

Applying Involvement Theory and Technology Acceptance Model to Explore Usage Intention of the Third Generation Mobile Co

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ABSTRACT

With the vigorous development of information technology and the prevailing of motion communication, the mobile phone has become more necessary in our daily life. According to the reports of National Communications Commission, the number of third generation (3G) subscribers have been increased. In addition, with the release of new 3G Phone and applications, users will have more choices. Therefore, the purpose of this study was to explore which elements will influence users' willingness to use 3G. This study use TAM as framework, and consider the characteristic of 3G to add perceived enjoyment, and user involvement as noise variables to explore the influence of user's willingness on 3G. The method to carry out this study was using a survey, and analysis with statistics.

The results showed that perceived usefulness, perceived ease of use, perceived enjoyment and perceived cost have significant effect on the use of attitude; perceived usefulness, perceived cost, attitude and SN have significant impact on behavioral intention; user involvement would interfere with the relationship between attitude and behavioral intention. The study will provide some marketing suggestions to telecom operators.

Keywords : involvement theory、 technology acceptance model、 third generation mobile communication

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REFERENCES

- 一、中文部份?道榮(2005), 我國3G?動通訊之發展[線上資料], 台灣工業銀?, 來源: <http://www.ibt.com.tw/UserFiles/File/940816.pdf> [2009, January 8]。吳顯東(2002), 3G?手級服務的條件?, 資訊工業透析:通訊與網?。行政院國家資訊通信發展推動小組[線上資料], 來源: http://www.nici.nat.gov.tw/content/application/nici/ict_summary/guest-cntgrp-browse.php?ordinal=10020073[2009, January 3]拓璞產業研究所(2004), 3G行動寬評產業與商機面面觀, 台北:拓璞科技股份有限公司。拓璞產業研究所(2005), 探究手機應用趨勢暨3G電信市場戰局評析, 台北:拓璞科技股份有限公司。許惠貞(2003), 以生活型態變數探討手機用戶之行動加值服務需求之研究, 國立台灣科技大學企業管理系未出版之碩士論文。張淑惠(1993)。SOR模型在使用者涉入理論之應用的檢討。明德學報, 9, 144-177。張森德, 黃進芳(2007), 全球3G市場研究與探討, 無線電界, 87(04), 28-34。郭鑑德(2003), 科技接受模式在行動上網市場之實證研究-以大台北地區為例, 銘傳大學管理學院高階經理碩士學程未出版之碩士論文。黃俊英, 賴文彬(1990), 涉入的理論發展與實務應用, 管理科學學報, 7(1), 15-29。曾順成(2002), 第三代行動通訊市場策略之研究, 國立中山大學資訊管理系研究所未出版之碩士論文。資策會FIND[線上資料], 來源: <http://www.find.org.tw/find/home.aspx?page=news&id=4938> [2008, December 21]資策會FIND[線上資料], 來源: <http://www.find.org.tw/find/home.aspx?page=many&id=202> [2008, December 25]資策會FIND[線上資料], 來源: http://www.find.org.tw/mit/2009MIT_S/survey2009_1.html [2009, April 27]劉書蘭(2002), 使用者採用行動商務之行為研究-以行動銀行為例, 國立雲林科技大學資訊管理研究所未出版之碩士論文。
- 二、英文部份Arova, R. (1982). Validation of an SOR model for situation, enduring, and eesponse comonents of involvement. *Journal of Marketing Research*, 19, 505-516.Ajzen, I. (1985). From intentions to actions: a theon of planned behavior. in J. Kulil and J. Beckmann (Eds)., *Action Control: From Cognition to Behavior* (pp. 11-39). New York: Springer Verlag.Ajzen, I. (1991). *The Theory of Planned Behavior*. *Organization Behavior and Human Decision Processes*, 50, 179-211.Anderson, J. C., & Gerbing, D. W. (1988). Structural Equation Modeling in Practice: A Review and Recommended Two-step Approach. *Psychological Bulletin*, 103(3), 411-423.Anckar, B., & D ' Incau, D. (2002). Value-Added Services in Mobile Commerce: An Analytical Framework and Empirical Findings from a National Consumer Survey. 35th Hawaii International Conference on System Sciences, 3, 1087-1096.Bagozzi, R.P., & Yi, Y. (1988). On the Evaluation of Structural Equation Models. *Academy of Marketing Science*, 16, 74-94.Barki, H., & Hartwick, J. (1994). Measuring user participation, user involvement, and user attitude. *MIS Quarterly*, 18(1), 59-82.Bentler, P. M., & Bonett, Douglas G. (1980). Significance tests and goodness of fit in the analysis of covariance structures. *Psychological Bulletin*, 88 (3), 588-606.Bniner IL G.C., & Kumar. A. (2005). Explaining consumer acceptance of handheld internet devices. *Journal of Business Research*. 58(5), 553-558.Bollen, K. A. (1989). *Structural Equations with Latent Variables*. New York: Wiley.Carolina, L. N., Francisco J. M. C., & Harry, B. (2008). An assessment of advanced mobile services acceptance: Contributions from TAM and diffusion theory models, *Information and Management*, 45, 359-364Constantinides, E. (2002). The 4S web-marketing mix model. *Electronic commerce Research and Applications*, 1(1), 57-76.Cousins, K., & Varshney, U. (2001). A Product Location Framework for Mobil Commerce Environment, *Proceedings of the First International Workshop on Mobile Commerce* (pp. 43-47), Rome, Italy..Davis, F. D. (1986). A Technology Acceptance Model for Empirically Testing New End-user Information Systems: Theory and Results, Doctoral Dissertation, Sloan school of Management, Massachusetts Institute of Technology.Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319-340.Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models, *Management Science*, 35, 982-1003.Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in the workplace. *Journal of Applied Social Psychology*, 22, 1111-1132.Delone, W. H., & Maclean, E. R. (1992). Information systems success: The quest for the dependent variable. *Information Systems Research*. 3(1), 60-95.Dianne, C., Milena, H., & Alex, I. (2006). Design aesthetics leading to m-loyalty in mobile commerce. *Information and Management*, 43(8), 950-963.Dishaw, M. T. & Strong, D. M. (1999). Extending the Technology Acceptance Model with Task-technology Fit Constructs. *Information and Management*, 36(3), 9-21.Engel, J. F., & Roger, D. B. (1982). *Consumer Behavior* (4th ed.). New York: The Dryden Press.Erlandson, C., & Ocklind, P. (1998), WAP-the wireless application protocol. *Ericsson Review*, 75(4), 150-153.Fishbein, T., & Ajzen, I. (1975). *Belief, Attitude, Intention and Behavior: An introduction to theory and esearch*. Reading. Massachusetts: Addison-Wesley.Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, XVIII, 39-50.Hairs, Anderson, Tatham, & Black, (1998). *Multivariate data analysis*. New York: Macmollan.Herman, M. (2002). M-Commerce-Hype and Reality, A View From The Bridge. *World Market Series Business Briefings: Wireless Technology World Markets*

