does the Pandemic Facilitate Mobile Payment? An Investigation on Users' Perspective under the COVID-19 Pandemic', *International Journal of Environmental Research and Public Health*, 18 (3), pp.1016. DOI: 10.3390/ijerph18031016

Bibliography

ACI Worldwide (2021). *Global Real-Time Payments Transactions Surge by 41 Percent in 2020 as COVID-19 Pandemic Accelerates Shift to Digital Payments - New ACI Worldwide Research Reveals*. Available at: <https://investor.aciworldwide.com/news-releases/news-release-details/global-real-time-payments-transactions-surge-41-percent-2020> (Accessed: 1 December 2021)

C&SD (2021(a)). *Thematic Household Survey Report No. 73*.

C&SD (2021(b)). *Population Estimates*.

Forbes (2021). 'Cash No Longer King As Digital Payments Boom', 15th November. Available at: <https://www.forbes.com/sites/hongkong/2021/11/15/cash-no-longer-king-as-digital-payments-boom/?sh=14f659d758d1> (Accessed: 21 November 2021)

HKGCC (2021). 'Payments Move to Mobile', August. Available at: https://www.chamber.org.hk/en/information/the-bulletin_detail.aspx?id=768 (Accessed: 1 December 2021)

InsideRetail (2021). 'Hong Kong on the cusp of a cashless economy as digital payments boom', 3rd March. Available at: <https://insideretail.asia/2021/03/03/hong-kong-on-the-cusp-of-a-cashless-economy-as-digital-payments-boom/> (Accessed: 1 December 2021)

JPMorgan (2019). *E-commerce Payments Trends: Hong Kong*. Available at: <https://www.jpmorgan.com/merchant-services/insights/reports/hong-kong> (Accessed: 1 December 2021)

McKinsey (2021). *Global payments 2021: Transformation amid turbulent undercurrents*. Available at: <https://www.mckinsey.com/industries/financial-services/our-insights/global-payments-2021-transformation-amid-turbulent-undercurrents> (Accessed: 1 December 2021)

Sendingan, S. (2018). 'Cash is still king in Hong Kong as only a fifth embrace e-payments', Hong Kong Business. Available at: <https://hongkongbusiness.hk/financial-services/news/cash-still-king-in-hong-kong-only-fifth-embrace-e-payments> (Accessed: 21 November 2021)

Statista (2020). *Pandemic Set To Benefit Smartphone Mobile Payments*. Available at: <https://www.statista.com/chart/amp/23470/global-transaction-value-forecast-of-smartphone-mobile-payments/> (Accessed: 9 December 2021)

PwC (2021). *Payments 2025 & beyond*. Available at: <https://www.pwc.com/gx/en/financial-services/fs-2025/pwc-future-of-payments.pdf> (Accessed: 18 November 2021)

APPLICATION FOR ETHICAL APPROVAL

In order for research to result in benefit and minimise risk of harm, it must be conducted ethically. A researcher may not be covered by the University's insurance if ethical approval has not been obtained prior to commencement.

The University follows the OECD Frascati manual definition of **research activity**: "creative work undertaken on a systematic basis in order to increase the stock of knowledge, including knowledge of man, culture and society, and the use of this stock of knowledge to devise new applications". As such this covers activities undertaken by members of staff, postgraduate research students, and both taught postgraduate and undergraduate students working on dissertations/projects.

The individual undertaking the research activity is known as the "principal researcher".

Ethical approval is not required for routine audits, performance reviews, quality assurance studies, testing within normal educational requirements, and literary or artistic criticism.

Please read the notes for guidance before completing ALL sections of the form.

This form must be completed and approved prior to undertaking any research activity. Please see Checklist for details of process for different categories of application.

