

Using the DTPB to Explore the User Intention of Mobile Added Value Service

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ABSTRACT

Recently, with the development of information technology and the rapid rise of the 3rd Generation of mobile communication broadband transportation, or the other communication technology such as WiFi, WiMax, the market of telecommunications has shifted from single voice service to mobile added value service. There are so many kinds of mobile added value service in today, but the utility rate of consumer is not as respected and accepted. This research uses Decomposed Theory of Planned Behavior to construct the user intention model of mobile added valued service. 257 mobile phone users as targets were surveyed by questionnaires and the collected data is approached to examine the influential factors by using structural equation model as the analysis method. The result of this study indicated that the behavior intention is positively affected by attitude, subjective norm and perceived behavioral control. Among them, the greatest influence degree is attitude, the secondary is perceived behavioral control, the lastly is subjective norm. Attitude is positively affected by perceived usefulness, perceived ease of use and compatibility. Subjective norm is positively affected by interpersonal influence and external influence. Perceived behavioral control is positively affected by self-efficacy and facilitating conditions. This result might be taken as reference for domestic telecommunication dealers to make their market strategy.

Keywords : mobile added value service (MVS), decomposed theory of planned behavior (DTPB), structural equation model (SEM)

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REFERENCES

中華電信(2008) , emome加值服務[線上資料] , 來源: <http://www.emome.net/> [2008, June 1]。 王勝宏(2007) , 台灣地區行動加值服務使用意願分析[線上資料] , 來源: <http://mic.iii.org.tw/home/aisreport.asp?l=c&f=10&menu=107&sno=11&cate1=D> [2007, January 11]。 台灣大哥大(2008) , 行動加值[線上資料] , 來源: <http://www.catch.net.tw/index.jsp> [2008, June 1]。 交通部電信總局(2008) , 行動電話業務營業規章範本第三章營業種類第九條電信業者加值服務規範[線上資料] , 來源: http://www.nici.nat.gov.tw/content/application/nici/meeting/guest-cnt-browse.php?cnt_id=377 [2008, June 1]。 行政院通訊通信發展推動小組(2008) , M台灣計畫[線上資料] , 來源: <http://www.nici.nat.gov.tw/index.php> [2008, June 1]。 吳明隆(2005) , SPSS統計應用學習實務:問卷分析與應用統計(2版) , 台北:知城數位科技。 亞太行動寬頻(2008) , Qma亞太行動[線上資料] , 來源: <http://lite.qma.com/qma/service/allservice.jsp> [2008, June 1]。 林世懿(2007) , 台灣地區行動加值服務與行動週邊問卷調查[線上資料] , 來源: http://www.find.org.tw/mit/200706/survey_01.html [2007, June 1]。 林羿分(2006) , 2005-2010年行動內容市場發展分析[線上資料] , 來源: <http://mic.iii.org.tw/home/pressroom2.asp?l=c&f=9&menu=92> [2006, June 1]。 泛亞電信(2008) , catch加值服務[線上資料] , 來源: <http://lite.qma.com/qma/service/allservice.jsp> [2008, June 1]。 邱家範(2000) , 高雄市家戶資源回收行為整合模式研究 , 中山大學公共事務管理研究所未出版之碩士論文。 邱皓政(2003) , 結構方程模式LISREL的理論、技術與應用 , 台北市:雙葉書廊。 威寶電信(2008) , VIBO行動網[線上資料] , 來源: http://www.vibo.com.tw/CWS/Consumer_05.html [2008, June 1]。 國家通訊傳播委員會(2008) , 國家通訊傳播委員會95年度電信統計圖表[線上資料] , 來源: http://www.ncc.gov.tw/chinese/news_detail.aspx?site_content_sn=245&is_history=0&pages=0&sn_f=2051 [2008, June 1]。 張育陞(2007) , 智慧型家庭網路的建置 , 明志科技大學工程技術研究所未出版之碩士論文。 曹維軒(2007) , 在指定區域內進行推播型行動廣告服務系統之設計與應用 , 大同大學資訊經營學研究所未出版之碩士論文。 陳順宇(2000) , 多變量分析(2版) , 台北:華泰書局。 黃芳銘(2002) , 結構方程模式理論與應用 , 台北:五南圖書出版股份有限公司。 黃俊英(2000) , 多變量分析 , 台北:中國經濟企業研究所。 資策會FIND(2006) , 2006台灣行動數據服務使用情況調查[線上資料] , 來源: <http://www.find.org.tw/find/home.aspx?page=many&id=169> [2007, April 14]。 葉伯罕(2006) , 多媒體簡訊MMS內容供應商網站首頁內容分析之評估研究 - 以中國移動之移動夢網為例 , 銘傳大學傳播管理研究所未出版之碩士論文。 遠傳電信(2008) , 多媒體服務[線上資料] , 來源: <http://www.istyle.com.tw/> [2008, June 1]。 劉蘊儀(2006) , 台灣地區行動加值服務與行動週邊問卷調查[線上資料] , 來源: <http://www.find.org.tw/find/home.aspx?page=many&id=154> [2006, December 25]。 蔡宗霖(2002) , 網路電子付款機制接受度之研究 - 以IC金融卡為例 , 台灣科技大學資訊管理研究所未出版之碩士論文。 