THE DETERMINANTS OF RMPnet SYSTEM ADOPTION AMONG SENIOR POLICE OFFICERS OF ROYAL MALAYSIA POLICE

SAADIAH BINTI KADIR

DOCTOR OF BUSINESS ADMINISTRATION UNIVERSITI UTARA MALAYSIA January 2013

THE DETERMINANTS OF RMPnet SYSTEM ADOPTION AMONG SENIOR POLICE OFFICERS OF ROYAL MALAYSIA POLICE

By SAADIAH BINTI KADIR

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ABSTRACT

Technology adoption has emerged as an important determinant in understanding its acceptance by end-users in many government organizations. However, there has not been much research focused on technology adoption in government organization in Malaysia especially in law enforcement agencies. This study investigates the determining factors that affect the end-users' technology adoption in a government organization in Malaysia. Specifically, the aim of this study was to determine the system technology adoption among senior police officers of Royal Malaysia Police (RMP). A survey methodology was employed to collect the data. Senior police officers from the contingents of Bukit Aman, Selangor, Kuala Lumpur, Central Brigade General Operations Force, RMP College Kuala Lumpur, Negeri Sembilan, Melaka, Johor and RMP Technical College were chosen as the sample for this study. A systematic sampling procedure was used to select respondents from the respective police contingents. Ten hypotheses were proposed regarding the determinants of RMPnet System technology adoption. Structured questionnaires comprising 41 questions that were used to measure seven variables; RMPnet System adoption, innovativeness, top management support, RMPnet System experience, perceived usefulness, behavioural intention, and user support were adopted in this study. Out of the 700 questionnaires, only 521 were usable, thus yielding a response rate of 74.4 percent. The findings revealed that significant relationships exist between four of the determinants (top management support, perceived usefulness, user support and system experience) and RMPnet System adoption. The findings also revealed that innovativeness moderated the relationships between all the determinants (top management support, perceived usefulness, user support, technology experience and system experience) and the RMPnet System adoption. The study concluded with a discussion on theoretical and practical implications and suggestion for future research.

Keywords: Technology Adoption, Top Management Support, Perceived Usefulness, User Support

ABSTRAK

Penggunaan teknologi telah muncul sebagai penentu penting dalam memahami penerimaan teknologi oleh pengguna akhir dalam banyak organisasi kerajaan. Walau bagaimanapun, tidak terdapat banyak penyelidikan yang memberi tumpuan kepada penggunaan teknologi dalam organisasi kerajaan di Malaysia terutamanya di agensiagensi penguatkuasaan undang-undang. Kaji selidik ini mengkaji faktor-faktor penentu pengguna akhir untuk menerima pakai teknologi dalam organisasi kerajaan di Malaysia. Khususnya, matlamat kajian ini adalah untuk menentukan penggunaan sistem teknologi di kalangan pegawai-pegawai kanan polis, Polis Diraja Malaysia (PDRM). Satu metodologi kaji selidik telah digunakan untuk mengumpul data. Pegawai kanan polis dari kontinjen Bukit Aman, Selangor, Kuala Lumpur, Briged Tengah Pasukan Gerakan Am, Maktab PDRM Kuala Lumpur, Negeri Sembilan, Melaka, Johor dan Maktab Teknik PDRM telah dipilih sebagai sampel bagi kajian ini. Satu prosedur pensampelan sistematik telah digunakan untuk memilih responden daripada kontinjen polis yang terlibat dalam kajian ini. Sepuluh hipotesis dicadangkan mengenai penentu penggunaan teknologi sistem RMPnet. Soal selidik berstruktur yang terdiri daripada 41 soalan telah digunakan untuk mengukur tujuh pembolehubah; penggunaan sistem RMPnet, inovasi, sokongan pengurusan atasan, pengalaman sistem RMPnet, tanggapan kegunaan, niat tingkah laku, dan sokongan pengguna telah diterima pakai dalam kajian ini. Daripada 700 soal selidik, hanya 521 boleh digunakan yang menghasilkan kadar tindak balas 74.4 peratus. Dapatan kajian menunjukkan bahawa hubungan signifikan wujud antara empat ramalan hipotesis (sokongan pengurusan atas, tanggapan kegunaan, sokongan pengguna dan pengalaman sistem) dengan penggunaan sistem RMPnet. Hasil kajian juga menunjukkan bahawa inovasi menyederhanakan hubungan antara semua ramalan (sokongan pengurusan atasan, tanggapan kegunaan, sokongan pengguna, pengalaman teknologi dan pengalaman sistem) dengan penggunaan sistem RMPnet. Kajian ini diakhiri dengan perbincangan mengenai implikasi teori dan praktikal, dan cadangan untuk kajian akan datang.

Kata Kunci: Penggunaan Teknologi, Sokongan Pengurusan Atasan, Tanggapan Kegunaan, Sokongan Pengguna

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CHAPTER ONE

INTRODUCTION

1.1 BACKGROUND

The adoption of technology has grown tremendously in the past decades, providing companies with new opportunities to support their activities (Manning, 2008). The technology adoption process involved a series of processes that an organization must undertake. It could only be decided whether or not to implement the new technology after all the processes had been undertaken (Kamal, 2006). Technologies were important tools for organizational change and occurred at the same time as the adoption of new ideas or behavior by an organization (Daft, 1978). Adopting technology to support organizational needs was a crucial prerequisite because of the opportunity of exploiting the potentials actual benefits of technology. Innovation and adoption could be conceptualized as being a series of temporal processes where a person had to undergo from the initial phase of acquiring the know how until he or she came to a state where he or she would be capable of making decision whether to adopt or reject the new technology (Rogers, 1995).

Research on the determinants of individual technology adoption in organizations continues to be a significant area for academicians, and though organizations had the authority to introduce new technology, the persons who made the final decision to reject or adopt the technology would be the end-users (Agarwal, 2000; Lewis, Agarwal & Sambamurthy, 2003). Innovation is what individuals made presumptions that the technology to be adopted was new (Rogers, 1995).

