MOBILE TECHNOLOGY ACCEPTANCE AMONG ENGLISH LANGUAGE ACADEMICS AT UNIVERSITI TEKNOLOGI MARA

WAN NAZIHAH BINTI WAN MOHAMED

DOCTOR OF PHILOSOPHY
UNIVERSITI UTARA MALAYSIA
2018

Awang Had Salleh
Graduate School
of Arts And Sciences

Universiti Utara Malaysia

PERAKUAN KERJA TESIS / DISERTASI
(Certification of thesis / dissertation)

Kami, yang bertandatangan, memperakukan bahawa
(We, the undersigned, certify that)

WAN NAZIHAH WAN MOHAMED

calon untuk Ijazah **PhD**
(candidate for the degree of)

telah mengemukakan tesis / disertasi yang bertajuk:
(has presented his/her thesis / dissertation of the following title):

"MOBILE TECHNOLOGY ACCEPTANCE AMONG ENGLISH LANGUAGE ACADEMICS AT UNIVERSITI TEKNOLOGI MARA"

seperti yang tercatat di muka surat tajuk dan kulit tesis / disertasi.
(as it appears on the title page and front cover of the thesis / dissertation).

Bahawa tesis/disertasi tersebut boleh diterima dari segi bentuk serta kandungan dan meliputi bidang ilmu dengan memuaskan, sebagaimana yang ditunjukkan oleh calon dalam ujian lisan yang diadakan pada : ***04 Mei 2017.***
That the said thesis/dissertation is acceptable in form and content and displays a satisfactory knowledge of the field of study as demonstrated by the candidate through an oral examination held on: ***May 04, 2017.***

Pengerusi Viva: *(Chairman for VIVA)*	**Assoc. Prof. Dr. Arsaythamby a/l Veloo**	Tandatangan *(Signature)*
Pemeriksa Luar: *(External Examiner)*	**Prof. Dr. Wan Mohd Fauzy Wan Ismail**	Tandatangan *(Signature)*
Pemeriksa Dalam: *(Internal Examiner)*	**Dr. Byabazaire Yusuf**	Tandatangan *(Signature)*
Nama Penyelia/Penyelia-penyelia: *(Name of Supervisor/Supervisors)*	**Assoc. Prof. Dr. Ahmad Jelani Shaari**	Tandatangan *(Signature)*

Tarikh:
(Date) ***May 04, 2017***

Permission to Use

In presenting this thesis in fulfilment of the requirements for a postgraduate degree from Universiti Utara Malaysia, I agree that the University Library may make it freely available for inspection. I further agree that permission for the copying of this thesis in any manner, in whole or in part, for scholarly purpose may be granted by my supervisor(s) or, in their absence, by the Dean of Awang Had Salleh Graduate School of Arts and Sciences. It is understood that any copying or publication or use of this thesis or parts thereof for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to Universiti Utara Malaysia for any scholarly use which may be made of any material from my thesis.

Requests for permission to copy or to make other use of materials in this thesis, in whole or in part, should be addressed to:

Dean of Awang Had Salleh Graduate School of Arts and Sciences
UUM College of Arts and Sciences
Universiti Utara Malaysia
06010 UUM Sintok

Abstrak

Pelaksanaan teknologi di dalam pengajaran dan pembelajaran telah mencapai kemajuan melalui penggunaan peranti teknologi mudah alih menggunakan rangkaian komunikasi tanpa wayar. Peningkatan luar biasa pengguna telefon pintar membolehkan universiti mengamalkan pengajaran dan pembelajaran mudah alih yang fleksibel tanpa mengira tempat dan masa. Namun begitu, pendekatan ini memerlukan para pendidik melengkapkan diri mereka dengan kemahiran menggunakan alat teknologi mudah alih. Berdasarkan literatur penerimaan teknologi, tujuan kajian ini adalah mengenal pasti faktor yang mempengaruhi tingkah laku pensyarah bahasa Inggeris dari Akademi Pengajian Bahasa untuk menerima pakai peranti teknologi mudah alih ini. Mengaplikasikan *Technology Acceptance Model* (TAM), penyelidikan ini menggunakan tiga pembolehubah luar iaitu subjektif norma, efikasi kendiri dan pengalaman teknologi mudah alih; tiga faktor utama model TAM iaitu tanggapan kegunaan, tanggapan kemudahan penggunaan dan tingkah laku penggunaan; serta tiga moderator utama iaitu umur, jantina dan budaya university. Sebanyak 337 soal selidik daripada 13 kampus negeri Universiti Teknologi MARA (UiTM) telah dianalisis menggunakan pendekatan *Structural Equation Modelling* (SEM) dengan perisian *Analysis of Moment Structures* (AMOS). Keputusan signifikan diperolehi bagi hubungan utama model TAM kecuali pembolehubah efikasi kendiri yang tidak mempengaruhi tanggapan kegunaan sementara tanggapan kemudahan penggunaan tidak mempunyai hubungan dengan tingkah laku penggunaan peranti teknologi mudah alih. Pembolehubah tanggapan kegunaan pula adalah faktor pengantara untuk subjektif norma dan pengalaman teknologi mudah alih dengan tingkah laku penggunaan. Hanya faktor umur memberi kesan moderator antara tanggapan kegunaan dan tingkah laku penggunaan. Budaya universiti tidak menunjukkan kesan moderator namun kajian telah mengenal pasti unsur yang mempengaruhi budaya kerja pensyarah. Berdasarkan penemuan penyelidikan, UiTM disarankan mengadakan bengkel latihan serta menerangkan dengan jelas dasar universiti mengenai penggunaan peranti teknologi mudah alih dalam aktiviti pengajaran dan pembelajaran. Inisiatif UiTM akan membantu para pendidik menggunakan peranti teknologi mudah alih bagi mencapai aspirasi universiti dan negara untuk menggunakan teknologi dalam mencapai pengajaran dan pembelajaran berkualiti di Malaysia.

Kata Kunci: Peranti teknologi mudah alih, *Technology Acceptance Model*, Pensyarah bahasa Inggeris, Budaya universiti

Abstract

Implementing technology in teaching and learning is advanced by mobile technology devices via wireless communication network. Extraordinary growth of mobile phone users has led to mobile learning that enables universities to implement teaching and learning practices of anywhere and anytime. However, this requires that educators equip themselves with relevant skills in using mobile technology devices. Based on technology acceptance literature, this study aims to identify the determinants that affect behavioural intention of the English language lecturers in Academy of Language Studies to adopt mobile technology devices. Applying Technology Acceptance Model (TAM), the research model formulated three external variables; subjective norm, self-efficacy and prior mobile technology experience; three main determinants of perceived usefulness, perceived ease of use and behavioural usage; and three key moderators of age, gender and university culture. A total of 337 questionnaires from 13 state campuses of Universiti Teknologi MARA (UiTM) were analysed based on Structural Equation Modelling (SEM) approach using Analysis of Moment Structures (AMOS). Significant findings were found for the main relationships except for self-efficacy which did not influence perceived usefulness while perceived ease of use had no relationship with behavioural intention in using mobile technology devices. Perceived usefulness was a mediator for subjective norm and prior mobile technology experience towards behavioural intention. However, only age moderated the relationship between perceived usefulness and behavioural intention. Although university culture did not display moderation effect, the study identified the elements that influence the working culture of the lecturers. Based on the findings, it is proposed that UiTM conducts training workshops and clearly describes the policy of the university regarding mobile devices usage in teaching and learning practices. UiTM's initiative will assist educators in using mobile technology devices towards fulfilling the aspiration of the university and nation to utilize ICT in achieving quality teaching and learning in Malaysia.

Keywords: Mobile technology device, Technology Acceptance Model, English language lecturers, University culture

Acknowledgement

In the name of Allah, the Beneficent and the Most Merciful. Peace be upon the Prophet Muhammad (pbuh) and his companions. Firstly, all praises goes to the almighty Allah as with His compassion and blessings, I am able to complete this thesis.

My journey in the search of knowledge and the accomplishment of this dissertation had been long and difficult. It could have not been achieved without the support of many persons and authorities. A heartfelt gratitude goes to my supervisor, Associate Professor Dr. Ahmad Jelani bin Shaari, for his assistance and guidance towards the development and completion of this thesis. His great patience had comforted me the passion and confidence towards this PhD experience.

A sincere appreciation is due to the English language lecturers in Academy of Language Studies from all campuses who had completed the questionnaires for this research. A huge amount of thanks also goes to my colleagues and friends in UiTM who had assisted me in various ways through their encouragement, advices, and technical support either for data collection and analysis. Their cooperation and help had enabled me to fully understand the rigorous and complex process of conducting a research.

Finally, I fully owe my deepest gratitude to my family members for their love, support and prayers in order to make my dream come true. To my husband, Nik Mohamed bin Salleh, thank you for being a wonderful and understanding person. To my children, Hafiz, Maisarah, Mardhiah and Munirah, may this be your inspiration towards achieving your own goals. To my late parents, mama and baba, I dedicate this work to both of you. May Allah bless us.

Table of Contents

List of Tables

List of Figures

List of Appendices

List of Abbreviations

AGFI	:	Adjusted goodness of fit index
AMOS	:	Analysis of Moment Structures
ATT	:	Attitude
AVE	:	Average Variance Extracted
BI	:	Behavioural intention
CFA	:	Confirmatory Factor Analysis
CFI	:	Comparative fit index
DIT	:	Diffusion of Innovation Theory
ESL	:	English as a Second Language
GOF	:	Goodness-of-fit
GPS	:	Global Positioning System
ICT	:	Information and communication technologies
ITM	:	Institut Teknologi MARA
MAR	:	Missing at random
MCAR	:	Missing completely at random
ME	:	Mobile technology experience
ML	:	Maximum likelihood
MMS	:	Multimedia Messaging System
NFI	:	Normed fit index
OLS	:	Ordinary Least Square
PDA	:	Personal Digital Assistants
PE	:	Perceived ease of use
PNFI	:	Parsimony normed fit index
PU	:	Perceived usefulness
RMR	:	Root mean square residual
RMSEA	:	Root mean square error of approximation
SE	:	Self-efficacy
SEM	:	Structural Equation Model
SMS	:	Short Message Service
SN	:	Subjective norm

SPSS	:	Statistical Package for the Social Sciences
SRMR	:	Standardized root mean residual
TAM	:	Technology Acceptance Model
TLI	:	Tucker-Lewis index
TPB	:	Theory of Planned Behaviour
TRA	:	Theory of Reasoned Action
UC	:	University culture
UTAUT	:	Unified Theory of Acceptance and Use of Technology
UiTM	:	Universiti Teknologi MARA
WAP	:	Wireless Application Protocol
Wi-Fi	:	Wireless Fidelity

CHAPTER ONE
INTRODUCTION

1.1 Research Background

Technology is the process in which we attempt to expand human potential to improve and control our world and it surrounds our daily lives either in homes or in workplaces (Akour, 2009). Today, learning institutions have integrated technology in its activities and technology has expanded dramatically. However, the implementation of these technologies will only take place if the students and educators of learning institutions accept and use these technologies.

Mobile technology is one of the advancement in technologies and it refers to portable technology that can be moved from one place to another without any loss (Junior & Coutinho, 2008). Portable computers like laptops, Personal Digital Assistants (PDA), iPods, and mobile devices such as smart phones are some of the examples of mobile technology devices. The utilization of these mobile devices is enhanced through the usages of communication technologies which include wireless communication network or Wi-Fi, 3G mobile network, and Bluetooth.

At present, it has become a need to own a mobile device such as a mobile phone because it allows communication and access to data and information in any moment or place. In Malaysia, there is an extraordinary growth of mobile phone users. Due to the rapid decline in the cost of mobile phones and subscription plans, Malaysian cellular telephone subscriptions increased from 42.9 million subscribers in 2013 to

The contents of the thesis is for internal user only

REFERENCES

Abachi, H. R., & Muhammad, G. (2014). The impact of m-learning technology on students and educators. *Computers in Human Behaviour, 30*, 491-496.

AbuSa'aleek, A. O. (2014). A review of emerging technologies: Mobile assisted language learning (MALL). *Asian Journal of Education and e-learning, 2*(6), 469-475.

Academy of Language Studies. (2015). *About Us Introduction.* Retrieved from http://apb.uitm.edu.my/v1/index.php?option=com_content&view=article&id=46&Itemid=56

Adesope, O. O., Olubunmi, S. S., & McCracken, J. J. (2007). Implementing mobile learning in developing countries: Prospects and challenges. In C. Montgomerie & J. Seale (Eds.) *Proceedings of the 19th World Conference on Educational Multimedia, Hypermedia & Telecommunications (ED-MEDIA)* (pp. 1249-1254). Vancouver, Canada: Association for the Advancement of Computing in Education (AACE).

Afendi Hamat, Mohamed Amin Embi, & Abdul Halim Sulaiman. (2011). Learning management systems in Malaysian higher education institutions. In Mohamed Amin Embi (Ed.), *e-Learning in Malaysian higher education institutions: Status, trends & challenges*. Putrajaya: Department of Higher Education, Ministry of Higher Education.

Aguirre-Urreta, M. I., & Marakas, G. M. (2010). Is it really gender? An empirical investigation into gender effects in technology adoption through the examination of individual differences. *Human Technology, 6*(2), 155-190.

Ahmad Redzuan Abdul Rahman, & Soraya Mohd Nashir. (Eds.). (2010). *Prospectus 2010 preparation for life.* Shah Alam: Universiti Teknologi MARA.

Ajzen, I. (1991). The theory of planned behaviour. *Organizational Behaviour and Human Decision Processes, 50*, 179-211.

Ajzen, I., & Fishbein, M. (2005). The influence of attitudes on behaviour. In D. Albarracín, B. T. Johnson & M. P. Zanna (Eds.), *The handbook of attitudes* (pp. 173-221). Mahwah, NJ: Erlbaum.

Akour, H. (2009). *Determinants of mobile learning acceptance: An empirical investigation in higher education.* (Doctoral dissertation). Retrieved from ProQuest LLC (ED518526).

Alemi, M. (2016). General impacts on integrating advanced and modern technologies on teaching English as a foreign language. *International Journal on Integrating Technology in Education, 5*(1), 13-25.

Algahtani, A. F. (2011). *Evaluating the effectiveness of the e-learning experience in some universities in Saudi Arabia from male students' perceptions*, Durham theses, Durham University. Retrieved from http://etheses.dur.ac.uk/3215/

Al-Husain, D., & Hammo, B. H. (2015). Investigating the readiness of college students for ICT and mobile learning: A case study from King Saud University. *International Arab Journal of e-Technology, 4*(1), 48-55.

Anuwar Ali. (2004). *Issues and Challenges in Implementing e-Learning in Malaysia*. Retrieved from http://asiapacific-odl.oum.edu.my/C33/F80.pdf

Arkorful, V., & Abaidoo, N. (2015). The role of e-learning, advantages and disadvantages of its adoption in higher education. *International Journal of Instructional Technology and Distance Learning, 12*(1), 29-42.

Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology, 40*, 471-499.

Arning, K., & Ziefle, M. (2007). Understanding age differences in PDA acceptance and performance. *Computers in Human Behaviour, 23*, 2904-2927.

