

1 Review Article

2 **Attitude Towards Using Mobile Banking in**

3 **Malaysia: A Conceptual Framework**

4

5

6

7

8 **ABSTRACT**

9

Despite various researches has been carried out on mobile banking adoption but only a small quantity of studies were conducted in Malaysia. As a result, literature on the key determinants of the intention to adopt mobile banking within Malaysia is insufficient. Therefore, there is a need to comprehend the factors influencing the intention to adopt mobile banking services in the Malaysian market. This research fills the gap by integrating Technology Acceptance Model (TAM) with perceived risk and perceived cost. The main objective of the study is to determine the factors that influences the intention to adopt mobile banking services. This conceptual study reviews the past literatures and proposes eight research hypotheses interlinking eight variables that are Usefulness, Easefulness, Relative advantage, Perceived risk, Attitude Towards Using, Perceived Cost, Age, Education and Intention to Adopt Mobile Banking. The paper concludes with a discussion of the future of mobile banking in Malaysia.

10 *Keywords: Technology Acceptance Model, Relative advantage, Perceived Risk, Perceived*

11 *Cost, Age, Education*

12 **1. INTRODUCTION**

13 The development of the banking industry in Malaysia is also shaped by the rapid

14 growth of telecommunication industry. The deployment of technology in financial services

15 has changed the nature of selling and buying financial services [1]. In response to the

16 technological evolution, banks have adopted strategies by offering better products and

17 services while decreasing and building customer satisfaction concurrently [2]. Besides that,

18 improved network bandwidth and wireless application technologies have developed

19 opportunities for outspread deployment and usage of mobile commerce services [3]. There

20 are several studies that have investigated the technology adoption but not many researches

21 is done on the intention to adopt mobile banking within the telecommunication industry

22 perspective in Malaysia. Mobile banking is still in its conception stage in Malaysia [4]. Mobile

23 banking is elucidated as the ability to conduct bank transactions via a mobile device, or more

24 broadly to conduct financial transactions via a mobile terminal [5]. Similarly, [6] defined

25 mobile banking as "a channel whereby the customer interacts with a bank via mobile device,

26 such as a mobile phone or personal digital assistant (PDA)".

27 Innovative mobile applications are developed in tandem with the mobile banking

28 evolution. In May 2009, Maybank became the first financial institution in Malaysia to

29 introduce a free banking application, M2UMap on the newly launched iPhone [7]. Later,

30 CIMB Clicks was introduced by CIMB Bank Berhad which went on to be the most popular

31 and widely used banking app in Malaysia. Ostensibly, almost all the banks in Malaysia offers

32 mobile banking services such as Al Rajhi Banking & Investment Corporation (Malaysia)

33 Berhad, AmBank (M) Berhad, Bank Islam Malaysia Berhad, Bank Simpanan Nasional, CIMB

34 Bank Berhad, Citibank Berhad, Hong Leong Bank Berhad, Malayan Banking Berhad, OCBC

35 Bank (Malaysia) Berhad, Public Bank Berhad, RHB Bank Berhad, and Standard Chartered
36 Bank Malaysia Berhad [8]. After a successful pilot test, Malaysian Electronic Clearing
37 Corporation Sdn Bhd launched “MyMobile”, in 2013 which connects Maybank, CIMB Bank
38 and Public Bank offered inter-bank funds transfer and a range of other banking services [9].

39 In September, 2014, Maybank launched Maybank2u App which created success
40 with more than one million downloads. It went on to develop another App known as Quick
41 Balance in February, 2015 which provides customers to only view their account and card
42 balances on mobile devices which caters customers who purely want to check balances [10].
43 This holds true when in 2014, Bank Negara Malaysia reported that there are 5.639 million
44 subscribers of mobile banking services’ in Malaysia while Malaysian Communications and
45 Multimedia Commission reported that Malaysia’s mobile phone penetration rate is as high as
46 145% in the Q3 2014. If we compare the mobile banking services’ subscribers to the mobile
47 phone penetration rate, it is relatively low. Furthermore, the transaction volume via mobile
48 banking per capita is comparatively low with other payments methods [11, 12].

