In this issue:

Research Design for Assessing Attitudes in Technology Acceptance: Chinese Americans and Internet Banking

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Abstract: Cultural factors, especially language, are important in studying the phenomenon of Internet banking adoption by Chinese Americans. As part of a study of Internet banking adoption by Chinese Americans, research design was an important issue. This was particularly true when considering the high percentage of Chinese Americans that speak a language other than English in their homes. The importance of research design was also true given the cultural differences between Americans and Chinese. In order to insure that a representative sample of this population was surveyed, it was important to develop a Chinese language version of a survey along with an English version and to consider cultural differences between Americans and Chinese when collecting data. The results showed that, when given a choice of language surveys, 59% of the participants preferred the Chinese version and that there were significant differences between the responses to the English version as compared to the responses to the Chinese version.

Keywords: Internet banking, online banking, Chinese Americans, technology acceptance, diffusion of innovations, Chinese language, Chinese culture, research design

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Research Design for Assessing Attitudes in Technology Acceptance:
Chinese Americans and Internet Banking

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ABSTRACT

Cultural factors, especially language, are important in studying the phenomenon of Internet banking adoption by Chinese Americans. As part of a study of Internet banking adoption by Chinese Americans, research design was an important issue. This was particularly true when considering the high percentage of Chinese Americans that speak a language other than English in their homes. The importance of research design was also true given the cultural differences between Americans and Chinese. In order to insure that a representative sample of this population was surveyed, it was important to develop a Chinese language version of a survey along with an English version and to consider cultural differences between Americans and Chinese when collecting data. The results showed that, when given a choice of language surveys, 59% of the participants preferred the Chinese version and that there were significant differences between the responses to the English version as compared to the responses to the Chinese version.

Keywords: Internet banking, online banking, Chinese Americans, technology acceptance, diffusion of innovations, Chinese language, Chinese culture, research design

1. INTRODUCTION

Internet banking adoption has been the subject of several studies in Mainland China, Hong Kong, Taiwan, and the United States (e.g., Chan and Lu, 2004: Hogarth, Kolodinsky, and Gabor, 2006; Kolodinsky, Hogarth, and Hilgert, 2004; Laforet and Li, 2005; Shih and Fang, 2004). These studies have focused on the population native to the country where the study took place. However, there have been no studies on the Chinese American population, which is the largest segment of the fastest growing minority population (Asian Americans and Pacific Islanders) in the United States (Cultural Access Group, 2004). In order for banks to remain competitive and attract customers from the Chinese American population, having knowledge of the factors that influence the adoption of Internet banking by this population is important. The overall purpose of this research was to explore the demographic and attitudinal factors related to Internet banking adoption by Chinese Americans. The factors used in this study were ones developed from the Technology Acceptance Model (Davis, 1989) and from Diffusion of Innovations Theory (Rogers, 2003). This research used a self-administered survey of Chinese Americans in the Chicago area to identify the demographic and attitudinal factors that influence Internet banking adoption by this population. This paper will focus on the issues related to instrument design and the challenges related to approaching the Chinese American population.

2. BACKGROUND

Internet banking or online banking can be defined as the service that allows consumers to perform banking transactions using a computer with an Internet connection. These transactions can include checking the balance in one's bank account, transferring funds between accounts, and bill paying.

Since the introduction of this service in 1995, the number of Americans using Internet banking has grown steadily to an estimated 63 million users by December of 2005 (Fox & Beier, 2006). The number of users increased by an estimated 47 per cent between 2002 and 2004 alone. This growth has coincided with the increase in Internet use in America, which has grown to over 140 million adults as of December of 2005 (Fox & Beier).

In 2001, the Pew Internet & American Life Project released a study titled "Asian Americans and the Internet: The Young and the Connected." This study showed that English-speaking Asian Americans were more likely to use the Internet and were the most active users as compared to other ethnic groups, including White Americans. However, the Pew study did not offer an explanation as to why this is true. In 2003, the President's Advisory Commission on Asian Americans and Pacific Islanders (AAPI) released a study concerning health care issues facing this group. In this study, the AAPI population is characterized as being "not hard to reach, but rather hardly reached" (President's Advisory Commission on Asian Americans and Pacific Islanders, 2003, p. 16).