Ary, D., Jacobs, L. C., Razavieh, A., & Sorensen, C. (2006). *Introduction to research in education* (7th ed.). Belmont, CA: Thomson Wadsworth.

Azlan Abdul Aziz, Posiah Mohd Isa, Nor Adura Endut, Siti Rahayu Abdul Aziz, & Mohd Nor Hajar Hasrol. (2009, Dec). *e-Learning for Universiti Teknologi MARA Malaysia (UiTM): Campus wide implementation and accomplishments.* Paper presented at the 2nd International Conference on e-Learning (ICEL), Shah Alam, Malaysia.

Baggaley, J. P. (2004). M-learning how to m-teach. *Diverse Newsletter*. Retrieved from http://csalt.lancs.ac.uk/diverse/diversenl1104jb1.htm

Bahrani, T. (2011). Mobile phones: Just a phone or a language learning device? *Cross-Cultural Communication, 7*(2), 244-248.

Balasundaram, S. R., & Ramadoss, B. (2007). SMS for questioning and answering in the m-learning scenario. *Journal of Computer Science. 3*(2), 119-121.

Bandura, A. (1982). Self-efficacy mechanism in human agency. *American Psychologist, 37*(2), 122-147.

Barker, A., Krull, G., & Mallinson, B. (2005, Oct). *A proposed theoretical model for m-learning adoption in developing countries.* Paper presented at the 4th World Conference on mLearning, Cape Town, South Africa. Retrieved from http://mlearn.org/mlearn2005/CD/papers/Barker.pdf

Barreh, K. A., & Zoraini Wati Abas. (2015). Students' attitudes and perceptions toward the effectiveness of mobile learning in university of Djibouti *International Journal of Education and Research, 3*(1), 601-612.

Behera, S. K. (2013). E- and M-learning: A comparative study. *International Journal of New Trends in Education and Their Implications, 4*(3), 65-78.

Berita Pejabat Bendahari. (2012). *Perutusan tahun baharu bendahari UiTM 2012 - "From usual to unusual business" Ke arah memperkasakan pengurusan kewangan universiti".* Retrieved from http://myfinancial.uitm.edu.my/uitm/news.nsf/all/CDF7DD9B320610CB482579AA0021B4D6?OpenDocument

Bolt, M. A. (1999). *The social cognitive model for computer training: an experimental investigation.* (Doctoral dissertation). Virginia Polytechnic Institute and State University. Retrieved from http://hdl.handle.net/10919/26736

Boone Jr., H. N., & Boone, D. A. (2012). Analyzing Likert data. *Journal of Extension, 50*(2), Article No 2TOT2.

Bozdogan, D. (2015). MALL revisited: Current trends and pedagogical implications. *Procedia Social and Behavioural Sciences, 195*, 932-939.

Bright, L. K., & Yang, J. F. (2004). Technology development challenges: Accommodating east/west cultural differences and similarities. In L. Cantoni & C. McLoughlin (Eds.). *Proceedings of the 16th World Conference on Educational Multimedia, Hypermedia & Telecommunications (ED-MEDIA)* (pp. 4282-5287). Vancouver, Canada: Association for the Advancement of Computing in Education (AACE).

Brown, L. (2008). *Using mobile learning to teach reading to ninth-grade students*. (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses (3330949)

Brown, T. H. (2005). Towards a model for m-Learning in Africa. *International Journal on Elearning. 4*(3), 299-315.

Burton-Jones, A., & Hubona, G. S. (2006). The mediation of external variables in the technology acceptance model. *Information & Management, 43*, 706-717.

Byrne, B. M. (2010). *Structural equation modeling with AMOS: Basic concepts, applications, and programming* (2nd ed.). New York NY: Routledge.

Chapin, A. (2009, March). *iPods and second language acquisition*. Paper presented at AcademiX 2009 Conference, Cambridge, MA. Retrieved from http://segueproject.org/ipods/files/2005/01/iPods-ls02.pdf

Che, P. C., Lin, H. Y., Jang, H. C., Lien, Y. N., & Tsai, T. C. (2009). A study of English mobile learning applications at National Chengchi University. *International Journal of Distance Education Technologies, 7*(4), 38-60.

Chen, C. J. (2014). Using concept mapping instruction in mobile phone to learning English vocabulary. *Creative Education, 5*(1), 4-6.

Chen, C. M., & Hsu, S. H. (2008). Personalised intelligent mobile learning system for supporting effective English learning. *Educational Technology & Society, 11*(3), 153-180.

Chen, H. R., & Tseng, H. F. (2012). Factors that influence acceptance of web-based e-learning systems for the in-service education of junior high school teachers in Taiwan. *Evaluation and Program Planning, 35*, 398-406.

Chen, Y. C., Lin, Y. C., Yeh, R. C., & Lou, S. J. (2013). Examining factors affecting college students' intention to use web-based instruction systems: Towards an integrated model. *The Turkish Online Journal of Educational Technology, 12*(2), 111-121.

Cheng, Y. M. (2014). Exploring the intention to use mobile learning: The moderating role of personal innovativeness. *Journal of Systems and Information Technology, 16*(1), 40-61.

Chin, L. G., & Vimala Balakrishnan. (2017). Predicting acceptance of mobile technology for aiding student lecturer interactions: An empirical study. *Australasian Journal of Educational Technology, 33*(2), 143-158.

Chinnery, G. M. (2006). Emerging technologies - Going to the MALL: Mobile assisted language learning. *Language Learning & Technology, 10*(1), 9-16.

Chun, H., Lee, H., & Kim, D. (2012). The integrated model of smartphone adoption: Hedonic and utilitarian value perceptions of smartphones among Korean college students. *Cyberpsychology, Behavior, and Social Networking, 15*(9), 473-479.

Chwo, S. M. G., Marek, M. W., & Wu, W. C. V. (2016). Curriculum integration of MALL in L1/L2 pedagogy: Perspectives in research. *Educational Technology & Society, 19*(2), 340-354.

Clarke, P., Keing, C., Lam, P., & McNaught, C. (2008). Using SMSs to engage students in language learning. In E. R. Weipp & J. Luca (Eds.), *Proceedings of the 20th Annual World Conference on Educational Multimedia, Hypermedia and Telecommunications(ED-MEDIA)* (pp. 6132-6141). Chesapeake, VA: Association for the Advancement of Computers in Education (AACE).

Cobcroft, R., Towers, S., Smith, J., & Bruns, A. (2006). Mobile learning in review: Opportunities and challenges for learners, teachers and institutions. *Proceedings of Online Learning and Teaching (OLT) Conference* (pp. 21-30). Brisbane: Queensland University of Technology.

Cochrane, T. (2007). Mobile teaching styles. In A. Burns, J. Smith & S. Towers (Eds.), *Creating mobile learning* (pp. 1-15). New York, NY: Peter Lang Publishers.

Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education* (6th ed.). London: Routledge.

CompTIA. (2013). *Generational research on technology and its Impact in the workplace*. United States: CompTIA Properties LLC. Retrieved from http://www.unify.com/~/media/internet-2012/documents/report/CompTIA-Generational-Study.pdf

Conci, M., Pianesi, F., & Zancanaro, M. (2009). Useful, social and enjoyable: Mobile phone adoption by older people. *Lecture Notes in Computer Science, 5726*, 63-76.

Cooper, R. B. (1994). The inertial impact of culture on IT implementation. *Information & Management, 27*(1), 17-31.

Corbeil, R., Pan, C., Sullivan, M., & Butler, J. (2007). Enhancing e-learning through m-learning: Are you ready to go mobile? *Technology and Teacher Education Annual, 1*(6), 273-280.

Costabile, M., De Angeli, C., Lanzilotti, R., Ardito, C., Buono, P., & Pederson, T. (2008). Explore! Possibilities and challenges of mobile learning. *Proceedings of the ACM CHI Conference on Human Factors in Computing Systems* (pp. 145-154). New York, NY: Association for Computing Machinery Inc.

Dabbagh, N. (2005). Pedagogical models for e-learning: A theory-based design framework. *International Journal of Technology in Teaching and Learning, 1*(1), 25-44.

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. (1993). User acceptance of information technology: System characteristics, user perception and behavioural impacts. *International Journal of Man-Machine Studies, 38*(3), 475-487.

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 comparison of two theoretical models. *Management Science, 35*(8), 982-1003.

Dawson, J. F. (2013). Moderation in management research: What, why, when, and how. *Journal of Business and Psychology.* doi:10.1007/s10869-013-9308-7

de Freitas, S., & Levene, M. (2003). Evaluating the development of wearable devices, personal data assistants and the use of other mobile devices in further and higher education institutions. *JISC Technology and Standards Watch Report: Wearable Technology, 3*(5).

Devadoss, K. (2011). Utility of mobile phones in English classes. *Language in India, 11*(12), 547 - 551.

Dewan Rakyat. (2006). *Dewan rakyat parlimen kesebelas penggal ketiga mesyuarat pertama.* Retrieved from http://www.parlimen.gov.my/files/hindex/pdf/DR-26042006.pdf

Dube, J. (2012, May 8). *Why smartphones are the future of social networking*. Retrieved from https://www.forbes.com/sites/jondube/2012/05/08/why-smartphones-are-the-future-of-social-networking/#2bac861b5d4f

Educause Learning Initiative. (2005). *7 things you should know about podcasting*. Retrieved from http://net.educause.edu/ir/library/pdf /ELI7003.pdf

Eichhorn, B. R. (2014, October 5-7). *Common method variance techniques*. Paper presented at the MWSUG 2014 Annual Conference, Chicago, Illinois. Retrieved from http://www.mwsug.org/proceedings/2014/AA/MWSUG-2014-AA11.pdf

Eteokleous, N., & Ktoridou, D. (2009). Investigating mobile devices integration in higher education in Cyprus: Faculty perspectives. *International Journal of Interactive Mobile Technologies (iJIM), 3*(1), 38-48.

Fairchild, A. J., & McQuillin, S. D. (2010). Evaluating mediation and moderation effects in school psychology: A presentation of methods and review of current practice. *Journal of School Psychology, 48*, 53-84.

Fan, S., Radford, J., & Fabian, D. (2016). A mixed-method research to investigate the adoption of mobile devices and Web2.0 technologies among medical students and educators. *BMC Medical Informatics and Decision Making, 16*(43), 1-8.

Farzana Parveen, & Ainin Sulaiman. (2008). Technology complexity, personal innovativeness and intention to use wireless internet using mobile devices in Malaysia. *International Review of Business Research Papers, 4*(5), 1-10.

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behaviour: An introduction to theory and research*. Reading MA: Addison-Wesley.

Fisher, M., & Baird, D. E. (2006). Making mLearning work: Utilizing mobile technology for active exploration, collaboration, assessment and reflection in higher education. *Journal of Educational Technology Systems, 35*(1), 3-30.

Fralinger, B., & Olson, V. (2007). Organizational culture at the university level: A study using the OCAI instrument. *Journal of College Teaching & Learning, 4*(11), 85-97.

Gao, Y. (2005). Applying the technology acceptance model (TAM) to educational hypermedia: A field study. *Journal of Educational Multimedia and Hypermedia, 14*(3), 237-247.

Gaskin, J. (2011). "*Multigroup moderation in Amos - Made easy (with critical ratios)", Gaskination's Statistics*. Retrieved from https://www.youtube.com/watch?v=ZMYS90AU8bs

Gaskin, J. (2012). "*Group Differences", Stats Tools Package*. Retrieved from http://statwiki.kolobkreations.com

Gaskin, J. (2016). "*Data Screening", Gaskination's StatWiki*. Retrieved from http://statwiki.kolobkreations.com

Gefen, D., & Straub, D. (1997). Gender differences in the perception and use of e-mail: An extension to the technology acceptance model. *MIS Quarterly, 21*(4), 389-400.

Geldhof, G. J., Preacher, K. J., & Zyphur, M. J. (2014). Reliability estimation in a multilevel confirmatory factor analysis framework. *Psychological Methods, 19*(1), 72-91.

Glahn, C. (2011, 23 May). *The role of the teacher in mobile learning*. Retrieved from http://lo-f.at/glahn/2011/05/the-role-of-the-teacher-in-mobile-learning.html

Goh, T., & Kinshuk (2006). Getting ready for mobile learning - Adaptation perspective. *Journal of Educational Multimedia and Hypermedia, 15*(2), 175-198.

Goh, Y. S., & Irfan Naufal Umar. (2010, Nov). *The effectiveness of web-based instruction and cooperative learning on the students' listening and speaking skills in Mandarin language learning.* Paper presented at the 18th International Conference on Computers in Education, Putrajaya, Malaysia.

Goh, Y. S., Ng, A. S., Raja Mariam Raja Baniamin, & Wan Anuar Wan Mamat. (2004). Technology and foreign language learning: Student perceptions on the feasibility of using WBI (web-based instruction) to supplement the on-campus foreign language courses in UiTM. In M. Singhal & J. Liontas (Eds.), *Proceedings of the First International Online Conference on Second and Foreign Language Teaching and Research* (pp. 147-160). United States: The Reading Matrix.

Gribbins, M. (2007). The perceived usefulness of podcasting in higher education: A survey of students' attitudes and intention to use. *Proceedings of the Second Midwest United States Association for Information Systems.* Retrieved from https://edocs.uis.edu/mgribbin/www/MWAIS2007paper.pdf

Guo, Y. (2015). Moderating effects of gender in the acceptance of mobile SNS based on UTAUT model. *International Journal of Smart Home, 9*(1), 203-216.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis: A global perspective* (7th ed.). New Jersey: Pearson Education.

Han, S. (2003). *Individual adoption of information systems in organisations: A literature review of technology acceptance model* (TUCS Technical Report No 540). Finland: Turku Centre for Computer Science

Harwati Hashim, Melor Md Yunus, & Mohamed Amin Embi. (2012, Sept). *Exploring the potential of using mobile technologies for the teaching and learning of English language in Polytechnics*. Paper presented at the 1st International Conference on Mobile Learning, Applications and Services (mobilcase2012), Melaka, Malaysia.

Hashemi, M., & Azizinezhad, M. (2012).The pedagogical applications of using short message system (SMS) in language learning classes. *International Journal of Academic Research in Progressive Education and Development, 1*(1), 10-14.

Hayati, H., Koo, A. C., & Song, H. (2009, Dec). *Exploring learner's perception of mobile learning.* Paper presented at the 2nd International Conference on e-Learning (ICEL), Shah Alam, Malaysia.

Holden, H., & Rada, R. (2011). Understanding the influence of perceived usability and technology self-efficacy on teachers' technology acceptance. *Journal of Research on Technology in Education, 43*(4), 342-367.

Hsu, C. K., Hwang, G. J., Chang Y. T., & Chang, C. K. (2013). Effects of video caption modes on English listening comprehension and vocabulary acquisition using handheld devices. *Educational Technology & Society, 16*(1), 403-414.

Huang, C. S. J., Yang, S. J. H., Chiang, T. H. C., & Su, A. Y. S. (2016). Effects of situated mobile learning approach on learning motivation and performance of EFL students. *Educational Technology & Society, 19*(1), 263-276.

Huang, J. H., Lin, Y. R., & Chuang, S. T. (2007). Elucidating user behaviour of mobile learning: A perspective of the extended technology acceptance model. *The Electronic Library, 25*(5), 585-598.