SECTION A: About You (Principal Researcher)

1	Full Name:	Ng Lok Yee Veronica			
2	Tick all boxes that apply:	Member of staff:	☐	Honorary research fellow:	☐
	Undergraduate Student	☐	Taught Postgraduate Student	☐	Postgraduate Research Student ☒
3	Institute/Academic Discipline/Centre:	The Hong Kong Management Association			
4	Campus:	N/A			
5	E-mail address:	2019398@studend.uwtsd.ac.uk			
6	Contact Telephone Number:	(852) 9370 9255			
For students:					
7	Student Number:	2019398			
8	Programme of Study:	Master of Business Administration			
9	Director of Studies/Supervisor:	Dr Katherine Mo			

SECTION B: Approval for Research Activity

1	Has the research activity received approval in principle? (please check the Guidance Notes as to the appropriate approval process for different levels of research by different categories of individual)	YES	☐	NO	☒
					Date
2	If Yes, please indicate source of approval (and date where known): <i>Approval in principle must be obtained from the relevant source prior to seeking ethical approval</i>	Research Degrees Committee	☐		
Institute Research Committee		☐			
Other (write in)		☐			

SECTION C: Internal and External Ethical Guidance Materials

Please list the core ethical guidance documents that have been referred to during the completion of this form (including any discipline-specific codes of research ethics, location-specific codes of research ethics, and also any specific ethical guidance relating to the proposed methodology). Please tick to confirm that your research proposal adheres to these codes and guidelines. You may add rows to this table if needed.	
1	UWTSD Research Ethics & Integrity Code of Practice ☒
2	UWTSD Research Data Management Policy ☒
3	[List any other relevant documents here] ☐

SECTION D: External Collaborative Research Activity

If there are external collaborators then you should gain consent from the contact persons to share their personal data with the university. If there are no external collaborators then leave this section blank and continue to section E.

1	Institution					
2	Contact person name					
3	Contact person e-mail address					
4	Is your research externally funded?	YES	☐	NO	☐	
5	Are you in receipt of a KESS scholarship?	YES	☐	NO	☐	
6	Are you specifically employed to undertake this research in either a paid or voluntary capacity?	Voluntary	YES	☐	NO	☐
7		Employed	YES	☐	NO	☐
8	Is the research being undertaken within an existing UWTSD Athrofa Professional Learning Partnership (APLP)?	If YES then the permission question below does not need to be answered.	YES	☐	NO	☐
9	Has permission to undertake the research has been provided by the partner organisation?	(If YES attach copy) If NO the application cannot continue	YES	☐	NO	☐

Where research activity is carried out in collaboration with an external organisation

10	Does this organisation have its own ethics approval system?	YES	☐	NO	☐
----	---	-----	--------------------------	----	--------------------------

	If Yes, please attach a copy of any final approval (or interim approval) from the organisation (this may be a copy of an email if appropriate).
--	---

SECTION E: Details of Research Activity

1	Indicative title:	A Review on Consumers' Behavioral Intention towards Mobile Payment during the Covid 19 Pandemic	
2	Proposed start date:	10 October 2021	Proposed end date: 29 April 2022
	Introduction to the Research (maximum 300 words per section) Ensure that you write for a <u>Non-Specialist Audience</u> when outlining your response to the points below: <i>Purpose of Research Activity</i> <i>Proposed Research Question</i> <i>Aims of Research Activity</i> <i>Objectives of Research Activity</i> Demonstrate, briefly, how Existing Research has informed the proposed activity and explain <i>What the research activity will add to the body of knowledge</i> <i>How it addresses an area of importance.</i>		
3	Purpose of Research Activity To investigate the development on the use of mobile payment in Hong Kong under the pandemic era. (this box should expand as you type)		
4	Research Question The impact on the use of mobile payment with the increase in general acceptance of technology and the new payment behavioural under the pandemic era. (this box should expand as you type)		
5	Aims of Research Activity To construct a research model by adopting Health Belief Model, the Unified Theory of Acceptance & Use of Technology model and the Technology Acceptance Model and selected vital factors that would positively influence the consumers' behavioural intention in the use of mobile payment in Hong Kong. (this box should expand as you type)		
6	Objectives of Research Activity - To verify the eight factors: perceived susceptibility, perceived severity, government support, perceived usefulness, perceived ease of use, social influence, facilitating condition and perceived trust that have positive influence on behavioral intention of mobile payment users; - To identify eight factors relationship with behavioral intention on the use of mobile payment which impacting cashless transactions through interview with focus group and conducting questionnaire; and - To analyze the existing development of mobile payment and provide adequate recommendations based on the findings for mobile payment service providers, retailers and regulators for evolving the capacity in the use of such advanced transaction method. (this box should expand as you type)		

