The Development and Validation of User Behavior Model for Mobile Financial Context

王瓊鋒、許晉龍

E-mail: 9609697@mail.dyu.edu.tw

ABSTRACT

With the increasing usage of mobile applications, the topic of instant financial requirements has received considerable attention. The purpose of this study is to developand validate the user behavior model which explains what influence user adoption of mobile financial services. This study applies the technology acceptance model (TAM) that incorporates trust and security-related factors as additional belief-related constructs to accurately predict the users 'acceptance of mobile financical application. The proposed model is empirically evaluated using survey data collected from 340 users about their perceptions of mobile finance. Overall, the results reveal that perceived usefulness and attitude explain about 55% of mobile finance usage. Trust and security-related factors have an indirect effect on intention to use through attitude. The implications of this study for both researchers and practitioners are discussed.

Keywords: Trust, Mobile Commerce, Information Security, Technology Acceptance Model, Smart Handheld Device of Financial Service

Table of Contents

中文摘要	iii 英文摘要	iv 誌謝辭	v 內容目錄
	vi 表目錄	viii 圖目錄	x 第一章 緒論
	1 第一節 研究背景與動機	1 第二節 研究目的	2 第三節 研究範圍與
對象	3 第四節 研究流程	4 第二章 文獻探討	6 第一節 行動理財系統
6 第	第二節 技術接受模型	16 第三節 延伸變數	22 第三章 研究模型與假說
33	第一節 研究模型	33 第二節 研究假說	34 第三節 構面定義
3	88 第四節 資料蒐集	40 第四章 研究方法	42 第一節 問卷設計
4	12 第二節 分析方法	44 第五章 資料分析與結果	45 第一節 描述性統計分
析45	5 第二節 量表驗證	55 第三節 變異數分析	59 第四節 相關分析
6	32 第五節 研究架構驗證	63 第六節 行動經驗分群	72 第六章 結論與建議
7	77 第一節 研究結論	77 第二節 管理意涵	79 第三節 研究意涵
8	31 第四節 研究限制與建議	82 參考文獻	84 附錄A 研究問卷
	.106		

REFERENCES

- 一、中文部份 [1] 何明珊(2004), 行動加值服務市場區隔與使用意願之研究, 國立成 功大學電信管理研究所碩士論文。
- [2] 吳明隆(2005), SPSS 統計應用學習實務-問卷分析與應用統計(二), 知城數位科技股份有限公司。
- [3] 邱皓政(2005),量化研究法(二):統計原理與分析技術,雙葉書廊。
- [4] 張幸惠(2006),消費者行動金融接受性,財金資訊雙月刊,第45期。
- [5] 梁定澎、歐陽彥晶(2006),如影隨形的行動商務,行政院國家科學委員會,科學發展,399,42-47。
- [6] 許晉龍(2004),線上遊戲使用者行為研究,國立台灣科技大學資訊管理研究所博士論文。
- [7] 陳雯婷(2000), 我國網路券商顧客需求與行銷策略之研究, 國立交 通大學經營管理研究所。
- [8] 盧希鵬(2004), 電子商務:產業架構、經營模式與電子化策略,雙葉書廊。
- [9] 盧希鵬、葉乃菁、許晉龍(2002),探討網路使用者參與虛擬社群意願之影響因素,第十三屆國際資訊管理學術研討會,409-416。
- [10] 盧希鵬、劉素瑜、許晉龍(2002),人們真的需要個人化服務?線上 個人化電子報服務接受度之研究,第十三屆國際資訊管理學 術研討會,63-69。 二、英文部份 [1] Abdul-Rahman, A., & Hailes, S., (2000), Supporting trust in virtual communities, Proceedings of The 33rd Hawall International Conference on System Science, 1-9.
- [2] Ba S., & Pavlou, P., (2002), Evidence of the effect of trust building technology in electronic markets: price premiums and buyer behavior. MIS Quarterly. 26(3):243-268.
- [3] Bauer, R. A., (1960), Consumer behavior as risk taking, in R. S. Hancock (Ed.), Dynamic Marketing for a Changing World, Proceedings of the

