Intention to Use Internet Banking in Penang

Introduction

On-line banking services are crucial for long term survival of banks in the world of electronic commerce (Burnham, 1996; Tan & Teo, 2000). Shih & Fang (2004) identified on-line banking as a new type of information system that uses the innovative resources of the Internet and WWW to enable customers to affect financial activities in virtual space. According to Liao et al. (1999) virtual bank is a "non-branch bank" and virtual banking is the provision of services via electronic media such as automated teller machines (ATMs), telephone, personal computers and/or the Internet (Tan & Teo, 2000)

Internetnews.com (2001) reported that according to the U.S. based research house, local users of online banking will reach 1.1 million by 2004 with the total number of online banking accounts reaching 1.6 million, or 23 percent of all Malaysian Internet users that year. This indicates a potential growth of Internet banking in Malaysia.

Research Problem

The Internet is becoming an increasingly important channel for banks to provide banking services to both individual consumers and businesses. Financial services on electronic channels will amount to USD 80 billion by the year 2003, up from USD 14 billion in 2000 (Ramayah & Koay, 2002). The main purpose of this paper was to gauge the user's intention to use internet banking and identify the main factors that can affect their intention to use internet banking in Penang, Malaysia. Although it has been 5 years since the introduction of internet banking in Malaysia, the uptake is still very low. The review of the literature shows that there are five potential predictors for the outcome variable. In addition, the effect of gender on the outcome variable is desired. The following theoretical model displays the variables and hypotheses.

Exploring the data on SPSS

Section 1: Actions

Action 1: Import the data into SPSS

Before importing the data in SPSS, we opened the excel file where we have conducted the blank method and straight line on the excel file of the collected data. We did not find any blanks as the largest value of blanks is zero while the least variance using the straight line method is 0.2.

We have imported our dataset that´s called "Collected Data" in SPSS. The steps as follows:

1. Open SPSS and press on File
2. Choose import data
3. Press an excel option
4. Locate the excel file on your local pc
5. Press on it and make sure the file type is xls, xlx, or xlsm. (Collected data.xls)
6. Finally, Ok

Action 2: Considering the level of measurement, correctly define each variable, variable label, value label, etc. precisely.

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2. Considering the level of measurement, correctly define each variable, variable label, value label, etc. precisely.

Here, we are going to define the type of measurement of each variable (Scale, Nominal, Ordinal).

1. ID
2. Gender:
    a. It is labelled "Gender of users of internet banking"
    b. Values assigned: 0 is Female, and 1 is Male.
    c. Its type of measurement is Nominal.
3. Age:
    a. It is labelled "Age of users of internet banking"
    b. Its type of measurement is Scale
4. Organization:
    a. It is labelled "Number of years working in the organization"
    b. Its type of measurement is Scale
5. Experience:
    a. It is labelled "Number of years of working experience"
    b. Its type of measurement is Scale
6. Departments:
    a. It is labelled "User´s departments in the organization"
    b. Values assigned: 1 is Sales & purchasing, 2 is R&D, 3 is Subcon management, 4 is Production, 5 is Test, 6 is QA, 7 is Material, 8 is Engineering, 9 is HR, 10 is Marketing.
    c. Its type of measurement is Nominal
7. Position:
    a. It is labelled "User´s current position"
    b. Values assigned: 1 is Technician, 2 is Engineer, 3 is Sr Engineer, 4 is Manager, 5 is Above managers.
    c. Its type of measurement is Ordinal
8. Education:
    a. It is labelled "User´s Level of education"
    b. Values assigned: 1 is Secondary or lower, 2 is Diploma, 3 is First Degree, 4 is Master Degree, 5 is PHD.
    c. Its type of measurement is Ordinal

9. PU1:
    a. It is labelled “Using the on-line banking systems would improve my performance in conducting banking transactions”
    b. Its type of measurement is Ordinal

From here till the end of the variables, the type of measurement will be ordinal as it is all questions answered using 7-point Likert scale.

