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企業管理研究所(MBA 學位學程)

碩士學位論文

影響投資人使用網路基金智能平台因素分析

**Factors influencing investors to adopt online funds intelligent
platform**



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摘要

隨著網際網路的發展，傳統共同基金投資的交易模式逐漸轉型為「網路基金智能平台」，此一平台特色強調即時開立帳戶、手續費用便宜且合理以及快速取得贖回款等特色，並利用大數據推出智能理財工具，方便投資人免於透過實體銀行，便可透過平台完成投資理財，台灣目前主要的基金平台包括基富通、鉅亨網、國泰智能投資，投資人現在能隨地完成投資基金、大大增加投資自主性。有鑑於基金智能平台發展蓬勃的現況，本研究結合(Davis, 1989)提出的科技接受模式以及(Ajzen, 1985)計劃行為理論作為研究理論架構並加入知覺風險作為外部負面因子加以分析投資人對「網路基金智能平台」的接受態度與使用意願。

本研究以問卷調查抽樣進行，共計回收 315 份有效樣本，研究結果顯示：

(一) 投資人對於使用網路基金智能平台的認知有用性高時，也對於網路基金智能平台的接受態度具有重要顯著影響

(二) 投資人對於使用網路基金智能平台的認知有用性高時，也對於網路基金智能平台的認知易用性具有重要顯著影響

(三) 投資人對於使用網路基金智能平台的接受態度高時，也會對於網路基金智能平台的使用意願具有重要顯著影響

(四) 社會主觀規範會對於投資人使用基金智能平台的使用意願具有重要顯著影響

(五) 知覺行為控制會對於投資人使用基金智能平台的使用意願具有重要顯著影響

結合質化分析目標受測者的回答後，本研究認為其中認知有用性及社會規範此兩因素之重要性較高，最終建議未來經理人運營網路基金平台時，針對此兩層面進行策略規劃，提升平台使用率。

關鍵詞：科技接受模式、計畫行為理論、網路基金智能平台

ABSTRACT

With the development of the Internet, the traditional form of the investing in mutual funds gradually transformed into “online funds intelligent platform”, The characteristics of this platform emphasize on opening account promptly, cheap and reasonable handling fees and received redemption quickly. Moreover, by using big data to propose intelligent financial investing tools, now investors can complete their own financial portfolio through platforms without going through physical banks. The major online funds intelligent platform including FundRich, Anue and the smart Investment of Cathay, investors now can invest in mutual funds whenever and wherever possible which increase investing autonomy. In view of the vigorous development of the online funds intelligent platforms, this research integrated with the technology acceptance model proposed by Davis (1989) and theory of planned behavior proposed by Ajzen (1985) as the research theoretical framework. Furthermore, we add perceived risk into model which serve as the negative external factor to analyze the investors attitude and intention to use online funds intelligent platform.

This study was conducted by sampling questionnaire survey, and a total of 315 valid sample were collected. The results are as follows:

1. Perceived usefulness of online funds intelligent platform by investors will certainly influences their attitude
2. Perceived usefulness of online funds intelligent platform by investors will certainly influences their perceived ease of the use
3. Attitude certainly influences the intention to use online funds intelligent platform
4. Subjective norm has certainly influenced the intention to use online funds intelligent platform.
5. Perceived behavior control of investors has certainly influenced the intention when adopting online funds intelligent platform.

Combining with the qualitative analysis from target respondents ‘answers, we regarded that perceived usefulness and subjective norm are more significant, according to this, providing suggestions for managers to focus on these two aspect to develop strategic planning to raise the usage rate of platforms in the future.

Key words: Technology Acceptance Model; Theory of Planned Behavior; online funds intelligent platform

CONTENTS

摘要	2
ABSTRACT	3
CONTENTS	4
LIST OF FIGURES	5
LIST OF TABLES	6
Chapter 1 Introduction	7
Chapter 2 Literature review	10
Chapter 3 Research model and hypotheses	15
Chapter 4 Research method	18
Chapter 5 Theoretical Analysis	22
Chapter 6 Conclusions	30
Appendix. Questionnaire	33
Reference	39

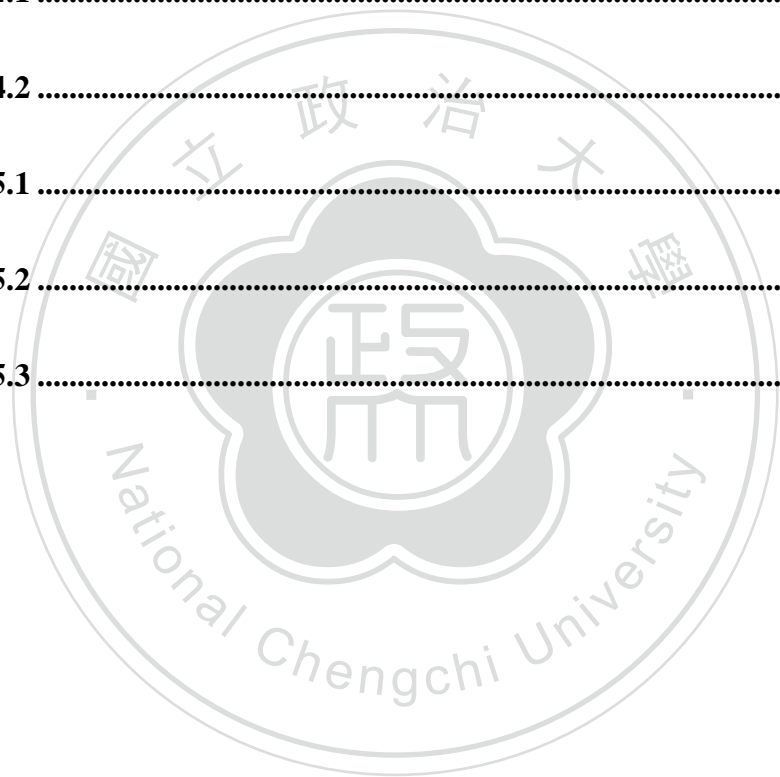
LIST OF FIGURES

- Figure 3.1** The proposed research model 17
- Figure 5.1** The proposed structural model..... 27