The contents of the thesis is for internal user only

REFERENCES

- Abdelghaffar, H. (2009). *Citizen's readiness for e-Government in developing countries (CREG)*.Proceedings of the 9th European on e-Government (ECEG), London, UK.
- Abdelghaffar.H., & Magdy, Y. (2012). The adoption of mobile Government services in developing countries: The case of Egypt. *International Journal of Information and Communication Technology Research*, 2(1), 333-341.
- Adams, D. A., Nelson, R. R., & Todd, P. A. (1992). Perceived usefulness, ease of use, and usage of information technology: a replication, *MIS Quarterly*, 16(2), 227–247.
- Agarwal R., & Karahanna, E. (2000). Time files when you're having fun: Cognitive absorption and beliefs about information technology usage, *MIS Quarterly*, 24(4), 665-694.
- Agarwal, R. (2000). Individual acceptance of information technologies. In Zmud, R.
 W. (ed.), Framing the Domains of IT Management: Projecting the Future... Through the Past, Cincinnati, OH: Pinnaflex Educational Resources, 85-104.
- Agarwal, R., & Prasad, J. (1998). A conceptual and operational definition of personal innovativeness in the domain of information technology. *Information System Research*, 9(2), 204-215.
- Agarwal, R., & Prasad, J. (1998). The antecedents and consequences of user perceptions in information technology adoption. *Decision Support Systems*, 22(1), 15-29.
- Agarwal, R., Sambamurthy, V., & Stair, R.M. (2000). Research report: the evolving relationship between general and specific computer self-efficacy an empirical assessment. *Information Systems Research*, 11(4), 418-430.
- Agarwal, S., Erramilli, M.,& Chekitan, S. (2003). Market orientation and performance in service firms: role of innovation. *Journal of Services Marketing*, 17(1), 68-82.
- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. Action control – from cognition to behavior. Kuhl, J., Bechmann, Berlin, J. U. A. 11-39.
- Ajzen, I. (1988). Attitudes, personality, and behaviour. Chicago: Dorsey Press.
- Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(1), 179-211.
- Ajzen, I. (2002). Perceived behavioural control, self efficacy, locus of control, and the theory of planned behaviour. *Journal of Applied Social Psychology*, 32(4), 665-683.
- Ajzen, I., & Fishbein, M. (1980). Understanding attitude and predicting social behaviour. Englewood Cliff, New Jersey: Prentice-Hall Inc.
- Akubue, A. I. (2002). Technology transfer: A third world perspective. *The Journal of Techniology Studies*, 1(1), 4-11.
- Alexander, S.,& McKenzie, J. (1998). An evaluation of information technology projects in university learning. Department of Employment, Education and Training and Youth Affairs, Canberra: Australian Government Publishing Services.

- Al-Gahtani, S. S. (2001). The applicability of TAM outside North America: an empirical test in the United Kingdom. *Information Resources Management Journal*, 2(1), 37-46.
- ALMR (2010). Alaskan land mobile radio communications system. System Management Office (SMO). Customer Support Plan (CSP) v4.
- Amoako-Gyampah, K., & Salam, A. F. (2004). An extension of the technology acceptance model in an ERP implementation environment. *Information* and Management, 41(6), 731-745.
- Amoroso, D. L. (1988). Organizational issues of end-user computing. *Database*, 19(3), 49-58.
- Amoroso, D. L., & Cheney, P. H. (1991). Testing a causal model of end-user application effectiveness. *Journal of Management Information Systems*, 8(1), 63-89.
- Anderson, D. R., Sweeney, D. J., & Williams, T.A. (2002). *Statistics for business and economics* (8thed). Cincinnati, OH: South-Western.
- Armstrong, C. P., &Sambamurthy, V. (1999). Information technology assimilation in firms: The influence of senior leadership and IT insfrastructure. *Information Systems Research*, 10(4), 304-327.
- Babbie, E. (1990). Survey research methods (2nded.). Belmont, Calif.: Wadsworth.
- Bagozzi, R. P. (1982). A field investigation of causal relations among cognitions, affects, intentions, and behaviour. *Journal of Marketing Research*, 19(11), 562-584.
- Bandura, A. (1986). Social foundations of thought and action: A social cognitive theory. Englewood Cliffs, NJ: Prentice Hall.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173-1182.
- Bayer, J., & Melone, N. (1989). A critique of diffusion theory as a managerial framework for understanding the adoption of software engineering innovations. *Journal of Systems and Software*, 9(3), 161-166.
- Beiglo, S. H. B. (2011). A survey on factors of effecting continuity of use of government' e-Services. Australian Journal of Basic and Applied Sciences, 5(8), 209-220.
- Benbasat, I., & Zmud, R. (1999). Empirical research in information systems: the practice of relevance. *MIS Quarterly*, 23(1), 3-16.
- Bennett, R., & Savani, S. (2011). Retailers' preparedness for the introduction of third wave (ubiquitous) computing applications. A survey of UK companies. *International Journal of Retail and Distribution Management*, 39(5), 306-325.
- Bergeron, F., Rivard, S.,& DeSerre, L. (1990).Investigating the support role of the information center.*MIS Quarterly*, 14(1), 247-260.
- Bernard, S. (1998). *Technics and time, 1: The fault of epimetheus*. Stanford University Press.ISBN 0-8047-3041-3.
- Bhattacharjya, J., & Chang, V. (2008). Adoption and implementation of IT governance: Cases from Australian higher education. Information technology governance and service management: Frameworks and adaptations. USA: *Information Science Reference*, 3(3), 82-100.

- Bhattacherjee, A. (2002). Individual trust in online firms: scaledevelopment and initial test. *Journal of Management and Information Systems*, 19(1), 211-241.
- Bradford, M., & Florin, J. (2003).Examining the role of innovation diffusion factors on the implementation success of enterprise resource planning systems.*International Journal of Accounting Information Systems*, 4(3), 205-225.
- Brown, M., Montoya-Weiss, M. M., & Burkman, J. R. (2002). Do I really have to? User acceptance of mandated technology. *European Journal of Information Systems*, 11(1), 283-295.
- Brown, S. A., & Venkatesh, V. (2005). Model of adoption of technology in households: A baseline model test and extension incorporating household life cycle. *MIS Quarterly*, 29(3), 399-426.
- Buyukkurt, M. D., & Vass, E. C. (1993). Investigation of factors contributing to satisfaction with end-user comouting process. *Canadian Journal of Administration Sciences*, 10(3), 212-228.
- Cannella Jr, A. A., Park, J. H., & Lee, H. U. (2008). Top management functional background diversity and firm performance: Examining the roles of team member collocation and environmental uncertainty. *Academy of Management Journal*, 51(4), 768-784.
- Carter, L., & Belanger, G. (2005). The Utilization of e-government services: Citizen trust, innovation and acceptance factors. *Information Systems Journal*, 15(1), 5-25.
- Carter-Steel, A. (2009). IT Service departments struggle to adopt a service-oriented philosophy. *International Journal of Information Systems in the Service Sector*, 3(2), 69-77.
- Cauberghe, V., & Pelsmacker, P. D. (2011). Adoption intention toward interactive digital television among adverstising professionals. *Journal Interactive Adverstising*, 11(2), 45-59.
- Chan, S. C., & Lu, M. T. (2004). Understanding internet banking adoption and user behaviour: A Hong Kong perspective. *Journal of Global Information Management*, 12(3), 21-43.
- Chang, M., Cheung, W., Cheng, C., & Yeung, J. (2008).Understanding ERP system adoption from the user's perspective.*International Journal of Production Economics*, 113(2), 928-942.
- Chau, P. Y. K. (2001). Influence of computer attitude and self-efficacy on IT usage behavior. *Journal of End User Computing*, 13(1), 26-33.
- Chau, P., & Hu, P. (2001). Information technology acceptance by individual professionals: a model comparision approach. *Decision Science*, 32(4), 699-719.
- Chin, W. W., Marcolin, B. L., & Newsted, P.R. (2003). A partial least squares latent variable modelling approach for measuring interaction effects: results from a Monte Carlo simulation study of an electronic-mail emotion/adoption study. *Information Systems Research*, 14(2), 252-268.
- Citrin, A. V., Sprott, D. E., Silverman, S. N., & Stern, D. E. (2000). Adoption of internet shopping: the role of consumer innovativeness. *Industrial Management and Data Systems*, 100(7), 294-300.