Hunt, L. (2003). What makes good university teaching? *B-Hert News, 18*, 20-21.

i-learn Portal. (2012). *i-Learn Management and Staff*. Retrieved from http://i-learn.uitm.edu.my/v2/?page_id=2

Im, I., Kim, Y. & Han, H. J. (2008). The effects of perceived risk and technology type on users' acceptance of technologies. *Information & Management, 45*, 1 - 9.

Issham Ismail, Siti Fatimah Bokhare, Siti Norbaya Azizan, & Nizuwan Azman (2013). Teaching via mobile phone: A case study on Malaysian teachers' technology acceptance and readiness. *Journal of Educators Online, 10*(1), 1-38.

Jackman, G. (2014). Investigating the factors influencing students' acceptance of mobile learning: The Cave Hill campus experience. *Caribbean Educational Research Journal 2*(2), 14-32.

JISC Digital Media. (2011). *Mobile learning for education.* Retrieved from http://www.jiscdigitalmedia.ac.uk/crossmedia/advice/mobile-learning-for-education

Jitlekha Teerajarmorn. (2005). Assessing students online. *Proceedings of the Second International Conference on eLearning for Knowledge-Based Society* (pp. 27-30). Bangkok, Thailand: Assumption University Press.

Jonassen, D., & Rohrer-Murphy, L. (1999). Activity theory as a framework for designing constructivist learning environments. *Educational Technology Research and Development, 47*(1), 61-79.

Joo, Y. J., Lee, H. W., & Ham, Y. (2014). Integrating user interface and personal innovativeness into the TAM for mobile learning in Cyber University. *Journal of Computing in Higher Education, 26*, 143-158.

Joseph, S. R. (2015). Students' perspectives on ICTs acceptance and use in higher educational institutions of Botswana: Limkokwing University. *International Journal of Engineering & Scientific Research, 3*(1), 185-198.

Ju, T. L., Wathanaporn Sriprapaipong, & Do Nhut Minh. (2008, Jan). *On the success factors of mobile learning.* Paper presented at the Technology and Innovation for Sustainable Development Conference, Khon Kaen, Thailand.

Junior, J. B., & Coutinho, C. C. (2008). The use of mobile technologies in higher education in Portugal: An exploratory survey. In C. J. Bonk, M. M. Lee & T. Reynolds (Eds.) *Proceedings of the World Conference on e-learning in Corporate, Government, Healthcare and Higher Education (E-LEARN)* (pp. 2102-2107). Chesapeake VA: Association for the Advancement of Computing in Education.

Kafyulilo, A. (2014). Access, use and perceptions of teachers and students towards mobile phones as a tool for teaching and learning in Tanzania. *Education and Information Technologies, 19*, 115-127.

Kamaruzaman Jusoff, & Siti Akmar Abu Samah (2009). Developing professional track towards excellence in academician's career path. *Asian Culture and History, 1*(2), 75-81.

Karsen, M., Siswono, & Widianty. (2015). The role of information technology to improve lecturer performance. *Journal of Theoretical and Applied Information Technology, 72*(3), 458-463.

Kearney, M., Schuck, S., Burden, K., & Aubusson, P. (2012). Viewing mobile learning from a pedagogical perspective. *Research in Learning Technology 20*. doi: 10.3402/rlt.v20i0/14406

Keengwe, J., Schnellert, G., & Jonas, D. (2014). Mobile phones in education: Challenges and opportunities for learning. *Education and Information Technology, 19*, 441-450.

Kementerian Pendidikan Malaysia. (2013). *Pelan pembangunan pendidikan Malaysia 2013-2025 (Pendidikan prasekolah hingga lepas menengah).*

Retrieved from http://www.moe.gov.my/cms/upload_files/articlefile/2013/articlefile_file_003107.pdf

Kementerian Pengajian Tinggi. (2011). *Institusi pengajian tinggi awam (IPTA).* Retrieved from http://www.mohe.gov.my/portal/institusi/ipta.html

Kessler, G., & Plakans, L. (2008). Does teachers' confidence with CALL equal innovative and integrated use? *Computer Assisted Language Learning, 21*(3), 269-282.

Kezar, A., & Eckel, P. D. (2002). The effect of institutional culture on change strategies in higher education. *The Journal of Higher Education, 73*(4), 435-460.

Khechine, H., Lakhal, S., Pascot, D., & Bytha, A. (2014). UTAUT model for blended learning: The role of gender and age in the intention to use webinars. *Interdisciplinary Journal of E-Learning and Learning Objects, 10*, 33-52.

Khonat, A. (2012). Do mobile phones have a place in the classroom? *Teaching Business & Economics, 16*(3), 15-17.

Kim, S. H., Holmes, K., & Mims, C. (2005). Mobile wireless technology use and implementation: Opening a dialogue on the new technologies in education. *TechTrends, 49*(3), 54-63.

Kim, S., & Chung, A. (2006). Mobile technology applications in the Korean higher education. In E. Pearson & P. Bohman (Eds.), *Proceedings of the 18th World Conference on Educational Multimedia, Hypermedia and Telecommunications (ED-MEDIA)* (pp. 83-88). Orlando, FL: Association for the Advancement of Computing in Education (AACE).

Kim, S., & Garrison, G. (2009). Investigating mobile wireless technology adoption: An extension of the technology acceptance model. *Information Syst Front, 11*, 323-333.

Kim, S., Mims, C., & Holmes, K. (2006). An Introduction to current trends and benefits of mobile wireless technology use in higher education. *AACE Journal, 14*(1), 77-100.

Kim, Y. J., Chun, J. U., & Song, J. (2009). Investigating the role of attitude in technology acceptance from an attitude strength perspective. *International Journal of Information Management, 29*(1), 67-77.

Kimura, M. (2009). Development and effectiveness of vocabulary learning contents for use with mobile phones in education in Japan. In C. D. Maddux (Ed.) *Proceedings of Research Highlights in Technology and Teacher Education*

(pp. 151-160). Chesapeake, VA: Society for Information Technology & Teacher Education (SITE).

Kimura, M., & Shimoyama, Y. (2009). Vocabulary learning contents for use with mobile phones in education in Japan. In I. Gibson, R. Weber, K. McFerrin, R. Carlsen & D. A. Willis (Eds.) *Proceedings of the 20th Society for Information Technology and Teacher Education International Conference (SITE)* (pp. 1922-1929).Charleston, SC: Association for the Advancement of Computing in Education (AACE).

King, W. R., & He, J. (2006). A meta-analysis of the technology acceptance model. *Information & Management, 43*, 740-755.

Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). New York, NY: Guilford Press.

Korucu, A. T., & Alkan, A. (2011). Differences between m-learning (mobile learning) and e-learning, basic terminology and usage of m-learning in education. *Procedia Social and Behavioural Sciences, 15*, 1925-1930.

Kothari, C. R. (2004). *Research methodology methods and techniques* (2nd ed.). New Delhi: New Age International Publishers.

Ktoridou, D., & Eteokleous, N. (2010). University campus adoption of WLAN technology: Applying the UTAUT model. *Proceedings of World Conference on Educational Multimedia, Hypermedia and Telecommunications (ED-MEDIA)* (pp. 85-93). Chesapeake, VA: Association for the Advancement of Computers in Education (AACE).

Kukulska-Hulme, A. (2009). Will mobile learning change language learning? *ReCALL, 21*(2), 157–165.

Kukulska-Hulme, A. (2013). Limelight on mobile learning: Integrating education and innovation. *Harvard International Review, Spring 2013*, 12-16.

Kukulska-Hulme, A., Sharples, M., Milrad, M., Arnedillo-Sánchez, I., & Vavoula, G. (2006). Innovation in mobile learning: A European perspective. *International Journal of Mobile and Blended Learning, 1*(1), 13-35.

Kwon, H. S., & Chidambaram, L. (2000). A test of the technology acceptance model: The case of cellular telephone adoption. In R. H. Sprague (Ed.), *Proceedings of the 33rd Annual Hawaii International Conference on System Sciences* (pp. 1-10). Maui, HI: IEEE Computer Society.

Lateef, A. R., & Alaba, S. O. (2013). Influence of gender and attitude of pre-service teachers towards on-line instruction in a selected university in south-western Nigeria. *Asian Social Science, 9*(4), 84-91.

Lee, J., Cerreto, F. A., & Lee, J. (2010). Theory of planned behaviour and teachers' decisions regarding use of educational technology. *Educational Technology & Society, 13*(1), 152-164.

Lee, Y. H., Hsieh, Y. C., & Hsu, C. N. (2011). Adding innovation diffusion theory to the technology acceptance model: Supporting employees' intentions to use e-learning systems. *Educational Technology & Society, 14*(4), 124-137.

Lee, Y., Kozar, K. A., & Larsen, K. R. T. (2003). The technology acceptance model: Past, present and future. *Communication of the Association for Information Systems, 12*, 752-780.

Legris, P., Ingham, J., & Collerette, P. (2003). Why do people use information technology? A critical review of the technology acceptance model. *Information and Management, 40*, 191-204.

Lin, C. C. (2014). Learning English reading in a mobile-assisted extensive reading program. *Computers & Education, 78*, 48-59.

Little, T. D., Card, N. A., Bovaird, J. A., Preacher, K. J., & Crandall, C. S. (2007). Structural equation modeling of mediation and moderation with contextual factors. In T. D. Little, J. A. Bovaird, & N. A. Card (Eds.), *Modeling contextual effects in longitudinal studies* (pp. 207-230). Mahwah, NJ: Lawrence Erlbaum Associates.

Liu, S. H., Liao, H. L., & Peng, C. J. (2005). Applying the technology acceptance model and flow theory to online- e-learning users' acceptance behaviour. *Issues in Information Systems, VI*(2), 175-181.

Livingston, A. (2004). Smartphones and other mobile devices. *Educause Quarterly, 2*, 48-52.

Lu, J., Liu, C., Yu, C. S., & Yao, J. E. (2003). Exploring factors associated with wireless internet via mobile technology acceptance in mainland China. *Communication of the International Information Management Association, 3*(1), 101-120.

Lu, X., & Viehland, D. (2008). Factors influencing the adoption of mobile learning. *Proceedings of the 19th Australasian Conference on Information Systems(ACIS)* (pp. 597-606). Christchurch, New Zealand: Australasian Association for Information Systems.

Lyytinen, K., & Damsgaard, J. (2001). What's wrong with the diffusion of innovation theory? In M. A. Ardis & B. L. Marcolin (Eds.) *Proceedings of the 4th International Federation for Information Processing (IFIP)* (pp. 173-190). Boston, London: Kluwer Academic Publishers.

Mac Callum, K., Jeffrey, L., & Kinshuk. (2014). Comparing the role of ICT literacy and anxiety in the adoption of mobile learning. *Computers in Human Behaviour, 39*, 8-19.

Mahendar Kumar Beniwal, & Arpita Sharma. (2013). Explosive growth of mobile technology and its potential impact on youth and education. *International Journal of Application or Innovation in Engineering and Management, 2*(4), 12-15.

Maina, A. (2016, May 4). *20 popular social media sites right now*. Retrieved from https://smallbiztrends.com/2016/05/popular-social-media-sites.html

Malaymail Online (2016, October 22). Budget 2017: Public universities suffer almost 20pc spending cut. *The Malay Mail*. Retrieved from http://www.themalaymailonline.com/malaysia/article/budget-2017-public-universities-suffer-almost-20pc-spending-cut

Malaysia Communications and Multimedia Commission. (2014). *Communication & multimedia. Pocket book of statistics Q2 2014.* Retrieved from http://www.skmm.gov.my/Resources/Statistics/Communications-and-Multimedia-Pocket-Book-of-Stati.aspx

Malhotra, N. K., Kim, S. S., & Patil, A. (2006). Common method variance in IS research: A comparison of alternative approaches and a reanalysis of past research. *Management Science, 52*(12), 1865-1883.

Manimekalai, J. (2013). Behavioural intention to adopt mobile technology among tertiary students. *World Applied Sciences Journal, 22*(9), 1262-1271.

Marangunic, N. & Granic, A. (2015). Technology acceptance model: A literature review from 1986 to 2013. *Univ Access Inf. Soc, 14*, 81-95.

Mariam Mohamad, & Woollard, J. (2012a). *Mobile learning in English language learning: An implementation strategy for secondary schools in Malaysia.* Retrieved from http://eprints.soton.ac.uk/300062/1/Mobile_learning_in_English_Language_Learning_An_implementation_strategy_for_secondary_schools_in_Malaysia.pdf

Mariam Mohamad, & Woollard, J. (2012b, April). *Mobile learning via mobile phones in Malaysian secondary schools: Seven signs of promises*. Paper

presented at the 8th International Scientific Conference eLearning and Software for Education, Bucharest, Romania. doi:10.5682/2066-026X-12-126

Maslin Masrom, & Ramlah Hussein. (2008). *User acceptance of information technology: Understanding theories and models*. Selangor: Venton Publishing (M) Sdn. Bhd.

Mayes, T., & de Freitas, S. (2004). *Review of e-learning theories, frameworks and models.* Retrieved from http://www.jisc.ac.uk/whatwedo/programmes/elearningpedagogy/outcomes.aspx

Mbarek, R., & Zaddem, F. (2013).The examination of factors affecting e-learning effectiveness. *International Journal of Innovation and Applied Studies, 2*(4), 423-435.

McNaught, C., & Vogel, D. R. (2004). The converging streams of globalisation and eLearning: Stretching the comfort zone. In R. Atkinson, C. McBeath, D. Jonas-Dwyer & R. Phillips (Eds.), *Proceedings of the 21st ASCILITE Conference* (pp. 637-646). Perth, Australia: Australasian Society for Computers in Learning in Tertiary Education (ASCILITE).

Md Masudul Hasan, & Tan, B. H. (2012). ESL learners' perception and attitudes towards the use of podcast in developing listening skills. *The English Teacher, XLI*(2), 160-173.

Meyer, G. (2004). Diffusion methodology: Time to innovate? *Journal of Health Communication, 9*, 59-69.

Ministry of Education Malaysia. (2015). *Malaysia Education Blueprint 2015 - 2025 (Higher Education)*. Putrajaya, Malaysia: Kementerian Pendidikan Malaysia.

Mohamed Amin Embi. (2011, Nov). *E-learning in Malaysian institutions of higher learning: Status, trends and challenges*. Paper presented at the International Lifelong Learning Conference (ICLLL), Kuala Lumpur, Malaysia.

Mohd Hafiz Nural Azhan, Lazim Abdullah, & Yazid Md Saman. (2012, Sept). *Usage of mobile devices in e-learning environment.* Paper presented at the 1st International Conference on Mobile Learning, Applications and Services (mobilcase2012), Melaka, Malaysia.

Mohd Nazri Md Saad, Ahmad Wiraputra Selamat, Eimiza Faisha Azmi, Mohamad Yunus Mustafa, & Prabu T. (2012, Sept). *Empowering learning through mobile technologies.* Paper presented at the 1st International Conference on Mobile Learning, Applications and Services (mobilcase2012), Melaka, Malaysia.

Mohd Rafi Yaacob. (2011). *PASW (SPSS) for business and social science students*. Kota Bharu, Kelantan: Eduserve Resources.

Moore, G. C. (1987). End user computing and office automation: A diffusion of innovations perspective. *Information Systems & Operational Research (INFOR) Journal, 25*(3), 214-235.