According to a Cultural Access Group study (2004), Asian Americans are the fastest growing segment in the United States on a percentage basis. This segment also has many demographics that are attractive to marketers, such as being the most highly educated ethnic group and having the highest median income of any ethnic group, including White Americans. The AAPI population was made up of several sub-groups with the largest of these being Chinese Americans, which accounted for more than 24% of the total Asian American population in the 2000 Census (Reeves and Bennett, 2004). The 2004 study done by the Cultural Access Group also indicated that 88% of Chinese Americans have a checking account, compared to 83% of Caucasian Americans. Such financial institution involvement makes Chinese Americans good candidates for Internet banking since a checking account is typically required to use Internet banking.

Some large banks initially implemented Internet banking in order to reduce their costs and expand their existing branch networks. Studies have shown that the cost of processing Internet transactions is only a small fraction of the cost of processing a transaction generated through a branch office (Turban, Lee, King, and Chung, 2000; Yakhelef, 2001). According to Yakhelef (2001), "a traditional payment transaction costs $1.08, whereas on the Internet the same transaction costs 13 cents or less" (p. 274). Other studies assert that Internet banking has developed into a service that is expected by bank customers, and the cost of providing it has become part of a bank's cost of providing retail banking services, as are branch offices and automated teller machines (Bradley and Stewart, 2003; Carr, 2002, pp.80-81). According to Pyun, Scruggs, and Nam (2002), Internet banking in the United States has become part of "a long-term defensive survival strategy" (p. 75). A study performed on the banking industry by Bradley and Stewart (2003) projected that 84% of banks are expected to offer Internet banking to their customers by 2011. A 2005 survey, completed by the Independent Community Bankers of America, of banks with less than one billion dollars in total assets indicates that 75% of those banks currently provide this service. However, Internet banking is only effective for a bank if its customers adopt it and use it.

Several studies have been performed in the last few years regarding Internet banking adoption. The model that has been used most frequently in these studies is the Technology Acceptance Model (TAM) or some modified version of the TAM (Davis, 1989). Studies have been performed surveying consumers in the U.S. (Fallows, 2004; Hogarth, Kolodinsky, and Gabor, 2006; Kolodinsky, Hogarth, and Hilgert, 2004; and Lassar, Manolis, and Lassar, 2005). In these particular studies, age, income, and education levels were found to have a statistically significant effect on adoption of Internet banking. Younger individuals with higher incomes, and higher levels of education were more likely to adopt Internet banking than were their lower income and less educated counterparts. These studies also found that certain attitudes or perceptions positively influence adoption including convenience, ease of use, relative advantage, and compatibility.

Hogarth et al. also found that the issues of security and privacy were important in the adoption of payment technologies in general.

Studies regarding Internet banking adoption have also been performed in countries outside of the United States. Several of these studies have been done in China, including studies by Chan and Lu (2004), Laforet and Li (2005), Shih and Fang (2004), Wan, Luk, and Chow (2005), and Wang, Wang, Lin, and Tang (2003). While the findings related to attitudes in these studies were similar to those in the U.S. studies, the demographic findings were somewhat different. Age, income level, and education level did not have the same impact in the studies done in China. (In this paper, China includes Mainland China, Hong Kong, and Taiwan.) This disagreement could be due to national factors such as the ones described in the study performed by Brown, Hoppe, Newman, Mugera, and Stander (2004), including socioeconomic conditions and the extent of Internet adoption. Risk factors, primarily related to security and privacy were important issues in all of the studies done in China.

The purpose of the overall research was to identify the demographic and attitudinal factors related to Internet banking adoption by Chinese Americans. This paper focuses on cultural factors, including language, involved in performing this research and how these factors can be included in research design.

3. METHODOLOGY AND INSTRUMENT DESIGN

The researcher developed a survey instrument to gather quantitative data to address the research questions concerning Internet banking adoption by Chinese Americans. Three choices existed as to how the survey instrument could be administered: through a self-administered written survey (either through the mail or hand-delivered), through a telephone survey, or through a self-administered Internet survey (email). The use of email was eliminated because: (a) email addresses were not available, (b) no common web site could reach the population being studied, and (c) this method would eliminate any participants who did not use email. The use of a telephone survey was eliminated

because the researcher had no access to an appropriate list of telephone numbers and did not have Chinese language skills. As a result, the researcher developed a more "user-friendly" written survey by modifying the previously used telephone survey. This written survey could be delivered to the targeted population and then completed by hand. The statements and questions included in the survey were suggested by items included on a questionnaire administered by the Survey Research Center at the University of Michigan (1999 and 2003), and adapted here with the kind permission of Dr. Jeanne M. Hogarth.

