

**BEHAVIOURAL INTENTION TO ADOPT POINT OF
SALES TECHNOLOGY IN NIGERIAN
RETAIL INDUSTRY**

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**BEHAVIOURAL INTENTION TO ADOPT POINT OF SALES TECHNOLOGY
IN NIGERIAN RETAIL INDUSTRY**

By

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**Thesis Submitted to
School of Business Management,
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in Fulfilment of the Requirement for the Degree of Doctor of Philosophy**

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ABSTRAK

Tujuan kajian ini adalah untuk mengkaji pengaruh jangkaan prestasi, jangkaan usaha, sosial, suasana mendorong dan pertimbangan pelanggan terhadap niat tingkah laku untuk menggunakan terminal tempat jualan dalam industri peruncitan di Nigeria dan kesan perantara kesedaran teknologi. Data telah dikumpulkan menerusi 165 pemilik atau pengurus perniagaan runcit di Nigeria, dalam tinjauan keratan lintang dan dianalisis dengan menggunakan teknik kuasa dua terkecil separa teknik pemodelan persamaan struktur. Hasil ujian hipotesis mengesahkan bahawa jangkaan prestasi, pengaruh sosial, suasana mendorong dan pertimbangan pelanggan mempunyai pengaruh yang signifikan terhadap niat tingkah laku, manakala tidak bagi jangkaan usaha. Begitu juga, perantara hubungan kesedaran teknologi antara jangkaan usaha, niat sosial dan tingkah laku, tetapi tiada perantaraan hubungan antara jangkaan prestasi, pemudah keadaan dan niat tingkah laku. Model yang digunakan telah menjelaskan 56 peratus variasi yang terdapat dalam niat tingkah laku. Oleh kerana keterbatasan sumber, kajian ini memberi tumpuan kepada niat sahaja dan mengabaikan penggunaan disebabkan sebagaimana kajian ini menggunakan tinjauan keratan-lentang. Oleh yang demikian, kajian masa hadapan disarankan untuk memperluaskan skop kajian dengan mengkaji niat dan tingkah laku sebenar, mungkin dalam kajian longitud. Berdasarkan bukti empirikal, pertimbangan pelanggan dan kesedaran teknologi merupakan isu penting dalam penyebaran teknologi. Pengamal sektor ini perlu memberi perhatian yang lebih dalam aspek berkenaan khususnya pelaksanaan teknologi dalam perniagaan runcit. Penemuan baru penyelidikan ini menjadi perintis dalam integrasi pertimbangan pelanggan dan perantara kesan teknologi sebagai sumber rujukan dalam penggunaan teknologi. Oleh itu, kajian ini memberikan maklumat tambahan kepada kajian lepas yang sedia ada dan melanjutkan teori secara empirikal terhadap penerimaan dan penggunaan teknologi dengan perbimbangan pelanggan dan kesedaran teknologi.

Kata kunci: Niat tingkah laku, perniagaan runcit, pertimbangan pelanggan, kesedaran teknologi, terminal tempat jualan.

ABSTRACT

The purpose of this study is to investigate the influence of performance expectancy, effort expectancy, social influence, facilitating conditions and customer concerns on behavioural intention to use point of sale terminal in the Nigerian retail industry and the moderating effect of technology awareness. Data were collected from 165 owners/managers of retail businesses in Nigeria, in a cross-sectional survey and were analysed using the partial least square structural equation modelling technique. The result of hypotheses testing confirmed that performance expectancy, social influence, facilitating conditions and customer concerns have a significant positive influence on behavioural intention, while effort expectancy does not. Similarly, technology awareness moderates the relationship between effort expectancy, social and behavioural intention, but does not moderate the relationship between performance expectancy, facilitating conditions and behavioural intention. The extended model explained 56 per cent of variance in behavioural intention. Due to resource limitations, this study focused on intention alone, neglecting the actual usage, thus the survey was cross-sectional. Therefore further studies should extend the horizon by capturing the intention and actual usage, perhaps in a longitudinal study. Based on empirical evidence, customer concerns and technology awareness are essential issues in technology diffusion, and therefore practitioners should pay more attention to them, particularly in the implementation of technology in retail business. The novelty of this research is pioneering the integration of customer concern and moderating effect of technology awareness in technology adoption literature. Hence, it provides further explanation to the existing literature by empirically extending the unified theory of acceptance and use of technology with customer concerns and technology awareness.