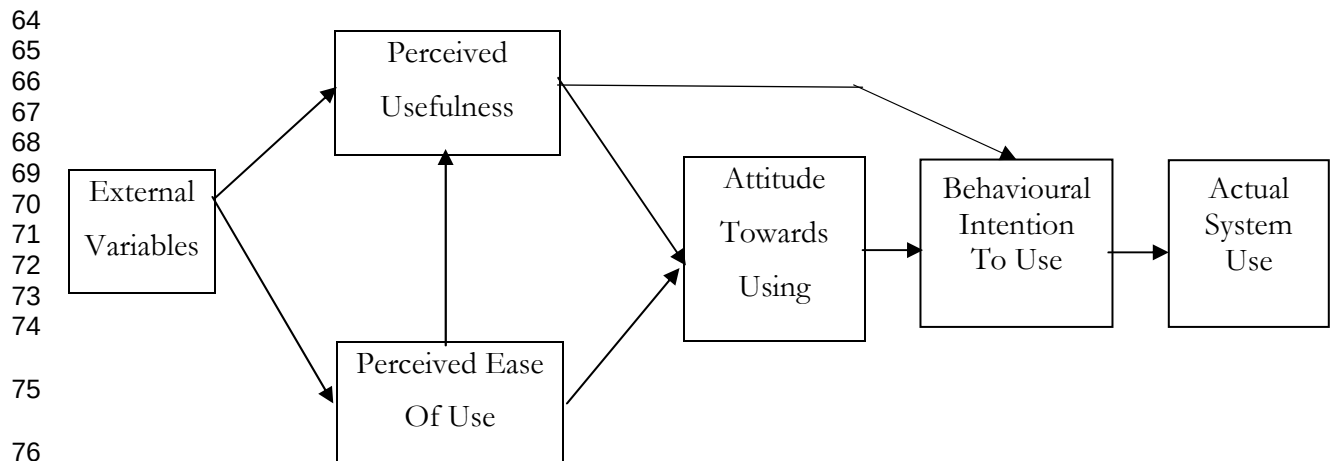
49 Hence, this conceptual paper determines the factors influencing the intention to
50 adopt mobile banking services in the Malaysian telecommunication industry perspective by
51 incorporating.

52 2. LITERATURE REVIEW

53 Technology Acceptance Model (TAM)

54 Technology Acceptance Model (TAM) was proposed by Fred Davis. He advocated
55 that external stimulus comprising actual system's features and capabilities influences the
56 users' motivation to use the system which predict the usage of the system. Davis further
57 proposed that users' motivation of actual usage are determined by three factors that are
58 perceived ease of use, perceived usefulness and attitude towards using a system which is
59 mediated by their behavioural intention to use as shown in Figure 1. Perceived usefulness is
60 illustrated as the degree to which a person believes that using a particular system would
61 enhance his or her job performance. In contrast, perceived ease of use is explained as the
62 degree to which a person believes that using a particular system would be free of effort [13].

63 **Figure 1: Technology Acceptance Model [13]**



79 [14] examined the factors affecting user's behavioral intention to adopt mobile
80 knowledge managements in Taiwan which revealed that perceived usefulness and
81 perceived ease of use significantly influences the consumers' attitude. Additionally,
82 perceived ease of use exhibited significant effect on perceived usefulness. Apparently,
83 attitude significantly effects their behavioral intentions too.

84 [15] studied the customer acceptance of internet banking in Brunei Darussalam and
85 found that perceived ease of use affects significantly the intention to use the internet banking
86 service. [16] investigated the e-filing behaviour among academics in Perak state in Malaysia
87 which revealed that perceived use of use and perceived usefulness do influence the Perak
88 state academic's e-filing adoption intention. [17] examined the factors that influences
89 students' desire in using the loaning institutions websites for loan applications among
90 university students in Kenya which found a significant influence of perceived usefulness on
91 the behavioral intention of adopting websites as a loan applications channel. Besides that, its
92 observed that students' perceived ease of use influences their perceived usefulness too.

93 [18] investigated the electronic banking acceptance in conditions of Slovak retail
94 banking market which revealed that perceived usefulness has a positive effect on
95 consumers' acceptance of electronic banking. [19] probed the technology acceptance of
96 prospective English teachers in Ankara, Turkey which revealed that perceived usefulness
97 and perceived ease of use has a positive effect on English teachers' attitudes towards using
98 technology. Consistently, perceived ease of use positively influences perceived usefulness.
99 Interchangeably, the English teachers' attitudes significantly affects their behavioral intention
100 to use technology in classes.

101 [20] examined the consumer participation in online product recommendation
102 services among online consumers that revealed that perceived ease of use of
103 recommendation agents has significant effect on its perceived usefulness. On the other
104 hand, perceived usefulness displayed significant effect on consumers' intention to reuse the
105 recommendation agents. [21] examined the adoption factors of Korean smartphones at
106 Jinju-Si in Korea which posits that perceived ease of use and perceived usefulness have a
107 positive effect on attitude of smartphone users adoption. Attitude and perceived usefulness
108 is found to be significant predictor of intent to use the smartphone. Also, perceived ease of
109 use also affects the on intention to use.

110 [22] investigated the experience factors related to students' perceptions of eTexts
111 among undergraduate students at a Canadian open university which revealed that perceived
112 ease of use is associated with behavioural intention to use. [23] investigated the academic
113 researchers' absorptive capacity influence on collaborative technologies acceptance in
114 Malaysia whereby they empirically identified significant effects of perceived usefulness and
115 perceived ease of use of collaborative technologies on their behavioral intention towards the
116 acceptance it.