The survey used for this study was a four-page document that included a cover letter and a three-page questionnaire. (Appendix A) The cover letter explained the circumstances surrounding this study, the fact that it was voluntary, that the responses would be anonymous and confidential, and provided the name and contact information of the researcher. The questionnaire portion was divided into three sections. The first section on PC/Internet access and usage was intended to be the easiest for participants to respond to and the most innocuous. The second and third sections dealt with attitudinal responses to Internet banking and demographic questions, respectively. In order to maximize the response rate, this survey was designed to require about 10 minutes to complete.

The first page of the questionnaire contained items about Internet access and use. These questions were primarily adopted from either the Pew Internet and American Life, or the Survey Research Center at the University of Michigan questionnaires. Two of the questions asked about Internet banking use and intent to use. The intent to use had a 7-point Likert scale response, ranging from *definitely will not use Internet banking in the next 12 months* (1) to *definitely will* (7). A question was also included to address the importance of Internet banking in the participant's decision to choose their primary bank. This question was intended to obtain additional information that may help a bank in its efforts to market its services to Chinese Americans.

The second page of the questionnaire consisted of a series of 17 statements

regarding the participants' attitudes or perceptions about Internet banking. Two of these statements are directly related to the participant's experience related to Internet banking as opposed to any particular attitude or perception. These two statements were: I have the opportunity to try Internet banking and I have seen how others use Internet banking. These statements are related to two factors in Rogers' DOIT, trialability and observability, respectively. The participants were asked to respond to each statement on a 5-point Likert scale, ranging from *strongly disagree* (1) to *strongly agree* (5).

The third page of the questionnaire contained demographic questions that were mostly the same as or similar to questions in numerous other surveys, including the Pew Internet and American Life questionnaire and the University of Michigan surveys. These questions were included on the final page of this survey so that anyone concerned about disclosing demographic information would not be dissuaded from completing the rest of the survey. This survey contained three additional questions, which were intended to capture specifics related to the Chinese American population: country of birth, primary language spoken at home, and country where the participant attended primary school.

4. LANGUAGE AND PRE-TESTING

After the survey was initially drafted in English, there were two important issues to consider: language and pre-testing the survey. Previous scientific studies done in the United States that included Chinese Americans were conducted in English: either through the use of oral interviews or written questionnaires. The language used in the written survey was important when the following facts are considered. According to the 2000 U.S. Census, 73% of the population studied was foreign born and 88% of the same population of those five years of age or older spoke a language other than English in their home. These facts led to the conclusion that the written survey used in this study should be available in both English and Chinese in order to have the best chance of reaching a representative sample of this population.

It is important to note that there are currently two standards or versions for the written Chinese language: Traditional and Simplified. The Traditional version is the older, more complex version that is used as a standard in Hong Kong, Taiwan, and Singapore. The Simplified version, which is also known as Simplified script or Simplified Chinese, was officially adopted in the People's Republic of China (Mainland China) in 1949. Simplified Chinese was adopted in an attempt to eliminate illiteracy. This version has about 2,000 characters that contain fewer strokes than the comparable Traditional characters. The Simplified version also has fewer synonymous characters ("The Chinese writing characters," retrieved on November 22, 2006 from http://www.omniglot.com/writing/chinese.htm#characters).

Based on conversations between the researcher and the heads of five local Chinese American community organizations, the Chinese version of the survey for this study was printed using Traditional Chinese characters. The reasoning was that most Chinese Americans living in the Chicago area that can read Chinese are able to read the Traditional version. As further support for this, five out of the seven Chinese newspapers distributed in the Chicago area were printed using the Traditional characters. In addition, five different Chinese Americans who were educated in Mainland China were approached to see if they could read the newspapers that were printed using Traditional Chinese characters. These five individuals, ranging in age from 20 to 55, were all approached in Chinatown at a local bank where four free Chinese newspapers were distributed weekly. All five individuals could read and understand the newspapers printed in Traditional Chinese.