10. PU2 is labelled “Using the on-line banking systems would make it easier for me to conduct banking transactions”
11. PU3 is labelled “I would find the on-line banking systems useful in conducting my banking transactions.”
12. PU4 is labelled “On-line banking eliminates geographic limitation and increase flexible in mobility; thus, I can bank any place that has Internet connection”
13. PU5 is labelled “On-line banking eliminates time constraints; thus, I can use the banking services at any time I like.”
14. PU6 is labelled “On-line banking would be a difficult way to manage my finances.”
15. PEU1 is labelled “My interaction with the on-line banking systems would be clear and understandable.”
16. PEU2 is labelled “It would be difficult for me to become skilful at using the on-line banking systems.”
17. PEU3 is labelled “Learning to use the on-line banking systems would be easy for me.”
18. PEU4 is labelled “Interacting with the on-line banking will not require a lot of my mental effort”
19. PEU5 is labelled “Overall, I would find the on-line banking systems easy to use”
20. BI1 is labelled “I plan to use on-line banking.”
21. BI2 is labelled “Assuming that I have access to the on-line banking systems, I intend to use it.”
22. BI3 is labelled “I intend to increase my use of the on-line banking systems in the next 6 months.”
23. BI4 is labelled “I will add on-line banking to my favourite links”
24. PBC1 is labelled “I would be able to operate the on-line banking systems.”
25. PBC2 is labelled “I have the resources to use the on-line banking systems.”
26. PBC3 is labelled “I have the knowledge to use the on-line banking systems.”
27. PBC4 is labelled “I have the ability to use the on-line banking systems.”
28. PR1 is labelled “I am not confident over the security aspects of on-line banking in Malaysia”
29. PR2 is labelled “Others will know information concerning my on-line banking transactions.”
30. PR3 is labelled “Others can tamper with information concerning my on-line banking transactions.”
31. PR4 is labelled “Advances in Internet security technology provides for safer on-line banking.”
32. PR5 is labelled “It is very easy for my money be stolen if using on-line banking.”
33. PC1 is labelled “Using the on-line banking systems would not divulge my personal information.”
34. PC2 is labelled “I would find the on-line banking systems secure in conducting my banking transactions.”

We have changed the role of all variables from input to both. Although input is right referring to the research model in figure (1) where all the variables are inputs and there are no moderators. However, we chose both to freely manipulate variables on SPSS as we could consider it as input and output.

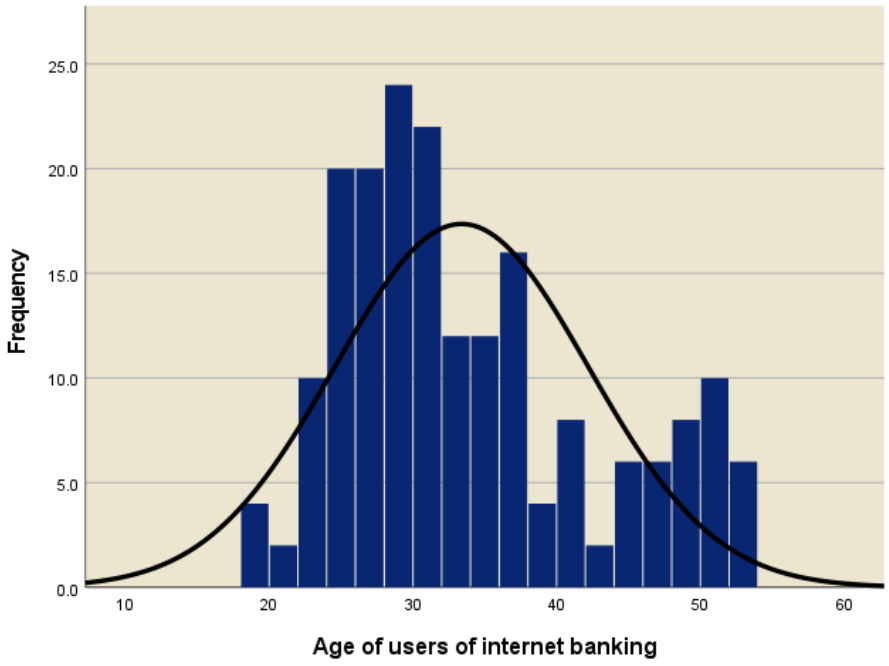
Note: we have labelled the variables that are using 7 degrees of likeliness as strongly disagree, disagree, somewhat disagree, either agree or disagree/neutral, somewhat agree, agree, and strongly agree referring to the 7-point Likert scale.