	Proposed methods (maximum 600 words) Provide a brief summary of all the methods that may be used in the research activity, making it clear what specific techniques may be used. If methods other than those listed in this section are deemed appropriate later, additional ethical approval for those methods will be needed. You do not need to justify the methods here, but should instead describe how you intend to collect the data necessary for you to complete your project.
7	The research result is analysed with quantitative and qualitative research through obtaining primary and secondary data on the research topic. Primary data is collected through focus group as well as questionnaire with a sampling size based on the Hong Kong population. Analysis techniques such as descriptive statistics, reliability test, correlation test, and regression test are conducted under the quantitative research to analysis the numerical result collected from the questionnaire. Evaluation on focus group will be support by secondary data such as journals, books, reports, websites due to the limitation in the approachable number of interviewees. <i>(this box should expand as you type)</i>
	Location of research activity Identify all locations where research activity will take place.
8	Hong Kong <i>(this box should expand as you type)</i>
	Research activity outside of the UK If research activity will take place overseas, you are responsible for ensuring that local ethical considerations are complied with and that the relevant permissions are sought. Specify any local guidelines (e.g. from local professional associations/learned societies/universities) that exist and whether these involve any ethical stipulations beyond those usual in the UK (provide details of any licenses or permissions required). Also specify whether there are any specific ethical issues raised by the local context in which the research activity is taking place, for example, particular cultural and/or legal sensitivities or vulnerabilities of participants. If you live in the country where you will do the research then please state this.
9	N/A <i>(this box should expand as you type)</i>

10	Use of documentation not in the public domain: Are any documents NOT publicly available?	NO ☒	YES ☐
11	If Yes, please provide details here of how you will gain access to specific documentation that is not in the public domain and that this is in accordance with the current data protection law of the country in question and that of England and Wales. <i>(this box should expand as you type)</i>		

	Does your research relate to one or more of the seven aims of the Well-being of Future Generations (Wales) Act 2015?	YES	NO
12	A prosperous Wales	☐	☒
13	A resilient Wales	☐	☒
14	A healthier Wales	☐	☒

15	A more equal Wales	☐	☒
16	A Wales of cohesive communities	☐	☒
17	A Wales of vibrant culture and thriving Welsh language	☐	☒
18	A globally responsible Wales	☐	☒
19	If YES to any of the above, please give details:		
	(this box should expand as you type)		

SECTION F: Scope of Research Activity

	Will the research activity include:	YES	NO
1	Use of a questionnaire or similar research instrument?	☒	☐
2	Use of interviews?	☒	☐
3	Use of focus groups?	☒	☐
4	Use of participant diaries?	☐	☒
5	Use of video or audio recording?	☐	☒
6	Use of computer-generated log files?	☒	☐
7	Participant observation with their knowledge?	☐	☒
8	Participant observation without their knowledge?	☐	☒
9	Access to personal or confidential information without the participants' specific consent?	☐	☒
10	Administration of any questions, test stimuli, presentation that may be experienced as physically, mentally or emotionally harmful / offensive?	☐	☒
11	Performance of any acts which may cause embarrassment or affect self-esteem?	☐	☒
12	Investigation of participants involved in illegal activities?	☐	☒
13	Use of procedures that involve deception?	☐	☒
14	Administration of any substance, agent or placebo?	☐	☒
15	Working with live vertebrate animals?	☐	☒
16	Procedures that may have a negative impact on the environment?	☐	☒
17	Other primary data collection methods. Please indicate the type of data collection method(s) below.		
	Details of any other primary data collection method:	☐	☒
	(this box should expand as you type)		

If NO to every question, then the research activity is (ethically) low risk and **may** be exempt from **some** of the following sections (please refer to Guidance Notes).

If YES to any question, then no research activity should be undertaken until full ethical approval has been obtained.

SECTION G: Intended Participants

If there are no participants then do not complete this section, but go directly to section H.