Research Centre, 12-22.Houston, & Rothschild (1978). Conceptual and Methodological Perspectives in Involvement, in *Research Frontiers in Marketing: Dialogues and Direction*, S. Jain ed., Chicago: American Marketing Association (pp. 184-187).Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling*, 6(1), 1-55.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), 91-112.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(1), 46 – 60.Hsiao, C. H., & Hung, Y. C. (2004). The Study of Behavior Intention to Accept Mobile Commerce in Technology Acceptance Model. Thesis for Master of Science Department of Information Management, Tatung University.Igbaria, M., Guirnarraes, T., & Davis, G. B. (1995). Testing the determinants of Microcomputer usage via a structural equation model. *Journal of Management Information Systems*, 11(4), 87-114.Igbaria, M., & Tan, M. (1997). The consequences of information technology acceptance on subsequent individual performance, *Information and Management*, 32, 113-121.Igbaria, Z. M., Cragg, P., & Cavaye, A. L. M. (1997). Personal Computing Acceptance Factors in Small Firms: A Structural Equation model. *MIS Quarterly*, 21(3), 279-305.Imsook, H., Youngseog, Y., & Munkee, C. (2007). Determinants of adoption of mobile games under mobile broadband wireless access environment. *Information and Management*, 44(3), 276-286.In-Stat [online]. Available: <http://www.in-stat.com/press.asp?ID=2040&sku=IN0703679AW> [2008, December 19]Jarvenpaa, S. L., Tractinsky, N., & Vitale, M. (2000). Consumer trust in an internet store, *Information Technology and Management*, 1(1/2), 45-71.Lin, J. C. C., & Lu, H. (2000). Towards an understanding of the behavioral intention to use a web site. *International Journal of Information Management*, 20(3), 197-208.Kazuaki, Yamauchi, Wenxi, C., & Daming, W. (2006). An Intensive Survey of 3G Mobile Phone Technologies and Applications in Japan. The Sixth IEEE International Conference on Computer and Information Technology (p. 265). Washington, DC.Kenny, D. A., & Judd, C. M. (1984). Estimating the nonlinear and interactive effects of latent variables. *Psychological Bulletin*, 96 (1), 201-210.Kuo, Y. F., & Yen, S.N. (2009). Towards an understanding of the behavioral intention to use 3G mobile value-added services. *Computers in Human Behavior*, 25(1), 103-110.Krugman, H. E. (1965), The impact of television advertising learning without involvement, *Public Opinion Quarterly*, 29, 349-356.Krugman, H. E. (1967). The Measurement of Advertising Involvement. *Public Opinion Quarterly*, 30 (Winter), 583-596.Laurent, G., & Kapferer, J. N. (1985). Measuring consumer involvement profiles. *Journal of Marketing Research*, 22, 41-53.Legris, P., Ingham, J., & Colletette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information and Management*, 40, 191-204.Luarn, P., & Lin, H. H. (2005). Toward an understanding of the behavioral intention to use mobile banking. *Computers in Human Behavior*, 21(6), 873-891.May, P. (2001). *Mobile Commerce: Opportunities, Applications, and Technologies of Wireless Business*. Cambridge University Press.McGinity, M. (1999). *Staying Connected: Flying Wireless, With a Net*. Communications of the ACM, 19-21.Moore, G. C., & Benbasat, I. (1991). Development of an Instrument to Measure the Perceptions of Adoption an Information Technology Innovation. *Information Systems Research*, 2(3), 192-222.Moon, J. W., & Kim, Y G., (2001). Extending the TAM for a World-Wide-Web Context. *Information and Management*, 38, 217-230.Mulaik, S.A., James, L.R., Van Alstine, J., Bennet, N., Lind, S., & Stilwell, C.D. (1989), Evaluation