- 43rd Conference of the American Marketing Association, 389-398.
- [4] Bauer, R. A., (1967), Consumer behavior as risk taking in Cox, D. F.(Ed.), Risk Takingand Information Handling in Consumer Behavior [5] Bellman, Steven., Lohse, Gerald L & Johnson, Eric J., (1999), Predictors of online buying behavior, Association for Computing Machinery, Communication of the ACM, New York, 42(12), Dec, 32-38.
- [6] Bhimani, A., (1996), Securing the commercial internet, Communications of the ACM 39(6), 29-35.
- [7] Bock, G. W., Zmud, R. W., Kim, Y. G., & Lee, J. N.,(2005), Behavioral Intention Formation in Knowledge Sharing: Examining the Roles of Extrinsic Motivators, Social-Psychological Forces and Organizational Climate, MIS Quarterly.
- [8] Bryman, Alan & Duncan Cramer, (1997), Quantitative Data Analysis with SPSS for Windows, 1st ed., London; New York: Routledge.
- [9] Chang, & Tseng, (1999), The Conflict Between Internet Marketing and Consumer Privacy. Paper presented at the Annual Conference of ISA Research Committee on Sociotechnics, Sociological Practice (RC26), Athens (Greece), September 9-12.
- [10] Chau, P. Y. K., & Hu, P. J. W., (2001), Information technology acceptance by individual professionals: A model comparison approach. Decision Sciences, 32(4), 699-719.
- [11] Chau, P. Y. K, & Hu, P. J. W., (2002), Investigating professionals 'decisions to accept telelemedicine technology: An empirical test of competing theories. Information & Management, 39, 297-311.
- [12] Chellappa, R. K. & Pavlou, P., (2002), Perceived Information Security, Financial Liability, and Consumer Trust in Electronic Commerce Transactions, Journal of Logistics Information Management ,15(5/6), 358-368.
- [13] Chen, P. Y., Hitt, L. M., (2002), Measuring switching costs and the determinants of customer retention in Internet-enabled businesses: a study of the online brokerage industry, Information Systems Research 13(3), 255-274.
- [14] Chiou, Jyh-Shen., (2004), The antecedents of consumers 'loyalty toward Internet service providers, Information & Management, 41, 685-695.
- [15] Constantinides, E., (2002), The 4S Web-marketing mix model, electronic commerce research and applications, Elsevier Science 1(1), 57 76.
- [16] Cox, D. F., (1967), Risk Taking and Information Handling in Consumer Behavior, Boston: Harvard University Press.
- [17] Culnan, M. J. & Armstrong, P. K., (1999), Information privacy concerns, procedural fairness, and impersonal trust: An empirical investigation, Organization Science, 10(1), 104-115.
- [18] Cunningham, S. M., (1967), The major dimension of perceived risk, in Donald F. Cox(ed.), Risk Taking and Information Handling in Consumer Behavior, Boston: Harvard University Press, 82-108.
- [19] Cyr, D., Head, M. & Ivanov, A., (2006), Design Aesthetics Leading to M-loyalty in Mobile Commerce. Information and Management.
- [20] Davis, F. D., (1989), Perceived usefulness, perceived ease of use, and user acceptance of information technology, MIS Quarterly, 13 (3), 319-340.
- [21] 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.
- [22] Dayal. S., Landesberg, H., & Zeisser, (1999), M., How to build trust online, Marketing & Technology, Fall 1999, 64-69.
- [23] Diamond, T., (2000), Gaining customer trust, http://www.clickz.com/article/cz.2244.html, Clickz, [24] Dishaw, Mark T. & Strong, D. M., (1999), Extending the technology acceptance model with task-technology fit constructs. Information & Management, 36, 9-21.
- [25] Dobing, B.,(1993), Building Trust in User-Analyst Relationships. Doctoral dissertation, Information and Decision Sciences Department, University of Minnesota.
- [26] Doney, P. M., Cannon, J. P., (1997), An examination of the nature of trust in buyer seller relationships, Journal of Marketing 61(2), 1997, 35 51.
- [27] Dowling, G. R. & R. Staelin, (1994), A model of perceived risk and intended risk-handling activity, Journal of Consumer Research, 21(June), 119-134.
- [28] Featherman, M. S. & Pavlou, P. A., (2002), "Predicting E-services Adoption: A Perceived Risk Facets Perspective", Proceedings of the Eighth American Conference on Information Systems (AMCIS), Dallas, 1034-1046.
- [29] Fishbein, M. & Ajzen, I., (1975), Belief, attitude, intention and behavior: An introduction to theory and research, Reading (MA): Addison-Wesley.
- [30] Fung, R. & Lee, M., (1999), EC-Trust (Trust in E-commerce): Exploring the Antecedent Factors, Proceedings of the 5th Americas Conference on Information Systems, 517-519.
- [31] Ganesan, S., (1994), Determinants of long-term orientation in buyer seller relationships, Journal of Marketing ,58(2), 1-19.
- [32] Garner, SJ., (1986), Perceived risk and information sources in service purchasing, The Mid-Atlantic Journal of Business, 24, 49-58(Summer).
- [33] Gefen, D., (2000), E-commerce: The Role of Familiarity and Trust, Omega: The International Journal of Management Science 28(6), September 2000, 725-737.
- [32] Gefen, D., Karahanna, E. & Straub, D. W., (2003a), Inexperience and Experience with Online Stores: The Importance of TAM and Trust, IEEE Transactions on Engineering Management, 503, 307-321.
- [33] Gefen, D., Karahanna, E., Straub, D. W., (2003b), Trust and TAM in online shopping: an integrated model, MIS Quarterly, 27(1), 51-90.

