

Influence of Demographic Factors on the Adoption Level of Mobile Banking Applications in Jordan

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Abstract: The number of mobile users around the world is continuously growing; the users look to benefit from the freedom afforded without the need for cables, time and place. Demographic factors, trust and security have an effect on the usage of mobile applications. The demographic factors are considered the most important factors that can affect the use or adoption of any new technology. This study aims to investigate the effect of demographic factors on the adoption of mobile banking applications. The data for this study has been collected using a survey with 80 respondents that reflect the current situation of the usage of mobile banking applications in Jordan. The outcome of the survey would be analyzed to reflect the preferred patterns among Jordanians towards the mobile banking application. The results indicate that Jordan has good potential in terms of the adoption of the mobile banking application. The impact of demographic factors in developing countries is noted. As an example, in Jordan, the impact of demographic factors is stronger than other adoption factors such as trust or usefulness because this country has high levels of illiteracy; low levels of income and different cultural levels. The major contribution of this research project is the pattern and attributes of preferences that reflect the demographic factors on the adoption levels of the mobile banking applications in Jordan. Besides that it also outlines novel and innovative ways to improve or increase the adoption level.

Key words: Mobile banking applications, demographic factors, adoption indicators, cables, freedom, Malaysia

INTRODUCTION

None of us is unaware of the technological revolution and great benefits that have been gained from its application. The history of the mobile banking sector began with the use of Interactive Voice Response (IVR) which is an automated telephony system that interacts with its callers gathers relevant information and routes calls to the appropriate destinations (Patel and Marwala, 2008). The banking sector uses this system to provide various services to its clients. Then, it witnessed the emergence of the bank based SMS services which was defined by Laukkanen as the client requesting the services of the bank by sending text messages such as check balance and latest transactions of his account (Laukkanen, 2007). Later on, the mobile banking era focused on the Web/Wireless Application Protocol (WAP) based services.

Currently the banking sector is focusing on mobile bank applications as a medium to introduce banking services for clients that can be defined as a type of execution of financial services in the course of which

within an electronic procedure the clients use mobile communication techniques in conjunction with mobile devices (Pousttchi *et al.*, 2004). For example, clients may request their account information and financial related banking services. Mobile banking application is growing healthily from the banking sector side but the usage of mobile banking application services among the citizens is still very low. Jordanians are still reluctant and doubtful about the effectiveness and efficiency of the mobile banking application. One research issue worthy of being investigated is the demographics factors which can be categorized as age, gender, education and income (Burke, 2002). Moreover, the personal characteristics of mobile banking users were found to be important determinants of their adoption decisions (Sulaiman *et al.*, 2007).

In this research, the adaption level of mobile banking applications in Jordan is investigated. Generally, from the year of 2004, the application of electronic banking becomes one of the most successful business-to-consumer applications in the Electronic Commerce (EC) sector (Pousttchi *et al.*, 2004). Previous studies have reported that by 2011, the number of users accessing the

internet via mobile phones will exceed those via computers in some countries for example China (Liu *et al.*, 2009). The majority of banks in the USA and Europe have already adopted mobile banking applications.

However, the situation is different with Arabic countries; they are still in the early stages of developing internet-banking applications. In 2003, there were some Islamic banks in the Middle East that had well-developed internet banking websites for the convenience of their customers (Burke, 2002). In Jordan, internet banking has developed rapidly since the year 2001 as most Jordanian banks have adopted some form of electronic banking services and launched websites to serve their customers (AbuShanab *et al.*, 2010). Therefore, the potential market for mobile banking is quite huge and it is necessary to study the potential mobile phone based banking services.

In spite of the benefits, evidence suggests that most clients who have adopted online banking also continue to use traditional banking methods (AbuShanab *et al.*, 2010). Unfortunately, previous research shows the low usage rate of banking services through the internet. So, logically, the usage rate of banking services through mobiles phones will be less than through computers or the internet because mobile phones bear some shortcomings such small screens (Liu *et al.*, 2009), price of high-end mobile phones, cost of internet connectivity and lack of a proper keyboard (Tiwari *et al.*, 2007).

MATERIALS AND METHODS

An online survey was conducted with 80 respondents for several reasons: To reflect the current situation of mobile banking applications in Jordan and to investigate the impact of demographic factors on the adoption of mobile banking applications. The survey was conducted between February and March 2011. The respondents are internet users in Jordan who utilize various banking services. The data was collected based on various categories and levels of Jordanians. Since, mobile banking is relatively new in Jordan, this research focuses on identifying the factors that have an impact on the adoption levels of mobile banking applications. The respondents were randomly selected from Jordanian users of the internet and invited to complete the questionnaires by sharing the survey’s link on social networks and email. A total of 80 users responded to the questionnaire survey. The profile of the respondents is shown in Table 1.

