



A Preliminary Study on Students' Perception of SMS Banking: A Case at The Labuan International Campus-University Malaysia Sabah

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Abstract

Mobile phones are crucial for those who are busy with daily routine activities, especially those who are employed as well as students. The objective of this study is to identify the key points which are relevant to the students perceptions of SMS banking by the use of a survey conducted during July C September 2005. This research used university students as the sample, namely from Labuan International Campus-Universiti Malaysia Sabah. In this paper, a total of 317 students were approached which was considered as a preliminary way to observe their perceptions of SMS banking. Through various SPSS analyses, we discovered that 38 percent of male respondents and 61 percent of the female respondents know what SMS is. Surprisingly, only female respondents used SMS banking with 0.95 percent, which is consistent with the study by Laforet and Li (2005) and Howcroft, Hamilton and Hewer (2002). Findings also discovered that all of the socio-demographic elements have their own level of significance. In general, it can be concluded that students perceptions were not homogeneous and an education level was insufficient to explain the SMS banking usage among the respondents.

INTRODUCTION

The need for mobile banking has been given considerable attention by many researchers (for example, Karjaluoto, Koivumaki, and Salo, 2002; Mattila, 2003; Suoranta and Mattila, 2004; Laforet and Li ,2005; Riivari, 2005). The topic of mobile banking has become important for academics, practitioners and students. Exploring such information will help banks to identify students perception toward SMS banking which will be crucial for the selection of banks services by students.

There are two questions that need to be posed in order to understand SMS banking. Firstly, what is SMS banking in the first place? SMS banking can be defined as a banking transaction conducted using a mobile phone via an SMS application. SMS stands for short message services. Bank Islam Malaysia Berhad (BIMB), Bank of Commerce (BCB), Maybank to name a few have introduced

such an application. Introduction for SMS has taken place due to competition among banking institutions as well as non- financial institutions. Secondly, why do people use SMS banking? There are four points, which can be highlighted here. First, the growing population of mobile phone users in Malaysia can be taken as a good indicator, which will also affect mobile phone application for banking purpose (see appendix). Second, a mobile phone can act as a new platform to inform others regarding information dissemination. Third, internet/online servers supports it. Fourth, it is flexible.

This field of research is very new in Labuan and in Malaysia as well. In fact, the potential of SMS banking is very obvious in Malaysia. As noted earlier, a dramatic increase in the number of mobile phone usage among Malaysian can be become as a yardstick to promote SMS banking as part of banks service (see appendix). According to statistics provided by Suruhanjaya Komunikasi dan Multimedia Malaysia (hereafter SKMM), the usage of SMS has drawn a dramatic increment in recent year. It stated that about 3.6 billion of SMS were sent in 2002, whereas in year 2003 the number of SMS increased to 6.1billion, 69 percent increment. In addition, on ownership of mobile phone, it has displayed an obvious increment. For example in 1998 total individuals with mobile phones were 2.15 million.

RESEARCH OBJECTIVES AND HYPOTHESES

This study was considered as a preliminary study where it may consist of basic results of the study that was undertaken. In order to achieve this, five objectives were verified:

- To determine students perceptions of SMS banking based on race;
- To determine students perceptions of SMS banking based on gender;
- To determine students perceptions of SMS banking based on schools;
- To determine students perceptions of SMS banking based on age; and
- To determine students perceptions of SMS banking based on religion

In line with the objectives of the study, five null hypotheses were verified:

- There is no significant relationship between students perception over SMS banking exhibited by race discrepancy.
- There is no significant relationship between students perception over SMS banking exhibited by male and female.
- There is no significant relationship between students perception over SMS banking exhibited by schools.
- There is no significant relationship between students perception over SMS banking exhibited by age discrepancy.
- There is no significant relationship between students perception over SMS banking exhibited by religion discrepancy.

LITERATURE REVIEW

There are several articles that can be considered as related to the present study namely the study conducted by Al Ashban and Burney (2001), [Howcroft et al. \(2002\)](#), Karjaluoto et al. (2002), Mattila (2003), SKMM (2004), Suoranta and Mattila (2004), Laforet and Li (2005) and Riivari (2005). The following discussion highlights some of the key findings of these studies.