- [34] Gefen, D., Pavlou, P. A., Warkentin, M., & Rose, G. M. (2002), "eGovernment adoption," 8th Americas Conference on Information Systems, 569-576.
- [35] Gefen, D., Silver, M.,(1999), Lessons learned from the successful adoption of an ERP system, in: Proceedings of the 5th International Conference of the Decision Sciences Institute, Athens, Greece, 1999, 1054-1057.
- [36] Goodhue, D. L. & Straub, D. W., (1991), Security Concerns of Systems Users: A Study of Perceptions of the Adequacy of Security, Information and Management (20), 1991, 13-27.
- [37] Hoffman, D. L., Novak, T. P., & Peralta, M., (1999), Building Consumer Trust Online, Communications of the ACM, 42(4), 31-39.
- [38] Hong, W., James Y. L., Thong, Wong, Wai-Man., & Tam, Kar-Yan., (2002), Determinants of User Acceptance of Digital Libraries: An Empirical Examination of Individual Differences and system Characteristics,, Journal of Management Information Systems, 18(3), 97-124.
- [39] Hosmer, L. T., (1995), Trust: the connecting link between organizational theory and philosophical ethics, Academy of Management Review 20(2), 379-403.
- [40] Lin, Hsin-Hui & Wang, Yi-Shun., (2006), An examination of the determinants of customer loyalty in mobile commerce contexts, Information & Management 43, 271-282.
- [41] Hu, P. J., Chau, P. Y. K., Sheng, O. R. L., Tam, K. Y.,(1999), Examining the technology acceptance model using physician acceptance of telemedicine technology, Journal of Management Information Systems, 16(2), 91.
- [42] Hung, S. Y., Ku, C. Y., Chang, C. M., (2003), Critical factors of WAP services adoption: an empirical study, Electronic Commerce Research and Applications, 2, 42-60.
- [43] Igbaria, M., T. Guimaraes & G. B. Davis,(1995), Testing the determinants of microcomputer usages via a structural equation model, Journal of Management Information Systems, 11(4), 87-114.
- [44] Wu, Ing-Long., & Chen, Jian-Liang., (2005), An extension of Trust and TAM model with TPB in the initial adoption of online tax: an empirical study, International Journal of Human Computer studies, 62(6), 784-808. (SSCI, Impact factor 1.222) [45] Jacoby, J. & L. Kaplan, (1972), The components of perceived risk, Proceedings of 3ed Annual Conference, Association for Consumer Research, 382-393.
- [46] Wu, Jen-Her & Wang, Shu-Ching, (2005), What drives mobile commerce? An empirical evaluation of the revised technology acceptance model, Information & Management 42, 719 729.
- [47] Jieun Yu, Imsook Ha, Munkee Choi, Jaejeung Rho, (2005), Extending the TAM for a t-commerce, Information & Management, 42, 965~976.
- [48] Karahanna, E. & Straub, D. W., (1999), The psychological origins of perceived usefulness and ease-of-use, Information & Management, 35(4), 237-250.
- [49] Kehoe, C., Pitkow, J. & Morton, K., (1998), GVU 's Tenth WWW User Survey. Available at www.guv.gatech.edu/uesr_survey/survey-1998-10/.
- [50] Kini, A., & Choobineh, J., (1998), Trust in Electronic Commerce: Definition and Theoretical Considerations, 31st Annual Hawaii International Conference on System Sciences Proceedings.
- [51] Kim, D. & Benbasat, I., (2003), Trust-Related Arguments in Internet Stores: a Framework for Evaluation, Journal of Electronic Commerce Research. 4(2), 49-64.
- [52] Koufaris, M. & Hampton-Sosa, W., (2004), The Development of Initial Trust in an Online Company by New Customers, Information and Management, 413, 377-397.
- [53] Langheinrich, Nakamura, Abe, Kamba, & Koseki, (1999), Unintrusive Customization Techniques for Web Adverstising. Computer Networks, 31, 1259-1272.
- [54] Lin, Chuan-Chuan, & Lu, Hsipeng, (2000), Towards an understanding of the behavioural intention touse a web site, International Journal of Information Management, 20, 197-208.
- [55] Lin, H.-H., & Wang, Yi-Shun., (2006), An Examination of the Determinants of Customer Loyalty in Mobile Commerce Contexts, Information & Management, 43(3), 271-282.
- [56] Luarn, P. & Lin, H. H., (2005), Toward an understanding of the behavioral intention to use mobile banking, Computers in Human Behavior, 21(6), pp. 873-891. (SSCI, impact factor=1.03) [57] Lucas, H. C., Spitler, V., (2000), Implementation in a world of workstations and networks, Information & Management 38(2), 119 128.
- [58] Luhmann, N., (1979), Trust and Power, Chichester, UK; Wiley.
- [59] Mayer, R. C., Davis, J. H., & Schoorman, F. D., (1995), An integrative model of organizational trust, Academy Management Review, 20(3), 709-734.
- [60] McKnight, D. H., Cummings, L. L., Chervany, N.L., (1998), Initial trust formation in new organizational relationships, Academy of Management Review 23(3), 472 490.
- [61] McKnight, D. H. & Chervany N. L., (2002), What Trust Means in E-Commerce Customer Relationship: An Interdisciplinary Conceptual Typology, International Journal of Electronic Commerce.
- [62] Mitchell V-W., (1999), Consumer perceived risk: conceptualizations and models, European Journal of Marketing, 33(1-2), 163-96.
- [63] Miyazaki, A. D. & Fernandez, A., (2000), Internet Privacy and Security: An Examination of Online Retailer Disclosures, Journal of Public