Who are the intended participants:		YES	NO
1	Students or staff at the University?	☐	☒
2	Adults (over the age of 18 and competent to give consent)?	☒	☐
3	Vulnerable adults?	☐	☒
4	Children and Young People under the age of 18? (Consent from Parent, Carer or Guardian will be required)	☐	☒
5	Prisoners?	☐	☒
6	Young offenders?	☐	☒
7	Those who could be considered to have a particularly dependent relationship with the investigator or a gatekeeper?	☐	☒
8	People engaged in illegal activities?	☐	☒
9	Others. Please indicate the participants below, and specifically any group who may be unable to give consent.		
	Details of any other participant groups: (this box should expand as you type)	☐	☒

Participant numbers and source	
Provide an estimate of the expected number of participants. How will you identify participants and how will they be recruited?	
10	How many participants are expected? Approximately 200 individuals (this box should expand as you type)
11	Who will the participants be? Aged over 20 with mobile payment experience (this box should expand as you type)
12	How will you identify the participants? By networking and reference (this box should expand as you type)

Information for participants:		YES	NO	N/A
13	Will you describe the main research procedures to participants in advance, so that they are informed about what to expect?	☒	☐	☐
14	Will you tell participants that their participation is voluntary?	☒	☐	☐
15	Will you obtain written consent for participation?	☐	☐	☒
16	Will you explain to participants that refusal to participate in the research will not affect their treatment or education (if relevant)?	☐	☐	☒
17	If the research is observational, will you ask participants for their consent to being observed?	☐	☐	☒

18	Will you tell participants that they may withdraw from the research at any time and for any reason?	☒	☐	☐
19	With questionnaires, will you give participants the option of omitting questions they do not want to answer?	☒	☐	☐
20	Will you tell participants that their data will be treated with full confidentiality and that, if published, it will not be identifiable as theirs?	☒	☐	☐
21	Will you debrief participants at the end of their participation, in a way appropriate to the type of research undertaken?	☒	☐	☐
22	If NO to any of above questions, please give an explanation			
<i>(this box should expand as you type)</i>				

Information for participants:		YES	NO	N/A
24	Will participants be paid?	☐	☒	☐
25	Is specialist electrical or other equipment to be used with participants?	☐	☒	☐
26	Are there any financial or other interests to the investigator or University arising from this study?	☐	☒	☐
27	Will the research activity involve deliberately misleading participants in any way, or the partial or full concealment of the specific study aims?	☐	☒	☐
28	If YES to any question, please provide full details			
<i>(this box should expand as you type)</i>				

SECTION H: Anticipated Risks

Outline any anticipated risks that may adversely affect any of the participants, the researchers and/or the University, and the steps that will be taken to address them. If you have completed a full risk assessment (for example as required by a laboratory, or external research collaborator) you may append that to this form.					
1	Full risk assessment completed and appended? <table border="1" style="width: 100%;"> <tr> <td>Yes</td> <td>☒</td> </tr> <tr> <td>No</td> <td>☐</td> </tr> </table>	Yes	☒	No	☐
Yes	☒				
No	☐				
2	Risks to participants For example: sector-specific health & safety, emotional distress, financial disclosure, physical harm, transfer of personal data, sensitive organisational information <table border="1" style="width: 100%;"> <tr> <td style="width: 50%; vertical-align: top;"> Risk to participants: Certain personal information is collected when conducting questionnaire and focus group which will store in computers and online storage driver. <i>(this box should expand as you type)</i> </td> <td style="width: 50%; vertical-align: top;"> How you will mitigate the risk to participants: Personal information will only keep within 6 months after the submission of the research report. <i>(this box should expand as you type)</i> </td> </tr> </table>	Risk to participants: Certain personal information is collected when conducting questionnaire and focus group which will store in computers and online storage driver. <i>(this box should expand as you type)</i>	How you will mitigate the risk to participants: Personal information will only keep within 6 months after the submission of the research report. <i>(this box should expand as you type)</i>		
Risk to participants: Certain personal information is collected when conducting questionnaire and focus group which will store in computers and online storage driver. <i>(this box should expand as you type)</i>	How you will mitigate the risk to participants: Personal information will only keep within 6 months after the submission of the research report. <i>(this box should expand as you type)</i>				
3	If research activity may include sensitive, embarrassing or upsetting topics (e.g. sexual activity, drug use) or issues likely to disclose information requiring further action (e.g. criminal activity), give details of the procedures to deal with these issues, including any support/advice (e.g. helpline numbers) to be offered to participants. Note that where applicable, consent procedures should make it clear that if something potentially or actually illegal is discovered in the course of a project, it may need to be disclosed to the proper authorities				
N/A					