Once the decision was made to print the surveys using Traditional Chinese characters, it became necessary to translate the English version of the survey into Chinese. A 52-year old Chinese American woman who was educated in Hong Kong on the Traditional version did the initial translation. A 20-year old male college student from Hong Kong then translated this Chinese version of the survey into English without seeing the original English version. This individual was educated in Mainland

China using the Simplified version. Both of these individuals spoke and understood Cantonese, Mandarin, and English. Each could also read Chinese in both Traditional and Simplified forms as well as English. After completing their initial translations, these two individuals met to make changes that both could understand and agree to.

The next step was to have two other Chinese Americans, one of which grew up learning the Simplified version and the other the Traditional, review the previously revised version independently. All four of these individuals agreed that the final Chinese version used in this study contained the same meaning as the English version. The English and Chinese versions were then administered to two Chinese American females ages 29 and 40. These individuals were born in Mainland China and Hong Kong, respectively, and for each of them English was a third language after Cantonese and Mandarin. The first individual completed the English version of the survey and the second completed the Chinese version. It took them 10 and 9 minutes, respectively, to complete the survey. Afterward, the researcher reviewed the surveys with the two individuals and determined that their interpretations of the questions and statements in the surveys were consistent with each other and with the intended meaning of the questions. The final Chinese version of the survey is included in this report as Appendix B.

5. DATA COLLECTION

In their 2005 book, *Cultures and Organizations Software of the Mind*, Hofstede and Hofstede discussed cultural differences among countries. Three concepts that they discussed where there were significant differences between American and Chinese culture are: (a) power distance, (b) individualism versus collectivism, and (c) long-term versus short-term orientation. Power distance is defined "as the extent to which the less powerful members accept that power is distributed unequally." (p. 46) In the workplace of a country with a larger power distance, such as China, the subordinates expect to be told what to do. In a society that is more collectivist, such as China, the interests of the group prevail over the interests of the individual. In the workplace in such

societies, the individual will tend to follow the group. In a country such as China that has a long-term orientation, individuals are more willing to subordinate their own interests to the interests of the group.

With these concepts from Hofstede and Hofstede in mind, the researcher approached leaders from 16 different community groups and organizations with primarily Chinese American members, clients, volunteers, and/or employees to obtain surveys from each group. The organizations that were chosen were primarily located in the Chinatown and Broadway areas of the City of Chicago. The Director, owner, or President of each organization chose the samples from these organizations. Since the employees, members, volunteers, and clients of these organizations were primarily located in Cook County, additional participants were obtained from employees and customers in a suburban mall located in DuPage County. These groups represented a variety of age groups, income levels, education levels, places of birth, and languages. Given the results of Hofstede and Hofstede, the researcher believed that the response rates would be high because the heads of the organizations were supporting the survey. Sixteen leaders were approached and fourteen agreed to participate and support the survey. Included in the participating groups were five businesses and nine non-profit groups or associations. In 13 of the 14 groups that agreed to participate, the leader was given both versions of the survey, English and Chinese, to distribute in their organization with the direction that participants were to complete the version with which they were most comfortable.

There were 30 independent variables examined in the overall study, including the subject of 15 demographic questions on pages one and three of the survey as well as the responses to 15 of the attitudinal statements on page two. The demographic variables include PC (personal computer) access, Internet access/connection/use, gender, marital status, age, income, education, birthplace, primary language, and occupation. The breakdown of the attitudinal statements and relevant factors is shown in Table 1. In this table, the attitudinal factors include perceived usefulness, perceived ease of use/compatibility/complexity, perceived

risk/security, perceived reliability/relative advantage, trialability, and observability.

According to the model developed by Rogers as part of the DOI Theory, the rate of adoption of an innovation is impacted by five factors: relative advantage, compatibility, trialability, observability, and complexity. According to the TAM, adoption is impacted directly by the perceived usefulness and perceived ease of use of a technology. The two variables used in the TAM were shown to have a direct effect on attitude toward using, which has a direct effect on intention to use. In addition, the perceived ease of use variable has been shown to have an effect on perceived usefulness, which has a direct effect on intention to use. Additional external factors that have been developed from variations of these models are perceived reliability and perceived risk/security. The primary focus of the overall study was on intention to adopt or use as opposed to actual use since the positive relationship between intention, to adopt or use, and actual use is well documented. These factors and the statements that relate to each factor are listed in Table 1.