Moore, G. C., & Benbasat, I. (1991). Development of an instrument to measure the perception of adopting an information technology innovation. *Information Systems Research, 2*(3), 192-222.

Moore, M. G. (1997). Theory of transactional distance. In D. Keegan (Ed.), *Theoretical principles of distance education* (pp. 22-38). New York: Routlege Studies in Distance Education.

Moryson, H., & Moeser, G. (2016). Consumer adoption of cloud computing services in Germany: Investigation of moderating effects by applying an UTAUT model. *International Journal of Marketing Studies, 8*(1), 14-32.

Mostakhdemin-Hosseini, A., & Mustajärvi, J. (2003). Framework for mobile learning system based on education component, *Proceedings of the International Conference on Theory and Applications of Mathematical and Informatics (ICTAMI)* (pp. 191-196). Alba Iulia: Department of Mathematics and Informatics.

Motlik, S. (2008). Mobile learning in developing nations. *International Review of Research in Open and Distance Learning, 9*(2), 1-7.

Munienge, M., & Muhandji, K. (2012). *The use of ICT in education: A comparison of traditional pedagogy and emerging pedagogy enabled by ICT's*. Paper presented at the 2012 World Congress in Computer Science, Computer Engineering, and Applied Computing (WORLDCOMP'12). Retrieved from http://worldcomp-proceedings.com/proc/p2012/FEC2651.pdf

Naemah Abdul Wahab, Jamal Othman, & Saiful Nizam Warris. (2016). Blended learning in higher education: An overview. *e-Academia Journal UiTMT, 5*(2), 115-122.

Nagrajan, K. (2012, March 1). *MCMC to build more than 800 new rural mobile towers in 2012*. Retrieved from http://malaysiatelecommunications.blogspot.my/2012/03/

Napaporn Kripanont. (2007). *Examining a technology acceptance model of internet usage by academics within Thai business schools*. (Unpublished doctoral dissertation). Victoria University, Melbourne, Australia. Retrieved from http://vuir.vu.edu.au/1512/1/Kripanont.pdf

Nasri, W., & Charfeddine, L. (2012). An exploration of facebook.com adoption in Tunisia using technology acceptance model (TAM) and theory of reasoned action (TRA). *Interdisciplinary Journal of Contemporary Research in Business, 4*(5), 948-968.

Nguyen, T. D. N., & Aoyama, A. (2015). The impact of cultural differences on technology transfer: Management practice moderation. *Journal of Manufacturing Technology Management, 26*(7), 926-954.

Nik Mastura Nik Mohammad, Mohd Nor Mamat, & Posiah Mohd Isa. (2009, Dec). *M-learning in Malaysia: Challenges and strategies*. Paper presented at the 2nd International Conference on e-Learning (ICEL), Shah Alam, Malaysia.

Nistor, N., Gogus, A., & Lerche, T. (2013). Educational technology acceptance across national and professional cultures: A European study. *Education Technology Research and Development, 61*(4), 733-749.

Nor Aziah Alias, & Haziah Jamaludin. (2005). The aches of online distance learning: A synthesis of three Malaysian studies. *Asian Journal of Distance Education, 3*(2), 48-54.

Norlina Mohd Sabri, Norulhidayah Isa, Nik Marsyahariani Nik Daud, & Azlan Abdul Aziz. (2010, Dec). *Lecturers' experience in implementing blended learning using i-learn.* Paper presented at the International Conference on Science and Social research (CSSR), Kuala Lumpur, Malaysia.

Normah Mustaffa, Faridah Ibrahim, Wan Amizah Wan Mahmud, Fauziah Ahmad, Chang, P. K., & Maizatul Haizan Mahbob. (2011). Diffusion of innovations: The adoption of facebook among youth in Malaysia. *The Innovation Journal: The Public Sector Innovation Journal, 16*(3), 1-15.

Norman, G. (2010). Likert scales, levels of measurement and the "laws" of statistics. *Advances in Health Sciences Education, 15*(5), 625-632.

Norsaniah Mohd Noh, Posiah Mohd Isa, Siti Akmar Abu Samah, Norzaidah Md Noh, & Mohd Ali Mohd Isa. (2012). Establishing an organisational e-learning culture to motivate lecturers to engage in e-learning in UiTM. *Procedia - Social and Behavioral Sciences, 67*, 436-443.

Nurmaisara Za'ba, Mohd Nor Mamat, Mohd Ali Mohd Isa, Azlan Abd Aziz, Prasanna Ramakrisnan, & Nurul Hidayah Mat Zain. (2012). A comparative study among selected global standards: i-Learn as a case study *Procedia - Social and Behavioral Sciences, 67*, 476-483.

Nyiri, K. (2008). Towards a philosophy of the mobile information society. In Wittgenstein and the Philosophy of Information, *Proceedings of the 30th International Ludwig Wittgenstein-Symposium* (pp. 149-163). Ontos Verlag, Frankfurt: University of Southampton.

Nysveen, H., Pedersen, P. E., & Thorbjornsen, H. (2005). Intentions to use mobile services: Antecedents and cross-service comparisons. *Journal of the Academy of Marketing Science, 33*(3), 330-346.

Oboegbulem, A. J., & Godwin, O. (2013). Application of ICT (information and communication technology) in the management of universities in the North-Central State of Nigeria. *US-China Education Review, 3*(3), 187-194.

Ong, C. S., & Lai, J. Y. (2006). Gender differences in perceptions and relationships among dominants of e-learning acceptance. *Computers in Human Behaviour, 22*(5), 816-829.

Ozdamli, F., & Cavus, N. (2011). Basic elements and characteristics of mobile learning. *Social and Behavioural Sciences, 28*, 937-942.

Park, B. (2006). How to increase the adoption and utilization of m-learning? In T. Reeves & S. Yamashita (Eds.), *Proceedings of World Conference on E-Learning in Corporate, Government, Healthcare and Higher Education (ELEARN)* (pp. 2271-2276). Chesapeake, VA: Association for the Advancement of Computers in Education (AACE).

Park, N. (2005, May). *User acceptance of e-learning in higher education: An application of the technology acceptance model*. Paper presented at the International Communication Association Annual Conference, New York, U.S. Retrieved from http://www.allacademic.com/meta/ p14794_index.html

Park, S. Y. (2009). An analysis of the technology acceptance model in understanding university students' behavioural intention to use e-learning. *Educational Technology & Society, 12*(3), 150-162.

Park, Y. (2011). A pedagogical framework for mobile learning: Categorizing educational applications of mobile technologies into four types. *International Review of Research in Open and Distance Learning, 12*(2), 78-102.

Parsons, D., Ryu, H., & Cranshaw, M. (2007). A design requirements framework for mobile learning environments. *Journal of Computer, 2*(4), 1-8.

Pejabat Bendahari. (2010). *Amanat bendahari tahun 2010*. Retrieved from http://www.bendahari.uitm.edu.my/images/stories/BORANG/AMANAT/amanat%20bendahari%20tahun%202010.pdf

Pejabat Pendaftar (2013). *Perancangan Strategik Sumber Manusia Universiti Teknologi MARA 2013-2015*. Shah Alam Selangor: Unit Percetakan Universiti Teknologi MARA.

Persico, D., Manca, S., & Pozzi., F. (2014). Adapting the technology acceptance model to evaluate the innovative potential of e-learning systems. *Computers in Human Behaviour, 30*, 614-622.

Pirasteh, P., & Mirzaeian, V. R. (2015). The effect of short message service (SMS) on Iranian EFL learners' attitude toward learning English. *Language in India, 15*(2), 113-131.

Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., Podsakoff, N. P. (2003). Common method biases in behavioural research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879-903.

Posiah Mohd Isa, Siti Akmar Abu Samah, & Kamaruzaman Jusoff. (2008). Inculcating values and ethics in higher education e-learning drive: UiTM i-learn user policy. *International Journal of Human and Social Sciences, 2*(2), 113-117.

Prensky, M. (2005). What can you learn from a cell phone? Almost anything! *Innovate, 1*(5). Retrieved from http://innovateonline.info/pdf/vol1_issue5/What_Can_You_Learn_from_a_Cell_Phone_Almost_Anything!.pdf

Pritchett, C. C., Wohleb, E. C., & Pritchett, C. G. (2013). Educators' perceived importance of web 2.0 technology applications. *TechTrends, 57*(2), 33-38.

Punnoose, A. C. (2012). Determinants of intention to use eLearning based on the Technology Acceptance Model. *Journal of Information Technology Education: Research, 11*, 301-337.

Rafizah Kechil, Azlina Mohd Mydin, Wan Anisha Wan Mohammad, & Zuraira Libasin. (2017). The impact of blended learning (BL) in UiTM cawangan Pulau Pinang. *International Academic Research Journal of Social Science, 3*(1), 239-244.

Raja Abdullah Yaacob, Adnan Jamaluddin, & Kamaruzaman Jusoff. (2011). Flexible learning programme (FLP) in Universiti Teknologi MARA: New opportunities for Malaysian higher education and training. *International Journal of Library and Information Science, 3*(10), 199-208.

Ramayah, T., & Norazah Mohd Suki. (2006). Intention to use mobile PC among MBA students: Implications for technology integration in the learning curriculum. *UNITAR E-Journal, 2*(2), 30-39.

Ramayah, T., Yusliza Mohd.Yusoff, Norzalila Jamaludin, & Amlus Ibrahim. (2009). Applying the theory of planned behaviour (TPB) to predict internet tax filing intentions. *International Journal of Management, 26*(2), 272-284.

Ramirez-Correa, P. E., Arenas-Gaitan, J., & Rondan-Cataluna, F. J. (2015). Gender and acceptance of e-learning: A multi-group analysis based on a structural equation model among college students in Chile and Spain. *PLoS ONE, 10*(10), 1-17.

Ranjit Kumar. (2011). *Research methodology: A step-by-step guide for beginners* (3rd ed.). London: SAGE Publications.

Raykov, T. & Marcoulides, G. A. (2008). *An introduction to applied multivariate analysis*. New York, NY: Taylor & Francis.

RealityMine. (2015, August 18). How mobile use varies across generations. Retrieved from http://www.realitymine.com/mobile-use-varies-across-generations/

Reinders, H. (2010). Twenty ideas for using mobile phones in the language classroom. *English Teaching Forum, 3*, 20-33.

Robinson, J. P., Shaver, P. R., & Wrightsman, L. S. (1991). Criteria for scale selection and evaluation. In *Measures of Personality and Social Psychological Attitudes.* Retrieved from http://www.radford.edu/~jaspelme/611/Spring-2007/Robinson_Shaver_and_Wrightsman_1991_Ch1.pdf

Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). New York NY: Free Press.

Rogers, E. M., Singhal, A., & Quinlan, M. M. (2009). Diffusion of innovations. In D. W. Stacks & M. B. Salwen (Eds.), *An integrated approach to communication theory and research* (2nd ed.) (pp. 418-420). New York NY: Routledge.

Rudito, P. (2010). *An investigation into the role of moderating variables on mobile broadband technology acceptance in Indonesia* RMIT University. (Unpublished doctoral dissertation). RMIT University, Melbourne, Australia. Retrieved from https://researchbank.rmit.edu.au/eserv/rmit:160736/Rudito.pdf

Rugayah Hashim, Hashim Ahmad, & Che Zainab Abdullah. (2010). Antecedents of ICT attitudes of distance education students. *The Turkish Online Journal of Educational Technology TOJET, 9*(1), 28-36.

Ruhil Hayati Hashim, Jamaliah Abdul Hamid, Mohd Hassan Selamat, Hamidah Ibrahim, Rusli Abdullah, & Mohd Ghazali Mohayidin. (2006). Using algorithmic taxonomy to evaluate lecturer workload. *Journal of Knowledge*

Management Practice, 7(2). Retrieved from http://www.tlainc.com/articl115.htm

Saadé, R., & Kira, D. (2006). The emotional state of technology acceptance. *Issues in Informing Science and Information Technology, 3*, 529-539.

Saadé, R., Nebebe, F., & Tan, W. (2007). Viability of the technology acceptance model in multimedia learning environments: A comparative study. *Interdisciplinary Journal of Knowledge and Learning Objects, 3*, 175-184.

Sahin, I. (2006). Detailed review of Rogers' diffusion of innovations theory and educational technology-related studies based on Rogers' theory. *The Turkish Online Journal of Educational Technology TOJET, 5*(2), 14-23.

Sahol Hamid Abu Bakar. (2014). *Being an entrepreneurial university: Lessons learnt from Malaysia.* Retrieved from https://www.swansea.ac.uk/media/SAHOL%20HAMID%20ABU%20BAKAR.pdf

Saleem, T. A. (2011). Mobile learning technology: A new step in e-learning. *Journal of Theoretical and Applied Information Technology, 34*(2), 125-137.

Schumacker, R. E., & Lomax, R. G. (2010). *A beginner's guide to structural equation modeling* (3rd ed.). New York NY: Routledge Taylor & Francis Group.

Sekaran, U., & Bougie, R. (2013). *Research methods for business: A skill-building approach* (6th ed.). West Sussex, United Kingdom: John Wiley & Sons.

Selvaraj Grapragasem, Anbalagan Krishnan, & Azlin Norhaini Mansor. (2014). Current trends in Malaysian higher education and the effect on education policy and practice: An overview. *International Journal of Higher Education, 3*(1), 85-93.

Seppälä, P., & Alamäki, H. (2003). Mobile learning in teacher training. *Journal of Computer Assisted Learning, 19*, 330 - 335.

Seyal A. H., Mohd Noah A. Rahman, Rudy Ramlie, & Armanadurni Abdul Rahman. (2015). A preliminary study of students' attitude on m-learning: An application of technology acceptance model. *International Journal of Information and Education Technology, 5*(8), 609-614.

Shamsul Arrieya Ariffin. (2011, Jan). *Mobile learning in the institution of higher learning for Malaysia students: Culture perspectives.* Paper presented at the International Scientific Conference 2011, Bangi-Putrajaya, Malaysia.

Sharples, M., Taylor, J., & Vavoula, G. (2005). *Towards a theory of mobile learning*. Paper presented at the 4th World Conference on mLearning, Cape Town, South Africa. Retrieved from http://www.mlearn.org.za/CD/papers/Sharples-%20Theory%20of%20Mobile.pdf

Shen, R., Wang, M., & Pan, X. (2008). Increasing interactivity in blended classrooms through a cutting-edge mobile learning system. *British Journal of Educational Technology, 39*(6), 1073-1086.

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.

Shih, Y. E. (2007). *Dynamic language learning: Comparing mobile language learning with online language learning.* (Doctoral dissertation). Retrieved from ProQuest (3263159).

Shih, Y. E., & Mills, D. (2007). Setting the new standard with mobile computing in online learning. *International Review of Research in Open and Distance Learning, 8*(2), 1-16.

Shohel, M. M. C., & Power, T. (2010). Introducing mobile technology for enhancing teaching and learning in Bangladesh: Teacher perspectives. *Open Learning, 25*(3), 201–215.

Singh, K., & Sandhu, H. (2006, Sept). *E-learning as an enabler of effective teaching and learning for the knowledge society*. Paper presented at the 6th South East Asian Association for Institutional Research (SEEAIR) Annual Conference, Langkawi, Malaysia.