117 [24] examined the ICT adoption behavior of rural young entrepreneurs in in four
118 states of peninsular Malaysia that are Negeri Sembilan, Selangor, Perlis, and Terengganu.
119 The result shows that perceived usefulness and attitudes are significantly related to
120 entrepreneurial intention. Besides that, attitude mediates the effects of perceived usefulness
121 on entrepreneurial intention significantly. Moreover, perceived usefulness influences attitude
122 significantly. [25] investigated the broadband television users' continuance intention to use in
123 Taiwan that revealed that perceived ease of use of broadband television influences
124 consumers' attitude to use it. Furthermore, users' attitude to use has significant effect on
125 their intention to continue to use the broadband television.

126

127

128

129

130

131

132

133 3. Conceptual Framework

134

Figure 2: Conceptual Framework

135

136

137

138

139

140

141

142

143

144

145

146

147

148

149

150

151

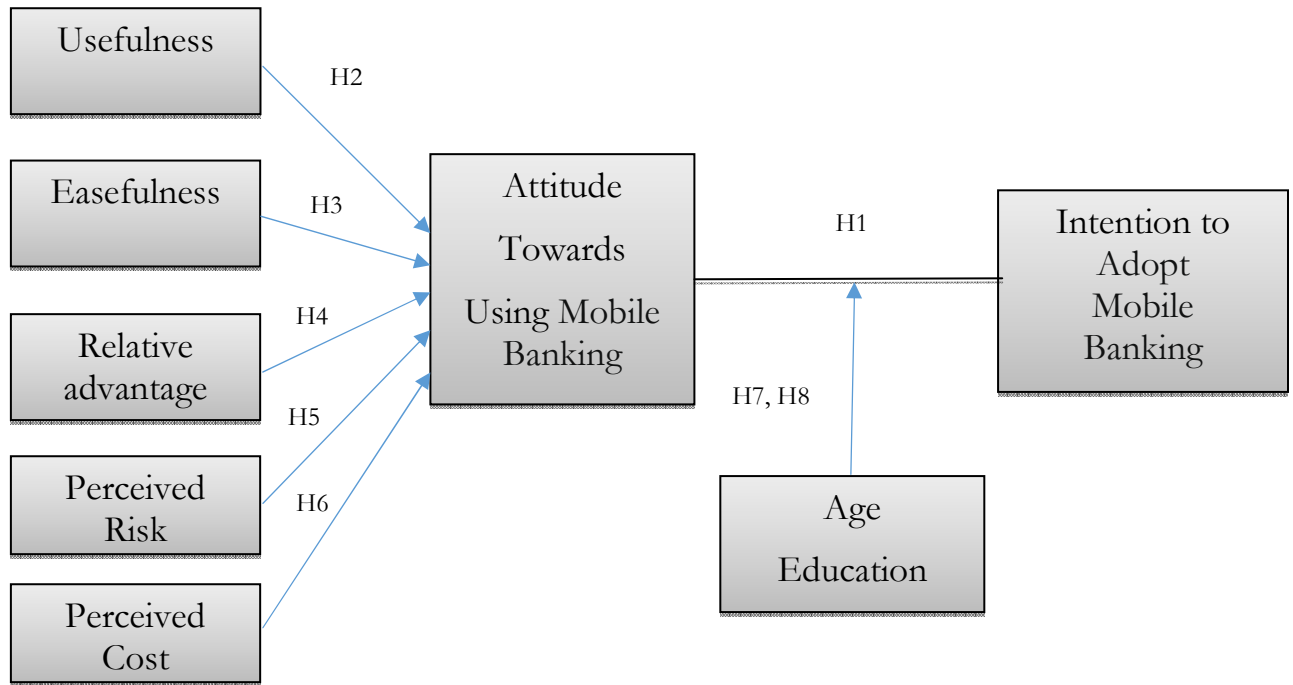
152

153

154

155

156



157 Intention to Adopt and Attitude Towards Using Mobile Banking

158

159

160

161

162

163

164

165

166

167

168

H₁: There is a relationship between Attitude Towards Using and Intention to Adopt mobile banking.

169 **Usefulness & Easefulness of Mobile Banking**

170 Perceived usefulness has a significant effect on consumer's attitude towards mobile
171 banking adoption in Ghana [32]. At the bottom of the pyramid in South Africa, perceived
172 usefulness and perceived ease of use has a significant effect impact on the adoption of
173 mobile banking [33]. Apparently, perceived ease of use induces intention to use mobile
174 banking among university students in South Africa [34]. Interchangeably, the perceived ease
175 of use of short message service (SMS) mobile banking has a significant influence on the
176 adoption of SMS banking in the West Nile Region in Uganda [35]. Persistently, the study of
177 M-commerce adoption in Oman shows that perceived usefulness and perceived ease of use
178 has significant effects on the adoption of M-commerce services [36]. In addition, both
179 perceived ease of use and perceived usefulness of mobile banking exhibits significant effect
180 on users' attitudes towards use of mobile banking in Iran [32]. In the same manner, another
181 study found that perceived ease of use and perceived usefulness of mobile banking services
182 influences consumers' attitude toward mobile banking significantly in Tehran, Iran [37].