Laforet & Li (2005) research on mobile and Internet banking has produced interesting findings. The important finding claimed that respondents level of education was not found to influence online and mobile banking adoption in China. In fact, as far as mobile banking is concerned, lack of understanding of its benefits was found significant. At least among the urban population surveyed, 33 percent used online banking and 14 percent used mobile banking. Thus, the level of awareness of such services was low in China.

A study conducted by [Howcroft et al. \(2002\)](#) revealed that younger consumers value the convenience or time saving potential of online and mobile banking more than older consumers. Younger consumers also regarded the lack of face-to-face contact as less important than older consumers. Another important finding as highlighted by [Howcroft et al. \(2002\)](#), further found the educational levels of respondents did not affect the use of telephone or online banking.

According to study reported by SKMM (2004), a mobile phone was considered as a necessity good instead of communication tool. Findings indicated that younger user equal to 12.3 percent of the total utilization, which is beyond the respondents, aged 50 (9 percent). Younger user for this study means teenagers (aged 15-25), consisting of secondary students and university students. Another important finding revealed that Malay teenagers were higher user among the other races comprising of 47.50 percent compared to Chinese (32.4 percent), Indian (6.9 percent) and other bumiputra (5.4 percent).

A study conducted by Mattila (2003) discovered that respondents aged 18-34 are considered as the population actively using mobile phones for banking purposes. Findings of this study also indicated that pay bills cheaper, have faster data transmission rate, authenticate with mobile phone to internet bank are considered as the main factors why they used mobile phone for banking transactions.

A study conducted by Karjaluoto et al. (2002) investigated the bank customers perception about private banking in Finland during the summer of 2000. The researchers claimed that the consumer segments of private banks in Finland could be classified into two categories. First, low frequency users main channel for banking is the branch and telephone to access accounts, meaning that they bank online rarely (around 1-3 times a month). Second, high frequency users main channel for banking is the Internet, meaning that they bank online on a weekly or even daily basis. Results imply statistically significant differences ($p < 0.01$) in age $t(640) = 6.632$, education $t(635) = -4.094$, income $t(609) = -5.615$ and profession $t(75.38) = 7.607$. Finding also indicated that high frequency users for mobile phone, Internet bank, ATM and others were those aged around 35-49 were amounted 281, which were considered as profitable segment for banks.

Among other purposes, Al-Ashban et al.s (2001) study was designed to investigate customer adoption of telephone-based banking. Generally, the study discovered that 87 percent of the respondents have an education higher than diploma, which was also parallel with the use of the service to be 72 percent during the past three years, 40.2 percent of them having started using tele-banking services less than one year. Other studies by Suoranta and Mattila (2004) and Riihari (2005) claimed that mobile phone banking were very sophisticated and considered as the newest channels to conduct banking electronically.

METHODOLOGY

The sampling design was through convenience random sampling, which involved 317 of the respondents at that university's campus. The populations of students amounted to approximately 1920. In this regard, students were chosen as a sample of the study because of two reasons. First, they are mostly intelligent in understanding current issues relating to mobile phones. Second, they mostly use SMS for communicating with friends and family. In fact, students have a potential to be banks predominant consumers in the future in using SMS banking. Thus, it is interesting to investigate their perceptions toward SMS banking which will affect banks effort in educating students about SMS banking. The sample size includes 317 respondents, as the set of questionnaires (317 set of questionnaires) were given to them randomly. The data for this study was collected through self-administered questionnaires distributed by the researchers. The questionnaire contains three sections: the first section was designed to gather the respondents personal and demographic characteristics. The second part was designed to gather the respondents awareness and usage for SMS banking. The last

part was designed to gather the respondents expectation and perception. By studying the sample, the researchers were able to draw conclusions that would be generalizable to the population of interest. Indeed, the researchers performed a number of chi-square tests to observe any significant relationship between socio-demographic elements with students perception (Part II and Part III).