Singh, P., Puzziawati Abdul Ghani, & Teoh, S. H. (2009). *Quantitative data analysis for novice researchers*. Kuala Lumpur: Primera Publishing.

Sølvberg, A. M., & Rismark, M. (2012). Learning spaces in mobile learning. *Active Learning in Higher Education, 13*(23), 23-23.

Son, C., Lee, Y., & Park, S. (2004). Toward new definition of m-learning. In G. Richards (Ed.) *Proceedings of the World Conference on e-learning in Corporate, Government, Healthcare and Higher Education (E-LEARN)* (pp. 2137-2140). Chesapeake VA: Association for the Advancement of Computing in Education.

Songpol Kulviwat, Bruner II, G. C., & Neelankavil, J. P. (2014). Self-efficiency as an antecedent of cognition and affect in technology acceptance. *Journal of Consumer Marketing, 31*(3), 190-199.

Statista. (2016). *Number of smartphone users in Malaysia from 2014 to 2019 (in millions)**. Retrieved from http://www.statista.com/statistics/494587/ smartphone- users-in-malaysia/

Sujeet Kumar Sharma, & Jyoti Kumar Chandel (2013). Technology acceptance model for the use of learning through websites among students in Oman. *International Arab Journal of e-Technology, 3*(1), 44-49.

Sullivan, G. M., & Artino Jr., A. R. (2013). Analyzing and interpreting data from Likert-type scales. *Journal of Graduate Medical Education, 5*(4), 541-542.

Sun, H., & Zhang, P. (2006). The role of moderating factors in user technology acceptance. *International Journal of Human-Computer Studies, 64*, 53-78.

Supyan Hussin, Mohd Radzi Manap, Zaini Amir, & Krish, P. (2012). Mobile learning readiness among Malaysian students in higher learning institutions. *Asian Social Science, 8*(12), 276-283.

Surbhi, S. (2016, May 5). *Difference between null and alternative hypothesis*. Retrieved from http://keydifferences.com/difference-between-null-and-alternative-hypothesis.html

Syed Jamal Abdul Nasir, Mohd Rashidee Alwi, & Jamaliah Said. (2007, July). *An evaluation of e-learning program: A case study at Institute of Education Development.* Paper presented at Conference on Scientific & Social Research, Sunway Lagoon Resort Hotel, Malaysia.

Syvanen, A., Nokelainen, P., Pehkonen, M., & Turunen, H. (2004). Mobile learning future views. In L. Cantoni & C. McLoughlin (Eds.), *Proceedings for the World Conference on Educational Multimedia, Hypermedia and Telecommunications (EDMEDIA)* (pp. 2112-2118). Vancouver, Canada: Association for the Advancement of Computing in Education (AACE).

Tai, Y., & Ting, Y. L. (2011). Adoption of mobile technology for language learning: Teacher attitude and challenges. *The Jalt Call Journal 7*(1), 3-18.

Tan, C. K., Lee, K. W., & Ng, S. H. (2012, Sept). *Mobile learning readiness of undergraduates in Universiti Malaysia Sabah, Malaysia.* Paper presented at the 1st International Conference on Mobile Learning, Applications and Services (mobilcase20), Melaka, Malaysia.

Tan, G. W. H., Ooi, K. B., Sim, J. J., & Kongkiti Phusawat. (2012). Determinants of mobile learning adoption: An empirical analysis. *Journal of Computer Information Systems, Spring 2012*, 82-91.

Tarhini, A., Hone, K., & Liu X. (2013). Factors affecting students' acceptance of e-learning environments in developing countries: A structural equation modeling approach. *International Journal of Information and Education Technology, 3*(1), 54-59.

Tarhini, A., Hone, K., Liu X. (2014). The effects of individual differences on e-learning users' behaviour in developing countries: A structural equation model. *Computers in Human Behavior, 41*, 153-163.

Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. *Information Systems Research, 6*, 144-176.

Teo, T. S. H., & Pok, S. H. (2003). Adoption of WAP-enabled mobile phones among internet users. *Omega, 31*, 483-498.

Teo, T., & Zhou, M. (2014). Explaining the intention to use technology among university students: A structural equation modeling approach. *Journal of Computing in Higher Education, 26*(2), 124-142.

Theng, Y. (2009). Mobile learning for tertiary students: An exploratory study of acceptance of use. In G. Siemens & C. Fulford (Eds.), *Proceedings for the World Conference on Educational Multimedia, Hypermedia and Telecommunications (EDMEDIA)* (pp. 937-946). Vancouver, Canada: Association for the Advancement of Computing in Education (AACE).

Thornton, P., & Houser, C. (2005). Using mobile phones in English education in Japan. *Journal of Computer Assisted Learning, 21*, 217-228.

Tolentino, M. N. (2011). University web portals as information management tool: Technology acceptance dimension. *International Journal of Management & Information Systems, 15*(3), 31-40.

Traxler, J., & Vosloo, S. (2014). Introduction: The prospects for mobile learning. *Prospects, 44*, 13-28.

Trifonova, A., & Ronchetti, M. (2003, Nov). *A general architecture for m-learning.* Retrieved from http://eprints.biblio.unitn.it/archive/00000493/01/A_General_Architecture_for_M-Learning_m-ICTE2003_.pdf

Tselios, N., Daskalakis, S., & Papadopoulou, M. (2011). Assessing the acceptance of a blended learning university course. *Educational Technology & Society, 14*(2), 224-235.

Universiti Teknologi MARA. (2012). *University profile*. Retrieved from http://www.uitm.edu.my/index.php/en/about-uitm/uitm-profile-and-history/university-profile

Universiti Teknologi MARA. (2014). *Teaching portfolio – A handbook for UiTM academic staff*. Retrieved from http://hea.uitm.edu.my/v1/images/stories/acad_dev_mgt/teaching_portfolio/teaching%20portfolio%20pdf.pdf

Upadhyay, P., & Jaiswal, U. C. (2014). E-learning, learning and m-learning: An e-learning approach - a survey. *International Journal of Science, Engineering and Technology Research, 3*(4), 856-860.

Ursavas, O. F. (2015). The influence of hedonic and utilitarian motivations on teachers behavioural intention to use tablet PC. *Education and Science, 40*(179), 25-43.

Valk, J. H., Rashid, A. T., & Elder, L. (2010). Using mobile phones to improve educational outcomes: An analysis of evidence from Asia. *International Review of Research in Open and Distance Learning, 11*(1), 117-140.

van Biljon, J., & Kotze, P. (2008). Cultural factors in a mobile phone adoption and usage model. *Journal of Universal Computer Science, 14*(16), 2650-2679.

Venkatesh, B., Nargundkar, R., Sayed, F. K., & Shahaida, P. (2006). Assessing Indian students' perceptions towards m-learning: Some initial conclusions. *International Journal of Mobile Marketing, 1*(2), 75-79.

Venkatesh, V. (2000). Determinants of perceived ease of use: Integrating control, intrinsic motivation and emotion into the technology acceptance model. *Information Systems Research, 11*(4), 342-365.

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 don't men ever stop to ask for directions? Gender, social influence and their role in technology acceptance and usage behaviour. *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.

Vogel, D., Kennedy, D., & Kwok, C. W. (2009). Does using mobile device applications lead to learning? *Journal of Interactive Learning Research, 20*(4), 469-485.

Wang, H. Y., & Wang, A. H. (2010). User acceptance of mobile internet based on the unified theory of acceptance and use of technology: Investigating the

determinants and gender differences. *Social Behaviour and Personality, 38*(3), 415-426.

Wang, M., Shen, R., Novak, D., & Pan, X. (2009). The impact of mobile learning on students' learning behaviours and performance: Report from a large blended classroom. *British Journal of Educational Technology, 40*(4), 673 - 695.

Wang, Y. S., Wu, M. C., & Wang, H. Y. (2009). Investigating the determinants and age and gender differences in the acceptance of mobile learning. *British Journal of Educational Technology, 40*(1), 92-118.

Weijters, B., Cabooter, E., & Schillewaert, N. (2010). The effect of rating scale format on response styles: The number of response categories and response category labels. *International Journal of Research in Marketing, 27*, 236-247.

Weng, L. J. (2004). Impact of the number of response categories and anchor labels on coefficient alpha and test-retest reliability. *Educational and Psychological Measurement, 64*, 956-972.

Wikipedia (2015a). *M-learning*. Retrieved from http://en.wikipedia.org/wiki/M-learning

Wikipedia (2015b). *Universiti Teknologi MARA*. Retrieved from http://en.wikipedia.org/wiki/Universiti_Teknologi_MARA

Williams, J. (2010). The factors that influence faculty adoption of instructional technology: An adapted unified model. In J. Herrington, J.& B. Hunter, B. (Eds.), *Proceedings for the World Conference on Educational Multimedia, Hypermedia and Telecommunications (EDMEDIA)* (pp. 854-859). Vancouver, Canada: Association for the Advancement of Computing in Education (AACE).

Williams, M., Rana, N., Dwivedi, Y., & Lal, B. (2011). Is UTAUT really used or just cited for the sake of it? A systematic review of citations of UTAUT's originating article. *Proceedings of the 19th European Conference on Information Systems (ECIS)*. Retrieved from http://aisel.aisnet.org/ecis2011/231

Windschitl, M., & Sahl, K. (2002). Tracing teachers' use of technology in a laptop computer school: The interplay of teachers' beliefs, social dynamics and institutional culture. *American Educational Research Journal, 39*, 165-205.

Wishart, C. (2009). The future of mobile learning: The paradigm pioneers of pedagogy. In R. Guy (Ed.), *The evolution of mobile teaching and learning* (pp. 271-290). Santa Rosa, California: Informing Science Press.

Wong, K. T., Rosma Osman, Goh, P. S. C., & Mohd Khairezan Rahmat. (2013). Understanding student teachers' behavioural intention to use technology: Technology acceptance model validation and testing. *International Journal of Instruction, 6*(1), 89-104.

Wong, S. L., & Teo, T. (2008, Oct). *Predicting technology acceptance among student teachers in Malaysia: A Structural Equation Modeling approach.* Paper presented at the 16th International Conference on Computers in Education (ICCE), Taipei, Taiwan. Retrieved from http://www.apsce.net/ICCE2008/papers/ICCE2008-paper21.pdf

Yuen, A. J. K., & Ma, W. W. K. (2004). Knowledge sharing and teacher acceptance of web based learning system. In R. Atkinson, C. McBeath, D. Jonas-Dwyer & R. Phillips (Eds.), *Proceedings of the 21st ASCILITE Conference* (pp. 975-983). Perth, Australia: Australasian Society for Computers in Learning in Tertiary Education (ASCILITE).

Zainudin Awang. (2010). *Research methodology for business & social science*. Shah Alam: University Publication Centre (UPENA).

Zainudin Awang. (2012). *A handbook on SEM structural equation modeling: SEM using AMOS graphic*. Shah Alam: University Publication Centre (UPENA).

Zakour, A. B. (2004). Cultural differences and information technology acceptance. *Proceedings of the 7th Annual Conference of the Southern Association for Information Systems (SAIS)* (pp. 156-161). Georgia, U.S. Retrieved from http://sais.aisnet.org/sais2004/Zakour.pdf

Zanjan, F. V. M., & Ramazani, M. (2013). Investigation of e-learning acceptance in teaching English language based on TAM model. *Scholarly Journal of Education, 2*(2), 18-21.

Zarlina Mohd Zamari, Airil Haimi Mohd Adnan, Sheema Liza Idris, & Johana Yusof. (2012). Students' perception of using online language learning materials. *Procedia - Social and Behavioral Sciences, 67*, 611-620.

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2010). *Business research methods* (8th ed.). South-Western: Cengage Learning.

APPENDICES

Appendix A
Questionnaire Survey

Dear respondent,

I am a PhD student under the supervision of Assoc. Prof. Dr Ahmad Jelani bin Shaari at Awang Had Salleh Graduate School of Arts and Sciences, Universiti Utara Malaysia.

You have been chosen to be a part of a study entitled '*Determinants of Mobile Technology Acceptance among English Language Lecturers: A Study at Universiti Teknologi MARA'*. The objective of the study is to identify the determinants that will demonstrate acceptance and intention to use mobile technology devices by English language lecturers in UiTM. It aims to understand your needs and potentials so that they can be included in future instructional designs and university policies.

Mobile technology devices consist of portable computers or laptops, mobile phones, smart phones, PDAs, and MP3 devices such as the iPod. However, this study only focuses on personal form of mobile technology which includes mobile phones and smart phones.

The result of this study will contribute to the knowledge regarding the identification of determinants that significantly influence the intention of English language lecturers in using mobile technology especially in teaching practices. Furthermore, it is expected that the results will provide information to the management of the university in improving professional practice and work quality.

I would appreciate your responses to this study as they may be very valuable and have an impact on future university policy. This study requires you to complete a questionnaire survey consisting of eight sections. All information provided will be kept strictly confidential and stored in a secure environment. The results of this study would be used for academic purpose only.

If you have any queries regarding this study, please contact (019-9391568) or email (nazihah71@gmail.com) the researcher.

Your help in completing this questionnaire is greatly appreciated. Thank you very much for your time and cooperation.

Yours sincerely,

Wan Nazihah binti Wan Mohamed

DETERMINANTS OF MOBILE TECHNOLOGY ACCEPTANCE AMONG ENGLISH LANGUAGE LECTURERS: A STUDY AT UNIVERSITI TEKNOLOGI MARA

SECTION A: DEMOGRAPHIC PROFILE

Instructions: Please mark (X) in the appropriate box for the following questions.