LIST OF TABLES

Table 2.1	13
Table 2.2	14
Table 4.1	19
Table 4.2	20
Table 5.1	24
Table 5.2	25
Table 5.3	27



Chapter 1 Introduction

With the opening of the market, financial commodities are developing towards diversification and investing in the mutual fund already become the main choice for investors.

The traditional channels of subscribing funds, including through banks, brokers, post office, with the growing of the internet usage rate the popularity of mobile devices, people

change their investing behavior from through traditional institution to online website. The main feature of investing in funds are low investment threshold, low cost, high liquidity and

also the advantage of diversifying risk. In 2015, the Financial Supervisory Commission

launched the "Building a Digital Financial Environment 3.0" plan to promote the establishment of diversified mutual fund investment channels, and to provide investment

diversification and a reasonable fee-charging mechanism. With the efforts of the government

the mutual funds' network transaction transformed into "mutual funds intelligent platform",

which emphasizes on the convenient and the quick process of opening an account. Investors

nowadays can build their own portfolio of fund, needless to face the financial specialist.

Additionally, the handling fee is quite low and transparent, the information security is also

valued and guaranteed. Take advantage of big data, using robot adviser investors can enjoy

their personal financial service and complete the wealth management through the

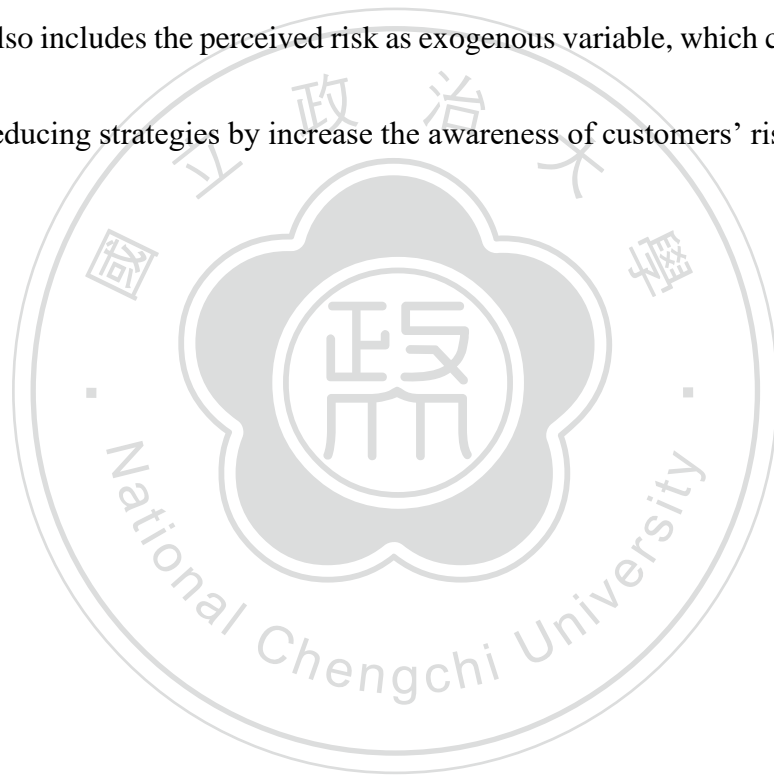
platform. However, with the development of global economic, black swan events happened

frequently after 2016, the economic growth rate dropped dramatically to 2.4%, which was

the lowest point after the financial crisis. To overcome such a volatile investment environment, smart investment provides a good platform for disciplinary investment. In the end of October in 2018, Cathay United Bank launched a rebalancing mechanism which can help investors to adjust their financial portfolio. The timing of initiating the rebalancing mechanism includes the imbalance of the investment portfolio caused by market fluctuations, changes in the risk attributes of investors, the need for adjustments after evaluation by a professional team, and when the performance of the investment targets lags behind or when the fund status changes. The Smart Investment of Cathay United Bank is based on long-term investment. Therefore, the funds selected on the platform must meet the long-term investment criteria before they can be selected into the smart investment platform. There are currently more than 2,000 fund targets for investors to choose. In light of the industry of mutual fund is really flourished and the trend that investors switching subscribing funds from traditional institutions to online websites. Therefore, by investigating the key factors that affect investors to adopt online funds platforms would provide a useful guideline for the banks' managers to improve the system and establish a more secure environment for investors trading funds. Over the past decade, TAM has been widely applied to examine IT usage and e-service acceptance (Davis, 1989). However, just the same as other information system, whether adopting the online funds platform just be explained partially by applying

TAM model by previous research, which lacking of “personal factor” and “social factor”.

Therefore , for the purpose of providing a substantial model for examining the adoption of online funds platform , this study incorporate TPB model(Ajzen, 1985),which was widely applied to explain and forecast human behavior and consider the impact of personal role and social system. In the purpose of improving the explanatory power and predictive ability, this research also includes the perceived risk as exogenous variable, which can help manager to exert risk-reducing strategies by increase the awareness of customers’ risk perceptions.