RESULTS

Based on Table 1, Jordan has positive indicators that would increase the adoption level of mobile banking

Table 1: Profile of the respondents

Factors	Mobile usage level (%)
Gender	
Male	88.31
Female	11.69
Age	
16 or below	3.85
17-25	69.23
26-35	25.64
36-45	0.00
46 or above	1.28
Education level	
Primary school	2.56
Secondary school	16.67
Diploma/High diploma	2.56
University or above	78.21
Income per month	
Below 100\$	19.74
100\$-300\$	26.32
300\$-500\$	25.00
500\$-750\$	13.16
750\$-1000\$	6.58
1000\$ or above	9.21

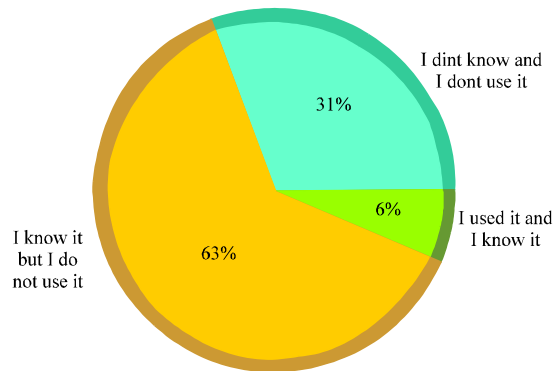


Fig. 1: Knowledge and mobile banking application

applications. These indicators are reflected through the high percentage of educated Jordanian aged between 17 and 25. Besides that, these groups of Jordanians are well versed in the current mobile technology available in Jordan. These are factors that increase usage levels of mobile devices in Jordan. Despite these positive indicators, the usage level for mobile banking applications in Jordan is still low as shown in Fig. 1. These findings are parallel with a previous survey result which was conducted by Jordanian General Statistics Department 2009.

The survey aims to measure the current situation of mobile banking application. One of the main questions asked to the respondents is to determine which factors have the strongest effect on the usage rate of mobile banking application? The respondents could choose only three factors. The results are: Low level of education (23.49%) as a strongest factor, low level of income (21.69%) and trust and uncomfortably (16.27%). Figure 2 shows Jordanians internet users’ perspective toward the usage of Mobile banking applications.

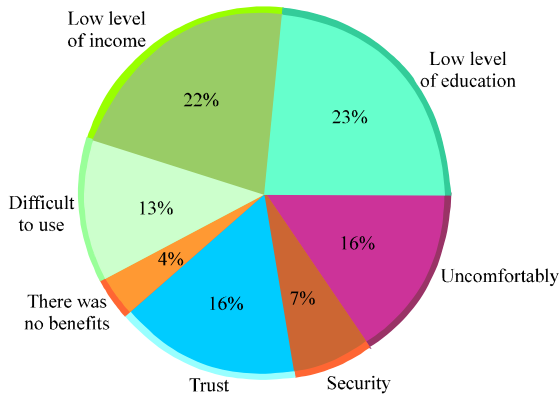


Fig. 2: Factors have the strongest effect on mobile banking application

Although, the percentage of those who own bank accounts was 62.30%, the percentage who uses the internet through mobile devices also was 65.79% but unfortunately, the percentage of those who use mobile banking applications was just 6.45%. The results of the survey indicate that the interface design plays an important role to encourage people to use the mobile banking application. In addition, the interface design is also considered as an obstacle facing the clients. The majority of respondents believe that the interface design has an important influence on the usage rate (79.41%). Thus, the banking sector must be able to develop new or innovative interface designs to encourage the use of mobile banking applications in Jordan.

DISCUSSION

In this research, age, gender, income and education level are considered as demographic factors that influence the adoption level of mobile banking applications. These factors are considered based on a previous study conducted by Burke (2002).

Age: Wood used the surveys and qualitative data through storytelling. Researcher discovered that the influence of age is noticeable. Through the fact that compared to older consumers, younger adults, especially those under age 25 are more interested in using any new technologies such as Internet or mobile banking application (Wood, 2002).