FINDINGS

Table 1: Chi-Square Tests

PART II	Race [DF=4]	Gender [DF=1]	School [DF=1]	Age [DF=2]	Religion [DF =3]
Q1	90.61***	9.39***	1.73	0.30	18.43***
Q2	1.69	0.35	0.02	0.20	2.45
Q3	8.66	0.442	0.82	13.99***	4.78
Q4	35.84***	18.11***	8.01***	1.42	38.62***
Q5	98.90***	2.78	49.45***	21.95***	98.65***
Q6	19.72***	2.77	0.04	0.68	18.82***
Q7	20.04***	16.23***	0.03	1.66	15.05***
Q8	3.59	1.97	0.86	0.150	3.83
Q9	28.31***	0.404	4.84*	12.45***	6.94
Q10	3.85	0.10	1.03	3.30	3.02
PART III	Race [DF=16]	Gender [DF=4]	School [DF=4]	Age [DF=8]	Religion [DF=12]
Reliability	23.25	5.68	31.23***	44.77***	39.23***
Security	36.38***	5.71	17.69***	27.44***	24.40*
Time and cost saving	26.68*	20.604***	5.20	55.93***	33.67***
Advance	48.17***	5.46	17.27***	13.24	67.20***

technology					
Punctuality	54.29***	8.25	4.03	21.67**	37.87***
Educating customers	48.57***	11.31*	6.58	26.53***	35.20***
Customer friendly service	52.13***	4.56	6.90	11.59	31.77***
Effectiveness	37.38***	11.95*	7.29	21.71**	18.88

Source: Sample survey

Note: * Significant at 0.05, ** Significant at 0.01, *** Significant at 0.005

According to the table above, for Part II as the relationship between items Q1, Q4, Q5, Q6, Q7 and Q9 and race were significant, the null hypotheses were rejected. Thus, race discrepancy may explain the differences can be observed through item Q1, Q4, Q5, Q6, Q7 and Q9. Part III the relationship between item security, time and cost saving, advance technology, punctuality, educating customers, customer friendly service and race were significant, and therefore the null hypotheses are rejected. In fact under race for Part II, for Q1, Malays were in the majority with 105 of the total respondents which is consistent with the research conducted by SKMM, followed by Chinese, Indians, Sabahan and Sarawakian. Also under Part III, for item security 58 Chinese respondents indicated this item to be very important with 18.30 percent, followed by Malays with 17.03 percent and Sabahan 17.98 percent. Overall, Part II and Part III were found to be significant with race discrepancy.

The relationship between gender and various items in the Part II and Part III were observed to be significant. Among the items in the Part II to be significant were Q1, Q4, and Q7. Under these items, Q1 majority of the female respondents who participated in this study answer yes which is 60.57 percent, only 37.54 percent of the male responded to the same item. For Q4, only 13.56 percent of the male respondents aware about Islamic banking liberalization in Malaysia. Female respondents were more conscious with 35.65 percent. Q7 has the same pattern with Q4 where female respondents heard about the use of mobile phone for SMS banking were 42.27 percent, male respondents with 18.61 percent. Under Part III, only time and cost-saving, educating customers and effectiveness discovered to be significant at 0.005, 0.05 and 0.05 respectively. It means that there is a significant difference that can be observed between those three elements and gender.

Under school, for Part II only three elements were discovered to be significant namely Q4, Q5 and Q9. Part III revealed that the same pattern as Part II where only three elements observed to be significant namely reliability, security and advance technology.

The relationship between various items and age also produced interesting results. The chi-square test yielded statistically significant differences between the age groups in each items of the questions in Part II and Part III. Result imply statistically significant differences for Part II, items Q3, Q5 and Q9 were found to be significant to age at 0.005 (observed value of chi square, 13.99, 21.92 and 12.45 respectively), the observed value of chi-square is greater than the critical value of chi-square, 10.5966, hence the null hypothesis was rejected. Whereas for Part III there were six elements have significant relationship to age namely reliability ($p < 0.005$: observed value of chi-square, $44.77 > 21.9550$), security ($p < 0.005$: observed value of chi-square, $27.44 > 21.9550$), time and cost saving ($p < 0.005$: observed value of chi-square, $55.93 > 21.9550$), punctuality ($p < 0.01$: observed value of chi-square, $21.67 > 20.0902$), Educating customers ($p < 0.005$: observed value of chi-square, $26.53 > 21.9550$) and effectiveness ($p < 0.01$: observed value of chi-square, $21.71 > 20.0902$). Again, the null hypothesis was rejected.