Chapter 2 Literature review

2.1 Technology Acceptance Model

Davis proposed the TAM to predict and explain the factors affecting willingness of users to use IT ,the origins of the TAM came from (Fishbein & Ajzen, 1977) Theory of Reasoned Action (TRA). In the past decades, TRA already widely applied on testing and verifying personal behavior, it suggests that a person's behavioral intention depends on the person's attitude about the behavior and subjective norms. Then, the behavioral intention is the determining factor which will directly affect actual usage. Extended and developed by(Davis, 1989), TAM consists of two user internal beliefs that determine acceptance, perceived ease of use and perceived usefulness, which will influence an individual's attitude and intentions toward using technology. Perceived ease of use was related to the degree which users regard the ease of use of technology. As the system become easier to use, users will have more confidence in self-efficacy and self-control and their attitude towards the system will be more positive. TAM suggested that perceived usefulness will be influenced by perceived ease of use, which related to the degree to which users believe that using a certain system will increase their work performance or save effort, that is, individual's subjective perception of the use of a certain information system will raise their work efficiency. According to

Davis (1989), TAM was designed to explain the predictors of computer acceptance; therefore, this study will apply TAM to investigate the motivation adopting online funds platforms by investors in Taiwan and explained the key Influencing factors.

2.2 Theory of Planned Behavior

The TPB underlying the effort of theory of reasoned action (TRA) which has been proven successful in predicting and explaining human behavior across various application contexts (Fishbein & Ajzen, 1977). The view point of TRA was that when individual carry out particular behavior will affect by their behavioral intention which determined by attitude and subjective norm jointly. However, due to that human being may lack of complete volitional control, Ajzen proposed TPB which in the purpose of enhancing the forecast of intention, by adding individuals' uncontrollable factors, that is, perceived behavioral control, to complete entire framework. (Ajzen & Madden, 1986).

Subjective Norms

Subjective norm (SN) is referred to the social pressure ones felt when he or she executed certain behaviors. In other words, the subjective norm is relative to normative beliefs about the expectations of other people, namely someone perceived as important others such as parents, spouses, friends, teachers, etc.

Perceived Behavioral Control

Perceived Behavioral Control (PBC) which is the key difference between TRA and TPB, reflects “a person’s perception of the ease or difficulty of implementing the particular behavior.” It is assumed that perceived behavioral control is determined by the total set of accessible control beliefs which may facilitate or hinder the performance of the behavior(Ajzen, 2002). The concept of perceived behavioral control is conceptually related to self-efficacy, which was proposed by psychologist Albert Bandura, refers to the belief that an individual has sufficient ability to accomplish something, which has nothing to do with the skills ones have but related to the self-judgment of the ability possessed(Wu & Chen, 2005). After investigating the previous research, we collect the relative works and write the conclusions of each of them, which showed in **Table 2.1.**

Table 2.1*The research relative with TAM and TPB*

Years	Scholars	Theme	Conclusion and findings
1985	Icek Ajzen	Job searching behavior	The result indicate that when people execute particular behavior , it will be affected by attitude, subjective norm and perceived behavioral control.
1989	Davis et al.	Word processing system	Perceived usefulness will be influenced by perceived ease of use. Besides both of them will affect the user's intention , then finally affect the actual behavior.
1995	Igbaria et al.	Microcomputer	Self-efficacy has a negative relationship with computer anxiety which will directly impact the perceived ease of use. Then, perceived ease of use will affect perceived usefulness , then both of them will affect system usage.
2007	Shi-Yi-Yang	Online-Stock trading	Results show that attitude, perceived behavior control, and cost significantly influence investors' intention towards adopting Online stock trading. Trust indirectly influences intention through attitude, Perceived behavior control, and subjective norm.

2.3 Perceived risks

Perceived risk is a multifaceted and dynamic concept. It represents that when consumers purchase products or services, they will perceive a certain sense of uncertainty because they cannot predict the result or face an uncertain situation. It has formally been defined as “a combination of uncertainty plus seriousness of outcome involved” (Bauer, 1967)and “the expectation of losses associated with purchase and acts as an inhibitor to purchase

behavior” (Peter & Ryan, 1976). After investigating the previous research, we also collect the relative works and write the conclusions of each of them, which presented in **Table 2.2**.

Table 2.2

The research relative with perceived risk

Years	Scholars	Theme	Conclusion and findings
2001	Featherman	Internet based e-payment system	Perceived risk have strong impact on TAM’s variables, which will reduce perceived usefulness and adopting intention. (Featherman, 2001)
2009	Lee	online trading	Social risk was an important determinant to SN when adopting of e-banking.(Lee, 2009)
2017	Xie and Song	e-government	The results show that perceived risk has adversely impact on perceived usefulness, attitude and perceived behavioral control. (Xie et al., 2017)

Chapter 3 Research model and hypotheses

3.1. Research model

Rely on the earlier discussion based on the theoretical background, this study evaluates the factors that influence investors' attitudes towards adopting online funds intelligent platform, the integration of TAM and TPB was served as the framework of our research, which proved to have better exploratory power than use them individually. From the TAM aspect, variables including perceived usefulness and perceived ease of use. Both of them have direct effect on one's attitude towards using online funds intelligent platform, then after that attitude will have direct effect on the intention to adopt online funds intelligent platform. Besides, perceived usefulness (PU) will also affect individual's perceived ease of use (PEOU) and intentions.