183 H₂: There is a relationship between Usefulness and Attitude Towards Using mobile
184 banking.

185 H₃: There is a relationship between Easefulness and Attitude Towards Using mobile
186 banking.

187 **Relative advantage of Mobile Banking**

188 Relative advantage is defined as the degree to which an innovation is perceived
189 better than the ideas it supersedes [38]. Relative advantage influences the Brazilian's
190 adoption intention of mobile banking services [39]. Intriguingly, investigation of the factors
191 affecting the mobile banking adoption in Saudi Arabia that revealed that relative advantage
192 has a significant effect on mobile banking adoption [40]. Interestingly, relative advantage is
193 significantly related to the intention to use mobile banking in Mauritius [41]. The relative
194 advantage of mobile banking services is a significant determinant in predicting mobile
195 banking adoption in Taiwan [42]. Furthermore, relative advantage is found to be statistically
196 significant with the intention to use mobile banking services in Bangladesh [43]. Consumers
197 attitude of switching from online banking to mobile banking are significantly influenced by the
198 relative advantages of mobile banking [29]. Allegedly, relative advantage of mobile banking
199 has a significant effect on consumers' attitude in Banda Aceh, Indonesia [44]. Moreover, a
200 study of the challenges affecting adoption and use of mobile banking done in Kenya
201 revealed that there exists a strong, positive and significant relationship between relative
202 advantage and adoption of mobile banking [45].

203 H₄: There is a relationship between Relative advantage and Attitude Towards Using
204 mobile banking.

205 **Perceived Risk of Mobile Banking**

206 Perceived risk is defined as the nature and amount of risk perceived by a consumer
207 in contemplating a particular purchase decision. Basically, perceived risk by the consumer is
208 a function of the amount at stake in the purchase decision, and the individual's feeling of
209 subjective certainty that he or she will win or lose all or some of the amount at stake [46].
210 Perceived risk has a significant influence on the Brazilian's adoption intention of mobile
211 banking services [39]. Also, perceived risk has a significant effect on consumer's attitude
212 towards and intention to use mobile banking adoption among Australian consumers [47].

213 Apart from that, perceived risk of mobile money transfer service in Ghana significantly
214 influences customers' intention to use it [48].

215 Perceived risk has a significant effect on the mobile banking adoption in Saudi
216 Arabia [40]. Similarly, in Pakistan its identified that consumers' intention to adopt mobile
217 banking services was significantly influenced by perceived risk [49]. In Taiwan, consumers'
218 demonstrated that perceived risk affects their attitudes towards adopting the mobile banking
219 services and the intention to use it [42]. Risk also has a significant effect on among Spanish
220 consumers' intention to use mobile banking [28]. Indistinguishably, perceived risk is a
221 significant predictor for user resistance towards adopting mobile banking services in China
222 [50]. In addition, perceived risk affects consumers' intention to adopt mobile banking in Saudi
223 Arabia [51]. Moreover, perceived risk is a significant predictor of adoption of mobile banking
224 in Iran [52]. In addition, perceived risk affects consumers' attitude toward using the internet
225 banking in Bangladesh [53]. Furthermore, in Bangladesh itself, perceived risk has significant
226 influence over consumers' behavioral intention in adopting or to continue use mobile banking
227 [54].

228 H₅: There is a relationship between Perceived Risk and Attitude Towards Using mobile
229 banking.

230 **Perceived Cost of Mobile Banking**

231 Perceived cost is defined as the extent to which a person believes that using mobile
232 banking will cost money [55]. Cost is significant factor of behavioral intention to use [56].
233 Perceived cost is a significant barrier on the Brazilian's adoption intention of mobile banking
234 services [39]. Homogeneously, perceived cost is a significant predictor of adoption of mobile
235 banking among young consumers' in Germany [57]. Similarly, cost has a significant effect on
236 consumer's attitude towards and intention to use mobile banking adoption among
237 Australians [47]. In Taiwan, perceived financial cost of mobile banking significantly
238 influences individuals' intention to adopt mobile banking [58]. Similarly, perceived cost has
239 significant effect on the adoption of m-banking in rural Bangladesh [59]. Nevertheless, its
240 also identified that perceived cost influences the adoption of mobile commerce by online
241 consumers [60]. The behavioral intention to use the internet banking is effected by the
242 perceived financial cost [61]. [52] found that perceived cost is a significant predictor of
243 adoption of mobile banking in Iran. Perceived financial cost has significant influence over
244 consumers' behavioral intention in adopting mobile banking in Bangladesh [53].