	<i>(this box should expand as you type)</i>	
4	Risks to the investigator For example: personal health & safety, physical harm, emotional distress, risk of accusation of harm/impropriety, conflict of interest	
	Risk to the investigator: N/A <i>(this box should expand as you type)</i>	How you will mitigate the risk to the investigator: <i>(this box should expand as you type)</i>
5	University/institutional risks For example: adverse publicity, financial loss, data protection	
	Risk to the University: N/A <i>(this box should expand as you type)</i>	How you will mitigate the risk to the University: <i>(this box should expand as you type)</i>
6	Environmental risks For example: accidental spillage of pollutants, damage to local ecosystems	
	Risk to the environment: N/A <i>(this box should expand as you type)</i>	How you will mitigate the risk to environment: <i>(this box should expand as you type)</i>

Disclosure and Barring Service				
	If the research activity involves children or vulnerable adults, a Disclosure and Barring Service (DBS) certificate must be obtained before any contact with such participants.	YES	NO	N/A
7	Does your research require you to hold a current DBS Certificate?	☐	☒	☐
8	If YES, please give the certificate number. If the certificate number is not available please write "Pending"; in this case any ethical approval will be subject to providing the appropriate certificate number.			

SECTION I: Feedback, Consent and Confidentiality

1	Feedback What de-briefing and feedback will be provided to participants, how will this be done and when?
	Introduction section is stated in the beginning of the questionnaire and briefing section is conducted by face-to-face before interviewing with focus group. <i>(this box should expand as you type)</i>
2	Informed consent Describe the arrangements to inform potential participants, before providing consent, of what is involved in participating. Describe the arrangements for participants to provide full consent before data collection begins. If gaining consent in this way is inappropriate, explain how consent will be obtained and recorded in accordance with prevailing data protection legislation.
	The questionnaire and focus group interview begin only when participants understand the purpose of the research and agree with the collection of data <i>(this box should expand as you type)</i>

3	Confidentiality / Anonymity Set out how anonymity of participants and confidentiality will be ensured in any outputs. If anonymity is not being offered, explain why this is the case.
	Anonymity is used in conducting questionnaire and information collected from face-to-face interview with focus group is solely use for analysing the research topic. <i>(this box should expand as you type)</i>

SECTION J: Data Protection and Storage

	Does the research activity involve personal data (as defined by the General Data Protection Regulation 2016 'GDPR' and the Data Protection Act 2018 "DPA")?	YES	NO
1	"Personal data" means any information relating to an identified or identifiable natural person ('data subject'). An identifiable natural person is one who can be identified, directly or indirectly, in particular by reference to an identifier such as a name, an identification number, location data, an online identifier or to one or more factors specific to the physical, physiological, genetic, mental, economic, cultural or social identity of that natural person. Any video or audio recordings of participants is considered to be personal data.	☒	☐
	If YES, provide a description of the data and explain why this data needs to be collected:		
2	Information such as gender, age, education level is collected for evaluating the use of mobile payment from participants' background perspective. <i>(this box should expand as you type)</i>		
	Does it involve special category data (as defined by the GDPR)?	YES	NO
3	"Special category data" means sensitive personal data consisting of information as to the data subjects' – (a) racial or ethnic origin, (b) political opinions, (c) religious beliefs or other beliefs of a similar nature, (d) membership of a trade union (within the meaning of the Trade Union and Labour Relations (Consolidation) Act 1992), (e) physical or mental health or condition, (f) sexual life, (g) genetics, (h) biometric data (as used for ID purposes).	☐	☒
	If YES, provide a description of the special category data and explain why this data needs to be collected:		
4	<i>(this box should expand as you type)</i>		

	Will data from the research activity (collected data, drafts of the thesis, or materials for publication) be stored in any of the following ways?	YES	NO
5	Manual files (i.e. in paper form)?	☒	☐
6	University computers?	☐	☒
7	Private company computers?	☒	☐
8	Home or other personal computers?	☒	☐
9	Laptop computers/ CDs/ Portable disk-drives/ memory sticks?	☒	☐
10	"Cloud" storage or websites?	☒	☐