From the TPB aspect, which serve as personal and social factor, with subjective norm and perceived behavioral control affect individual's intention, respectively.

In addition, perceived risk acted as negative external factor which influence investors' attitude and intention to adopt online funds intelligent platform, the integrated model use in this study is illustrated in **Fig 3.1**.

3.2. Hypotheses development

After investigating the technology accepting model in Chapter 2, the hypotheses were formulated. Regarding Technology Acceptance Model, we proposed Hypotheses 1 to 5; then in reference to Theory of planned behavior, Hypotheses 6 to 7 were proposed.

Contemplating the negative variable, hypotheses 8 and 9 were based on Perceived Risk to formulate.

Technology Acceptance Model

H1. Perceived usefulness of online funds intelligent platform by investors will certainly influences their attitude

H2. Perceived usefulness of online funds intelligent platform by investors will certainly influences their perceived ease of the use

H3. Perceived ease of use certainly influences attitudes towards the use of online funds intelligent platform

H4. Perceived usefulness certainly influences the perceived ease of the use towards online funds intelligent platform

H5. Attitude certainly influences the intention to use online funds intelligent platform

Theory of Planned Behavior

H6. Subjective norm has certainly influenced the intention to use online funds intelligent platform

H7. Perceived behavior control of investors has certainly influenced the intention when adopting online funds intelligent platform.

Perceived Risk

H8. Perceived risk negatively influences investors' attitude toward adopting online funds intelligent platform

H9. Perceived risk negatively influences investors' intention toward adopting online funds intelligent platform

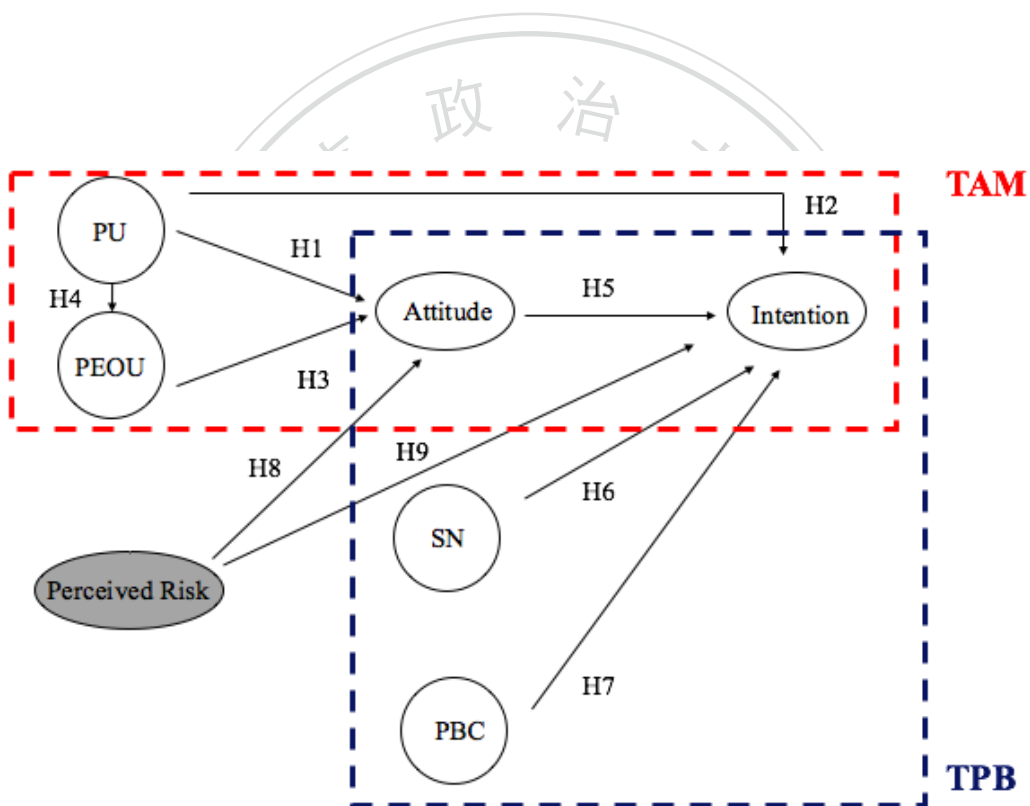


Figure 3.1 The proposed research model

Chapter 4 Research method

4.1 Data collection

The purpose of this research is to investigate the factors influencing investors' intention to adopt online funds intelligent platforms, the research matrix is mainly based on who had the experience of investing in mutual funds. Since online funds intelligent platforms are operated via the Internet, data collection uses online questionnaires to conduct surveys. To encourage participation, we use the voucher as lucky draw prizes allowing users to participate at their own discretion. This online questionnaire was designed by Survey cake, which collected a total of 349 responses, by eliminating missing values, there are 315 responses were recognized as valid questionnaire, namely overall response rate reach 90%.

For the first part of survey, we inquire the basic information of investors, including demographic items. **Table 4.1** summaries the result of descriptive statistical analysis.

Table 4.1*Sample demographics*

Measure	Item	Frequency	Percentage (%)
Gender	Male	164	52.1
	Female	151	47.9
Age	20-29	103	32.7
	30-39	78	24.8
	40-49	77	24.4
	50-59	53	16.8
	>60	4	1.3
Educational level	Secondary	1	0.3
	High school	7	2.2
	College	172	54.6
	Master	133	42.2
	PhD	2	0.6
Industry	Financial	52	16.5
	Business	36	11.4
	Government officials	27	8.6
	Manufacturing	36	11.4
	Service	55	17.5
	Electronic technology	36	11.4
	Students	40	12.7
	Others	33	10.5
Investing amount monthly (NTD)	10,001-50,000	125	39.7
	50,001-100,000	30	9.5
	100,001-150,000	17	5.4
	150,001-200,000	7	2.2
	200,001-250,000	7	2.2
	>250,000	16	5.1

Besides, we also measure the behaviors of investors which are shown by **Table 4.2**.