245 H₆: There is a relationship between Perceived Cost and Attitude Towards Using mobile
246 banking.

247 **Demographic Characteristics**

248 Demographic characteristics is been used by many researchers to improve the
249 explanatory power of consumer's intention to adopt new technologies. Consumers vary in
250 various ways. One method is to categorize them is via education. Education level is a way to
251 place them in groups. Most researches concentrate on consumer education which means
252 that the emphasis is on educating consumers to be effective and sensitive customers. But
253 limited studies have looked into the area of the education level of the consumers itself. An
254 undergraduate will make decisions in a different manner than a doctorate [62, 63]. [64] found
255 that age has a significant impact on users' intention to adopt electronic banking technologies
256 in the United States of America.

257 In Greece [65] found that consumer's age and education influences the decision of
258 internet banking adopters. [66] examined the mothers' attitude towards over weight
259 preschool children's nutritional patterns in Iran which revealed that parents' education level

significantly influences their attitude and behavioral intention about nutritional patterns. [67] found that education level significantly influences the Iranian high school teachers' perceived ease of use when dealing with technology acceptance decision making. [59] learned that education is a demographic factor that has significant effect on the adoption of m-banking in rural Bangladesh. Consumers' age and income displayed significant effect on individual's attitudes to adopt mobile payment services in Sweden [68].

H₇: There is a relationship between Age and Intention to Adopt mobile banking.

H₈: There is a relationship between Education and Intention to Adopt mobile banking.

Based on established relationship found by previous scholars, a conceptual framework is developed for these variables involved in this study which consists of Usefulness, Easefulness, Relative advantage, Perceived risk, Attitude Towards Using, Perceived Cost, Age, Education and Intention to Adopt Mobile Banking as shown in Figure 2.

4. DISCUSSION

Perceived ease of use and perceived usefulness of mobile banking services influences consumers' attitude toward mobile banking significantly in Iran [37]. The effect of diffusion of innovation aspect, relative advantage of mobile banking is significant toward intention to use mobile banking through the consumer attitudes in Indonesia [44]. Even in Kenya, there exists a strong, positive and significant relationship between relative advantage and adoption of mobile banking [47]. Furthermore, [52] found that perceived risk is a significant predictor of adoption of mobile banking in Iran. Moreover, [42] also found that perceived risk influences consumer attitudes towards mobile banking services. [53] found that perceived risk and perceived financial cost has significant influence over consumers' behavioral intention in adopting or to continue use mobile banking in Bangladesh. The age and income of consumers' displayed significant effect on individual's attitudes to adopt mobile payment services in Sweden [68].

5. CONCLUSION

Mobile banking is relatively a new area in Malaysia with limited studies about it in the Malaysian context [4]. Most mobile banking related studies have been conducted in Western countries and samples include mainly university students or a particular user group. In addition, most studies have ignored the mediating and moderating effects on the intention to adopt mobile banking services. This research is an addition to the limited number of literatures and also fills the gaps of previous studies. The principal aim of this research was to identify the factors that influence the intention to adopt mobile banking services among Malaysians.

This research can be useful for future researchers in this mobile banking domain. It updates the knowledge of the behavioral intention to adopt mobile banking. Besides that, the findings of this study that will provide an insight to the knowledge of behaviour and expectations of Malaysians will help banks, mobile banking service providers and mobile banking app developers that intend to venture or expand into the Malaysian market to make the right decision and policy in the future in order to stimulate the growth of mobile banking. Apart from that, they can use the findings of this research as a reference to improve their marketing strategy in capturing the market share by providing a more personalized service to the customers. Ultimately, it will contribute to the country's economic growth. Hence, this conceptual paper is a good starting point.