- Clark, S., Metzer, P., Wasserman, Z., Xu, K., & Blaze, M. (2010, November 18). Security weaknesses in the APCO Project 25 two-way radio system.CIS Technical Report MS-CIS-10-34.
- Clegg, C., Axtell, C., Damodaran, L., Farbey, B., Hull, R., Lloyd-Jones, R., Nicholls, J., Sell, R., & Tomlinson, C. (1997). Information technology: a study of performance and the role of human and organizational factors. *Economics*, 40(9), 851-871.
- Coakes, S. J., &Ong, C. (2011).SPSS version 18.0 for windows: Analysis without anguish. Australia: John Wiley & Sons Ltd.
- Coakes, S. J., & Steed, L. G. (2003).*SPSS: Analysis without anguish.* Sydney: John Wiley & Sons.
- Cohen, J., & Cohen, P. (1983).*Applied multiple regression/correlation analysis for behavioural science* (2nded.). Erlbaum.
- Collier, P. M. (2006). Policing and the intelligent application of knowledge. *Public* Money & Management, 26(2), 109-116.
- Colvin, C. A., & Goh, A. (2005). Validation of the technology acceptance model for police. *Journal of Criminal Justice*, 33(1), 89-95.
- Contractor, F. J., & Narayanan, V. K. (1990). Technology development in the multinational firm: A framework for planning and strategy. *R & D Management*, 20(4), 305-322.
- Cooper, D. R.,& Schindler, P. S. (2006). *Business research methods* (9thed.). New York: McGraw Hill. Salkind, N. J.
- Cronbach, L.J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 31(1), 93-96.
- Cronk, B. C. (2006). *How to use SPSS: A step-by-step guide to analysis and interpretation.* Glendale, CA: Pyrczak.
- Daft, R. L. (1978). A dual-core model for organizational innovation. *Academy of Management Journal*, 21(1), 193-210.
- Damanpur, F. (1992).Organizational size and innovation.*Organization Studies*, 13(3), 375-402.
- Dasgupta, S. (1997). The role of culture in information technology diffusion in organizations. *Proceedings of Innovation in Technology Management The Key to Global Leadership (PICMET 97)*, Portland, OR, 353-356.
- Davis, F. (1993). User acceptance of information technology: system characteristics, user perceptions and behavioural impacts. *International Journal of Man-Machine Studies*, 38(1), 475-87.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology.*MIS Quarterly*, 13(3), 319-339.
- Davis, F. D., & Venkatesh, V. (1996). A critical assessment of potential measurement biases in the technology acceptance model: three experiments. *International Journal of Human-Computer Studies*, 45(1), 19-45.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparation of two theoretical models. *Management Science*, 35(8), 982-1003.
- DeLone, W. H. (1988). Determinants of success for computer usage in small business.*MIS Quarterly*, 12(1), 51-61.
- Diamantopoulos, A., & Schlegelmich, B. B. (2000). *Taking the fear out of data analysis. A step-by-step approach.* London: Thomson Learning.

- Digital radio for police from this month. (2010, April 2). *The Star*.Retrieved April 2, 2010, from http://thestar.com.my/news.
- Digital radio to fight Sabah crimes. (2011, September 8). *Daily Express*. Retrieved October 16, 2010, from http://www.dailyexpress.com.my/news.
- Dillon, A., & Morris, M. (1996). User acceptance of information technology: theories and models. *Information Science and Technology*, 31(1), 3-32.
- DiMaggio, P. J., & Cohen, J. N. (2005). Information inequality and network externalities: A comparative study of the diffusion of television and internet. *Economic Sociology of Capitalism*, 3(3), 227-267.
- Dorothy, L. B., & Isabella, D. (1988). Managerial influence in the implementation of new technolog. *Management Science*, 34(10), 1252-1265.
- Dwivedi, Y. K. (2007). Consumer adoption and usage of broadband: IRM Press.
- Dwivedi, Y. K., Choudrie, J., & Brinkman, W. P. (2006).Development of a survey instrument to examine consumer adoption of broadband.*Industrial Management and Data Systems*, 106(5), 700-718.
- Ely, R. J., & Thomas, D. A. (2001). Cultural diversity at work: The effects of diversity perspectives on work group processes and outcomes. *Administrative Science Quarterly*, 46(2), 229-273.
- ErnestChang, S., & Heng, M. (2006). An empirical study on voice-enabled web applications. *IEEE Pervasive Computing*, 5(3), 76-81.
- Faziharudean, T. M., & Li-Ly, T. (2011).Consumers' behavioral intentions to use mobile data services in Malaysia.African Journal of Business Management, 5(5), 1811-1821.
- Featherman, M. S. (2001). Extending the technology acceptance model by inclusion of perceived risk.*Proceeding of the Seventh Americas Conference on Information Systems*, 758-760.
- Fernandez-Caamano, R., & Johnson, S. D. (2005). Consequences of technology transfer in the Pueblo Viejo gold mine. *Comparative Technology Transfer and Society*, 3(1), 1-34.
- Fichman, R. G. (1992). *Information technology diffusion: A Review of empirical research*. Paper presented at the thirteenth international conference on information systems, Dallas, TX.
- Fichman, R. G. (2000). The diffusion and assimilation of information technology innovations, in framing the domains of IT management: projecting the future through the past, Zmud, R., ed. Cincinnati.
- Fichman, R. G., & Kemerer, C. F. (1997). The assimilation of software process innovations: An organizational learning perspective. *Management Science*, 43(10), 1345-1363.
- Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention, and behavior: An introduction to theory and research. Reading, MA: Addison-Wesley.
- Flury, B., & Riedwyl, H. (1988).*Multivariate Statistics: A practical approach*. London: Chapman and Hall.
- Flynn, B. B., Schroeder, R. G., & Sakakibara, S. (1994). The impact of quality management practices on performance and competitive advantage. *Decision Science*, 26(5), 659-691.