1. Gender
   - ☐ [1]Male
   - ☐ [2]Female

2. Age
   - ☐ [1]Below 29 years
   - ☐ [2]30 – 39 years
   - ☐ [3]40 – 49 years
   - ☐ [4]Above 50 years

3. Highest Education Level
   - ☐ [1]Bachelor Degree
   - ☐ [2]Master Degree
   - ☐ [3]Doctoral Level
   - ☐ [4]Other (please specify) _____

4. Race
   - ☐ [1]Malay
   - ☐ [2]Chinese
   - ☐ [3]Indian
   - ☐ [4]Other (please specify) _____

5. Job title
   - ☐ [1]Associate Professor (DM53/54)
   - ☐ [2]Senior Lecturer (DM51/52)
   - ☐ [3]Lecturer (DM45/46)
   - ☐ [4]Contract Lecturer
   - ☐ [5]Other (please specify) _____

6. Monthly income
   - ☐ [1]Less than RM2000
   - ☐ [2]RM2001 – RM3000
   - ☐ [3]RM3001 – RM4000
   - ☐ [4]RM4001 – RM5000
   - ☐ [5]RM5001 – RM6000
   - ☐ [6]More than RM6001

7. Years working in Universiti Teknologi MARA (UiTM)
   - ☐ [1]Less than 5 years
   - ☐ [2]6 – 10 years
   - ☐ [3]11 – 15 years
   - ☐ [4]16 – 20 years
   - ☐ [5]More than 20 years

8. State Campus
   - ☐ [1]Johor
   - ☐ [2]Kedah
   - ☐ [3]Kelantan
   - ☐ [4]Melaka
   - ☐ [5]Negeri Sembilan
   - ☐ [6]Pahang
   - ☐ [7]Perak
   - ☐ [8]Perlis
   - ☐ [9]Pulau Pinang
   - ☐ [10]Sabah
   - ☐ [11]Sarawak
   - ☐ [12]Selangor
   - ☐ [13]Terengganu

9. Teaching hours (per week)

☐ [1]Less than 8 hours
☐ [2]9 – 12 hours
☐ [3]13 – 16 hours
☐ [4]17 – 20 hours
☐ [5]More than 20 hours

10. Type of mobile technology device(s) you currently own (you can tick more than one)

☐ [1]Cell/mobile phone
☐ [2]Smart phone
☐ [3]Tablet
☐ [4]PDA
☐ [5]Laptop/notebook
☐ [6]MP3 player
☐ [7]Other (please specify) _____

11. Experience in using mobile technology devices

Cell/mobile phone	Smart phone	Tablet	PDA	Laptop/ notebook	MP3
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐
☐	☐	☐	☐	☐	☐

[1]N/A
[2]< 1 year
[3]1-3 years
[4]3-6 years
[5]> 6 years

12. Average amount of time spent on mobile technology device(s) on a daily basis

Conversation	Messaging	Internet (Web/email)	Games/ Music	Learning/ Educational
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐
☐	☐	☐	☐	☐

[1]N/A
[2]< 1 hour
[3]1-3 hours
[4]3-6 hours
[5]> 6 hours

13. Have you ever attended any training course, workshop or seminar on using mobile technology devices?

☐ [1]Yes ☐ [2]No

14. Have you ever used your mobile phone or smart phone for learning or educational purposes?

☐ [1]Yes ☐ [2]No

SECTION B: UNIVERSITY CULTURE (UC)
Instructions: Please rate the extent to which you agree with each statement below.

1= Strongly Disagree 2= Quite Disagree 3= Slightly Disagree 4= Neutral 5= Slightly Agree 6= Quite Agree 7= Strongly Agree							
1. UiTM is a highly reputable teaching university.	1	2	3	4	5	6	7
2. UiTM plans to be a research university in the future.	1	2	3	4	5	6	7
3. UiTM lecturers need to fulfill the teaching hours of 16 to 18 hours a week.	1	2	3	4	5	6	7
4. UiTM lecturers need to teach using various approaches (i.e. face-to-face, e-learning, blended learning, mobile learning)	1	2	3	4	5	6	7
5. UiTM lecturers need to obtain grants and conduct research.	1	2	3	4	5	6	7
6. UiTM lecturers need to produce publications of professional reports (i.e. journal articles)	1	2	3	4	5	6	7
7. UiTM lecturers need to present papers in conferences	1	2	3	4	5	6	7
8. UiTM lecturers need to perform professional service duties to the faculty and/or university (i.e. administration and committee work)	1	2	3	4	5	6	7
9. UiTM lecturers need to perform professional service duties to the community (i.e. consultancy and community activities)	1	2	3	4	5	6	7

SECTION C: BEHAVIOURAL INTENTION (BI)
Instructions: Please rate the extent to which you agree with each statement below.

1= Strongly Disagree 2= Quite Disagree 3= Slightly Disagree 4= Neutral 5= Slightly Agree 6= Quite Agree 7= Strongly Agree							
1. I intend to use mobile phone in my teaching practices.	1	2	3	4	5	6	7
2. I predict I would use mobile phone in my teaching practices.	1	2	3	4	5	6	7
3. I plan to use mobile phone in my teaching practices.	1	2	3	4	5	6	7
4. I would enjoy using mobile phone for teaching purposes.	1	2	3	4	5	6	7
5. I would recommend others to use mobile phone for teaching purposes.	1	2	3	4	5	6	7

SECTION D: PERCEIVED USEFULNESS (PU)
Instructions: Please rate the extent to which you agree with each statement below.

1= Strongly Disagree 2= Quite Disagree 3= Slightly Disagree 4= Neutral 5= Slightly Agree 6= Quite Agree 7= Strongly Agree							
1. Using mobile phone would likely improve my teaching performance.	1	2	3	4	5	6	7
2. Using mobile phone would likely increase my teaching productivity.	1	2	3	4	5	6	7

3. Using mobile phone would likely enhance the effectiveness of my teaching practices.	1	2	3	4	5	6	7
4. Using mobile phone would likely be useful in my teaching practices.	1	2	3	4	5	6	7
5. Using mobile phone would likely enable me to accomplish teaching tasks more quickly	1	2	3	4	5	6	7

SECTION E: PERCEIVED EASE OF USE (PE)
Instructions: Please rate the extent to which you agree with each statement below.

1= Strongly Disagree 2= Quite Disagree 3= Slightly Disagree 4= Neutral 5= Slightly Agree 6= Quite Agree 7= Strongly Agree							
1. I would likely find my interaction with mobile phone to be clear and understandable.	1	2	3	4	5	6	7
2. I would likely find mobile phone easy to use.	1	2	3	4	5	6	7
3. I would likely find it easy to get mobile phone to do what I want it to do.	1	2	3	4	5	6	7
4. I would likely find mobile phone flexible to interact with.	1	2	3	4	5	6	7
5. I would likely find my interaction with mobile phone does not require a lot of my mental effort.	1	2	3	4	5	6	7
6. I would likely find it easy for me to be skillful at using mobile phone.	1	2	3	4	5	6	7

SECTION F: SUBJECTIVE NORM (SN)
Instructions: Please rate the extent to which you agree with each statement below.

1= Strongly Disagree 2= Quite Disagree 3= Slightly Disagree 4= Neutral 5= Slightly Agree 6= Quite Agree 7= Strongly Agree							
1. People who influence my behaviour think that I should use mobile phone in my teaching practices.	1	2	3	4	5	6	7
2. People who are important to me think that I should use mobile phone in my teaching practices.	1	2	3	4	5	6	7
3. My students think that I should use mobile phone in my teaching practices.	1	2	3	4	5	6	7
4. My peers think that I should use mobile phone in my teaching practices.	1	2	3	4	5	6	7
5. The lecturers in my faculty have been helpful in the use of mobile phone in my teaching practices.	1	2	3	4	5	6	7
6. In general, the organization has supported the use of mobile phone in my teaching practices.	1	2	3	4	5	6	7

SECTION G: SELF-EFFICACY (SE)
Instructions: Please rate the extent to which you agree with each statement below.

1= Strongly Disagree 2= Quite Disagree 3= Slightly Disagree 4= Neutral 5= Slightly Agree 6= Quite Agree 7= Strongly Agree							
1. I could complete a task using mobile phone if no one is around to tell me how to use it.	1	2	3	4	5	6	7
2. I could complete a task using mobile phone if I could call someone for help if I got stuck.	1	2	3	4	5	6	7
3. I could complete a task using mobile phone if someone shows me how to do it first.	1	2	3	4	5	6	7
4. I could complete a task using mobile phone if someone helps me to get started.	1	2	3	4	5	6	7
5. I could complete a task using mobile phone if I have a lot of time to do it.	1	2	3	4	5	6	7
6. I could complete a task using mobile phone if I have never used a product like it before.	1	2	3	4	5	6	7
7. I could complete a task using mobile phone if I have the built-in help facility for assistance.	1	2	3	4	5	6	7

SECTION H: PRIOR MOBILE TECHNOLOGY EXPERIENCE (ME)
Instructions: Please rate the extent to which you agree with each statement below.

1= Strongly Disagree 2= Quite Disagree 3= Slightly Disagree 4= Neutral 5= Slightly Agree 6= Quite Agree 7= Strongly Agree							
1. I am able to access information on the internet using mobile phone.	1	2	3	4	5	6	7
2. I am able to send and read emails using mobile phone.	1	2	3	4	5	6	7
3. I am able to send and receive Short Messaging System (SMS).	1	2	3	4	5	6	7
4. I am able to send and receive Multimedia Messaging System (MMS).	1	2	3	4	5	6	7
5. I am able to use mobile phone to play games.	1	2	3	4	5	6	7
6. I am able to use mobile phone for social networking activities.	1	2	3	4	5	6	7
7. I am able to write notes using mobile phone application.	1	2	3	4	5	6	7

Thank you for completing the questionnaire

Appendix B
Pilot Test Analysis

Behavioural Intention (BI):

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.969	.969	5

Inter-Item Correlation Matrix

	BI1	BI2	BI3	BI4	BI5
BI1	1.000	.812	.876	.847	.829
BI2	.812	1.000	.897	.845	.791
BI3	.876	.897	1.000	.928	.879
BI4	.847	.845	.928	1.000	.932
BI5	.829	.791	.879	.932	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
BI1	21.74	22.227	.882	.786	.967
BI2	21.76	22.875	.876	.809	.968
BI3	21.77	21.686	.953	.916	.955
BI4	21.81	21.667	.944	.921	.957
BI5	21.82	22.279	.905	.875	.963

Perceived Usefulness (PU):

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.973	.973	5

Inter-Item Correlation Matrix

	PU1	PU2	PU3	PU4	PU5
PU1	1.000	.903	.873	.852	.807
PU2	.903	1.000	.952	.910	.842
PU3	.873	.952	1.000	.926	.866
PU4	.852	.910	.926	1.000	.861
PU5	.807	.842	.866	.861	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PU1	20.94	21.635	.895	.825	.970
PU2	20.79	20.988	.951	.930	.962
PU3	20.81	20.159	.954	.931	.961
PU4	20.66	21.047	.933	.879	.964
PU5	20.81	20.749	.877	.779	.973

Perceived Ease of Use (PE):

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.969	.970	6

Inter-Item Correlation Matrix

	PE1	PE2	PE3	PE4	PE5	PE6
PE1	1.000	.900	.844	.872	.744	.809
PE2	.900	1.000	.899	.916	.769	.811
PE3	.844	.899	1.000	.911	.780	.866
PE4	.872	.916	.911	1.000	.777	.877
PE5	.744	.769	.780	.777	1.000	.872
PE6	.809	.811	.866	.877	.872	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PE1	28.26	30.555	.889	.830	.965
PE2	28.11	29.872	.921	.902	.961
PE3	28.08	30.043	.923	.874	.961
PE4	28.03	30.884	.937	.903	.960
PE5	28.21	30.923	.833	.778	.971
PE6	28.10	30.482	.907	.878	.963

Subjective Norm (SN):

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.933	.934	6

Inter-Item Correlation Matrix

	SN1	SN2	SN3	SN4	SN5	SN6
SN1	1.000	.858	.601	.608	.613	.612
SN2	.858	1.000	.660	.697	.585	.596
SN3	.601	.660	1.000	.885	.672	.686
SN4	.608	.697	.885	1.000	.753	.766
SN5	.613	.585	.672	.753	1.000	.936
SN6	.612	.596	.686	.766	.936	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
SN1	22.82	30.312	.740	.766	.929
SN2	22.82	29.755	.767	.791	.926
SN3	22.37	27.319	.805	.790	.922
SN4	22.74	27.801	.866	.849	.913
SN5	22.97	28.589	.823	.881	.919
SN6	22.89	27.708	.829	.885	.918

Self-Efficacy (SE):

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.921	.922	7

Inter-Item Correlation Matrix

	SE1	SE2	SE3	SE4	SE5	SE6	SE7
SE1	1.000	.572	.427	.404	.504	.540	.443
SE2	.572	1.000	.823	.791	.698	.682	.667
SE3	.427	.823	1.000	.871	.632	.599	.598
SE4	.404	.791	.871	1.000	.664	.581	.601
SE5	.504	.698	.632	.664	1.000	.623	.707
SE6	.540	.682	.599	.581	.623	1.000	.744
SE7	.443	.667	.598	.601	.707	.744	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
SE1	33.29	37.816	.559	.399	.929
SE2	33.40	34.572	.868	.783	.897
SE3	33.34	34.851	.800	.807	.904
SE4	33.55	34.907	.790	.788	.905
SE5	33.13	36.081	.770	.623	.907
SE6	33.47	36.089	.755	.638	.909
SE7	33.24	36.088	.752	.660	.909

Prior Mobile Technology Experience (ME):

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.936	.942	7

Inter-Item Correlation Matrix

	ME1	ME2	ME3	ME4	ME5	ME6	ME7
ME1	1.000	.757	.664	.886	.659	.631	.809
ME2	.757	1.000	.576	.783	.553	.533	.854
ME3	.664	.576	1.000	.699	.519	.921	.627
ME4	.886	.783	.699	1.000	.736	.653	.888
ME5	.659	.553	.519	.736	1.000	.562	.770
ME6	.631	.533	.921	.653	.562	1.000	.625
ME7	.809	.854	.627	.888	.770	.625	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ME1	37.00	36.754	.858	.800	.920
ME2	37.05	35.785	.781	.776	.929
ME3	36.71	41.455	.743	.876	.933
ME4	36.87	36.704	.917	.885	.915
ME5	37.13	35.524	.724	.664	.937
ME6	36.74	41.145	.724	.865	.933
ME7	36.98	35.459	.909	.891	.915

University Culture (UC):

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.875	.882	9

Inter-Item Correlation Matrix

	UC1	UC2	UC3	UC4	UC5	UC6	UC7	UC8	UC9
UC1	1.000	.644	.414	.334	.365	.492	.309	.252	.384
UC2	.644	1.000	.496	.311	.212	.278	.204	.128	.283
UC3	.414	.496	1.000	.353	.141	.241	.127	.412	.301
UC4	.334	.311	.353	1.000	.413	.494	.393	.450	.394
UC5	.365	.212	.141	.413	1.000	.750	.860	.567	.686
UC6	.492	.278	.241	.494	.750	1.000	.871	.733	.813
UC7	.309	.204	.127	.393	.860	.871	1.000	.689	.780
UC8	.252	.128	.412	.450	.567	.733	.689	1.000	.721
UC9	.384	.283	.301	.394	.686	.813	.780	.721	1.000

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
UC1	47.15	37.831	.543	.597	.868
UC2	47.06	39.111	.432	.540	.876
UC3	47.15	36.520	.401	.477	.889
UC4	46.48	39.172	.539	.347	.869
UC5	47.00	34.164	.691	.767	.855
UC6	47.10	34.646	.832	.867	.844
UC7	47.16	34.301	.744	.888	.850
UC8	47.13	34.737	.700	.698	.854
UC9	47.13	34.934	.778	.723	.848

Appendix C
Comments for Content Validity

UUM
Universiti Utara Malaysia

UNIVERSITI UTARA MALAYSIA
ILMU BUDI BAKTI
UUM
Universiti Utara Malaysia

UUM
Universiti Utara Malaysia

UUM
Universiti Utara Malaysia

UUM
Universiti Utara Malaysia

UUM
Universiti Utara Malaysia

UUM
Universiti Utara Malaysia

UUM
Universiti Utara Malaysia

UUM
Universiti Utara Malaysia

UUM
Universiti Utara Malaysia

UUM
Universiti Utara Malaysia

Appendix D
Outliers Analysis

Boxplot for Gender

Boxplot for Age

Boxplot for Highest Education Level

Boxplot for Race

Boxplot for Job Title

Boxplot for Monthly Income

Boxplot for Years Working in UiTM

Boxplot for State Campus

Boxplot for Teaching Hours

Appendix E
Demographic Analysis

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	59	17.5	17.5	17.5
	Female	278	82.5	82.5	100.0
	Total	337	100.0	100.0	