1. Suoranta, M. and Matilla, M. (2003) 'Mobile banking and consumer behavior: new insights into the diffusion pattern', *Journal of Financial Services Marketing*, Vol. 8, No. 4, pp.354–356.
2. Sadiq Sohail, M., & Shanmugham, B. (2003). E-banking and customer preferences in Malaysia: An empirical investigation. *Information sciences*, 150(3), 207-217.
3. AlShaali, S. and Varshney, U. (2005) 'On the usability of mobile commerce', *International Journal of Mobile Communication*, Vol. 3, No. 1, pp.29–37.
4. Amin, H., Baba, R. and Muhammad, M.Z. (2007), "An analysis of mobile banking acceptance by Malaysian customers", *Sunway Academic Journal*, Vol. 4, pp. 1–12.
5. Drexelius, K. & Herzig, M., 2001. Mobile Banking and Mobile Brokerage – Successful Applications of Mobile Business?, *International management & Consulting*, 16(2), 20-23.
6. Barnes, S.J., & Corbitt, B. (2003). Mobile banking: concept and potential, *International Journal of Mobile Communications*, 1, 273-288.
7. Maybank Introduces First Ever Mobile Banking Services Information for iPhone Applications in Malaysia (2009, August 7) Retrieved September 1, 2014, from http://www.maybank2u.com.my/mbb_info/m2u/public/personalDetail04.do?channelId=Personal&cntTypeId=0&cntKey=AU09.08.10&programId=AU02.02ArchiveNews&newsCategoryId=/mbb/AU-AboutUs/AU02Newsroom/2009/08&chCatId=/mbb/Personal
8. Masrek, M.N., Ahmad Uzir, N. & Khairuddin, I.I (2012) Examining Trust in Mobile Banking: A Conceptual Framework. *Proceeding of the 18th International Business Information Management (IBIMA) Conference*, 9-10th May 2012, Istanbul Turkey
9. Thestar.com.my, (2015). Maybank boosts digital banking presence with Quick Balance - Business News The Star Online. Retrieved 26 February 2015, from <http://www.thestar.com.my/Business/Business-News/2015/02/23/Maybank-boosts-digital-banking-presence-with-Quick-Balance/?style=biz>
10. MyClear,. (2014). MyClear launches Malaysia's first Inter-bank Mobile Payment Service » MyClear – Malaysian Electronic Clearing Corporation Sdn. Bhd.. Retrieved 3 November 2014, from http://www.myclear.org.my/press_release/myclear-launches-malaysias-first-inter-bank-mobile-payment-service/
11. Bank Negara Malaysia. (2014) Payment statistics. Retrieved January 31, 2015, from http://www.bnm.gov.my/index.php?ch=ps&pg=ps_stats&eld=box1
12. Malaysian Communications and Multimedia Commission. (2014). Communications & multimedia pocket book of statistics. Retrieved January 31, 2015, from <http://www.skmm.gov.my/skmmgovmy/media/General/pdf/Q3-BI-Pocket-Book-of-Statistics.pdf>
13. Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, 35(8), 982-1003.
14. Tang, J. T. E., & Chiang, C. (2009). Towards an understanding of the behavioral intention to use mobile knowledge management. *WSEAS Transactions on Information Science and Applications*, 6(9), 1601-1613.
15. Karuppiyah, N., Subramanian, U., Seng Hu, S., Basiuni, R. M., & Jefri, R. (2014). Customer Acceptance of Internet Banking in Brunei Darussalam. Available at SSRN 2412826.
16. Moorthy, M. K., Samsuri, A. S. B., Hussin, S. B. M., Othman, M. S. B., & Chelliah, M. K. (2014). E-Filing Behaviour among Academics in Perak State in Malaysia. *Technology and Investment*, 2014.
17. Wanjiku, W. T., N. Mwangi, J. and N. Omollo, V. (2014). Examining the Technology Acceptance Model for E-Loan Application Services among University Students in Kenya. *IOSRJECE*, 9(5), pp.41-46.