- Foo, S., Hui, S. C., Leong, P. C., & Liu, S. (2000). An integrated help desk support for customer services over the world wide web – a case study. *Computers in Industry*, 41(2), 129-145.
- Frazier, P. A., Barron, K. E., & Tix, A. P. (2004). Testing moderator and mediator effects in counselling psychology research. *Journal of Counseling Technology*, 51(1), 115-134.
- Fusilier, M., & Durlabhji, S. (2005). An exploration of student internet use in India. *Campus-Wide Information Systems*, 22(4), 233-246.
- Garcia, R., & Calantone, R. (2002). A critical look at technological innovation typology and innovativeness terminology: a literature review. *The Journal of Product Innovation Management*, 19(2), 110-132.
- Gardner, C., & Amoroso, D.L. (2004).*Development of an instrument to measure the* acceptance of Internet technology by consumers. Proceedings of the 37th Hawaii International Conference on System Sciences. Honolulu, HI.
- Gefen, D., & Straub, D. (2002). Managing user trust in B2C e-Service *Journal*, 2(2), 7-23.
- Gefen, D., &Straub, D. W. (1997). Gender differences in the perception and use of email: An extension to the technology acceptance model. *MIS Quarterly*, 21(4), 389-400.
- Gilbert, G. N. (2001). Researching social life: Sage Publication Ltd.
- Glass, S., Muthukkumarasamy, M., & Portmann, M. (2009). *A Software-defined radio receiver for APCO project signals*. IWCMC 2009, Leipzig, Germany.
- Glass, S., Portmann, M., & Muthukkumarasamy, M. (2008). Securing wireless mesh networks. *IEEE Internet Computing*, 12(4), 30-36.
- Gopalakrishnan, S., & Santoro, M. D. (2004).Distinguishing between knowledge transfer and technology transfer activities: the role of key organizational factors.*IEEE Transactions on Engineering Management*, 51(2), 57-69.
- Gottschalk, P. (2006). Stages of knowledge management systems in police investigations. *Knowledge-Based Systems*, 19(6), 381-387.
- Gottschalk, P., & Holgersson, S. (2006). Stages of knowledge management technology in the value shop: The case of police investigation performance. *Expert Systems*, 23(4), 183-193.
- Gumussoy, C. A., Calisir, F., & Bayram, A. (2007).Understanding the behavioral intention to use ERP systems: An extended technology acceptance model.*Proceedings of the 2007 IEEE*.
- Guo, H. (2011, September 12). Malaysia police to spend US\$326 mil on ICT.Asia Pacific future government.Retrieved November 7, 2011, from http://www.futuregov.asia/articles.
- Guriting, P., & Ndubisi, N. O. (2006). Borneo online banking: Evaluating customer perceptions and behavioural intention. *Management research News*, 29(2), 6-15.
- Hainbuchner, C. M. (2005).*Technology acceptance of complex products and systems*. *The case of Terrestrial Trunked Radio (TETRA)*. Doctoralthesis: WU Vienna University of Economics and Business.
- Hair, J., Babin, B. J., Money., & Samouel. (2003). Essentials of Business Research, Wiley.
- Hair, J., Black, B., Babin, B., Anderson, R., & Tatham, R. (2006).*Multivariate data* analysis (6thed.). Upper Saddle River, NJ: Prentice-Hall.

- Hair, J., Black, W, C., Babin, B. J., & Anderson, R. E. (2010).*Multivariate data analysis* (7thed.).Upper saddle River, New Jersey: Pearson Education International.
- Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review*, 9(2), 193-206.
- Hambrick, R. C., Geletkanyez, M. A., & Fredrickson, J. W. (1993). Top executive commitment to the status quo: Some tests of its determinants. *Strategic Management Journal*, 14(6), 401-408.
- Hartwick, J., & Barki, H. (1994). Explaining the role of user participation in information system use. *Management Science*, 40(4), 440-465.
- Heeks, R. (1999).*Reinventing government in the information age: International practice in IT-enable public sector reform.* London: Routledge.
- Heeks, R. (2003). Most e-government for development projects fail: How can risk be reduced? Institute for Development Policy and Management, University of Manchester, UK, Paper No 14.
- Hennington. A. H., & Janz, B. D. (2007). Information systems and healthcare XVI: Physician adoption of electronic medical records: Applying the UTAUT model in a healthcare context. *Communications of the Association for Information Systems*, 19(1), 60-80.
- Herbet, M., & Benbasat, I. (1994). Adopting information technology in hospitals. The relationship between attitudes/expectations and behavior. *Hospital and Health Services Adminsitration*, 39(3), 369-383.
- Herrero Crespo, A., & Rodriguez D. B. I. (2008). The effect of innovativeness on the adoption of B2C e-commerce: A model based on the theory of planned behaviour. *Computers in Human Behaviour*, 24(6), 2830-2847.
- Hirschman, E. C. (1980). Innovativeness, novelty seeking, and consumer creativity. *Journal of Consumer Research*, 7(1), 283-295.
- Ho, A. T. K. (2002). Reinventing local governments and the e-government initiative. *Public Administration Review*, 62(4), 434-444.
- Holden, S. H., Norris, D. F., & Fletcher, P. D. (2003). Electronic government at local level: Progress to date and future issues. *Public Performance and Management Review*, 26(4), 325-344.
- Hu, P. J., Clark, T. H. K., & Ma, W. W. (2003).Examining technology acceptance by school teachers: a longitudinal study.*Information and Management*, 41(2), 227-241.
- Hung, S., Ku, C., & Chang, C. (2003). Critical factors of WAP services adoption: An empirical study. *Electronic Commerce Research and Applications*, 2(1), 42-60.
- Hussein, R., Selamat, H., & Abdul Karim, N. S. (2005). The impact of technological factors on information systems success in the electronic-government context. *The Second International Conference on Innovation in Information Technology (IIT'05).*
- Hussey, J., & Hussey, R. (1997). Business research: A practical guide for undergraduate and postgraduate students. New York: Palgrave.
- Igbaria, M., & Chakrabarti, A. (1990).Computer anxiety and attitude towards microcomputer use.*Behavior and Information Technology*, 9(3), 229-241.
- Igbaria, M., Guimaraes, 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., Zinatelli, N., Cragg, P., & Cavaye, A. L. M. (1997). Personal computing acceptance factors in small firms: A structural equation model. *MIS Quarterly*, 21(3), 279-305.
- Irani, Z., Themistocleous, M., & Love, P. E. D. (2003). The impact of enterprise application intergration on information system lifecycle. *Information and Management*, 41(2), 177-187.
- Jantan, M., Ramayah, T., & Chin, W. W. (2001). Personal computer acceptance by small and medium sized companies evidence from Malaysia. *Journal Management and Business*, 3(1), 1-14.
- Jaworski, B. J., & Kohli, A. K. (1991). Supervisory feedback: Alternative types and their impact on salespeople's performance and satisfaction. *Journal of Marketing Research*, 28(2), 190-201.
- Jeyaraj, A., Rottman, J. W., & Lacity, M. C. (2006). A review of the predictors, linkages, and biases in IT innovation adoption research. *Journal of InformationTechnology*, 21(1), 1-23.
- Jiang, J. J., Muhana, W. A., & Klein, G. (2000). User resistance and strategies for promoting acceptance across system types. *Information and Management*, 37(1), 25-36.
- Joaquin, A. M., Carlos, L. N., Carla, R. M., & Silvia, S. B. (2009). Key drivers of internet banking services use. *Online Information Review*, 33(4), 672-695.
- Jones, G. R. (2007). *Organizational Theory, Design, and Change*.(5thed.). New Jersey: Pearson International Edition. Upper Saddle River, New Jersey.
- Jones. C. M., McCarthy. R. V., Halawi. L., &Mujtaba, B. (2010).Utilizing the technology acceptance model to assess the employee adoption of information systems security measures.*Issues in Information Systems*, 11(1), 9-16.
- Joshi, K. (1991). A model of users' perspective on change: the case of information systems technology implementation. *MIS Quarterly*, 15(2), 229-242.
- Kamal, M. M. (2006). IT innovation adoption in the government sector: identifying the critical success factors. *Journal of Information Management*, 19(2), 192-222.
- Karahanna, E., & Straub, D. W. (1999). The psychological origins of perceived usefulness and ease-of-use.*Information and Management*, 35(3), 237-250.
- Karahanna, E., Straub, D. W., & Chervany, N. L. (1999).IT adoption across time.*MIS Quarterly*, 23(2), 183-213.
- Kartiko, P., Stewart, D., & Moore, G. (2003).Implementing a technology strategy in developing countries.The experience of the Indonesian roling stock industry.*Technological Forecasting & Social Change*, 70(2), 163-176.
- Katz, L. M., & Shapiro, C. (1986). Technology adoptions in the presence of network externalities. *Journal of Political Economy*, 94(4), 823-841.
- Kimberly, J. R., & Evanisko, M. (1981). Organizational innovation: The influence of individual organizational and contextual factors on hospital adoption of technological and administrative innovations. Academy of Management Journal, 24(4), 689-713.
- King, R. C., & Xia, W. (1997). Media appropriateness: Effects of experience on communication media choice. *Decision Sciences*, 28(4), 877-910.
- Korpelainen, E. (2011). *Theories of ICT system implementation and adoption A critical review*. Alto University, School of Science. Department of Industrial Engineering and Management Working Paper 2011, Helsinki 2011.