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Below 29 years	100	29.7	29.7	29.7
	30-39 years	87	25.8	25.8	55.5
	40-49 years	94	27.9	27.9	83.4
	Above 50 years	56	16.6	16.6	100.0
	Total	337	100.0	100.0	

Highest Education Level

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Bachelor Degree	26	7.7	7.7	7.7
	Master Degree	287	85.2	85.2	92.9
	Doctoral Level	24	7.1	7.1	100.0
	Total	337	100.0	100.0	

Race

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Malay	278	82.5	82.5	82.5
	Chinese	21	6.2	6.2	88.7
	Indian	18	5.3	5.3	94.1
	Other (Please specify)	20	5.9	5.9	100.0
	Total	337	100.0	100.0	

Job Title

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Associate Professor (DM53/54)	9	2.7	2.7	2.7
	Senior Lecturer (DM51/52)	88	26.1	26.1	28.8
	Lecturer (DM45/46)	200	59.3	59.3	88.1
	Contract Lecturer	40	11.9	11.9	100.0
	Total	337	100.0	100.0	

Monthly Income

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than RM2000	24	7.1	7.1	7.1
	RM2000-RM3000	24	7.1	7.1	14.2
	RM3001-RM4000	66	19.6	19.6	33.8
	RM4001-RM5000	79	23.4	23.4	57.3
	RM5001-RM6000	50	14.8	14.8	72.1
	More than RM6001	94	27.9	27.9	100.0
	Total	337	100.0	100.0	

Years working in University Teknologi MARA (UiTM)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 5 years	118	35.0	35.0	35.0
	6-10 years	95	28.2	28.2	63.2
	11-15 years	63	18.7	18.7	81.9
	16-20 years	29	8.6	8.6	90.5
	More than 20 years	32	9.5	9.5	100.0
	Total	337	100.0	100.0	

State Campus

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Johor	37	11.0	11.0	11.0
	Kedah	22	6.5	6.5	17.5
	Kelantan	31	9.2	9.2	26.7
	Melaka	39	11.6	11.6	38.3
	Negeri Sembilan	23	6.8	6.8	45.1
	Pahang	29	8.6	8.6	53.7
	Perak	44	13.1	13.1	66.8
	Perlis	17	5.0	5.0	71.8
	Pulau Pinang	13	3.9	3.9	75.7
	Sabah	12	3.6	3.6	79.2
	Sarawak	30	8.9	8.9	88.1
	Selangor	17	5.0	5.0	93.2
	Terengganu	23	6.8	6.8	100.0
	Total	337	100.0	100.0	

Teaching Hours (per week)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Less than 8 hours	8	2.4	2.4	2.4
	9-12 hours	12	3.6	3.6	5.9
	13-16 hours	56	16.6	16.6	22.6
	17-20 hours	164	48.7	48.7	71.2
	More than 20 hours	97	28.8	28.8	100.0
	Total	337	100.0	100.0	

Type of mobile technology device: Cell/Mobile Phone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Ticked	226	67.1	67.1	67.1
	Ticked	111	32.9	32.9	100.0
	Total	337	100.0	100.0	

Type of mobile technology device: Smart Phone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Ticked	33	9.8	9.8	9.8
	Ticked	304	90.2	90.2	100.0
	Total	337	100.0	100.0	

Type of mobile technology device: Tablet

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Ticked	234	69.4	69.4	69.4
	Ticked	103	30.6	30.6	100.0
	Total	337	100.0	100.0	

Type of mobile technology device: PDA

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Ticked	333	98.8	98.8	98.8
	Ticked	4	1.2	1.2	100.0
	Total	337	100.0	100.0	

Type of mobile technology device: Laptop/Notebook

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Ticked	60	17.8	17.8	17.8
	Ticked	277	82.2	82.2	100.0
	Total	337	100.0	100.0	

Type of mobile technology device: MP3 Player

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Ticked	289	85.8	85.8	85.8
	Ticked	48	14.2	14.2	100.0
	Total	337	100.0	100.0	

Type of mobile technology device: Others

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Not Ticked	333	98.8	98.8	98.8
	Ticked	4	1.2	1.2	100.0
	Total	337	100.0	100.0	

Experience using Cell/Mobile Phone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	84	24.9	24.9	24.9
	N/A	11	3.3	3.3	28.2
	< 1 year	5	1.5	1.5	29.7
	1-3 years	10	3.0	3.0	32.6
	3-6 years	19	5.6	5.6	38.3
	> 6 years	208	61.7	61.7	100.0
	Total	337	100.0	100.0	

Experience using Smart Phone

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	26	7.7	7.7	7.7
	N/A	11	3.3	3.3	11.0
	< 1 year	19	5.6	5.6	16.6
	1-3 years	43	12.8	12.8	29.4
	3-6 years	96	28.5	28.5	57.9
	> 6 years	142	42.1	42.1	100.0
	Total	337	100.0	100.0	

Experience using Tablet

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	157	46.6	46.6	46.6
	N/A	42	12.5	12.5	59.1
	< 1 year	20	5.9	5.9	65.0
	1-3 years	24	7.1	7.1	72.1
	3-6 years	59	17.5	17.5	89.6
	> 6 years	35	10.4	10.4	100.0
	Total	337	100.0	100.0	

Experience using PDA

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	225	66.8	66.8	66.8
	N/A	91	27.0	27.0	93.8
	< 1 year	3	.9	.9	94.7
	1-3 years	6	1.8	1.8	96.4
	3-6 years	2	.6	.6	97.0
	> 6 years	10	3.0	3.0	100.0
	Total	337	100.0	100.0	

Experience using Laptop/Notebook

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	18	5.3	5.3	5.3
	N/A	5	1.5	1.5	6.8
	< 1 year	2	.6	.6	7.4
	1-3 years	1	.3	.3	7.7
	3-6 years	22	6.5	6.5	14.2
	> 6 years	289	85.8	85.8	100.0
	Total	337	100.0	100.0	

Experience using MP3 Player

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	191	56.7	56.7	56.7
	N/A	51	15.1	15.1	71.8
	< 1 year	7	2.1	2.1	73.9
	1-3 years	13	3.9	3.9	77.7
	3-6 years	13	3.9	3.9	81.6
	> 6 years	62	18.4	18.4	100.0
	Total	337	100.0	100.0	

Time spent on Conversation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	9	2.7	2.7	2.7
	N/A	38	11.3	11.3	13.9
	< 1 hour	136	40.4	40.4	54.3
	1-3 hours	69	20.5	20.5	74.8
	3-6 hours	33	9.8	9.8	84.6
	> 6 hours	52	15.4	15.4	100.0
	Total	337	100.0	100.0	

Time spent on Messaging

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	5	1.5	1.5	1.5
	N/A	24	7.1	7.1	8.6
	< 1 hour	117	34.7	34.7	43.3
	1-3 hours	74	22.0	22.0	65.3
	3-6 hours	46	13.6	13.6	78.9
	> 6 hours	71	21.1	21.1	100.0
	Total	337	100.0	100.0	

Time spent on Internet (Web/Email)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	15	4.5	4.5	4.5
	N/A	15	4.5	4.5	8.9
	< 1 hour	52	15.4	15.4	24.3
	1-3 hours	96	28.5	28.5	52.8
	3-6 hours	71	21.1	21.1	73.9
	> 6 hours	88	26.1	26.1	100.0
	Total	337	100.0	100.0	

Time spent on Games/Music

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	46	13.6	13.6	13.6
	N/A	120	35.6	35.6	49.3
	< 1 hour	94	27.9	27.9	77.2
	1-3 hours	30	8.9	8.9	86.1
	3-6 hours	13	3.9	3.9	89.9
	> 6 hours	34	10.1	10.1	100.0
	Total	337	100.0	100.0	

Time spent on Learning/Educational

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	17	5.0	5.0	5.0
	N/A	13	3.9	3.9	8.9
	< 1 hour	76	22.6	22.6	31.5
	1-3 hours	107	31.8	31.8	63.2
	3-6 hours	83	24.6	24.6	87.8
	> 6 hours	41	12.2	12.2	100.0
	Total	337	100.0	100.0	

Attended training course, workshop or seminar on using mobile technology devices

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	96	28.5	28.5	28.5
	No	241	71.5	71.5	100.0
	Total	337	100.0	100.0	

Used mobile phone or smart phone for learning or educational purposes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	268	79.5	79.5	79.5
	No	69	20.5	20.5	100.0
	Total	337	100.0	100.0	

Appendix F
Common Method Bias Analysis

Total variance explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	15.681	43.559	43.559	15.681	43.559	43.559
2	3.783	10.509	54.068			
3	3.443	9.563	63.631			
4	2.207	6.130	69.761			
5	1.694	4.705	74.466			
6	1.082	3.006	77.472			
7	.718	1.995	79.466			
8	.687	1.909	81.375			
9	.596	1.655	83.030			
10	.525	1.458	84.489			
11	.517	1.435	85.924			
12	.487	1.352	87.276			
13	.415	1.153	88.428			
14	.399	1.110	89.538			
15	.385	1.071	90.609			
16	.344	.956	91.565			
17	.311	.864	92.429			
18	.293	.813	93.242			
19	.275	.765	94.007			
20	.244	.679	94.686			
21	.231	.641	95.326			
22	.203	.563	95.889			
23	.187	.520	96.409			
24	.167	.463	96.872			
25	.154	.428	97.301			
26	.152	.422	97.723			
27	.121	.336	98.059			
28	.121	.335	98.394			
29	.103	.286	98.679			
30	.096	.266	98.946			
31	.091	.252	99.198			
32	.072	.199	99.397			
33	.064	.178	99.575			
34	.056	.156	99.731			
35	.051	.142	99.873			
36	.046	.127	100.000			

Appendix G
Confirmatory Factor Analysis

Regression Weights for BI Variable (before modification)

			Estimate	S.E.	C.R.	P
BI1	<---	Behav_Int	1.000			
BI2	<---	Behav_Int	.949	.031	30.749	***
BI3	<---	Behav_Int	1.028	.029	35.148	***
BI4	<---	Behav_Int	1.022	.033	31.185	***
BI5	<---	Behav_Int	1.002	.034	29.557	***

Regression Weights for BI Variable (after modification)

			Estimate	S.E.	C.R.	P
BI1	<---	Behav_Int	1.000			
BI2	<---	Behav_Int	.955	.029	32.436	***
BI3	<---	Behav_Int	1.035	.028	37.110	***
BI4	<---	Behav_Int	.987	.034	29.145	***
BI5	<---	Behav_Int	.961	.035	27.310	***

Regression Weights for PU Variable (before modification)

			Estimate	S.E.	C.R.	P
PU1	<---	Perc_Useful	1.000			
PU2	<---	Perc_Useful	1.030	.027	37.964	***
PU3	<---	Perc_Useful	1.042	.026	40.534	***
PU4	<---	Perc_Useful	.984	.029	34.481	***
PU5	<---	Perc_Useful	.972	.034	28.252	***

Regression Weights for PU Variable (after modification)

			Estimate	S.E.	C.R.	P
PU1	<---	Perc_Useful	1.000			
PU2	<---	Perc_Useful	1.028	.023	43.964	***
PU3	<---	Perc_Useful	1.058	.027	38.761	***
PU4	<---	Perc_Useful	.997	.032	30.830	***
PU5	<---	Perc_Useful	.975	.036	27.028	***

Regression Weights for PE Variable (before modification)

			Estimate	S.E.	C.R.	P
PE1	<---	Perc_Ease	1.000			
PE2	<---	Perc_Ease	1.040	.050	20.951	***
PE3	<---	Perc_Ease	1.137	.051	22.189	***
PE4	<---	Perc_Ease	1.062	.047	22.421	***
PE5	<---	Perc_Ease	1.015	.068	14.992	***
PE6	<---	Perc_Ease	1.022	.052	19.583	***

Regression Weights for PE Variable (after modification)

			Estimate	S.E.	C.R.	P
PE1	<---	Perc_Ease	1.000			
PE2	<---	Perc_Ease	1.053	.046	23.041	***
PE3	<---	Perc_Ease	1.172	.055	21.208	***
PE4	<---	Perc_Ease	1.094	.051	21.455	***
PE5	<---	Perc_Ease	1.015	.072	14.178	***
PE6	<---	Perc_Ease	1.035	.056	18.500	***

Regression Weights for SN Variable (before modification)

			Estimate	S.E.	C.R.	P
SN1	<---	Subj_Norm	1.000			
SN2	<---	Subj_Norm	1.047	.036	28.855	***
SN3	<---	Subj_Norm	.976	.052	18.625	***
SN4	<---	Subj_Norm	1.013	.047	21.661	***
SN5	<---	Subj_Norm	.832	.049	17.055	***
SN6	<---	Subj_Norm	.772	.053	14.639	***

Regression Weights for SN Variable (after modification)

			Estimate	S.E.	C.R.	P
SN1	<---	Subj_Norm	1.000			
SN2	<---	Subj_Norm	1.077	.032	33.245	***
SN3	<---	Subj_Norm	1.085	.069	15.703	***
SN4	<---	Subj_Norm	1.176	.065	18.223	***
SN5	<---	Subj_Norm	.933	.059	15.690	***
SN6	<---	Subj_Norm	.882	.062	14.149	***

Regression Weights for SE Variable (before modification)

			Estimate	S.E.	C.R.	P
SE1	<---	Self_Efficacy	1.000			
SE2	<---	Self_Efficacy	2.851	.614	4.645	***
SE3	<---	Self_Efficacy	4.046	.857	4.722	***
SE4	<---	Self_Efficacy	4.147	.881	4.708	***
SE5	<---	Self_Efficacy	2.641	.575	4.597	***
SE6	<---	Self_Efficacy	2.035	.468	4.350	***
SE7	<---	Self_Efficacy	2.120	.474	4.477	***

Regression Weights for SE Variable (after modification)

			Estimate	S.E.	C.R.	P
SE2	<---	Self_Efficacy	1.000			
SE3	<---	Self_Efficacy	1.483	.093	16.002	***
SE4	<---	Self_Efficacy	1.515	.095	15.988	***
SE5	<---	Self_Efficacy	.907	.073	12.414	***

Regression Weights for ME Variable (before modification)

			Estimate	S.E.	C.R.	P
ME1	<---	Mobile_Exp	1.000			
ME2	<---	Mobile_Exp	1.017	.050	20.191	***
ME3	<---	Mobile_Exp	.564	.036	15.566	***
ME4	<---	Mobile_Exp	.951	.048	20.013	***
ME5	<---	Mobile_Exp	.935	.080	11.624	***
ME6	<---	Mobile_Exp	.840	.044	19.275	***
ME7	<---	Mobile_Exp	1.034	.063	16.476	***

Regression Weights for ME Variable (after modification)

			Estimate	S.E.	C.R.	P
ME1	<---	Mobile_Exp	1.000			
ME2	<---	Mobile_Exp	.950	.048	19.889	***
ME3	<---	Mobile_Exp	.608	.041	14.847	***
ME4	<---	Mobile_Exp	1.032	.053	19.553	***
ME6	<---	Mobile_Exp	.881	.049	17.828	***
ME7	<---	Mobile_Exp	1.079	.070	15.359	***

Regression Weights for UC Variable (before modification)