Table 1

A List of Attitudinal Factors and the Statements That Relate to Each

Attitudinal Factors	Relevant Statements from Questionnaire
Perceived Usefulness	Internet banking is convenient. There are enough advantages of Internet banking for me to consider using it. Internet banking helps me to better manage my personal finances.
Perceived Ease of Use/ Compatibility/Complexity	Internet banking is difficult to use. I need to familiarize myself with Internet banking technology. It bothers me to use a machine for my banking transactions when I could talk to a person instead.
Perceived Risk/Security	When I use Internet banking, my money is as safe as when I use other banking services. I worry about the privacy of my information when using Internet banking. I worry that Internet banking is not secure enough and I could lose money. I worry that Internet banking is not secure enough to protect my personal financial information. I feel comfortable providing my personal information through Internet banking.
Perceived Reliability/ Relative Advantage	Mistakes are more likely to occur with Internet banking than with regular banking. Mistakes with Internet banking are more difficult to get corrected than with regular banking.
Trialability	I have the opportunity to try Internet banking.
Observability	I have seen how others use Internet banking.

6. RESULTS AND DISCUSSION

The researcher generated descriptive statistics to provide an overview of the data set with respect to each of the demographic variables. The data included the total number of respondents broken down by the different demographic categories. A profile of the participants was then compared to the profile of the total Chinese American population in the Chicago area. This was done to determine whether the sample was comparable to the target population. See Table 2 for details. The relationships between the independent variables and the dependent variable were then examined to determine which of the independent

variables had statistically significant relationships with the dependent variable. The birth country and language sub-groups

were also examined to determine differences between them.

Table 2

Comparison of Demographics Between Population and Sample

Demographics	% of Target Population	% of Sample
Male*	48	38
Female*	52	62
25 years old and older	90	92
65 years old and older	11	10
High school education or higher	71	80
College graduate or higher**	56	46
Foreign born*	73	89
Speak other than English*	82	88
Cook County residents*	73	83

Note. The Target Population consisted of 66,051 according to the 2000 U.S. Census while the Sample consisted of 254. All individuals in the Sample were 18 years old and older.
* Calculated as a percentage of the entire population.
** Calculated as a percentage of the population aged 25 and over.

There were 279 surveys collected, and the participants identified their ethnicity as Chinese on 254 of them. Although some of these surveys were not fully completed, the only surveys excluded were from participants of non-Chinese ethnicity. This was done so as not to lose any available relevant data. The question regarding household income was the one with the least responses (222). The number of responses to the other demographic questions on pages one and three of the questionnaire ranged from 234 to 254. The total responses to the attitudinal statements on page two of the questionnaire ranged from 236 to 246.

The surveys were distributed and collected by the community leaders in August and September of 2006. The number of completed surveys from each group varied from as few as one to as many as 55. The exact number of surveys distributed by each leader was only known for four of the

groups. The smallest number of surveys distributed within or by an organization was three (with one response). The largest number was unknown. The response rates to the survey were estimated to range from as low as 33% to greater than 80%. These estimates were based on the groups where the number of surveys distributed was known along with descriptions given by the other group leaders.

The largest difference between the sample and the target population was in the percent of foreign-born individuals. However, this difference is probably overstated since the percentages were calculated differently. The sample included only individuals who were aged 18 and over, so the percentages were calculated based on that age group. The U.S. Census numbers included all residents, and it is likely that a higher percent of those under the age of 18 would be American born compared to those aged 18 and over. This would make the percentage of those aged

18 and over that are foreign-born higher than the reported 73% for the total population. Thus, if a direct comparison could be done, it is likely that the percentages of foreign-born individuals in the sample and the population would be closer.

The choice of which survey to complete, one in Chinese or one in English, provided an indication as to which language the participants preferred. The sub-groups related to the language version of the survey, Chinese or English, were also examined. The 22 participants that were not given a choice as to what language version to complete were excluded from these sub-groups. This left 96 English version surveys and 136 Chinese version surveys. Statistical analyses, including ANOVA, correlation, and regression analyses were then performed on each of these sub-groups to determine whether there were any differences in the demographic and attitudinal factors between sub-groups.