Last but not least, the relationship between religion groups in each items of the questions discovered to produce a variety of results. It found that five elements for Part II significant at 0.005

namely (Q1: observed value of chi-square, 18.43), (Q4: observed value of chi-square, 38.62), (Q5: observed value of chi-square, 98.65), (Q6: observed value of chi-square, 18.82) and (Q7: observed value of chi-square, 15.05). These observed values are greater than critical value of chi-square, 12.8381. Therefore the null hypothesis was rejected. Whereas for Part III, the relationship between various items and religion produced seven elements to be significant named reliability ($p < 0.005$, observed value of chi-square, 39.23 > critical value of chi-square, 28.2995), security ($p < 0.05$, observed value of chi-square, 24.40 > critical value of chi-square, 21.0261), time and cost saving ($p < 0.005$, observed value of chi-square, 33.67 > critical value of chi-square, 28.2995), advance technology ($p < 0.005$, observed value of chi-square, 67.20 > critical value of chi-square, 28.2995), punctuality ($p < 0.005$, observed value of chi-square, 37.87 > critical value of chi-square, 28.2995), educating customers ($p < 0.005$, observed value of chi-square, 35.20 > critical value of chi-square, 28.2995) and customer friendly service ($p < 0.005$ observed value of chi-square, 31.77 > critical value of chi-square, 28.2995). Thus the null hypothesis was rejected.

Overall, the results clearly addressed the students perception of SMS banking in terms of demographic elements. There are individual differences have found in this study, meaning that they have difference perception for the new products and services offered by commercial banks in Malaysia. The results also consistent with the study conducted by Karjaluoto et al. (2002) claimed that socio-demographic elements such as gender, age, marital status, education, income level and profession as noted earlier are significant at 0.001. This will give us a signal that students market segment can be regarded differently in accordance to demographic elements. The next step will be an action by banks for customers market segmentation to increase more participation among younger users for SMS banking.

CONCLUDING REMARKS

The relationship between Part II: awareness and usage variables and Part II: expectation and perception variables with the socio-demographic elements (i.e race, gender, school, age and religion) were discovered clearly in this study. This paper could provide a general guideline to bankers about students attitude may differ according to age, gender, education, religion and school when perceiving mobile phone as a new channel for banking transaction. This is consistent with Howcroft et al. (2005), whose study showed that financial providers cannot assume that consumers are homogeneous in terms of their attitudes towards home banking. Thus it is extremely important to enable bankers to target specific segments of the customer base with messages aimed at changing consumer attitudes and ultimately their perception.

According to the findings, 0.32 percent of the India, Sabahan and Sarawakian respondents used their mobile phone for SMS banking. Under religion, only students from Buddhist, Hindu and Christian used their mobile phone for SMS banking with a small percentage 0.32 percent each of the respondents. A similar pattern also occurred to age, school and gender. This reflected the low understanding on the benefits that could be extracted from mobile phone SMS banking due to difference perceptions can be observed through this study. Again, this result is consistent with Laforet and Li (2005), which claimed that lack of understanding the benefit of mobile banking, was found to be significant.

In fact, a high level of education cannot be used as a benchmark to assume students most likely use SMS banking as indicated by the present finding which is consistent with Howcroft et al. (2005). However this in contrast with Al Ashban, et al. (2001) which claimed that 72 percent of the respondents which used telephone-based banking have an education higher than diploma, the discrepancy with the present study due to the respondents were employed. Under Part II of the questionnaire, respondents were required to give their expectation of what they want from banks when it offers new services. It discovered that time and cost-saving was ranked very important among the respondents (mean=4.56), which was parallel with the study conducted by Howcroft et al. (2005).