- Kraemer, L., Danziger, J. N., Dankle, D. E., & King, J. L. (1993). The usefulness of computer-based information to public managers. *MIS Quarterly*, 17(2), 129-148.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(1), 607-610.
- Kumar, R. (1996). Research methodology: A step by step guide for beginners. Longman.
- Laporan Tahunan bagi tahun 2010 Polis Diraja Malaysia, Bahagian Penyelidik dan Pembangunan, Jabatan Pengurusan Bukit Aman, Kuala Lumpur.
- Legris, P., Ingham, J., & Collerette. (2003). Why do people use information technology? A critical review of the technology acceptance model.*Information and Management*, 40(3), 191-204.
- Leonard-Barton, D. (1985). Experts as negative opinion leaders in the diffusion of a technological innovations. *Journal of Consumer Research*, 11(4), 914-926.
- Leonard-Barton, D. (1988). Implementation characteristics of organizational innovations. *Journal of Communication Research*, 15(5), 603-631.
- Leonard-Barton, D., & Deschamps, I. (1988).Managerial influence in the implementation of new technology.*Management Science*, 34(10), 1252-1265.
- Lewis, W., Agarwal, R., & Sambamurthy, V. (2003). Sources of influence on beliefs about information technology use: an empirical study of knowledge workers. *MIS Quarterly*, 27(4), 657-678.
- Liaw, S. S. (2002). Understanding user perceptions of world-wide web environment. *Journal of Computer Assisted Learning*, 18(2), 137-148.
- Liaw, S. S., & Huang, H. M. (2003). An investigation of user attitudes towards search engine as an information retrievel tool. *Computers in Human Behavior*, 19(6), 751-765.
- Lin, C., Hu, P. J., & Chen, H. (2004). Technology implementation management in law enforcement: COPLINK system usability and user acceptance evaluations. *Social Science Computer Review*, 22(1), 24-36.
- Lin, H. F., & Lee, G. G. (2004).Perceptions of senior managers toward knowledge sharing behaviour.*Management Decision*, 42(1), 108-125.
- Lin, J. C., & Lu, H. (2000).Towards an understanding of the behavioural intention to use a Web Site.*International Journal of Information Management*, 20(3), 197-208.
- Liu, Y., Li, H., & Carlsson, C. (2010). Factors driving the adoption of m-learning: An empirical study. *Computers and Education*, 55(3), 1211-1219.
- Lu, H. P., & Su, P. Y. J. (2009). Actors affecting purchase intention on mobile shopping web sites. *Internet Research*, 19(4), 442-458.
- Lu, J., Yu, C. S., Liu, C., & Yao, J. E. (2003). The technology acceptance model for wireless internet. *Internet Research*, 13(3), 206 222.
- Lucas, H. C., &Spitler, V. K. (1999). Technology use and performance: a field study of broker workstations. *Decision Sciences*, 30(2), 291-311.
- Madanmohan, T. R., Kumar, U., & Kumar, V. (2004). Import-led technological capability: A comparative analysis of Indian and Indonesian manufacturing firms. *Technovation*, 24(7), 979-993.
- Mahoney, M. L. (2011). An examination of the determinants of top management support of information technology projects. Doctoral dissertation of Stevens Institute of Technology.