The results related to the survey language did demonstrate a statistically significant relationship with intent to use Internet banking. On the demographic side, age was a significant factor for the participants who completed the English version of the survey, but not for those who completed the Chinese version. On the attitudinal side, statements regarding safety, security, privacy, observability, and using a machine instead of dealing with a person were not significant among the participants who completed the Chinese version of the survey, but were for those who completed the English version.

7. CONCLUSION

In studying a cultural sub-group such as Chinese Americans, it is important to consider language and differences between the cultures involved. In order to obtain a representative sample of the population being studied this is particularly true. This requires that the methodology used in any study take into account appropriate languages and incorporate these languages into the process. This also requires that cultural issues be considered when attempting to obtain participants. In addition, the results of this study indicate that the choice of language by the participants was consistent with certain cultural differences. These differences include the collectivist nature of the Chinese culture, along with greater deference to authority, as compared to the American culture.

The language and cultural differences may also impact Information Systems education and Chinese immigrants, particularly those who are still comfortable communicating in their native language. In order to best communicate with and teach such students, teachers should consider language and cultural differences and not necessarily use the same approaches and techniques that are used for students that are born and raised in English-speaking, American homes. This may require Chinese translations for these Chinese-speaking students or the assistance of a translator as part of the teaching process.

As the use of technology in teaching increases along with the immigrant population in the U.S., these issues of language and cultural differences in technology acceptance will become more important. One area for future study is the adoption of technology in education by Chinese and other immigrant sub-groups. This should include further study of technology acceptance related to English proficiency and specific cultural differences. The results may be used to not only improve teaching techniques, but also to attract more students into the field of Information Systems.

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APPENDIX A

Dear Participant,

My name is Lloyd Gibson and I am a doctoral candidate in the Information Systems and Communication department at Robert Morris University, which is located in Moon Township (Pittsburgh area), Pennsylvania. I am conducting research on the adoption and use of Internet banking.

Your participation in this study is voluntary. As such, you may decline to participate or withdraw from participation at any time without penalty. Your responses will remain anonymous and the results will be kept under lock and key. There are no foreseeable risks associated with your participation and there are no perceived benefits. You must be 18 years of age or older to participate. Your participation would be greatly appreciated.

If you have any questions about this study, please contact Lloyd Gibson at lloydggibson@hotmail.com or by telephone at (412) 767-0337.

Please place the completed survey in the envelope provided.

This survey should take no longer than 10-15 minutes to complete.

Thank you for your participation.

Sincerely,

Lloyd G. Gibson
Robert Morris University
Moon Township, PA
www.rmu.edu

For each of the following items please place an "X" in the box next to the response or responses that best answer the question. Internet banking, also known as online banking, is when you use a personal computer connected to the Internet to check your bank account information, to transfer funds, to pay bills, or to do other banking.

1) Do you own or have access to a personal computer?   Yes   No

2) I have access to the Internet…(check all that apply)
   at home   at work   somewhere besides home or work   I do not have access

3) My Internet connection is   dial up   high speed   I have no Internet access

4) When did you first start using the Internet?
          I have never used the Internet
          Within the last year
          One to two years ago
          Two to three years ago
          More than three years ago

5) How often do you access the Internet?
          I have never accessed the Internet
          More than once a day
          About once a day
          3 to 5 times a week
          About once a week
          About once a month
          Less than once a month

6) Have you used Internet banking during the past twelve months?   Yes   No

7) How likely are you to use Internet banking in the next twelve months?
   definitely will   very likely   somewhat likely   even chances
somewhat unlikely   very unlikely   definitely will not

8) For me to choose a bank as my primary bank, how important is it that the bank offers Internet banking?   extremely important   somewhat important
   neither important nor unimportant   somewhat unimportant
not important at all

For each of the following statements on the next page please place an "X" in the box that best describes how you feel about that statement, whether you STRONGLY DISAGREE, DISAGREE, are NEUTRAL (meaning you neither agree nor disagree), AGREE, or STRONGLY AGREE with that particular statement. Internet banking, also known as online banking, is when you use a personal computer connected to the Internet to check your bank account information, to transfer funds, to pay bills, or to do other banking.