Adams, D.A., Nelson R.R., & Todd P. A. (1992). Perceives usefulness, ease of use ,and usage of information technology: A replication. MIS Quarterly, 16(2), 227-247. Ajzen, I. (1985). From intentions to actions: A theory of planned behavior, in Action Control from Cognition to Behavior, Kuhl Julius and Bechmann Jurgen, 11-39. Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50, 179-211. Ajzen, I., & Madden, T. (1986). Prediction of goal-directed behavior: Attitude, intentions, and perceived behavioral control. Journal of Experimental Social Psychology, 22, 452-474. Ajzen, I., & Thomas, J. M. (1985). Prediction of goal-directed behavior: Attitudes, intentions, and perceived behavioral contro. Journal of Experimental Social Psychology, 32, 453-474. Bagozzi, R. P. (1981). Attitudes, intentions, and behavior: A test of some key hypotheses. Journal of Personality and Social Psychology, 41, 607-627. Bagozzi, R. P., & Yi, Y. (1988). On the evaluation structural equation models. Academic of Marketing Science, 16, 74-94. Bagozzi, R. P., & Yi, Y. (1988). On the evaluation structural equation models. Academic of Marketing Science, 16, 74-94. Bandura, A. (1977). Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 32, 191-215. Bandura, A. (1982). Self-efficacy mechanism in human agency. American Psychologist, 37(2), 122-147. Bandura, A., & Jourden, F. J. (1991). Self-regulatory mechanisms governing the impact of social comparison on complex decision making. Journal of Personality and Social Psychology, 60(6), 941-951. Benham, H. C., & Raymond, B. C. (1996). Information technology adoption: Evidence from a voice mail introduction. ACM SIGCPR Computer Personnel, 17(1), 3-25. Berger, I. (1993). A framework for understanding the relationship between environmental attitudes and consumer behaviors. In: Varadarjan R, Jaworski B, editors. Marketing theory and application, American Marketing Association, Chicago, IL, 4, 157-63. Bhattacherjee, A. (2000). Acceptance of e-commerce services: The case of electronic brokerages. IEEE Transactions on Systems, Man, and Cybernetics - Part A: Systems and Humans, 30(4), 411-420. Bock, R. D., & Bargmann, R. E. (1966). Analysis of covariance structures. Psychometrika, 31(4), 507-534. Bollen, K. A. (1989). Structrual equations with latent variables. New York: Wiley. Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. In K. A. Bollen & J. S. Long (Eds.), Testing structural equation models, Newbury Park, California: Sage. Browne, M. W., & Mels, G. (1990). RAMONA user ' s guide. Columbus: Department of Psychology, Ohio State University. Chau, P. Y. K., & Hu, P. J. (2001). Information technology acceptance by individual professionals: A model comparison approach. Decision Science, 32(4), 699-719. Chau, P. Y. K., & Hu, P. J. (2002). Investigating healthcare professionals ' decision to accept telemedicine technology: An empirical test of competing theories. Information and Management, 39(4), 297-311. Chen, L. D., Gillenson, M. L., & Sherrell, D. L. (2002). Enticing online consumers: An extended technology acceptance perspective. Information and Management, 39(8), 705-719. Chin, W. W., & Todd, P. (1995). On the use, usefulness and ease of use of structural equation modeling in mis research: A note of caution. MIS Quarterly, 19(2), 237-246. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. MIS Quarterly, 32, 319-335. Davis, F. D., Bagozzi R. P., & Warshaw P. R. (1989). User acceptance of computer ttechnology: A comparison of two theoretical models. Management Science, 35(8), 982-1003. DeVellis, R. F. (1991). Scale development - Theory and applications. Newbury Park, California: Sage Publications, Inc. Fishbein, M. & Ajzen, I. (1975). Belief, attitude, intention, and behavior: An introduction to theory and research. Reading, Massachusetts: Addison-Wesley. Fisherbein, M., & Ajzen, I. (1980). Understanding attitudes & predicting social behavior, New Jersey: Prentice-Hall. Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobervables and measurement error. Journal of Marketing Research, 18, 39-50. Gefen, D. (2000). E-commerce: The role of