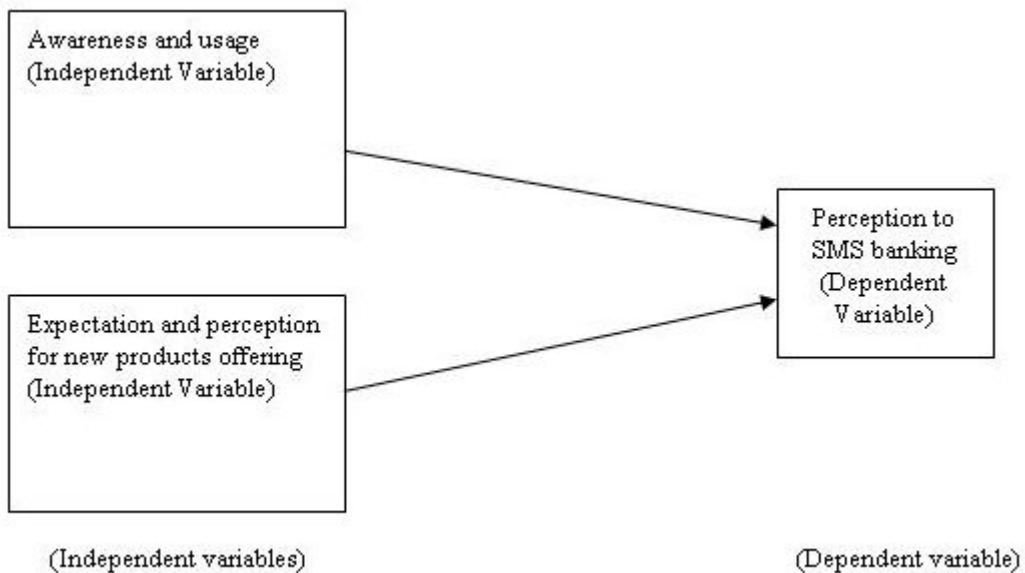
Like other studies this study also has its own limitation since it only use students as the sample of the study, which may have an affect on the generalization of the results. Thus, in the future a larger sample should be incorporated that may consist of general population, which will perhaps produce interesting findings. Indeed, this study was developed only in Labuan, in an offshore banking center where the results may differ compared if conducted in other locations.

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Appendix

Figure 1: Theoretical framework



According to the figure above, it shows and explains that students awareness and usage as well as their expectation and perception for new products are the key elements affect their level of perception to SMS banking. These elements have been identified as Independent Variable (IV) and will be used in the study in order to discover students perception, which is signed as dependent variable (DV).

Table I: Internet users and mobile phones

Year	Internet users (per 1,000 people)	Mobile phones (per 1,000 people)
1990	NA	5
1991	NA	7
1992	0	11
1993	0	18
1994	1	29
1995	1	50
1996	9	72
1997	23	92

1998	69	101
1999	128	137
2000	214	220
2001	266	313
2002	320	377
2003	344	442

Source: <http://devdata.worldbank.org>

Table II: Malaysian Population and television sets

Year	Population ages 15-64 (% of total)	Population, total	Television sets (per 1,000 people)
1990	60	18201900	149
1991	60	18,656,950	149
1992	60	19,127,100	149
1993	60	19,609,110	156
1994	60	20,103,260	163
1995	60	20,609,860	169
1996	61	21,129,230	165
1997	61	21,667,000	172
1998	61	22,180,000	182
1999	62	22,710,000	193
2000	62	23,270,000	193

2001	62	23,802,360	202
2002	62	24,304,578	210
2003	63	24,774,252	NA

Source: <http://devdata.worldbank.org>

Table III: Urban population

Year	Urban population	Urban population (% of total)
1990	9,068,551	50
1991	9,441,387	51
1992	9,829,111	51
1993	10,230,386	52
1994	10,645,641	53
1995	11,075,327	54
1996	11,509,979	54
1997	11,962,437	55
1998	12,408,956	56
1999	12,872,664	57
2000	13,361,401	57
2001	13,827,506	58
2002	14,283,072	59
2003	14,726,063	59