Among this investigation, here are 52% of the respondents were man and 48% were women. Besides, those over thirty years old take the great part (67.3%) in this survey. According to the responses, about 39.7% of the respondents will spend at least 10 thousand in investment. To be more detailed, over half percent (58.4%) of respondents had experience in investing mutual funds which includes using online investment. Finally, the result showed that although 41.6% were non-experienced users, they are still willing to adopt online funds intelligent platforms in the future.

Table 4.2
Behavior measurement of target respondents

Behaviors of investors	Number	Percentage (%)
Experienced users	184	58.4
Non-experienced users, but willing to use online funds platform in the future	131	41.6
Sample size	315	100

Note. Experienced users= someone had experience in investing mutual funds (including online investment)

4.2 Measuring development

We divided the questionnaire into two parts, which was attached in the **Appendix**.

Firstly, for the purpose of collecting respondents' basic information, we use nominal scale to categorize the participants 'gender, age, education, industry and investment amount per month. The second part of questionnaire, a five-point Likert scales, ranging from (1) 'strongly disagree' to (5)'strongly agree' were used to assess responses, which were developed in accordance with TAM, TPB and Perceived Risk. Firstly, for the aspect of TAM, all constructs were adjusted from the previous assessment specified by(Cheng et al., 2006). Secondly , for the aspect of TPB, perceived behavior control and subjective norm were revised by the assessment specified by(Wu & Chen, 2005).Finally, the last aspect, Perceived Risk , containing three components for its construct, was derived from the assessment specified by (Littler & Melanthiou, 2006).

Chapter 5 Theoretical Analysis

The Smart PLS 3 software (v. 3.3.2) developed by (Ringle et al., 2015) was applied for this research. The reason why is that PLS is applicable to small samples in estimation as well as suitable for exploratory research (Ringle et al., 2012). Generally speaking, the analysis of SEM should at least includes two-phase measurement, the first phase called Measurement model, the second phase called Structural model.(Anderson & Gerbing, 1988).Consequently, the below statement will follow these two procedure.

5.1 Analysis of the measurement model

The measurement model for constructs with reflective measures were assessed by observing three criteria: factor loading(λ), composite reliability and average variance extracted. As suggested by (Fornell & Larcker, 1981), convergent validity can be significant when factors loading on their associated factors are well above 0.5. As shown in **Table 5.1**, all values for factor loading in confirmatory factor analysis of the measurement model exceeded 0.5, ranging from 0.65 to 0.96. Besides, see **Table 5.1**, composite reliabilities are well above recommended level 0.8, ranging from 0.86 to 0.94. The last one, average variance extracted, which is adequate when reaching the level 0.5, ranging from

0.69 to 0.96. In the end, all three conditions for convergent validity were met. On the other hand, discriminant validity was referred to when evaluate different constructs, the value observed should be distinguished. (Bagozzi et al., 1991). **Table 5.2** had shown the discriminant validity of constructs, the square root of AVE and the correlation among constructs. The result showed that all diagonal values exceeded the internal constructs' correlation, which proved that our instrument had satisfactory construct validity.

5.2 Collinearity

Since the correlation between constructs are rather high, the potential problem of collinearity should be further examined. By investigating the variance inflation factor(VIF) of the inner model, which was used to determine whether independent variables of multiple linear regression model is independent. According to the criteria suggested by(Hair et al., 2011),when VIF less or equal to 5, it represents there are no collinearity between variables. Calculating by PLS, the VIFs for each construct are well below the threshold 5, providing evidence against collinearity.

Table 5.1*Construct reliability and convergent validity*

Construct	Item	Factor loading	t-value	CR	AVE	Cronbach's α
Perceived usefulness	PU1	0.86	41.23	0.93	0.77	0.90
	PU2	0.88	57.65			
	PU3	0.89	57.99			
	PU4	0.88	52.78			
Perceived ease of use	PEOU1	0.65	8.75	0.90	0.69	0.77
	PEOU2	0.90	51.87			
	PEOU3	0.91	75.64			
Attitude	AT1	0.88	57.39	0.93	0.76	0.89
	AT2	0.88	48.44			
	AT3	0.84	34.42			
	AT4	0.90	66.85			
Intention	IT1	0.96	176.81	0.92	0.96	0.91
	IT2	0.96	136.77			
Subjective norm	SN1	0.92	77.40	0.94	0.83	0.89
	SN2	0.92	74.66			
	SN3	0.90	62.05			
Perceived behavior control	PBC1	0.86	32.93	0.92	0.79	0.87
	PBC2	0.88	35.58			
	PBC3	0.93	90.36			
Perceived risk	PR1	0.84	9.30	0.86	0.72	0.81
	PR2	0.85	9.67			
	PR3	0.86	10.98			

Note. CR=Composite Reliability; AVE= Average variance extracted

Table 5.2*Discriminant validity*

Construct	AT	IT	PBC	PEOU	PU	PR	SN
Attitude	0.874						
Intention	0.799	0.960					
Perceived behavior control	0.578	0.618	0.890				
Perceived ease of use	0.510	0.454	0.601	0.828			
Perceived usefulness	0.799	0.697	0.619	0.632	0.878		
Perceived risk	-0.155	-0.196	-0.262	-0.377	-0.174	0.848	
Subjective norm	0.601	0.622	0.419	0.319	0.499	-0.778	0.912

Note. The square root of AVE list along the diagonal line. The correlation coefficient between variables list along the off-diagonal line. The p-value less than 0.05 of each construct were deleted.