- MCMC (2009).*Malaysian Communications and Multimedia Commision:* SKMM Industry Report 2009. Publication date: September 2009.
- Malaysian Communications and Multimedia Commission Act (1998) and the Communications and Multimedia Act (1998).
- Malhotra, N.K. (1996). The impact of the academy of marketing science on marketing scholarship: An analysis of the research published in JAMS. *Journal of the Academy of Marketing Science*, 24(4), 291-298.
- Manning, P. K. (2003). *Policing contingencies*. Chicago, IL: The University of Chicago Press.
- Manning, P. K. (2008). *The technology of policing: Crime Mapping, Information Technology, and the Rationality of Crime Control.* New York:NYU Press.
- Manueli, K., Latu, S., & Koh, D. (2007). *ICT adoption models*.20th Annual Conference of the National Advisory Committee of Computing Qualifications (NACCQ 2007). Nelson, New Zealand. Samuel Mann and Noel Bridgeman (ed.).
- Markus, M.L. (1987). Toward a 'critical mass' theory of interactive media: Universal access, iInterdependence and diffusion. *Communications Research*, 14(5), 491-511.
- Mathieson, K. (1991). Predicting user intensions: comparing the technology acceptance model with the theory of planned behaviour. *Information System Research*, 2(3), 173-191.
- Mathwick, C., Rigdon, E., & Malhotra, N. (2001). Experiental value conceptualization measurement and application in the catalog and internet shopping environment. *Journal of Retailing*, 77(1), 39-53.
- Melville, N., &Ramirez, R. (2008). Information technology innovation diffusion: An information requirement paradigm. *Information Systems Journal*, 18(3), 247-273.
- Meyers, M. (1997).Qualitative research in information system.*MIS Quarterly*, 21(2), 241-242.
- Miller, W. T., Kun, A. L., & Lenharth, W. H. (2004). *Consolidated advanced technologies for law enforcement program*. IEEE Intelligent Transportation Systems Conference. Washington, DC. October 3-6, 2004.
- Mirani, R., & King, W.R. (1994). Impacts of end-user and information center characteristics on end-user computing. *Journal of Management Information Systems*, 11(1), 141-166.
- Mohd Suki, N., Ramayah, T., & Mohd Suki, N. (2008). Internet shopping acceptance: Examining the influence of intrinsic versus extrinsic motivations. Direct marketing: *An international Journal*, 2(2), 97-110.
- Moon, J. W., & Kim, Y. G. (2001). Extending the TAM for a world-wide-web context. *Information & 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.
- Morris, G. M., & Dillon, A. (1997). The influence of user perceptions on software utilization: Application and evaluation of a theoretical model of technology acceptance. *IEEESoftware*, 14(4), 58-69.
- Myler, E., & Broadbent, G. (2006). ISO 17799: Standard for security. *Information Management Journal*, 40(6), 43-52.

- Ndubisi, N. O., & Jantan, M. (2003). Evaluating IS usage in Malaysian small and medium-sized firms using technology acceptance model. *Logistics Information Managemenet*, 16(6), 440-450.
- Ndubisi, N. O., Jantan, M., & Richardson, S. (2001). Is the technology acceptance model valid for entrepreneurs? Model testing and examining usage determinants. *Asian Academy of Management Journal*, 6(2), 31-54.
- Neuman, W. L. (1997). Social research methods. Qualitative and quantitative approaches (3rded.). MA: Allyn & Bacon.
- Ngai, E. W. T., Poon, J. K. L., & Chan, Y. C. (2005). Empirical examination of adoption of WebCT using TAM. *Computers and Education*, Article in Press.
- Ngai, E. W. T., Poon, J. K. L., & Chan, Y. H. C. (2007). Empirical examination of the adoption of WebCT using TAM. *Computers and Education*, 48(2), 250-267.
- Ngai, E. W. T., Poon, J. K. L., Chan, A., Chan, B., & Wu, W. (2009). *A Case analysis* of adoption of an *RFID-based garment manufacturing information* system. Pacific Asia Conference of Information Systems Proceedings 2009.
- Ngai, E., & Gunasekaran, A. (2004). Implementation of EDI in Hong Kong: an empirical analysis. *Industrial Management and Data System*, 104(1), 88-100.
- Noll, C. L., & Wilkins, M. (2002). Critical skills of IS professionals: A model for curriculum development. *Journal of Information Technology Education*, 1(3), 1-12.
- Noor, S. M. (2010). The moderating effect of organizational structure and quality practices on absortive capacity, technology compatibility and technology transfer relationship. Unpublished doctoral dissertation, Universiti Utara Malaysia.
- Norman, D. (2002). The design of everyday things: Basic Books New York.
- Norusis, M. J. (1999). Guide to data analysis. New Jersey: Prentice Hall.
- Nunn, S., & Quinet, K. (2002). Evaluating the effects of information technology on problem-oriented-policing: If it doesn't fit, must we quit? *Evaluation Review*, 26(1), 81-108.
- Nunnally, J.C. (1978). Psychometric Theory. New York, NY: McGraw Hill.
- Omoush, K. S. A., & Shaqrah, A. A. (2010). An empirical study of household internet continuance adoption among Jordanian users. *International Journal of Computer Science and Network Security*, 10(1), 32-44.
- Onwuegbuzie, A. J., & Daniel, L. (2002).Uses and misuses of the correlation coefficient.*Research in the Schools*, 9(2), 73-79.
- Orlikowski, W. J. (1993). Case tools as organizational change: Investigating incremental and radical changes in systems development. *MIS Quarterly*, 17(2), 309–341.
- Ozdemir, H. (2004). An examination of the need to establish cultural literacy in police administration. *Turkish Journal of Police Studies*, 6(4), 95-114.
- Pavlou, P. A. (2003). Consumer acceptance of electronic commerce, integrating trust and risk with the technology acceptance model.*International Journal of Electronic Commerce*, 7(3), 101-134.
- Phillips, L. A., Calantone, R., & Lee, M. (1994). International technology adoption: Behavior structure, demand certainty and certainty and certainty and culture. *The Journal of Business and Industrial Marketing*, 9(2), 16-32.

Plouffe, C. R., Hulland, J. S., & Vandenbosch, M. (2001). Research report: Richness versus parsimony in modeling technology adoption decisions - understanding merchant adoption of a smart card-based payment system. *Information Systems Research*, 12(2), 208-222.