Source: <http://devdata.worldbank.org>

Table IV: Frequency Table Socio-demographic

Items	Frequency	Percent
Race		
Malays	86	21.1
Chinese	75	23.7
Indians	38	12.0
Sabahan	100	31.5
Sarawakian	18	5.7
Gender		
Male	79	24.9
Female	238	75.1
School		
SPKAL	227	71.6
SSIL	90	28.4
Age		
Less than 20 years	13	4.1
20-25	303	95.6
26-31	1	0.3
Religion		

Islam	134	42.3
Buddhist	59	18.6
Hindhu	27	8.5
Christian	97	30.6

Source: Sample survey

Table V: Frequency Table Awareness and usage

Items	Frequency	Percent
Q1		
Yes	311	98.1
No	6	1.9
Q2		
Yes	313	98.7
No	4	1.3
Q3		
Yes	269	84.9
No	48	15.1
Q4		
Yes	156	49.2
No	161	50.8
Q5		
Yes	188	59.3

No	129	40.7
Q6		
Yes	274	86.4
No	43	13.6
Q7		
Yes	193	60.9
No	124	39.1
Q8		
Yes	3	0.9
No	314	99.1
Q9		
Yes	24	7.6
No	293	92.4
Q10		
Yes	115	36.3
No	202	63.7

Source: Sample survey

Table VI: Mean Expectation and Perception

Items	Mean	Rank
Time and cost saving	4.56	1

Advance technology	4.51	2
Effectiveness	4.50	3
Security	4.21	4
Customer friendly service	4.38	5
Educating customers	4.27	6
Punctuality	4.27	7
Reliability	4.21	8

Source: Sample survey

Questionnaire

PART I: 1.0 Student background: *Latarbelakang pelajar*

Name/ Nama: _____

Race/ Bangsa: a. Malay /Melayu b. Chinese/Cina c. Indian/India
d. Bumiputra Sabah/Sabahan e. Bumiputra Sarawak/Sarawakian

Religion/ Agama: a. Islam/Islam b. Buddhist /Buddha c. Hindhu/Hindu
d. Christian/Kristian

Age/ Umur: a. below than 20/ bawah 20 tahun b. 20-25 c. 26-31 d. 32-37
e. More than 37/ lebih dari 37 tahun

Gender/Jantina: a. Male/Lelaki b. Female/Perempuan

School/ sekolah: a. Labuan School of International Business and Finance (SPKAL)
b. Labuan School of Informatic Sciences (SSIL)

PART II: 2.0 Awareness and usage: *Kepekaan dan Penggunaan*

Q1: Do you know what is SMS?/ *Apakah yang dimaksudkan dengan SMS?*

- a. Yes/Ya b. No/Tidak

Q2: Have you used your mobile phone for SMS purposes? / *Pernahkan anda menggunakan telefon bimbit untuk tujuan SMS?*

- a. Yes/Ya b. No/Tidak

Q3: Have you heard about the negative and positive implications brought by SMS?/ *Pernahkah anda dengar tentang implikasi negatif dan positif SMS?*

- a. Yes/Ya b. No/Tidak

Q4: Have you heard about the Islamic banking liberalization in Malaysia?/ *Pernahkan anda dengar tentang liberalisasi perbankan Islam di Malaysia?*

- a. Yes/Ya b. No/Tidak

Q5: Have you familiar with Islamic banks?/ *Adakah anda mengetahui tentang bank-bank Islam?*

- a. Yes/Ya b. No/Tidak

Q6: Have you familiar with commercial banks?/ *Adakah anda mengetahui tentang bank-bank komersial?*

- a. Yes/Ya b. No/Tidak

Q7: Have you heard about the use of SMS for banking?/ *Pernahkah anda dengar tentang penggunaan SMS dalam perbankan?*

- a. Yes/Ya b. No/Tidak

Q8: Have you used your mobile phone for SMS banking? *Pernahkan anda menggunakan telefon bimbit anda untuk tujuan perbankan SMS?*

- a. Yes/Ya b. No/Tidak