There is no missing value. However, we assigned it to discrete missing values of 0 and 999.

We are recoding the data for the sake of the regression model by recoding into categories, collapsing categories, and reverse coding:

1. Age: We recoded it into three categories, first category 1 is 15 to 25 years, 2 is 26 to 35 years, and finally 36 and above.
2. Gender: Gender in surveys were 1 is Female and 2 is Male, we recode it to 0 is Female and 1 is Male and assigned values in variable view section.
3. Position: we recoded by collapsing categories from 5 to 3 categories which are 1 is Technician, 2 is Engineers, and 3 is Managers.
4. Education: we collapsed the categories again from 5 to 3. 1 is secondary or lower, 2 is graduates and 3 is post graduates.
5. Reverse coding to negative wording survey questions:
    a. In perceived usefulness, the sixth “On-line banking would be a difficult way to manage my finances.” Is negative, so it is reversed.
    b. In perceived ease of use, the second question “It would be difficult for me to become skilful at using the on-line banking systems.” Also negative, so it is reversed
    c. In perceived risk, all questions except the fourth are negative, so they are reversed.

3. Using a histogram, visually inspect if age variable is distributed normally.



Age is normally distributed as shown in figure (1) Although it is not perfectly normally distributed because statistically the age median and mean do not overlap but they are very near to each other with difference about 2 years as shown in table (1).

Table (1): Statistics of Age

Age of users of internet banking	
Mean	33.39
Median	31.00
Std. Deviation	8.823

4. Determine the reliability of the main variables used in the study.

Conducting reliability analysis:

Table (3): The reliability of main variables

Variable	N of item	Items deleted	Alpha
Usefulness	5	1	0.785
Ease of Use	4	1	0.878
Intention	4	-	0.882
Control	4	-	0.819
Risk	4	1	0.693
Credibility	2	-	0.833

For perceived usefulness which is usefulness in the table has six items. It will be reduced to 5 items by deleting the sixth one which has -0.417.

For perceived ease of use which is Ease of use in table, we deleted the second, to achievee alpha of 0.878 with 4 features out of 5 dropping the PEU2.

For behavioural intentions which is intention, we did not deduct any item as when we deduct the raise will not exceed 0.05

For perceived behaviour of control which is control in the table, we did not deduct any item as when we deduct the raise will not exceed 0.05

For perceived risk which is risk in the table, we deleted the fourth item, then we reached all items higher than 0.3, and alpha 0.693.

For perceived credibility which is credibility in the table, only two items with alpha of 0.833.

5. For each variable, compute the sum score

We computed the mean of each of the 6 main variables choosing the items with high reliability for each variable.

6. Describe the sample profile in terms of gender and department using frequency tables and bar charts.

Table (4): Frequency sample profile

Variable	Frequency	Percentage
Gender		
Male	48	25
Female	144	75
Department		
Sales & purchasing	8	4.2
R&D	22	11.5
Subcon management	6	3.1
Production	36	18.8
Test	12	6.3
QA	24	12.5
Material	16	8.3
Engineering	50	26.0
HR	6	3.1
Marketing	12	6.3

Table 4 reveals that the surveys yielded a total of 192 replies. It outlines the demographic profile of the respondents based on the table. In terms of respondents, 75% are female and only 25% are male. The majority of them are currently in the Engineering department.