	STRONGLY DISAGREE	DISAGREE	NEUTRAL	AGREE	STRONGLY AGREE
1) Internet banking is the wave of the future.	U	U	U	U	U
2) Internet banking services are used by many people.	U	U	U	U	U
3) I have seen how others use Internet banking.	U	U	U	U	U
4) I have the opportunity to try Internet banking.	U	U	U	U	U
5) There are enough advantages of Internet banking for me to consider using it.	U	U	U	U	U
6) I need to familiarize myself with Internet banking technology.	U	U	U	U	U
7) Internet banking is convenient.	U	U	U	U	U
8) Internet banking is difficult to use.	U	U	U	U	U
9) It bothers me to use a machine for banking transactions when I could talk with a person instead.	U	U	U	U	U
10) When I use Internet banking, my money is as safe as when I use other banking services.	U	U	U	U	U
11) I feel comfortable providing my personal information through Internet banking.	U	U	U	U	U
12) I worry about the privacy of my information when using Internet banking.	U	U	U	U	U
13) Mistakes are more likely to occur with Internet banking than with regular banking.	U	U	U	U	U
14) Mistakes with Internet banking are more difficult to get corrected than with regular banking.	U	U	U	U	U

15) Internet banking helps me to better manage my personal finances.	U	U	U	U	U
16) I worry that Internet banking is not secure enough and I could lose money.	U	U	U	U	U
17) I worry that Internet banking is not secure enough to protect my personal financial information.	U	U	U	U	U

The following demographic information is for statistical purposes only and will remain anonymous and confidential. Please place an "X" in the box next to your response.

1) Your gender   male   female

2) Your age   18-24   25-34   35-44   45-54   55-64   65+

3) Your marital status   married or living with a partner   separated

             divorced   widowed   never married

4) Where were you born?

  Mainland China   Taiwan   Hong Kong   USA   Vietnam

Other

5) My race/ethnicity is   Chinese   White/Caucasian

             Black/African American   Hispanic   Vietnamese   Other

6) What is the primary language spoken in your home?

        Mandarin   Cantonese   Taiwanese   English   Vietnamese

Other

7) I live in which county

        Cook   DuPage   Will   Lake   Allegheny   Other

8) What is the highest level of education you have completed?

  Less than high school   High school or equivalent   Tech school   Some college

  College graduate   Postgraduate or professional (Masters, Doctorate, JD, or MD)

9) Where did you attend school from primary school through high school?

  China   USA   China and USA   Other

10) What is your annual household income?

  0-$24,999 $25,000-$49,999 $50,000-$74,999 $75,000-$99,999

$100,000+

11) Which of the following best describes your job or profession?

Laborer   Clerk   Manager   Professional   Self-employed   Student

Homemaker   Unemployed   Retired   Other_____

Appendix B

您好！我是 Lloyd Gibson，現正在 Robert Morris 大學修讀博士學位（有關資訊網絡通訊），這大學位於賓夕法尼亞州，匹茲堡的 Moon 鎮。我正搜集有關使用網上銀行的資料。

希望您能自願參與這次調查，調查資料絕對保密及不記名，沒有任何風險，只要您年滿十八歲便可。多謝您的幫助。

如有關此次調查問題，請與本人聯絡，電郵是：lloydgibson@hotmail.com 或電：(412)767-0337。

請用附上回郵信封於　月　日前寄回。

這份問卷只需時 10 至 15 分鐘。

多謝您的參與。

Lloyd G. Gibson 敬上

請選擇最合適的答案打上「X」。網上銀行就是利用個人電腦與您的銀行網絡聯繫，查詢戶口結餘、轉賬、付費及其他銀行服務。

1. 閣下家中有否個人電腦：　　　☐ 有　　　☐ 否

2. 閣下可以在何處上網（可以有一個以上的答案）：
　　☐ 家中　　　　☐ 公司　　　　☐ 其他地方　　☐ 沒有

3. 電腦網絡的連接是：　　☐ 電話線　　　☐ 寬頻　　　☐ 沒有連接電腦網絡

4. 您第一次上網是：
　　☐ 從沒有上網
　　☐ 過去一年
　　☐ 一至二年前
　　☐ 二至三年前
　　☐ 三年以前

5. 閣下上網的情況：
　　☐ 從來不使用
　　☐ 每日一次以上
　　☐ 每日一次
　　☐ 每星期三至五次
　　☐ 每星期一次
　　☐ 每月一次
　　☐ 每月少於一次