11	Other – specify:	☐	☒
12	For all stored data, explain the measures in place to ensure the security of the data collected, data confidentiality, including details of backup procedures, password protection, encryption, anonymisation and pseudonymisation:		
	Password is required to get access to computers and cloud storage that keep the data for the research topic. <i>(this box should expand as you type)</i>		

Data Protection			
	Will the research activity involve any of the following activities:	YES	NO
13	Electronic transfer of data in any form?	☒	☐
14	Sharing of data with others at the University outside of the immediate research team?	☐	☒
15	Sharing of data with other organisations?	☐	☒
16	Export of data outside the UK or importing of data from outside the UK?	☐	☒
17	Use of personal addresses, postcodes, faxes, emails or telephone numbers?	☒	☐
18	Publication of data that might allow identification of individuals?	☐	☒
19	Use of data management system?	☐	☒
20	Data archiving?	☒	☐
21	If YES to any question, please provide full details, explaining how this will be conducted in accordance with the GDPR and Data Protection Act (2018) (and any international equivalents, where appropriate):		
	Data collected is only use for the purpose for analysis the research topic without manipulating data that is being collected. Such information will be destroyed after the report is being submitted after 6 months. <i>(this box should expand as you type)</i>		
22	List all who will have access to the data generated by the research activity:		
	Only supervisor and the researcher <i>(this box should expand as you type)</i>		
23	List who will have control of, and act as custodian(s) for, data generated by the research activity:		
	The researcher <i>(this box should expand as you type)</i>		
24	Give details of data storage arrangements, including security measures in place to protect the data, where data will be stored, how long for, and in what form. Will data be archived – if so how and if not why not.		
	Cloud is used for the backup purpose with password settings and only supervisor could get review the data with the specific access link. <i>(this box should expand as you type)</i>		



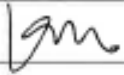
25	Please indicate if your data will be stored in the UWTSD Research Data Repository (see https://researchdata.uwtsd.ac.uk/). If so please explain. <i>(Most relevant to academic staff)</i>		
	N/A <i>(this box should expand as you type)</i>		
26	Confirm that you have read the UWTSD guidance on data management (see https://www.uwtsd.ac.uk/library/research-data-management/)	YES	☒
27	Confirm that you are aware that you need to keep all data until after your research has completed or the end of your funding	YES	☒



SECTION K: Declaration

	The information which I have provided is correct and complete to the best of my knowledge. I have attempted to identify any risks and issues related to the research activity and acknowledge my obligations and the rights of the participants. In submitting this application I hereby confirm that I undertake to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice which is published on the website: https://www.uwtsd.ac.uk/research/research-ethics/	
1	Signature of applicant:	
		Date: 17/12/2021

For STUDENT Submissions:

2	Director of Studies/Supervisor:	MO WING YING	Date: 19 Dec 2021
3	Signature:		

For STAFF Submissions:

4	Academic Director/ Assistant Dean:		Date:
5	Signature:		

Checklist: Please complete the checklist below to ensure that you have completed the form according to the guidelines and attached any required documentation:

☒	I have read the guidance notes supplied before completing the form.
☒	I have completed ALL RELEVANT sections of the form in full.
☒	I confirm that the research activity has received approval in principle
☐	I have attached a copy of final/interim approval from external organisation (where appropriate)
☒	I have attached a full risk assessment (where appropriate) ONLY TICK IF YOU HAVE ATTACHED A FULL RISK ASSESSMENT
☒	I understand that it is my responsibility to ensure that the above named research activity will meet the University's Research Ethics and Integrity Code of Practice.
☒	I understand that before commencing data collection all documents aimed at respondents (including information sheets, consent forms, questionnaires, interview schedules etc.) must be confirmed by the DoS/Supervisor, module tutor or Academic Director.

RESEARCH STUDENTS AND STAFF ONLY

All communications relating to this application during its processing must be in writing and emailed to pgresearch@uwtsd.ac.uk, with the title 'Ethical Approval' followed by your name. You will be informed of the outcome of your claim by email; therefore it is important that you check your University and personal email accounts regularly.

STUDENTS ON UNDERGRADUATE OR TAUGHT MASTERS PROGRAMMES should submit this form (and receive the outcome) via systems explained to you by the supervisor/module leader.

This form is available electronically from the Academic Office web pages:

<https://www.uwtsd.ac.uk/academic-office/appendices-and-forms/>