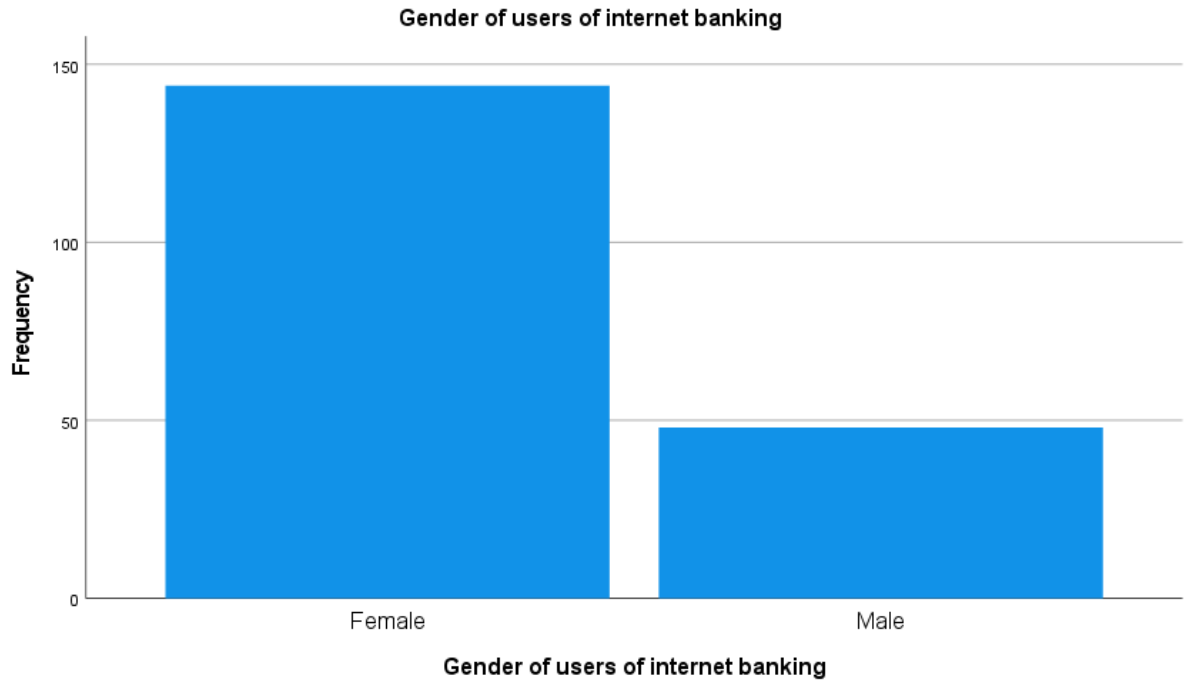


figure (2): Gender Frequency bar chart

Figure 2 clearly depicts the two gender groupings. It is apparent that females make up the majority of the sample.