Police Act, 1967 (Act 344)

- Porter, C. E., & Donthu, N. (2006). Using the technology acceptance model to explain how attitude determine internet usage: The role of perceived access barriers and demographics. *Journal of Business Research*, 50(5), 999-1007.
- Raaij, E. M. V., & Schepers, J. J. J. (2008). The acceptance and use of a virtual learning environment in China. *Computers & Education*, 50(5), 838-852.
- Ramayah, T. (2010). The role of voluntariness in distance education students' usage of a course website. *The Turkish Online Journal of Educational Technology*, 9(3), 96-105.
- Ramayah, T., & Lo, M. C. (2007).Impact of shared beliefs on "perceived usefulness" and "ease of use" in the implementation of an enterprise resource planning system.*Management Research News*, 30(6), 420-431.
- Ramayah, T., Ignatius, J., & Aafaqi, B. (2005). PC usage among students in private institution of higher learning: the moderating role of prior experience. *Educators and Education Journal*, 20(3), 131-152.
- Rawstorne, P. (2005). A systematic analysis of the theory of reasoned action, the theory of planned behavior and the technology acceptance model when applied to the prediction and explanation of information systems use in mandatory usage context.Doctoral thesis, The Department of Psychology, University of Wollongong, Australia.
- Regan, E. A., & O'Connor, B. N. (1994).End-user information systems, perspectives for managers and information systems professionals. Macmillan Publishing Company.
- Rogers, E.M. (2003). Diffusion of innovation. New York: Free Press.
- Rogers, E.M., & Shoemaker, F.F. (1971). Communication of innovations: A crosscultural approach. New York, The Free Press.
- Roscoe, J. T. (1975). *Fundamental research statistics for the behavioral sciences* (2nded.). Holt, Rinehart and Winston, New York.
- Russell, D. M., & Hoag, A. M. (2004). People and information technology in the supply chain: Social and organizational influences on adoption. *International Journal of Physical Distribution and Logistics Management*, 34(1), 102-121.
- Sandhu, K., & Corbitt, B. (2003). End-user control in web-based electronic services: A case study. 7th Pacific Asia Conference on Information Systems, 10 – 13 July, 2002. Adelaide, South Australia.
- Schatzberg, E. (2006). Technik comes to America: Changing meaning of technology before 1930. *Technology and Culture*, 47(7), 486-512.
- Schepers, J., & Wetzels, W. (2007). A meta-analysis of the technology acceptance model: investigating subjective norm and moderation effects. *Information and Management*, 44(1), 90-103.
- Schepers, J., Wetzels, M., & Ruyter, K. D. (2005). Leadership styles in technology acceptance: do followers practice what leaders preach? *Managing Service Quality*, 15(6), 496-508.

- Schillewaert, N., Ahearne, M.J., Frambach, R.T., & Moenaert, R.K. (2005). The adoption of information technology in the sales force. *Industrial Marketing Management*, 34(4), 323-336.
- Scupola, A. (2009). SMES' e-Commerce adoption: Perspectives from Denmark and Australia. *Journal of Enterprise Infirmation Management*, 22(1), 1-15.
- Sefnedi, S. (2007). The relationship between market orientation and export Performance : The mediation impact of export marketing management competency and the moderating effect of environmental factors. Doctoral thesis, Universiti Sains Malaysia.
- Sekaran, U. (2006). *Research methods for business: A skill building approach*. New York: John Wiley & Sons, Inc.
- Sekaran, U., &Bougie, R. (2010).*Research methods for business.A skill building approach* (5th ed.). West Sussex, United Kingdom: John Wiley and Sons, Ltd, Publication.
- Selamat, M. H., & Rawashdeh, A. A. (2009). Towards a conceptual model of XBRL diffusion. Paper presented at the 18th Asian Academy of Management International Conference, Kuantan, Malaysia.
- Selamat, M. H., Dwivedi, Y. K., Abd Wahab, M. S., Mat Samsudin, M. A., Williams, M. D., & Lal, B. (2008). *Factors affecting Malaysian accountants'* broadband adoption and use behavior. Paper presented at the 14th Americas Conference of Information Systems (AMCIS 2008), Toronto, Ontario.
- Sharma, A. (2007). Strategic institutional and radicalness factors in the evaluation, adoption and early integration of RFID: An empirical investigation of current and future adopters. Ph.D. Dissertation, Emory University.
- Sharma, S., Durand, R. M., & Gur-Arie, O. (1981).Indentification and analysis of moderator variables.*Journal of Marketing Research*, 18(3), 291-300.
- Sim, J. J., Tan, G. W. H., Ooi, K. B., & Lee, V. H. (2011). Exploring the individual characteristics on the adoption of Broadband: An empirical Analysis.*International Journal of Network and Mobile Technologies*, 2(1), 1-14.
- Sitkin, S. B., & Pablo, A. L. (1992).Reconceptualizing the determinants of risk behavior.*Academy of Management Review*, 17(1), 9-38.
- SitiRahayaAriffin&SalbiahMohamad. (1996). Pemikiran Guru cemerlang: kesanterhadapprestasipengajaran. In Ahmad, F., Aziz, J. (2009).Students' Perception of the Teachers' Teaching of Literature Communicating and Understanding Through the Eyes of the Audience. *European Journal of Social Sciences*, 7(3), 17-26.
- Soong, M. H. B., Chan, H. C., Chua, B. C., & Loh, K. F. (2001). Critical success factors for on-line course resources. *Computers and Education*, 36(2), 101-120.
- Sorenko, A. (2008). A model of user adoption of interface agents for email notification. *Interacting with Computers*, 20(1), 461-472.
- Straub, D., Boudreau, M., & Gefen, D. (2004). Validation guidelines for it positivist research. Communications of the Association for Information Systems, 13(24), 380-427.
- Sun, H., & Zhang, P. (2006). The role moderating factors in user technology acceptance. *International Journal of Human-Computer Studies*, 64(1), 53-78.

- Sussman, J. M. (2000). Ideas on complexity in systems twenty views.Professor of civil and environmental engineering and engineering systems, Massachusetts Institute of Technology.
- Tabachnick, G. B., & Fidell, S. L. (2007). *Using multivariate statistics* (5th ed.). New York: Pearson Educational inc.
- Tan, M.,& Teo, T. (2000).Factors influencing the adoption of internet banking. *Journal of the Association for Information Systems*, 1(5), 22-38.
- Tarde, G. D., & Parson, E. W. C. (1903).*The laws of imitation*. New York. H. Holt and Company.
- Taylor, N. J. (2007). Public grid computing participation: an exploratory study of determinants. *Information & Management*, 44(1), 12-21.
- Taylor, S.,& Todd, P. (1995). Assessing it usage: the role of prior experience. *MIS Quarterly*, 19(4), 561-70.
- Teo, T. (2009). The impact of subjective norm and facilitating conditions on preservice teschers' attitude toward computer use: A structural equation modelling of an extended technology acceptance model. *Journal of Educational Computing Research*, 40(1), 89-109.
- Teo, T., Luan, W. S., & Sing, C. C. (2008). A cross-cultural examination of the intention to use technology between Singaporean and Malaysian pre-service teachers: An application of the technology acceptance model (TAM). *Educational Technology and Society*, 11(4), 265-280.
- The Report of the Royal Commission to enhance the operation and management of the Royal Malaysia Police. Kuala Lumpur: Percetakan Nasional Malaysia Berhad.
- Themistocleous, M., Irani, Z., & Kuljis, J. (2004). Extending the information system lifecycle through emterprise application integration: A case study experience. Proceedind of the 37th Annual Hawaii International Conference on System Science (HICSS 04) – Track 8, Big Island, Hawaii, 1-8.
- Thiesse, F., Staake, T., Schmitt, P., & Fleisch, E. (2011). The rise of the "next-generation bar code": an international RFID adoption study. *Supply Chain Management: An International Journal*, 16(5), 328-345.
- Thompson, R. L., Higgins, C. A., & Howell, J. M. (1994).Influence of experience on personal computer utilization: testing a conceptual model. *Journal of Management Information Systems*, 1(6), 167-187.
- Thompson, R. L., Higgins, C. A., &Howell, J. M. (1991). Personal computing: Toward a conceptual model of utilization. *MIS Quarterly*, 15(1), 124-143.
- Ticehurst, G. W., & Veal, A. J. (2000). Business research methods: A managerial approach. Pearson Education Australia, NSW.
- Tornatzky, L. G., & Klein, K. J. (1982). Innovation characteristics and innovation adoption-implementation: A meta-analysis of findings. *IEEE Transactions on Engineering Management*, 29(1), 28-45.
- Trevino, L. K., Daft, R. L., & Lengel, R. H. (1990). Understanding managers' media choices: a symbolic interactionist perspective. In Fulk, J., & Steinfield, C.W. (ed.). Organizations and Communications Technologies. Sage Publications. Newbury Park.
- Trial run of upgraded police radio network by month-end. (2010, April 3). *The Star*.Retrieved April 3, 2010, from http://thestar.com.my/news.
- Triandis, H. C. (1977). Interpersonal Behavior, Brooke/Cole Monterey, CA.