- 357 18. VEJAČKA, M. (2014). CUSTOMER ACCEPTANCE OF ELECTRONIC BANKING:
358 EVIDENCE FROM SLOVAKIA. *Journal of Applied Economic Sciences*, 514.
- 359 19. Kirmizi, O. (2014). Measuring Technology Acceptance level of Turkish pre-service
360 English teachers by using technology acceptance Model. *Educational Research and*
361 *Reviews*, 9(23), 1323-1333.
- 362 20. Sheng, X., & Zolfagharian, M. (2014). Consumer participation in online product
363 recommendation services: augmenting the technology acceptance model. *Journal of*
364 *Services Marketing*, 28(6), 460-470.
- 365 21. Kim, S. H. (2014). A Study on Adoption Factors of Korean Smartphone Users: A Focus
366 on TAM (Technology Acceptance Model) and UTAUT (Unified Theory of Acceptance
367 and Use of Technology).
- 368 22. Clarke, V. (2015). Experience Factors Related to Students' Perceptions of eTexts:
369 Extending the Technology Acceptance Model (Doctoral dissertation, ATHABASCA
370 UNIVERSITY).
- 371 23. Bamasoud, D. M., Iahad, N. A., & Rahman, A. A. (2014). Academic Researchers'
372 Absorptive Capacity Influence on Collaborative Technologies Acceptance for Research
373 Purpose: Pilot Study. *Modern Applied Science*, 8(6), p161.
- 374 24. Zaremohzzabieh, Z., abu Samah, B., Muhammad, M., Omar, S. Z., Bolong, J., Hassan,
375 M. S., & Shaffril, H. A. M. (2015). A Test of the Technology Acceptance Model for
376 Understanding the ICT Adoption Behavior of Rural Young Entrepreneurs. *International*
377 *Journal of Business and Management*, 10(2), p158.
- 378 25. Liou, D. K., Hsu, L. C., & Chih, W. H. (2015). Understanding broadband television users'
379 continuance intention to use. *Industrial Management & Data Systems*, 115(2).
- 380 26. Püschel, J., Mazzon, J. A., & Hernandez, J. M. C. (2010). Mobile banking: proposition of
381 an integrated adoption intention framework. *International Journal of Bank Marketing*,
382 28(5), 389-409.
- 383 27. Aboelmaged, M., & Gebba, T. R. (2013). Mobile Banking Adoption: An Examination of
384 Technology Acceptance Model and Theory of Planned Behavior. *International Journal of*
385 *Business Research Development (IJBRD)*, 2(1).
- 386 28. Silva Bidarra, S. H., Muñoz-Leiva, F., & Liébana-Cabanillas, F. (2013). Analysis and
387 modeling of the determinants of mobile banking acceptance. *The International Journal of*
388 *Management Science and Information Technology (IJMSIT)*, (8-(Apr-Jun)), 1-27.
- 389 29. Yu, C. S. (2014). CONSUMER SWITCHING BEHAVIOR FROM ONLINE BANKING TO
390 MOBILE BANKING. *International Journal of Cyber Society and Education*, 7(1).
- 391 30. Balabanoff, G. A. (2014). Mobile Banking Applications: Consumer Behaviour,
392 Acceptance and Adoption Strategies in Johannesburg, South Africa (RSA).
393 *Mediterranean Journal of Social Sciences*, 5(27), 247.
- 394 31. Mohammadi, H. (2015). A study of mobile banking loyalty in Iran. *Computers in Human*
395 *Behavior*, 44, 35-47.
- 396 32. Crabbe, M., Standing, C., Standing, S., & Karjaluoto, H. (2009). An adoption model for
397 mobile banking in Ghana. *International Journal of Mobile Communications*, 7(5), 515-
398 543.
- 399 33. Masinge, K., 2010. Factors influencing the adoption of mobile banking services at the
400 Bottom of the Pyramid in South Africa. Master's Thesis, Gordon Institute of Business
401 Science, Sandton, South Africa.
- 402 34. Govender, I., & Sihlali, W. (2014). A Study of Mobile Banking Adoption among University
403 Students Using an Extended TAM. *Mediterranean Journal of Social Sciences*, 5(7), 451.
- 404 35. Nyeko, J. S., Moya, M., Kabaale, E., & Odongo, J. (2014). Factors Influencing the Short
405 Message Service (SMS) Mobile Banking Adoption: A Users' Perspective in the West Nile
406 Region in Uganda. *European Journal of Business and Management*, 6(5), 34-45.
- 407 36. Naqvi, S. J., & Al-Shihi, H. (2014) Factors Affecting M-commerce Adoption in Oman
408 using Technology Acceptance Modeling Approach. *TEM Journal*, 3(4), 315-322

- 409 37. Hosseini, M. H., Fatemifar, A., & Rahimzadeh, M. (2015). EFFECTIVE FACTORS OF
410 THE ADOPTION OF MOBILE BANKING SERVICES BY CUSTOMERS.
- 411 38. Rogers, E. M. (2003). *Diffusion of Innovation* (5th ed.): Free press.
- 412 39. Cruz, P., Neto, L. B. F., Muñoz-Gallego, P., & Laukkanen, T. (2010). Mobile banking
413 rollout in emerging markets: evidence from Brazil. *International Journal of Bank*
414 *Marketing*, 28(5), 342-371.
- 415 40. Al-Jabri, I. M., & Sohail, M. S. (2012). Mobile banking adoption: application of diffusion of
416 innovation theory. *Journal of Electronic Commerce Research*, 13(4), 379-391.
- 417 41. Dineshwar, R., and Steven, M. (2013). An Investigation on Mobile Banking Adoption and
418 Usage: A Case Study of Mauritius. *Proceedings of 3rd Asia-Pacific Business Research*
419 *Conference 25 - 26 February 2013, Kuala Lumpur, Malaysia*, ISBN: 978-1-922069-19-1
- 420 42. ChauShen Chen, (2013), "Perceived risk, usage frequency of mobile banking services",
421 *Managing Service Quality: An International Journal*, Vol. 23 Iss 5 pp. 410 – 436
- 422 43. Kabir, M. R. (2013). Factors Influencing the Usage of Mobile Banking: Incident from a
423 Developing Country. *World Review of Business Research*, 3(3), 96-114.
- 424 44. Yunus, M. (2014). Diffusion of Innovation, Consumer Attitudes and Intentions to use
425 Mobile Banking. In *Information and Knowledge Management* (Vol. 4, No. 10, pp. 12-18).
- 426 45. Kiura Doline, N., & Solomon, N. (2014). Challenges Affecting Adoption and Use of
427 Mobile Banking: A Case of Equity Bank, Kenya.
- 428 46. Cox, D. F., & Rich, S. U. (1964). Perceived risk and consumer decision-making: The
429 case of telephone shopping. *Journal of Marketing Research*, 1(November), 32- 39.
- 430 47. Wessels, L., & Drennan, J. (2010). An investigation of consumer acceptance of M-
431 banking. *International Journal of Bank Marketing*, 28(7), 547-568.
- 432 48. Tobbin, P. E. (2010). Modeling Adoption of Mobile Money Transfer: A Consumer
433 Behaviour Analysis. Paper presented at The 2nd International Conference on Mobile
434 Communication Technology for Development, Kampala, Uganda.
- 435 49. Kazi, A. K., & Mannan, M. A. (2013). Factors affecting adoption of mobile banking in
436 Pakistan: Empirical Evidence. *International Journal of Research in Business and Social*
437 *Science*, 2(3), 54-61.
- 438 50. Cheng, S., Lee, S. J., & Lee, K. R. (2013). Perceived Risk of Mobile Banking in China.
- 439 51. Alsheikh, L., & Bojei, J. (2014). Determinants Affecting Customer's Intention to Adopt
440 Mobile Banking in Saudi Arabia. *Int. Arab J. e-Technol.*, 3(4).
- 441 52. Islam, M. M., & Hossain, M. E. (2014). Consumers' Attitudes towards Mobile Banking in
442 Bangladesh. In *The Second International Conference on E-Technologies and Business*
443 *on the Web (EBW2014)* (pp. 31-45). The Society of Digital Information and Wireless
444 Communication.
- 445 53. Hanafizadeh, P., Behboudi, M., Abedini Koshksaray, A., & Jalilvand Shirkhani Tabar, M.
446 (2014). Mobile-banking adoption by Iranian bank clients. *Telematics and Informatics*,
447 31(1), 62-78.
- 448 54. Siddik, M. N. A., Sun, G., Yanjuan, C. U. I., & Kabiraj, S. (2014). Financial Inclusion
449 through Mobile Banking: A Case of Bangladesh. *Journal of Applied Finance & Banking*,
450 4(6), 109-136.
- 451 55. Luarn, P., & Lin, H. H. (2005). Toward an understanding of the behavioral intention to
452 use mobile banking. *Computers in Human Behavior*, 21(6), 873-891.
- 453 56. Wu, J. H., & Wang, S. C. (2005). What drives mobile commerce?: An empirical
454 evaluation of the revised technology acceptance model. *Information & management*,
455 42(5), 719-729.
- 456 57. Koenig-Lewis, N., Palmer, A., & Moll, A. (2010). Predicting young consumers' take up of
457 mobile banking services. *International Journal of Bank Marketing*, 28(5), 410-432.
- 458 58. Yu, C-S. (2012). Factors affecting individuals to adopt mobile banking: empirical
459 evidence from the UTAUT Model. *Journal of Electronic Commerce Research*, 13(2),
460 104-121.