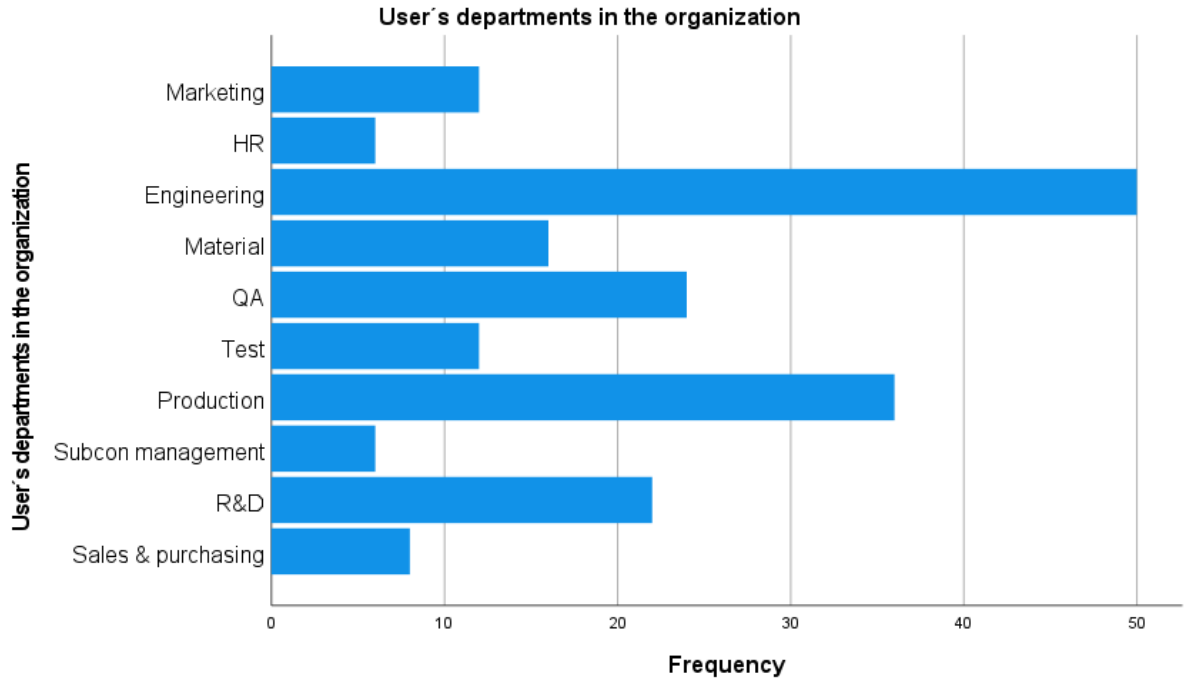


figure (3): Department Frequency bar chart

Figure 3 depicts the varied frequencies of responses in the various departments. The frequency was highest in the engineering department, next in the manufacturing department, and finally in the Q&R department. The HR and subcorn management departments, on the other hand, had the lowest frequency.

7. Use a cross-tabulation to describe the gender of the participants in terms of their education level.

Table 5

Gender and Level of education Crosstabulation

Construct		Diploma	First Degree	Master Degree	PHD	Total
Gender of users of internet banking	Female	30	100	10	4	144
		(20.8)	(69.4)	(6.9)	(2.8)	
	Male	4	36	8	0	48
		(8.3)	(75.0)	(16.7)	(0)	

Table 6

Gender and Education* categories *Cross-tabulation

		Graduates	Post graduates
Gender of users of internet banking	Female	130	14
	Male	40	8

Table 6 and 7 shows the gender and the level of education and education categories cross tabulation respectively. Out of all females who answered to the study, 90% are graduates and just 10% have a postgraduate degree; of those 10% who are graduates, 71.5 percent have a master's degree and only 28.5 percent have a PHD. On the other side, around 83 percent of all male respondents to the study are graduates, and 16.6 percent possess a postgraduate degree with a master's degree.

8. Categorize the intention to use Internet banking variable into 2 categories (a different variable), labelling them as low intention, and high intention.

The median is 4, so whatever is below 4 is considered low intention. On the other hand, whatever above 4.01 (added 1% to avoid overlapping) is considered high intention.

Figure 4 indicates that out of the 192 respondents only 13.5% have a high intention to use internet banking.

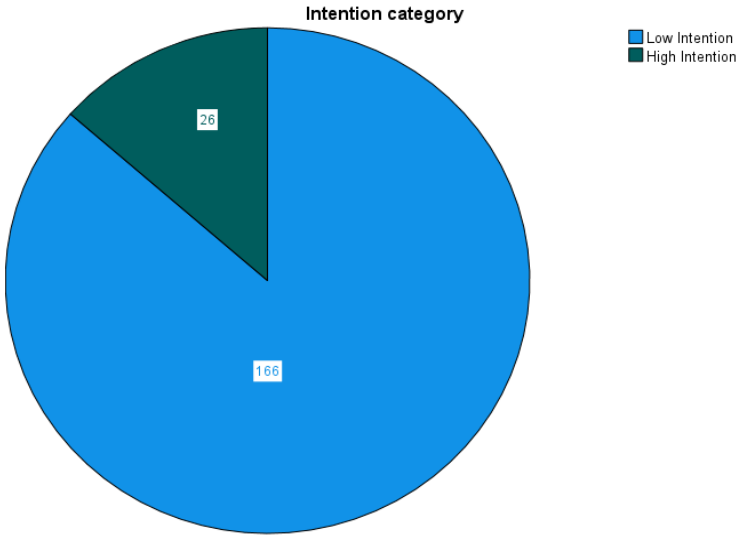


figure (4): Intention category Frequency bar