of Goodness-of-Fit Indices for Structural Equation Models. *Psychological Bulletin*, 105(3), 430-45.Narayanan, A. K. (2001). Realms and States: A Framework for Location Aware Mobile Computing. Proceedings of the First International Workshop on Mobile Commerce (pp. 48-54), Rome, Italy.Olshavsky, R. W., & Donald, H. G. (1979). Consumer Decision Making-Fact or Fiction?, *Journal of Consumer Research*, 6 (September), 93-100.Peters, B. (2002). The Future of Wireless Marketing In World Market Series Business Briefings: Wireless Technology. *World Markets Research Centre*, 88 -190.Robertson, T. S., Zielinski, J., & Ward, S. (1984). *Consumer Behavior*, Illinois: Scott, Foresman and Company.Schultz, B. (2001). The m-commerce fallacy. *Network World*, 18(9), 77-82.Sheppard, B. H., Hartwick, J., & Warshaw, P. R. (1988). The Theory of Reasoned Action: A Meta-Analysis of Past Research with Recommendations for Modifications and Future Research. *Journal of Consumer Research*, 15(3), 325-343.Sherif, M., & Cantril, H. (1947). The psychology of ego-involvements. New York: Wiley.Szajna, B. (1994). Software evaluation and choice: predictive evaluation of the Technology Acceptance Instrument. *MIS Quarterly*, 18(3), 319-324.Szajna, B. (1996). Empirical evaluation of the revised technology acceptance model. *Management Science*, 42(1), 85-92.Tabachnik, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*(5th ed.). Boston: Pearson Education, Inc.Taylor, S., & Todd, P. (1995). Assessing IT usage: the role of prior experience. *MIS Quarterly*, 19(4), 561-570.Teo, T., Lim, V., & Lai, R. (1999). Intrinsic and extrinsic motivation in internet usage. *International Journal of Management Science*, 27(1), 25-37.Teo, T. S. H. (2001). Demographic and motivation variables associated with Internet usage activities. *Internet Research: Electronic Networking Applications and Policy*, 11(2), 125-137.Tsalgatiou, A., & Pitoura, E. (2001). Business Models and Transactions in Mobile Electronic Commerce: Requirements and Properties. *Journal of Computer Networks*, 37(2), 221-236.Tucker, T. R., & Lewis, C. (1973). A reliability coefficient for maximum likelihood factor analysis. *Psychometrika*, 38(1), 1-10.Varshney, U., & Vetter, R. (2002). Mobile Commerce: Framework, Applications and Networking Support. *Mobile Networks and Applications*, 7(3), 185-198.Van der Heijden, H. (2003). Factors influencing the usage of websites: the case of a generic portal in Netherlands, *Information and Management*, 40(6), 541-549.Venkatesh, V., & Davis, F. D. (1996). A model of the antecedents of perceived ease of use: Development and test. *Decision Sciences*, 27(3), 451-481.Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46, 186 – 204.Wu, J. H., & Wang J. L. (2005). What Drives Mobile Commerce? An Empirical Evaluation of the Revised Technology Acceptance Model. *Information and Management*, 42(5), 719-729.Warrington, P., & Shim, S. (2000). An empirical investigation of the relationship between product involvement and brand commitment. *Psychology and Marketing*, 17(9), 761-782.Yavas, U., & Babakus, E. (1995). Purchasing Involvement in Saudi Arabia. *Journal of International Consumer*

Marketing, 8(1), 23-42. Zaichkowsky, J. L. (1985). Measuring the Involvement Construct. *Journal of Consumer Research*, 12(Dec), 341-352. Zaichkowsky, J. L. (1986). Conceptualizing Involvement. *Journal of Advertising*, 15(2), 4-15. Zaichkowsky, J. L. (1994). The Personal Involvement Inventory: Reduction, Revision and Application to Advertising. *Journal of Advertising*, 23(4), 59-70.