familiarity and trust. *Omega*, 28(6), 725-737. Gefen, D., Karahanna, E., & Straub, D.W. (2003). Trust and TAM in online shopping: An integrated model. *MIS Quarterly*, 27(1), 51-90. George, J. F. (2004). The theory of planned behavior and internet purchasing. *Internet Research*, 14(3), 198-212. Godin, G., & Kok, G. (1996). The theory of planned behavior: A review of its applications to health-related behavior. *American Journal of Health Promotion*, 11(2), 87-98. Hair, J. F. J., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate Data Analysis* (5th ed.). Englewood Cliffs, New Jersey: Prentice-Hall. Hong, W., Thong, J. Y. L., Wong, W. M., & Tam, K. Y. (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. Hu, L., & Bentler, P. M. (1999). Cut off criteria for fit indexes in covariance structural. *Equation Modeling*, 6(1), 1-55. Hung, S. Y., & Chang, C. M. (2005). User acceptance of WAP services: Test of competing theories. *Computer standards & interfaces*, 27, 359-370. Jo"reskog, K. G., & So"rbom, D. (1981). *LISREL V: Analysis of linear structural relationships by the method of maximum likelihood*, Chicago: National Educational Resources. Jo"reskog, K. G., & So"rbom, D. (1993). *LISREL8.14: Structural equation modeling with the SIMPLIS command language*, Chicago: Scientific Software International. Jyoti, C., & Kumar, D. Y. (2004). Analysing the factors of broadband adoption in the household. *Proceedings of the 13th European Conference on Information Systems*. Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika*, 39, 31-36. Karahanna, E., Straub, D.W., & Chervany, N. L. (1999). Information technology adoption across time: A cross-sectional comparison of pre-adoption and post-adoption beliefs. *MIS Quarterly*, 23(2), 183-213. Kashima, Y., Gallois, C., & McCamish, M. (1993). Theory of reasoned action and cooperative behavior: it takes two to use a condom. *British Journal of Social Psychology*, 32, 227-239. Kline, R. B. (1998). *Principles and practice of structural equation modeling*, New York: The Guilford Presws. Klobas, J. E., & Clyde, L. A. (2000). Adults learning to use longitudinal study of attitudes and other factors associated with intended internet use. *Library and Information Science Research*, 22(1), 5-34. Lee, M. K. O., Cheung, C. M. K., & Chen, Z. (2005). Acceptance of internet-based learning medium: the role of extrinsic and intrinsic motivation. *Information & Management*, 42, 1095-1104. Liao,S., Shao, Y. P., Wang, H., & Chen, A. (1999). The adoption of virtual banking: An empirical study. *Internation of Journal of Information Management*, 19, 63-74. Mathieson, K. (1991). Predicting user intentions: Comparing the technology acceptance model with the theory of planned behavior. *Information Systems Research*, 32, 173-191. Methieson K., Peacock E., & Chin W. (2001). Extending the technology acceptance model: The influence of perceived user resources. *DATA BASE for Advances in Information Systems*, 32(3), 86-112. Moon, J. W., & Kim, Y. G. (2001). Extending the TAM for a world-wide-web context. *Information and Management*, 38(4), 217-230. Moore, G. C., & Benbasat, I. (1991). Development of an instrument to measure the perceptions of adopting an information technology innovation. *Information Systems Research*, 2(3), 192-222. Nunnally, J. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill. Oliver, Richard L., & William O. B. (1985). Crossover effects in the theory of reasoned action. *Journal of Consumer Research*, 32, 324-340. Rogers, E. M. (1983). *Diffusion of innovations* (3rd ed.). New York: Free Press. Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). New York: Free Press. Saade, R., Bouchaib, & Bahli, B. (2005). The impact of cognitive absorption on perceived usefulness and perceived ease of use in on-line learning: An extension of the technology acceptance model. *Infromation & Management*, 42(2), 317-327. Schiffman, L.G., & Kanuk, L. L. (1994). *Consumer Behavior* (5th ed.). Prentice-Hall, New Jersey. Shimp, T. A., & Kavas, A. (1984). The theory of reasoned action applied to coupon usage. *Journal of Consumer Research*, 11, 795-809. Steiger J. H. (1989). EZPATH: A supplementary module for SYSTAT and SYSGRAPH. Evanston, Illinois: SYSTAT. Studer, B. (2001). Fixed mobile internet convergence (FMIC). *Telematics and Informatics*, 18, 133-141. Tan, M., & Teo, T. S. H. (2000). Factors influencing the adoption of i banking. *Journal of the Association for Information Systems*, 1(5), 1-42. Taylor S., & Todd P. (1995). Understanding information technology usage: A test of competing models. *Information Systems Research*, 6(2), 144-176. Triandis, H. C. (1979). Values, attitudes, and interpersonal behavior. In Jr. E. How (Ed.), *Nebraska symposium on motivation*, 27, 195-259. Lincoln, Nebraska: University of Nebraska Press. Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance modes: Four longitudinal field studies. *Management Science*, 186-204. Venkatesh, V., Morris, M. G., & Ackerman, P. L. (2000). A longitudinal field investigation of gender differences in individual technology adoption decision-making processes. *Organizational Behavior and Human Decision Processes*, 83(1), 33-60. Wycliffe L., & Jostein R. (1999). Predicting intended condom use among tanzanian students using the theory of planned behavior. *Journal of Health Psychology*, 4(4) , 497-506. Zain, M., Rose, R. C., Abdullah, I., & Masrom, M. (2005). The relationship between information technology acceptance and organizational agility in Malaysia. *Information & Management*, 42, 829-839.