- Troshani, I., & Doolin, B. (2007). Innovation diffusion: A stakeholder and social network view. *European Journal of Innovation Management*, 10(2), 176-200.
- Valente, T. W. (1995). *Network models of the diffusion of innovation*. Cresskill, New Jersey: Hampton Press, Inc.
- Venkatesh, V. (2000). Determinants of perceived ease of use: integrating control, intrinsic motivation, and emotion into the technology acceptance model. *Information Systems Research*, 4(4), 342-65.
- Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and research agenda on interventions. *Decision Sciences*, 39(1), 273-315.
- Venkatesh, V., & Davis, F. D. (1996). A model of antecedents of perceived ease of use: Development and test. *Decision Science*, 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(2),186-204.
- Venkatesh, V., & Morris, M. G. (2000) Why do not men ever stop to ask for directions? Gender, social influence, and their role in technology acceptance and usage behavior.*MIS Quarterly*, 24 (1), 115-139.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425-478.
- Venkatraman, M. P., & Price, L. L. (1990).Differentiating between cognitive and sensory innovativeness: concepts, measurements, and implications.*Journal of Business Research*, 20(1), 293-315.
- Vijayaraman, B. S., & Ramakrishna, H. V. (1990). A comparative analysis of successful and unsuccessful information centers. *Information and Management*, 19(3), 199-209.
- Vroom, V. H. (1964). Work and motivation. Wiley, New York, NY.
- Walczuch, R., Lemmink, J., & Streukens, S. (2007). The effect of service employees' technology readiness on technology acceptance. *Information and Management* 44(1), 206-215.
- Wamba, S. F., & Chatfield, A. T. (2009). A contingency model for creating value from RFID supply chain network projects in logistics and manufacturing environments. *European Journal Information Systems*, 18(1), 615.636.
- Wang, H. Y., & Wang, S. H. (2010).Predicting mobile hotel reservations adoption: Insight from a perceived value standpoint. *International Journal of Hospitality Management*, 29(1), 598-608.
- Warren, M. (2004). Farmers online: Drivers and impediments in adoption of internet in UK agricultural businesses. *Journal of Small Business and Enterprise Development*, 11(3), 371-381.
- Weinberg, B. D., Berger, P. D., & Hanna, R. C. (2003). A belief undating process for minimizing waiting time in multiple waiting-time events: Application in website designs. *Journal of Interactive Marketing*, 17(4), 24-37.
- Wiersema, M. F., & Bantel, K. A. (1992). Top management team. Journal of Applied Psychology, 81(6), 680-693.
- Wiersma, W. (1993).*Research methods in education: An introduction* (5thed.). Boston: Allyn & Bacon.

- Willson, P., & Pollard, C. (2009). Exploring IT governance in theory and practice in a large multi-national organization in Australia. *Information Systems Management*, 26(2), 153-163.
- Winniford, M., Conger, S., & Erickson-Harris, L. (2009). Confusion in the ranks: IT service management practice and terminology. *Information Systems Management*, 26(2), 153-163.
- Wood, S. L., & Swait, J. (2002). Psychological indictors of innovation adoption: Cross-classification based on need for cognition and need for change. *Journal* of Consumer Psychology, 12(1), 1-13.
- WRC (2007).*World Radiocommunication Conference* (Geneva, 2007). Geneva, Switzerland22 October 16 November, 2007.
- Wu, J., & Lederer, W. (2009). A meta-analysis of the role of environment-based voluntariness in information technology acceptance. *MIS Quarterly*, 33(2), 49-432.
- Xia, W. D., & Lee, G. H. (2000). *The influence of persuasion, training and experience on user perceptions and acceptance of IT Innovation*, Association for Conference on Infromation Systems, Brisbane, Australia, 371-384.
- Yalcinkaya, R. (2007). Police officers' adoption of information technology: A case study of the Turkish POLNET system. Doctoral dissertation, University of North Texas.
- Yanga, H., & Yoo, Y. (2004). It's all about attitude: Revisiting the technology acceptance model. *Decision Support Systems*, 38(1), 19-31.
- Young, C. E. (2010). Using the technology acceptance model (TAM) to conduct an analysis of user perceptions. Doctoral dissertation, Walden University.
- Young, H. (2006). *The diffusion of innovations in social networks*. The economy as an evolving complex system III: Current Perspectives and Future Directions, 267.
- Zain, M., Rose, R. C., Abdullah, I., &Masrom, M. (2005). The relationship between information technology acceptance and organizational agility in Malaysia. *Information and Management*, 42(1), 829-839.
- Zhu, K., Kraemer, K., & Xu, S. (2003). Electronic business adoption by European firms: a cross-country assessment of the facilitators and inhibitors. *European Journal of Information Systems*, 12(3), 251-268.
- Zikmund, W.G. (1994). Exploring marketing research (5thed.). TX: The Dryden Press.
- Zmud. R. W. (1979). Individual differences and MIS success: a review of the empirical literature. *Management Science*, 25(10), 960-978.
- Zolait, A. H. S., Mattila, M., & Sulaiman, A. (2009). The effect of user's informationbased readiness on innovation acceptance. *International Journal of Bank Marketing*, 27(1), 76-100.