The demographic distribution from Table 1 shows that most of the respondents (69%) were between 17-25 years, the second age group (25.64%) was between 26-35 years. This age group has the potential to become the users of mobile banking based on Mattila’s study because of its familiarity with the latest mobile technologies (Mattila, 2003). These percentages give us

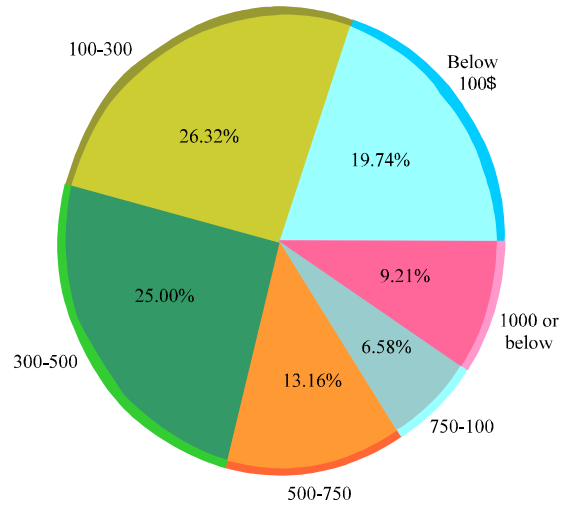


Fig. 3: Average of income monthly

positive indicators to increase adoption level, through encouragement of the younger adult’s cohorts to adopt the application. In addition, these results require the banking sector to focus on these cohorts as a target for marketing and strategic planning. This would make them to be the major group of users for mobile banking application in Jordan. Besides that the targeted users would also comprise middle aged, relatively good income and highly educated. Thus, age is important factor to be considered for the adoption of mobile banking application in Jordan.

Gender: In terms of the effects of gender on innovation diffusion, Venkatesh and Morris investigated the gender differences in the context of individual adoption and sustained usage. They discovered that gender is an important determinant of technology adoption and usage (Venkatesh and Morris, 2000). In addition, in 2004, Monsuwe (Monsuwe *et al.*, 2004) and S. Laforet (Laforet and Li, 2005) said that men express a greater interest with using various types of technology. All the results of the survey conducted indicated that the highest percentage of Jordanian internet users consists of males (88.31%), besides that the percentage of female was very low (11.69%). This is consistent with the previous research which found that males are more likely to adopt technological innovation than females (Venkatesh and Morris, 2000). Males have potential to become users of mobile banking applications because they have the desirability to try any new technology more than females.

Such findings requires decision-makers in the banking sector to focus more on males in their marketing plans and to encourage females to utilize the mobile banking application.

Income: Based on Monsuwe, the consumers with higher household incomes have the potential or intention to adopt any new technology such as online shopping more compared with lower income consumers (Monsuwe *et al.*, 2004). Logically, the level of income is a core factor and has a strong effect on the adoption of mobile banking applications. The survey's result indicates a low level of income among Jordanian, compared to other developing neighboring countries in the Arabic region. This is the main reason why Jordanians avoid the usage of mobile bank applications. Figure 3 shows the percentages of monthly income among Jordanians. Figure 3 shows that more than half of Jordanian people have income <500 USD monthly. Thus, low income level can be considered as the main reason that causes the avoidance of usage for mobile banking application because it needs an advanced mobile device in addition to an internet connectivity service. That could be considered as an add-on cost of such banking services. Decision-makers in the banking sector in Jordan should be keen to introduce the best of services for their clients, taking into consideration of such avoidance factor. As an example, lower cost communication device should be considered.

Education: Since, mobile banking is one of the most technological applications in terms of innovation, it is important that a strong understanding on how these innovations would benefit is inculcated among clients. Based on previous research work, an educated community is better at adopting new mobile banking technologies (Mattila, 2003). Household income and education level were found to have a significant effect on the adoption of Internet banking (Mattila *et al.*, 2003). The respondents of the survey can be classified into four different groups based on their educational background:

- University degree or above
- Diploma/Higher diploma degree
- Secondary school education
- Primary school

Thus, there is a strong relationship between the adoption level of mobile banking and respondent's education level. Based on Fig. 1, there is a high level of percentage of non-mobile banking application users who have certain prior knowledge about mobile banking application. These non-mobile banking application users also represent Jordanians with higher level of education (University degree or above). They are considered to be the potential users of mobile banking application in the future.

Framework: This study aims to answer the following research question: What are the demographic factors that

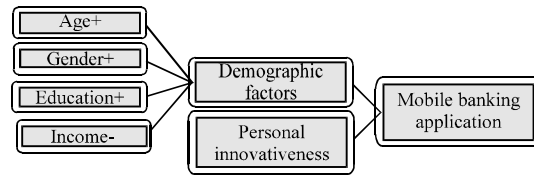


Fig. 4: Conceptual framework for the impact of the demographic factors on the adoption level

affect the adoption of mobile banking application among Jordanians? In order to answer the research question, this study employed content analysis method in addition to the findings from the survey. Sulaiman *et al.* (2007) proposed model based on Rogers (2003), Venkatesh and Morris (2000) and Polatoglu and Ekin (2001) to illustrate the relationship between the independent variables and the dependent variables which focuses on the demographic factors. Based on the findings from the survey, the following conceptual framework was adapted to formulate the perception about current status and its potential, in addition to illustrate the impact of demographic factors on mobile banking applications especially in Jordan as shown in Fig. 4. Figure 4 shows the current situation towards the adoption of mobile banking application in Jordan; the framework consists of two essential categories; demographic factors and personal innovativeness. Each category comprises a set of factors or elements. The demographic factors includes; age, gender, education and income. It is indicated that in Jordan, there are three demographic factors that have a positive impact on the adoption levels which are age, gender and education. These factors are considered as good incentives to adopt the mobile banking application by encouraging the banking sector to focus more on the potential clients in Jordan. The income level can be considered as a negative factor that reduces the adoption level of mobile banking application. These factors are specifically applicable for Jordan and can generalize for neighboring developing Arabic countries.