Policy & Marketing, 19(1), 54-61.

- [64] Miyazaki, A. D. & Fernandez, A., (2001), Consumer Perceptions of Privacy and Security Risks for Online Shopping, The Journal of Consumer Affairs, 25(1), 27-44.
- [65] Moon, J. W., Kim, Y. G., (2001), Extending the TAM for a World-Wide-Web context, Information & Management, 38, 217-230.
- [66] Moore, M. G., Benbasat, I., (1991), Development of an instrument to measure the perceptions of adopting an information technology innovation, Information Systems Research, 2, 192-222.
- [67] Moorman, C., Deshpande, R., & Zaltman, G. (1993), Factors Affecting Trust in Marketing Relationships, Journal of Marketing, 57, January, 81-101.
- [68] Moorman, C., Zaltman, G., Deshpande, R., (1992), Relationships between providers and users of market research: the dynamics of trust within and between organizations, Journal of Marketing Research 29(3), 314 328.
- [69] Morgan, R. M. & Hunt, S. D., (1994), The Commitment-Trust Theory of Relationship Marketing, Journal of Marketing, 58(3), 20-38.
- [70] Nicholson, C. Y., L. D. Compeau & R.Sethi, (2001), The role of interpersonal liking in building in long-term channel relationships, Journal of the Academy of Marketing Science, 29 (Winter), 3-15.
- [71] Niina Mallat, Matti Rossi, Virpi Kristiina Tuunainen, Anssi Oorni.,(2006), The Impact of Use Situation and Mobility on the Acceptance of Mobile Ticketing Services. HICSS 2006 [72] Pavlou, P. A., & Chai Lin., (2002), What drines electronic commerce across cultures? A cross-cultural empirical investigation of the theory of planned behavior, Journal of Electronic Commerce Research, 3(4), 240.
- [73] Peter, J. P. & M. J. Ryan, (1976), An investigation of perceived risk at the brand level, Journal of Marketing Research, 13(May), 184-188.
- [74] Plouffe, C. R., Hulland, J.S., Vandenbosch, M., (2001), Research report: richness versus parsimony in modeling technology adoption decision-understanding merchant adoption of a smart cardbased payment system, Information Systems Research 12(2), 208-222.
- [75] Rayport J. F., Jaworski B. J., (2001), e-Commerce, McGraw-Hill Companies.
- [76] Robey, D. (1979), User Attitudes and Management Information System Use, Academy of Management Journal, 22(3), 527-537.
- [77] Rock, J., (2000), Mobile commerce: the next big thing or just plain hype, TheWeekly Corporate Growth Report 1121, 18 December 2000, pp. 11093, 11104. Rousseau, Denise, Sim B. Sitkin, Ronald Burt, and Colin [78] Camerer.,(1998), Not so Different After All: A Cross-Discipline View of Trust. The Academy of Management Review 23, no. 4: 393-404.