Keywords: Behavioural intention, retail business, customer concerns, technology awareness, point of sale terminal

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LIST OF ABBREVIATIONS

AKA	Also Known As
ATM	Automatic Teller Machine
AVE	Average Variance Extracted
BPR	Business Process Reengineering
CBN	Central Bank Of Nigeria
CC	Concern For Customers
CEO	Chief Executive Officer
COT	Commission On Turnover
CR	Composite Reliability
C-TAM & TPB	Combined TAM And TPB
DTPB	Decomposed Theory of Planned Behaviour
EE	Effort Expectancy
EPS	Electronic Payment System
ERP	Enterprise Resource Planning
FAQ	Frequently Asked Questions
FC	Facilitating Conditions
GDP	Gross Domestic Product
GLO	Globacom Mobile Nigeria
GPB	Great Britain Pounds
HND	Higher National Diploma
ICT	Information and Communication Technology

IDT	Innovation Diffusion Theory
IMF	International Monetary Fund
IS	Information System
ISP	Internet Service Providers
IT	Information Technology
MCAR	Missing Completely At Random
MPCU	Model Of PC Utilisation
MTN	MTN Mobile Telecom
NGN	Nigerian Naira
OGB	Online Group Buying
PE	Performance Expectancy
PEOU	Perceived Ease Of Use
PLS	Partial Least Squares
POS	Point Of Sale
PPP	Purchasing Power Parity
PPRA	Petroleum Products Regulatory Agency
PU	Perceived Usefulness
Q & A	Questions and Answers
RM	Ringgit Malaysia
SCT	Social Cognitive Theory
SD	Standard Deviation
SE	Standard Error

SEM	Structural Equation Modelling
SI	Social Influence
SPSS	Statistical Package for Social Sciences
T.DIST	T Distribution
TA	Technology Awareness
TAM	Technology Acceptance Model
TMM	The Motivational Model
TPB	Theory Of Planned Behaviour
TRA	Theory Of Reason Action
TTF	Task Technology Fit
US	United States
USD	United States Dollar
UTAUT	Unified Theory Of Acceptance And Use Of Technology
VIF	Variance Inflated Factor
VOU	Voluntariness Of Use

CHAPTER ONE

INTRODUCTION

1.1 Background of the Study

The rapidly ever-changing and yet technology-driven market place stresses a paradigm shift in the approach to managing businesses, thus requires the deployment of alternative management designs. Also, with the advancements in information and communication technology (ICT), such as e-commerce, business processes becomes much easier, but yet the competition from external environment remains or even stiffer (Ahmad, 2012). These necessitate the emergence of technology management approach to managing businesses.

Nigerian business environment is not in isolation in this regard, because of the emergence of business process technologies such as electronic payment system (EPS). Even more worrisome, the Federal Government of Nigeria through the Central Bank of Nigeria (CBN) has embarked on a serious monetary policy revolution it called “the cash-less policy”, which entail payment processes to be done electronically, using various forms of e-payment systems. EPS is a form of a financial exchange that takes place between the buyer and seller facilitated by means of electronic communications (Turban, Lee, King, Liang, & Turban, 2009).

Based on the accounts of World Payments Report, 2011, the number of e-payments transactions is totalled 17.9 billion in 2010, and are projected to grow at a sustained 19.1 per cent a year to total 30.3 billion transactions in 2013, while the cumulative value of

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REFERENCES

- Abadi, H. R. D., & Nematizadeh, F. (2012). An empirical investigation of the level of user's acceptance of e-banking among some customers of banks in Iran. *International Journal of Academic Research in Business and Social Sciences*, 2(6), 418-430.
- Abbad, M. M., Morris, D., & De Nahlik, C. (2009). Looking under the bonnet: factors affecting student adoption of e-learning systems in Jordan. *The International Review of Research in Open and Distance Learning*, 10(2), 1-13.
- Abubakar, F. M., & Ahmad, H. (2014). Determinants of behavioural intention to use e-payment system in Nigerian retail industry: A conceptual extension of UTAUT with concern for customers. *International Journal of Contemporary Business Management (IJCBM)*, 1(1), 87-93.
- Abubakar, F. M., Ahmad, H. B., & Baharin, S. (2013). *Establishing Basis for Funnel Approach in Research: Using Ontology to Examine Electronic Payment System from the View of Business Process Reengineering* Paper presented at the 21st International Business Information Management Association Conference, Vienna, Austria.
- AbuShanab, E., & Pearson, J. (2007). Internet banking in Jordan: The unified theory of acceptance and use of technology (UTAUT) perspective. *Journal of Systems and Information Technology*, 9(1), 78-97.
- Ackfeldt, A.-L., & Coote, L. V. (2005). A study of organizational citizenship behaviors in a retail setting. *Journal of Business research*, 58(2), 151-159. doi: 10.1016/S0148-2963(03)00110-3