CONCLUSION

This study provides an interesting insight into the diffusion pattern of mobile banking services in Jordan. The fundamental research question focuses on the impact of demographic factors on mobile banking application, especially in Jordan. The literature review described how demographics affect the adoption of the mobile banking application. The findings discovered that demographic factors such as age, gender, income and education level have strong effects on the adoption level of mobile banking applications in Jordan. In addition, the survey discovered that the education level is the strongest

positive factor that influences the adoption level among Jordanian whereby the younger generations of Jordanian are highly educated. The income level is a negative factor that reduces the adoption levels among Jordanians.

Thus, joint efforts by the government and banking sector in Jordan should focus on the younger male generation as they are the largest potential user of mobile banking application in the future. Further continuous research work would be conducted to investigate each adoption in detail. The outcome of the research work would comprise an implementation plan that could ensure a successful adoption of mobile application and services in Jordan.

REFERENCES

- AbuShanab, E., J.M. Pearson and A.J. Setterstrom, 2010. Internet banking and customers acceptance in Jordan: The unified model's perspective. *Commun. AIS*, 26: 493-524.
- Burke, R.R., 2002. Technology and the customer interface: What consumers want in the physical and virtual store. *J. Acad. Marketing Sci.*, 30: 411-432.
- Laforet, S. and X. Li, 2005. Consumers attitudes towards online and mobile banking in China. *Int. J. Bank Marketing*, 23: 362-380.
- Laukkanen, T., 2007. Bank customers' channel preferences for requesting account balances. *Proceedings of the 40th Hawaii International Conference on System Sciences*, Jan. 3-6, Waikoloa, HI., USA., pp: 148a-148a.
- Liu, Z., Q. Min and S. Ji, 2009. An empirical study on mobile banking adoption: The role of trust. *Proceedings of the 2nd International Symposium on Electronic Commerce and Security*, May 22-24, Nanchang, China, pp: 7-13.
- Mattila, M., 2003. Factors affecting the adoption of mobile banking services. *J. Internet Bank. Commerce*, <http://www.arraydev.com/commerce/jibc/0306-04.htm>.
- Mattila, M., H. Karjaluoeto and T. Pento, 2003. Internet banking adoption among mature customers: Early majority or laggards. *J. Serv. Market.*, 17: 514-528.
- Monsuwe, T.P., B.G.C. Dellaert and K. De Ruyter, 2004. What drives consumers to shop online? A literature review. *Int. J. Serv. Ind. Manage.*, 15: 102-121.
- Patel, P.B. and T. Marwala, 2008. Interactive voice response field classifiers. *Proceedings of the IEEE International Conference on Systems, Man and Cybernetics*, Oct. 12-15, Singapore, pp: 3425-3430.
- Polatoglu, V.N. and S. Ekin, 2001. An empirical investigation of the Turkish consumers acceptance of Internet banking services. *Int. J. Bank Market.*, 19: 156-165.
- Pousttchi, K. and M. Schurig Pousttchi, K. and M. Schurig, 2004. Assessment of today's mobile banking applications from the view of customer requirements. *Proceedings of the 37th Annual Hawaii International Conference on System Sciences*, Jan. 5-8, Big Island, Hawaii, pp: 70184-70184.
- Rogers, E.M., 2003. *Diffusion of Innovations*. 5th Edn., Free Press, New York, pp: 27-30.
- Sulaiman, A., N.I. Jaafar and S. Mohezar, 2007. An overview of mobile banking adoption among the urban community. *Int. J. Mobile Commun.*, 5: 157-168.
- Tiwari, R., S. Buse and C. Herstatt, 2007. Mobile services in banking sector: The role of innovative business solutions in generating competitive advantage. *Proceedings of the International Research Conference on Quality, Innovation and Knowledge Management*, April 5, New Delhi, India, pp: 886-894.
- Venkatesh, V. and M.G. Morris, 2000. Why don't men ever stop to ask for directions? Gender, social influence and their role in technology acceptance and usage behavior. *MIS Q.*, 24: 115-139.
- Wood, S.L., 2002. Future fantasies: A social change perspective of retailing in the 21st century. *J. Retailing*, 78: 77-83.