5.3 Analysis of the structural model and hypotheses testing

In this research we adopted structural equation modeling research to conduct data analysis (Bagozzi et al., 1991) The structural model was assessed by examining the path coefficient beta weight (β) and the R^2 . The former, which explained the relationship between the dependent and independent variable; the latter, which illustrate the predictive power of the model. Both indicators present how well the model is performing. The result of structural

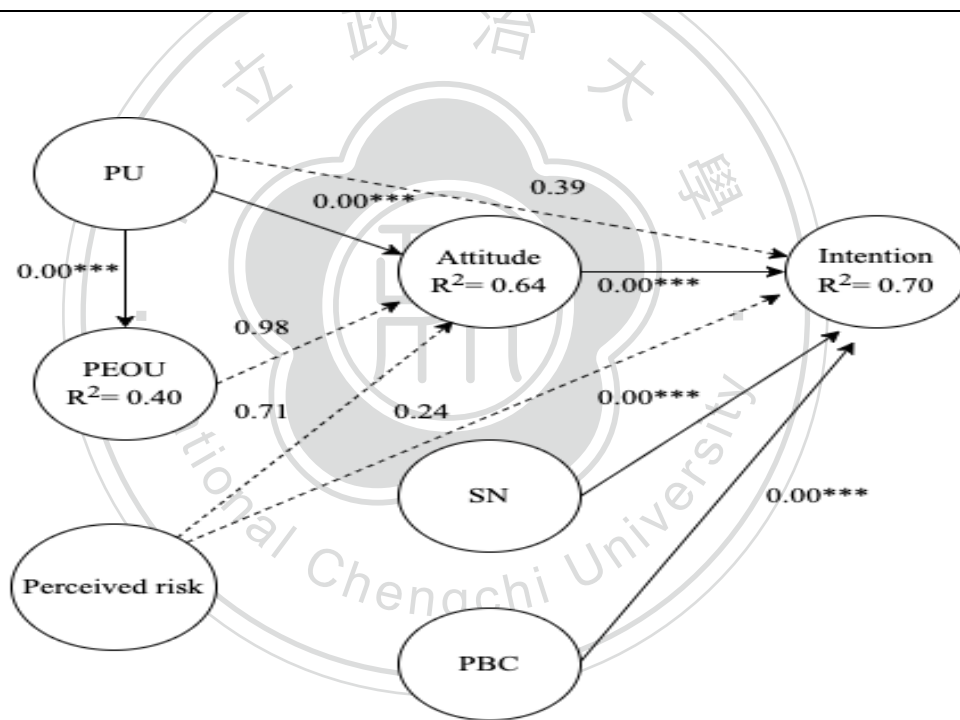
modeling analysis I is shown in **Fig. 5.1** and **Table 5.3** demonstrated the result of Hypotheses testing.

Firstly, intention to adopt online intelligent funds platform was jointly determined by attitude ($\beta = 6.49, p < 0.001$), subjective norm ($\beta = 3.89, p < 0.01$) and perceived behavior control ($\beta = 2.85, p < 0.01$) which together explained 70% of the variance of intention to use ($R^2 = 0.70$, coefficient of determination). Therefore, Hypotheses 5, 6 and 7 were supported. However, perceived usefulness ($\beta = 0.06, p > 0.05$) and perceived risk ($\beta = -0.04, p > 0.05$) did not significantly affect intention. Hence, Hypotheses 2 and 9 were not supported. Then attitude was predicted by perceived usefulness ($\beta = 0.79, p < 0.001$), which explained 64 % of the total variance. As a result, Hypothesis 1 was supported. However, due to that perceived ease of use ($\beta = 0.001, p > 0.05$) and perceived risk ($\beta = -0.02, p > 0.05$), didn't significantly affect attitude. Thus, Hypotheses 3 and 8 were not supported. Finally, perceived usefulness has significantly influenced on perceived ease of use which path coefficient is 0.63 and its p-value less than 0.001 while R square equal to 0.4, explaining 40 % of the variance. Consequently, Hypothesis 4 was supported.

Table 5.3

Path coefficients and hypothesis testing

Hypotheses	Relation	Hypothesized direction	Path coefficient	t-value	Supported
H1	PU → AT	+	0.7950	0.3678	Yes
H2	PU → IT	+	0.0655	0.8516	No
H3	PEOU → AT	+	0.0016	0.0237	No
H4	PU → PEOU	+	0.6323	16.8443	Yes
H5	AT → IT	+	0.5117	6.4858	Yes
H6	SN → IT	+	0.1993	3.8961	Yes
H7	PBC → IT	+	0.1879	2.8519	Yes
H8	PR → AT	-	-0.0162	0.3678	No
H9	PR → IT	-	-0.0404	1.1392	No



*** P < 0.001

Note Hypothesis which indicate no significance will represent as dotted line.