6. 在過去十二個月內，你有否使用網上銀行服務：　　☐ 有　　☐ 否

7. 你會否于未來十二個月內使用網上銀行服務，那一種情況較適合：
　　☐ 確定會使用
　　☐ 將會使用
　　☐ 或會使用
　　☐ 會使用
　　☐ 或者不會使用
　　☐ 不會使用
　　☐ 絕對不會使用

8. 當你要選擇自己的主要銀行時，會否覺得有網上銀行服務很重要：
　　☐ 非常重要
　　☐ 有點重要

□ 沒有關係
□ 不重要
□ 完全不重要

請選擇最合適的答案、在答案的下方打上「X」。網上銀行就是利用個人電腦與您的銀行網絡聯繫 查詢戶口結餘、轉賬、付費及其他銀行服務。

	十分不同意	不同意	沒有意見	同意	十分同意
1. 網上銀行是未來的趨勢。	□	□	□	□	□
2. 很多人使用網上銀行服務。	□	□	□	□	□
3. 我曾見別人怎樣使用網上銀行服務。	□	□	□	□	□
4. 我有機會去嘗試使用網上銀行服務。	□	□	□	□	□
5. 網上銀行服務有足夠的好處及優點 使我值得考慮使用。	□	□	□	□	□
6. 我先要熟習網上銀行服務的技術。	□	□	□	□	□
7. 網上銀行十分方便。	□	□	□	□	□
8. 網上銀行使用困難。	□	□	□	□	□
9. 我不喜歡自動化服務代替櫃員服務。	□	□	□	□	□
10. 網上銀行服務及傳統銀行服務同樣安全可靠。	□	□	□	□	□
11. 我願意在網上銀行提供個人資料。	□	□	□	□	□
12. 我擔心個人資料私隱性遭到侵犯。	□	□	□	□	□
13. 網上銀行較傳統銀行更容易出錯。	□	□	□	□	□
14. 網上銀行如有錯誤 較傳統銀行更難更正。	□	□	□	□	□
15. 網上銀行理財更容易。	□	□	□	□	□
16. 我擔心使用網上銀行不安全 令我損失金錢。	□	□	□	□	□

17. 我擔心使用網上銀行我個人財
務資料的安全性。　　　　☐　　　☐　　　☐　　　☐
☐

下列的統計資料完全保密及不公開姓名，請在選擇的答案打上「X」。

1. 姓別：　　　☐男　　　　☐女

2. 年齡：　　　☐ 18-24　　☐ 25-34　　☐ 35-44　　☐ 45-54　　☐ 55-64
☐ 65+

3. 婚姻狀況：　☐ 己婚/同居　☐ 分居☐ 離婚☐ 喪偶　　☐ 未婚

4. 出生地：　　☐ 中國　　　☐ 台灣　　☐ 香港　　　☐ 美國　　　☐ 越南
☐ 其他

5. 種族：　　　☐ 中國人　　☐ 白種人　☐ 非洲裔　　☐ 西語裔　　☐ 越南人
☐ 其他

6. 在家中所用語言：　☐ 國語　　　☐ 廣東話　　☐ 台語　　☐ 越南話　　☐ 英文
☐ 其他

7. 居住於那一郡：☐ Cook　　　☐ DuPage　　☐ Will　　☐ Lake　　☐
Allegheny
☐ Other

8. 教育程度：☐ 高中以前　　　☐ 高中或同等學歷　　　☐ 專業學校 ☐ 大專程度
☐ 大學畢業　　☐ 大學以上程度（ 例如：碩士、博士 等等）

9. 在何處完成小學到中學：　☐ 中國　　☐ 美國　　☐ 中國及美國　　　☐ 其他

10. 家庭每年收入：　　☐ 0-$24,999　　　☐ $25,000-$49,999　　　☐ $50,000-
$74,999
☐ $75,000-$99,000　☐ $100,000+

11. 職業：　☐ 工人　　☐ 文員　　☐ 經理　　☐ 專業人仕 ☐ 自僱人仕
☐ 學生　　☐ 主婦　　☐ 失業　　☐ 退休人仕 ☐ 其他_____