- [79] Sathye, M., (1999), Adoption of Internet banking by Australian consumers: an empirical investigation, International Journal of Bank Marketing, 17(7), 324-34.
- [80] Schonberger, (1998), Internet Privacy: The Internet and Privacy Legislation: Cookies for a Treat? Computer Law & Security Report, 14(3), 166-174.
- [81] Sheehan, K. B., & Hoy, M. G., (1999). Using e-mail to survey Internet users in the United States: Methodology and assessment. Journal of Computer Mediated Communication, 4(3).
- [82] Smith, J. H., Milberg, S. J. & Burke, S. J., (1996), Information Privacy: Measuring Individuals' Concerns About Corporate Practices, MIS Quarterly 20(2), 167-196.
- [83] Stewart, K. A. & Segars, A. H., (2002), An Empirical Examination of the Concern for Information Privacy Instrument, Information Systems Research 13(1), 2002, 36-49.
- [84] Szajna, B., (1996), Empirical evaluation of the revised technology acceptance model, Management Science 42(1), 85-92.
- [85] Taylor, J. W., (1974), The role of risk in consumer behavior, Journal of Marketing 38, 54-60.
- [86] Turkheimer, (1994), Privacy and the Internet: The Next Step. Computer Networks and ISDN Systems, 27, 395-401.
- [87] US Congress, C.o.S. Computer Security Enhancement Act Of 1997 Rept 105-243. Committee On Science, House Of Representatives 105th Cong., 1st Sess., 09/03/97, Government, Washington DC, 1997a.
- [88] US Congress, H.C.o.S.S.o.T. Secure communications:hearing before the Subcommittee on Technology of the Committee on Science, U.S. House of Representatives, One Hundred Fifth Congress, first session, February 11, 1997, U.S. G.P.O. Supt. of Docs. Congressional Sales Office, Washington DC, 1997b.
- [89] Varadharajan, V., Pieprzyk, J. and Mu, Y., (1997), Information security and privacy: Second Australasian Conference, ACISP '97, Sydney, NSW, Australia, July 7-9, 1997: proceedings, Springer, Berlin; New York.
- [90] Venkatesh, V., (2000), Determinants of Perceived Ease of Use: Integrating Control, Intrinsic Motivation and Emotion into the Technology Acceptance Model. Information System Research, 11(4), 342-365.
- [91] Wang, Y. D., Emurian, H.H., (2005), An overview of online trust: concepts, elements and implications., Computers in Human Behavior 21, 105-125.
- [92] Wang, Y. S., (2002), The adoption of electronic tax filing systems: an empirical study, Government Information Quarterly, 20, 333-352.
- [93] Westin, A. F., (1967), Privacy and Freedom, New York:NY,.
- [94] Wang, Yi-Shun., Lin, H.-H., & Luarn, P.,(2006), Predicting Consumer Intention to Use Mobile Service, Information Systems Journal, 16(2), 157-179.
- [95] Young, D., (2003), Handicapping M-commerce, Wireless Review, 1 August 2000, viewed 1 January 2003.