Figure 5.1 The proposed structural model

5.4 Discussion and findings

The overall explanatory power of our research model had R^2 of 70% for intention and R^2 of 63% to attitude to use online funds intelligent platform. Apart from quantitative analysis, in order to investigate the key factors, affecting investors to adopt online intelligent funds platform, we add qualitative questions to ask those experienced users, what are the advantages and disadvantages for existing funds platform for them. According to the responses, there are three major pros attract investors to use online intelligent funds platform and two main cons for them to use it. The formers are convenient, fast and cheap, different from subscribing funds through traditional channel, instead of wasting time and energy for commute, investors now can be investing funds via internet, which increased their autonomy greatly. Besides, owing to redemption can be credited quickly, which help investors use their capital more effectively. The last but not the least, because funds platform operated online, the operating cost is quite low, investors can subscribe without paying high handling fee and needless to pay for management fee. However, the defects for experienced users are that these investing tools did not popular among their friends, they had difficulty to discuss with people their trust. In addition, they mentioned that the investing performance was not stable. According to the responses from our target respondent we can figure out somewhere work in concert with the result of hypotheses testing. First, perceived usefulness has significant

impact on attitude(H1), then attitude has direct effect on intention (H5) to use online funds intelligent platform. Besides ,the H7 indicate that perceived behavior control also impact intention, which is consistent with the result from (Featherman & Fuller, 2003). The other finding is that just as hypothesis 6 indicate subjective norm have significant effect to intention, which implying that managers can use marketing campaign to promote online funds intelligent platform, to raise the usage rate. Due to that our survey indicated our target respondents concerned about the unstable performance and had difficulty to discuss using experience with their friends. Therefore, mangers can focus on enhancing perceived usefulness of users and raising the popularity among society. Finally, reaching the goal of enlarging their customers' base.

Chapter 6 Conclusions

6.1 Suggestions for manager to operate online funds intelligent platform

The main difference of this research is that it includes the objective questions to investigate the key reason which really impact investors to adopt online intelligent funds platform. After making qualitative research several findings are correspond to the result of the hypotheses which are proved supported. Consequently, we perceived that among 5 hypotheses which proved to be significant, there are 2 major factors managers should focus improving them. That is, perceived usefulness and subjective norms, the suggestions for managers to operate online funds intelligent platform are as follow:

1. For the perceived usefulness aspect, offering courses to teach users how to use online funds intelligent platform and the basic knowledge to select funds.

2. For the subjective norm aspect, by providing extra benefits to loyal customers, asking them to invite their friends and family to adopt online funds intelligent platforms.

The benefit to execute the recommendations above, for the perceived usefulness aspect, by this way, helping users feeling themselves have capability to adopt online funds platform and to improve investing performance. For the subjective norm aspect, by this way, dealing

with the problem of low popularity and make them to discuss using experience with their friends.

6.2 Limitations of the research

Although that the proposed model was examined to have good explanatory power toward investigating factors influencing investors adopting online funds intelligent platform.

However, some limitations should be noted. First, due to that some respondents didn't have experience in using online funds intelligent platform; therefore, the designed questionnaire didn't specify the particular platform which exist in the market now, we only invite respondents to imagine the scenario when adopting online funds platform. Second, there are strong relevance between each construct, such as perceived usefulness and perceive ease of use. Due to different background of respondents, some of them might have difficulties distinguish each measuring questions.

6.3 Recommendations for future research

This result which provides a guideline for future research to target objective aspect to conduct a more deeply examination. However, due to that the previous research proved perceived risk as an important determinant for the context regarding to online banking

adoption(Lee, 2009).Therefore, this study integrates the perceived risk as an external negative factor to test whether it will affect investors' attitude and intention. However, the result indicate that it has no significant effect towards attitude and intention. After investigate of previous studies, we figure out it may because cultural differences may affect individual react to the potential risk.(Bontempo et al., 1997) On the other hand, according to(Tse & Wilton, 1988),different culture will formulate different cognitive framework, which in turn affect the recognition and evaluation of existing risk. Therefore, future comparative research could target cultural difference to further validation. Additionally, to investigate more in-depth understanding the factors that affect online intelligent funds platform adoption., evaluating the component of perceived risk can be adopted in the future research. Finally, since online intelligent platform was an online service, for the purpose of collecting data from internet experienced users, this paper was conducted using web-based form. For generalizing the model, future research can devote efforts in systematically sampled from a more dispersed sample.

Appendix. Questionnaire

(English version)

First part (basic information)

Measure	Item
Gender	Male
	Female
Age	Under 19
	20-24
	25-29
	30-34
	35-39
	40-50
	>50
Education level	High school
	College
	Master
	PhD
Occupation	High level managers
	Intermediate level managers
	Supervisory
	Government officials
	Students
	Others
Investing amount monthly (NTD)	10,001-50,000
	50,001-100,000
	100,001-150,000
	150,001-200,000
	200,001-250,000
	>250,000
Categorization of respondents	Experienced users
	Non-experienced users
	(investing in mutual funds)
The willingness to adopt online funds intelligent platform in the future	Yes, willing to use
	No, no willing to use
What are the pros and cons you perceived towards online funds intelligent platform ?	Free answer question

Second part

Please response to these questions by ticking the checkbox.