- 461 59. Ahad, M.T., Dyson, L.E. & Gay, V.C. 2012, 'An Empirical Study of Factors Influencing
462 the SME's Intention to Adopt m-Banking in Rural Bangladesh', *Journal of Mobile*
463 *Technologies, Knowledge and Society*, vol. 2012, pp. 1-16.
- 464 60. Gitau, L. & Nzuki, D. (2014). Analysis of Determinants of M-Commerce Adoption by
465 Online Consumers. *International Journal of Business, Humanities and Technology*
- 466 61. TUNG, F. C., YU, T., & YU, J. L. (2014). An Extension of Financial Cost, Information
467 Quality and IDT for Exploring Consumer Behavioral Intentions to Use the Internet
468 Banking. *International Review of Management and Business Research*, 3(2).
- 469 62. Darmesh Krishanan, Ali Khatibi, Aye Aye Khin (2014). Determination of Consumer
470 Satisfaction on Ipad Among University Students In Malaysia. *Aust. J. Basic & Appl.*
471 *Sci.*,8(6): 324-332.
- 472 63. Paul, J., & Rana, J. (2012). Consumer behavior and purchase intention for organic food.
473 *Journal of Consumer Marketing*, 29(6), 412-422.
- 474 64. Kolodinsky, J. M., Hogarth, J. M., & Hilgert, M. A. (2004). The adoption of electronic
475 banking technologies by US consumers. *International Journal of Bank Marketing*, 22(4),
476 238-259.
- 477 65. Gounaris, S., & Koritos, C. (2008). Investigating the drivers of internet banking adoption
478 decision: a comparison of three alternative frameworks. *International Journal of Bank*
479 *Marketing*, 26(5), 282-304.
- 480 66. Boroumandfar, K., Momenzadeh, F., Tavakkol, K., Kelishadi, R., & Rad, G. S. (2010).
481 The effect of education on behavioral intention model of mothers' attitude towards over
482 weight preschool children's nutritional patterns. *Iranian journal of nursing and midwifery*
483 *research*, 15(Suppl1), 386.
- 484 67. Ataran, A., & Nami, K. (2011). Examining acceptance of information technology: A
485 longitudinal Study of Iranian high school teachers. In 3rd International Conference on
486 Information and Financial Engineering.
- 487 68. Arvidsson, N. (2014). Consumer attitudes on mobile payment services—results from a
488 proof of concept test. *International Journal of Bank Marketing*, 32(2), 150-170.