			Estimate	S.E.	C.R.	P
UC1	<---	Univ_Culture	1.000			
UC2	<---	Univ_Culture	.972	.197	4.927	***
UC3	<---	Univ_Culture	1.705	.343	4.972	***
UC4	<---	Univ_Culture	1.101	.206	5.346	***
UC5	<---	Univ_Culture	2.441	.396	6.161	***
UC6	<---	Univ_Culture	2.421	.386	6.266	***
UC7	<---	Univ_Culture	2.433	.389	6.255	***
UC8	<---	Univ_Culture	1.775	.304	5.835	***
UC9	<---	Univ_Culture	1.661	.280	5.939	***

Regression Weights for UC Variable (after modification)

			Estimate	S.E.	C.R.	P
UC5	<---	Univ_Culture	1.572	.131	12.045	***
UC6	<---	Univ_Culture	1.574	.120	13.124	***
UC7	<---	Univ_Culture	1.609	.121	13.288	***
UC8	<---	Univ_Culture	1.053	.071	14.865	***
UC9	<---	Univ_Culture	1.000			

Appendix H
Measurement Model Analysis

Standardized Regression Weights (before modification)

			Estimate				Estimate
BI5	<---	BI	.926	SN4	<---	SN	.903
BI4	<---	BI	.938	SN3	<---	SN	.832
BI3	<---	BI	.955	SN2	<---	SN	.907
BI2	<---	BI	.924	SN1	<---	SN	.883
BI1	<---	BI	.921	SE1	<---	SE	.277
PE6	<---	PE	.861	SE2	<---	SE	.725
PE5	<---	PE	.714	SE3	<---	SE	.932
PE4	<---	PE	.936	SE4	<---	SE	.926
PE3	<---	PE	.931	SE5	<---	SE	.677
PE2	<---	PE	.895	SE6	<---	SE	.493
PE1	<---	PE	.828	ME1	<---	ME	.889
PU1	<---	PU	.934	ME2	<---	ME	.823
PU2	<---	PU	.958	ME3	<---	ME	.718
PU3	<---	PU	.975	ME4	<---	ME	.828
PU4	<---	PU	.945	ME5	<---	ME	.580
PU5	<---	PU	.892	ME6	<---	ME	.813
SN6	<---	SN	.721	ME7	<---	ME	.743
SN5	<---	SN	.772	SE7	<---	SE	.568

Standardized Regression Weights (after modification)

			Estimate				Estimate
BI5	<---	BI	.896	SN6	<---	SN	.728
BI4	<---	BI	.913	SN5	<---	SN	.768
BI3	<---	BI	.965	SN4	<---	SN	.926
BI2	<---	BI	.937	SN3	<---	SN	.832
BI1	<---	BI	.928	SN2	<---	SN	.853
PE6	<---	PE	.853	SN1	<---	SN	.815
PE5	<---	PE	.697	SE2	<---	SE	.707
PE4	<---	PE	.938	SE3	<---	SE	.947
PE3	<---	PE	.932	SE4	<---	SE	.934
PE2	<---	PE	.897	SE5	<---	SE	.647
PE1	<---	PE	.827	ME1	<---	ME	.895
PU1	<---	PU	.921	ME2	<---	ME	.822
PU2	<---	PU	.949	ME3	<---	ME	.717
PU3	<---	PU	.977	ME4	<---	ME	.829
PU4	<---	PU	.950	ME6	<---	ME	.811
PU5	<---	PU	.895	ME7	<---	ME	.734

Covariances

			M.I.	Par Change
e36	<-->	BI	14.923	.135
e35	<-->	SE	4.004	.024
e34	<-->	e36	11.857	.236
e32	<-->	SN	8.266	-.069
e32	<-->	PE	4.769	.046
e32	<-->	BI	4.906	-.045
e32	<-->	e36	21.767	-.136
e32	<-->	e35	18.584	.083
e32	<-->	e33	7.704	.058
e31	<-->	e36	7.846	.109
e31	<-->	e35	10.523	-.083
e31	<-->	e33	11.566	-.094
e30	<-->	e36	6.581	-.078
e30	<-->	e31	20.539	.106
e29	<-->	ME	8.928	.151
e29	<-->	BI	5.576	.094
e28	<-->	BI	7.296	.125
e28	<-->	e36	14.335	.251
e28	<-->	e34	9.753	.284
e28	<-->	e32	11.456	-.131
e28	<-->	e31	6.462	.132
e28	<-->	e29	35.991	.453
e27	<-->	e29	60.773	.474
e26	<-->	ME	8.522	-.098
e26	<-->	e29	9.482	-.131
e26	<-->	e28	4.722	-.108
e26	<-->	e27	6.272	-.100
e25	<-->	e35	4.141	.049
e25	<-->	e31	4.635	-.061
e25	<-->	e29	19.951	-.183
e25	<-->	e28	11.227	-.160
e25	<-->	e27	7.506	-.105
e25	<-->	e26	21.915	.109
e24	<-->	ME	12.599	.159
e24	<-->	e27	5.289	.124
e23	<-->	ME	20.847	.268
e23	<-->	SE	7.426	-.064
e23	<-->	PE	12.747	.171
e23	<-->	e36	7.661	.183
e23	<-->	e34	5.315	.209
e23	<-->	e29	34.038	.440
e23	<-->	e28	62.360	.693
e23	<-->	e27	10.982	.235
e23	<-->	e26	39.910	-.315
e23	<-->	e25	12.988	-.173
e23	<-->	e24	27.493	.351
e22	<-->	PE	4.338	-.057

			M.I.	Par Change
e16	<-->	e23	4.624	.094
e15	<-->	SN	6.495	-.050
e15	<-->	PU	4.930	-.032
e15	<-->	BI	11.171	.056
e15	<-->	e36	6.456	-.061
e15	<-->	e35	5.820	.038
e15	<-->	e31	6.012	-.046
e15	<-->	e23	5.529	-.075
e15	<-->	e16	11.869	.054
e14	<-->	e15	5.164	.020
e13	<-->	BI	4.007	-.031
e13	<-->	e18	8.741	-.062
e13	<-->	e16	9.181	-.044
e12	<-->	e35	7.311	-.047
e12	<-->	e30	6.081	.040
e12	<-->	e17	9.729	-.084
e12	<-->	e15	30.958	-.069
e12	<-->	e13	43.776	.076
e11	<-->	PU	4.587	.045
e11	<-->	PE	8.699	-.075
e11	<-->	e17	4.779	-.079
e11	<-->	e12	6.593	.047
e10	<-->	e32	4.063	.033
e10	<-->	e28	5.300	-.085
e10	<-->	e24	5.702	.067
e10	<-->	e19	6.942	-.054
e10	<-->	e15	4.785	.029
e10	<-->	e11	18.221	.083
e9	<-->	e21	4.195	.037
e9	<-->	e11	13.084	-.063
e8	<-->	e9	10.336	.035
e7	<-->	ME	4.709	-.096
e7	<-->	SE	8.864	.053
e7	<-->	e28	6.081	.163
e7	<-->	e17	13.698	.189
e7	<-->	e10	9.703	-.086
e6	<-->	e35	7.080	-.056
e6	<-->	e28	6.542	.107
e6	<-->	e23	4.063	.084
e6	<-->	e21	8.415	-.065
e6	<-->	e7	28.655	.167
e5	<-->	e35	5.008	-.047
e5	<-->	e31	4.304	.051
e5	<-->	e12	4.296	.034
e5	<-->	e8	6.634	-.037
e5	<-->	e6	12.760	.071
e4	<-->	e35	5.306	-.045

			M.I.	Par Change
e22	<-->	BI	4.366	-.055
e21	<-->	SE	6.042	-.031
e21	<-->	SN	4.647	.062
e21	<-->	e22	147.593	.316
e20	<-->	ME	5.136	.093
e20	<-->	SN	4.907	-.084
e20	<-->	e30	5.653	.068
e20	<-->	e22	5.636	-.082
e20	<-->	e21	19.678	-.144
e19	<-->	e35	4.461	-.051
e19	<-->	e28	8.325	.140
e19	<-->	e22	30.764	-.148
e19	<-->	e21	8.856	-.075
e19	<-->	e20	57.782	.254
e18	<-->	PU	10.432	-.092
e18	<-->	PE	7.657	.095
e18	<-->	e36	5.438	.110
e18	<-->	e27	4.671	.109
e18	<-->	e22	7.046	-.094
e18	<-->	e20	5.961	-.107
e17	<-->	SE	11.322	.062
e17	<-->	PE	15.073	.144
e17	<-->	e34	5.247	.162
e17	<-->	e27	11.168	.184
e17	<-->	e24	6.814	.136
e17	<-->	e22	21.051	-.176
e17	<-->	e21	17.277	-.151
e17	<-->	e19	6.277	.094
e17	<-->	e18	89.866	.460
e16	<-->	PE	9.294	.073
e16	<-->	e34	5.443	-.106
e16	<-->	e31	5.452	-.060

			M.I.	Par Change
e4	<-->	e31	8.995	.069
e4	<-->	e12	6.475	.039
e4	<-->	e10	4.386	-.034
e4	<-->	e5	11.312	.062
e3	<-->	PU	7.858	-.043
e3	<-->	e30	25.799	.080
e3	<-->	e29	5.465	.068
e3	<-->	e5	11.230	.053
e3	<-->	e4	27.615	.077
e2	<-->	e35	4.588	.041
e2	<-->	e30	6.215	-.045
e2	<-->	e22	7.816	-.061
e2	<-->	e12	7.830	-.043
e2	<-->	e6	8.069	-.052
e2	<-->	e5	17.390	-.075
e2	<-->	e4	18.710	-.072
e2	<-->	e3	5.114	-.032
e1	<-->	ME	5.513	-.064
e1	<-->	PU	5.462	.043
e1	<-->	e35	4.676	.044
e1	<-->	e34	6.107	.105
e1	<-->	e30	8.005	-.054
e1	<-->	e15	4.150	.030
e1	<-->	e14	6.136	.029
e1	<-->	e12	10.319	-.052
e1	<-->	e9	4.253	.032
e1	<-->	e6	7.404	-.053
e1	<-->	e5	6.551	-.049
e1	<-->	e4	32.429	-.102
e1	<-->	e3	18.474	-.066
e1	<-->	e2	118.896	.191

Appendix I
Model Fit Analysis

Model Fit Summary (before modification)

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	87	2060.240	579	.000	3.558
Saturated model	666	.000	0		
Independence model	36	13875.293	630	.000	22.024

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.185	.733	.693	.637
Saturated model	.000	1.000		
Independence model	.751	.127	.077	.120

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.852	.838	.889	.878	.888
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.919	.783	.816
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.087	.083	.091	.000
Independence model	.250	.247	.254	.000

Model Fit Summary (after modification)

CMIN

Model	NPAR	CMIN	DF	P	CMIN/DF
Default model	85	958.604	443	.000	2.164
Saturated model	528	.000	0		
Independence model	32	12947.194	496	.000	26.103

RMR, GFI

Model	RMR	GFI	AGFI	PGFI
Default model	.097	.852	.823	.714
Saturated model	.000	1.000		
Independence model	.786	.128	.072	.120

Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI
Default model	.926	.917	.959	.954	.959
Saturated model	1.000		1.000		1.000
Independence model	.000	.000	.000	.000	.000

Parsimony-Adjusted Measures

Model	PRATIO	PNFI	PCFI
Default model	.893	.827	.856
Saturated model	.000	.000	.000
Independence model	1.000	.000	.000

RMSEA

Model	RMSEA	LO 90	HI 90	PCLOSE
Default model	.059	.054	.064	.002
Independence model	.273	.269	.277	.000

Appendix J
Structural Model Analysis

Regression Weights

			Estimate	S.E.	C.R.	P
PE	<---	SN	.401	.053	7.509	***
PE	<---	SE	-.171	.050	-3.437	***
PE	<---	ME	.450	.049	9.129	***
PU	<---	SN	.421	.065	6.445	***
PU	<---	SE	.067	.055	1.224	.221
PU	<---	ME	.185	.060	3.079	.002
PU	<---	PE	.532	.072	7.431	***
BI	<---	PE	.031	.055	.575	.565
BI	<---	PU	.917	.053	17.353	***

Squared Multiple Correlations

	Estimate
PE	.443
PU	.573
BI	.774

Appendix K
Mediating Analysis

Regression Weights (without mediator)

			Estimate	S.E.	C.R.	P
BI	<---	SN	.681	.075	9.069	***
BI	<---	SE	-.054	.064	-.838	.402
BI	<---	ME	.404	.062	6.524	***

Standardized Direct Effects

	ME	SE	SN	PU	PE	BI
PU	.358	-.033	.537	.000	.000	.000
PE	.476	-.186	.448	.000	.000	.000
BI	.042	-.027	.128	.788	-.007	.000

Standardized Indirect Effects

	ME	SE	SN	PU	PE	BI
PU	.000	.000	.000	.000	.000	.000
PE	.000	.000	.000	.000	.000	.000
BI	.279	-.025	.420	.000	.000	.000

Standardized Total Effects

	ME	SE	SN	PU	PE	BI
PU	.358	-.033	.537	.000	.000	.000
PE	.476	-.186	.448	.000	.000	.000
BI	.321	-.052	.548	.788	-.007	.000

Appendix L
Moderator Analysis

Age (Unconstrained)

Age (Constrained on PU)

Age (Constrained on PE)

Gender (Unconstrained)

Gender (Constrained on PU) *Gender (Constrained on PE)*

University Culture (Unconstrained)

University Culture (Constrained on PU) *University Culture (Constrained on PE)*

Appendix M
Measurement Items Analysis

Means and standard deviations for measurement items

Items	N	Mean	Std. Deviation
UC1	337	5.69	1.203
UC2	337	5.91	1.021
UC3	337	5.62	1.745
UC4	337	6.21	.951
UC5	337	5.79	1.234
UC6	337	5.88	1.078
UC7	337	5.92	1.079
UC8	337	5.75	1.168
UC9	337	5.84	1.024
BI1	337	5.30	1.436
BI2	337	5.38	1.360
BI3	337	5.32	1.419
BI4	337	5.27	1.448
BI5	337	5.25	1.442
PU1	337	5.08	1.323
PU2	337	5.14	1.326
PU3	337	5.15	1.320
PU4	337	5.28	1.292
PU5	337	5.24	1.351
PE1	337	5.42	1.150
PE2	337	5.62	1.098
PE3	337	5.52	1.150
PE4	337	5.63	1.070
PE5	337	5.20	1.335
PE6	337	5.51	1.118
SN1	337	4.29	1.388
SN2	337	4.33	1.416
SN3	337	4.68	1.509
SN4	337	4.40	1.436
SN5	337	4.34	1.371
SN6	337	4.26	1.381
SE1	337	5.32	1.318
SE2	337	5.26	1.363
SE3	337	5.13	1.491
SE4	337	5.00	1.530
SE5	337	5.36	1.358
SE6	337	4.74	1.447
SE7	337	5.39	1.307
ME1	337	6.13	1.112
ME2	337	6.09	1.219
ME3	337	6.43	.776
ME4	337	6.12	1.129
ME5	337	5.67	1.587
ME6	337	6.26	1.016
ME7	337	5.86	1.371
Valid N (listwise)	337		