(1= strongly disagree, 5= strongly agree)

Constructs	Source
<p><i>Perceived ease of use</i></p> <ul style="list-style-type: none"> • I think that learning how to use online funds intelligent platforms would be easy. • I think that using online funds intelligent platforms would not spend too much mental effort. • I think that it is easy to use online funds intelligent platforms to complete the financial portfolio 	<p>Cheng et al.(2006)</p>
<p><i>Perceived usefulness</i></p> <ul style="list-style-type: none"> • I think that using online funds intelligent platforms would enable me to accomplish my tasks more quickly. • I think that using online funds intelligent platforms would make it easier for me to carry out my tasks. • I think that online funds intelligent platforms is useful. • Overall, I think that using online funds intelligent platforms is advantageous. 	<p>Cheng et al.(2006)</p>
<p>Attitude</p> <ul style="list-style-type: none"> • I think that using online funds intelligent platforms is a good idea. • I think that using online funds intelligent platforms to complete the financial portfolio would be a wise idea. • I think that using online funds intelligent platforms is pleasant. • I think that using online funds intelligent platforms would be ideal. 	<p>Cheng et al.(2006)</p>
<p>Intention to use</p> <ul style="list-style-type: none"> • I would use online funds intelligent platforms to complete my financial portfolio. • I would like to use online funds intelligent platforms the future. 	<p>Cheng et al.(2006)</p>

Subjective Norms

- People who are important to me would think that I should use online funds intelligent platforms
- People who influence me a lot would think that I should use online funds intelligent platforms
- People whose opinions are valuable to me would prefer that I use online funds intelligent platforms

Wu and Chen(2005)

Perceived Behavioral Control

- I think that I am able to use online funds intelligent platforms to accomplish my financial portfolio.
- Using online funds intelligent platforms is entirely within my control.
- I have the resources, knowledge, and ability to use online funds intelligent platforms.

Wu and Chen(2005)

Perceived risk

- I would not feel secure when sending private personal information on the online funds intelligent platforms
- If errors were to occur when I use online funds intelligent platforms, I worry that I would be unable to get compensation.
- I worry about the occurrence of fraud and hacker intrusion while trading on the online funds intelligent platform.

Litter and Melanthiou(2006)



(Chinese version)

影響投資人使用網路基金智能平台之因素 問卷調查

親愛的受訪者，您好！

這是一份關於投資人對於使用基金智能平台投資意願之學術研究問卷，目的是為了解投資人對於基金智能平台接受意願、受社會價值規範及知覺風險影響的程度。請依據您的實際感受依序填答即可。

本問卷的搜集與採用資料僅供學術研究，並且採用匿名方式進行，資料不會另行公開，請安心填答。

最後對於您的協助致上最誠摯的敬意與感謝！

敬祝您

身體健康 萬事如意政治大學企業管理研究所

指導教授：周冠男 教授

研究生：許馨心 敬上

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一、基本資料題

1.請問您的性別：

生理男 生理女

2.請問您的年齡：

20歲-29歲 30歲-39歲 40歲-49歲 50歲-59歲 60歲以上

3.請問您的學歷：

國中（含以下） 高中（職） 大學（專） 碩士 博士

4.請問您的職業：

金融業 商業 軍公教 製造業 服務業 電子科技業 學生

其他

5.請問您每月投資金額(台幣)：

10,000元以下 100,001-50,000元 50,001-100,000元 100,001-150,000元

150,001-200,000元 200,001-250,000元 250,001元以上

(二) 對於「網路基金智能平台」認知有用性之感受

1.我認為使用網路基金智能平台能讓我更快完成投資理財規劃

非常不同意 不同意 普通 同意 非常同意

2.我認為使用網路基金智能平台讓我更輕易完成投資理財規劃

非常不同意 不同意 普通 同意 非常同意

3.我認為使用網路基金智能平台是實用的

非常不同意 不同意 普通 同意 非常同意

4.整體來說，我認為使用網路基金智能平台是有利的

非常不同意 不同意 普通 同意 非常同意

(三) 對於「網路基金智能平台」之接受態度

1.我認為使用網路基金智能平台是個好主意

非常不同意 不同意 普通 同意 非常同意

2.我認為使用網路基金智能平台完成投資理財規劃是明智的

非常不同意 不同意 普通 同意 非常同意

3.我認為使用網路基金智能平台會是愉悅的

非常不同意 不同意 普通 同意 非常同意

4.我認為使用網路基金智能平台投資是理想的

非常不同意 不同意 普通 同意 非常同意

(四) 對於「網路基金智能平台」之使用意願

1.我會使用網路基金智能平台去完成投資理財需求

非常不同意 不同意 普通 同意 非常同意

2.未來我想使用網路基金智能平台投資

非常不同意 不同意 普通 同意 非常同意

(五) 外在社會規範之影響

1.對我而言重要的人(例如:父母長輩、摯友、老師、伴侶等)會認為我必須使用網路基金智能平台

非常不同意 不同意 普通 同意 非常同意

2.主要影響我決策的人會認為我必須使用網路基金智能平台

非常不同意 不同意 普通 同意 非常同意

3.其建議對我具價值的人(例如:顧問、專業人士)會認為我必須使用網路基金智能平台

非常不同意 不同意 普通 同意 非常同意

(六) 主觀認定自身掌控能力之影響

1.我認為我有能力使用網路基金智能平台完成投資理財規劃

非常不同意 不同意 普通 同意 非常同意

2.我認為使用網路基金智能平台時能夠完全的在我的掌控之中

非常不同意 不同意 普通 同意 非常同意

3.我認為我有資源、知識以及能力去使用網路基金智能平台投資

非常不同意 不同意 普通 同意 非常同意

(六) 不確定性風險之影響

1.當我在網路基金智能平台傳輸個人資訊時我感到不安全

非常不同意 不同意 普通 同意 非常同意

2.若有交易錯誤發生,我怕我無法得到補償

非常不同意 不同意 普通 同意 非常同意

3.我擔憂在使用網路基金智能平台時會遭到駭客入侵或被詐欺

非常不同意 不同意 普通 同意 非常同意

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