- Adeoti, O., & Oshotimehin, K. (2011). Factors influencing consumers' adoption of point of sale terminals in Nigeria. *Journal of Emerging Trends in Economics and Management Sciences (JETEMS)*, 2(5), 388-392.
- Adepetun, A. (2012, 30 July). Survey puts PoS usage, penetration in Nigeria at six per cent, *The Guardian*. Retrieved from http://www.nguardiannews.com/index.php?option=com_content&view=article&id=93855:survey-puts-pos-usage-penetration-in-nigeria-at-six-per-cent&catid=31:business&Itemid=562
- Agbonifo, O. C., Adeola, S. O., & Oluwadare, S. A. (2012). An assessment of the role of ICT in the readiness of Nigerian bank customers for the introduction of cashless transactions. *International Journal of Computing and ICT Research*, 2(6), 9-22.
- Agboola, O. O. (2012). CBN reviews the cash-less Lagos policy. *Press Release*. Retrieved 25/5/2013, 2013, from <http://www.nibss-plc.com/about-nibss/nibss-profile>
- Ahmad, A. (2012). Technology Management School: Evolution and imperative. *International Journal of Business, Humanities and Technology*, 2(2), 156-162.
- Ahmad, H., & Francis, A. (2006). Empirical investigation on satisfaction and service quality level of radical process change implementation. *International Journal of Management Studies (IJMS)*, 13, 1-27.
- Ahmad, H., Francis, A., & Zairi, M. (2007). Business process reengineering: critical success factors in higher education. *Business Process Management Journal*, 13(3), 451-469.

- Ahmad, S. A., Kamba, M. A., & Usman, M. (2013). Technophobia versus ICT acceptance and use in teaching and learning among academic staff of universities in northern Nigeria. *Indian Journal of Applied Research*, 3(12), 161-165. doi: 10.15373/2249555X
- Aiken, L. S., & West, S. G. (1991). *Multiple regression: Testing and interpreting interactions*. Arizona, USA: Sage Publications, Inc.
- Aiyevbomwan, E. (2013). The rise of Retail Business in Nigeria -TheInsider (Vol. 2013). Lagos: Sesema PR Limited.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, 50(2), 179-211. doi: 10.1016/0749-5978(91)90020-T
- Ajzen, I. (2002). *Constructing a TPB questionnaire: Conceptual and methodological considerations*. Retrieved from http://chuang.epage.au.edu.tw/ezfiles/168/1168/attach/20/pta_41176_7688352_57138.pdf
- Al-Gahtani, S. S., Hubona, G. S., & Wang, J. (2007). Information technology (IT) in Saudi Arabia: Culture and the acceptance and use of IT. *Information & Management*, 44(8), 681-691. doi: 10.1016/j.im.2007.09.002
- Al-Mashari, M., & Zairi, M. (1999). BPR implementation process: an analysis of key success and failure factors. *Business Process Management Journal*, 5(1), 87-112.
- Al-Nawawi, Y. I. S. (2001). *Text, Translation and Notes: Imam Nawawi's Collection of Forty Hadith*. Kuala Lumpur.: Islamic Book Trust.

- Al-Shafi, S., & Weerakkody, V. (2009). *Understanding Citizens' behavioural Intention in the Adoption of E-Government Services in the State of Qatar*. Paper presented at the European Conference on Information Systems, Verona, Italy.
- Alake, T. (2013). Cashless Lagos Campaign - POS Machine: Youtube.
- Alrawashdeh, T. A., Muhairat, M. I., & Alqatawnah, S. M. (2012). Factors affecting acceptance of web-based training system: Using extended UTAUT and structural equation modeling. *International Journal of Computer Science, Engineering and Information Technology (IJCSEIT)*, 2(2). doi: <http://arxiv.org/abs/1205.1904>
- Alvesson, M., & Kärreman, D. (2007). Constructing mystery: Empirical matters in theory development. *Academy of Management Review*, 32(4), 1265-1281. doi: 10.5465/AMR.2007.2658682
- American Educational Research Association. (2006). *Standards for reporting on empirical social science research in AERA publications*. Washington, DC: Author.
- Amoroso, D. L., & Cheney, P. H. (1991). Testing a causal model of end-user application effectiveness. *Journal of Management Information Systems*, 8(1), 63-89.
- Anckar, B. (2003). Drivers and inhibitors to e-commerce adoption: Exploring the rationality of consumer behavior in the electronic marketplace. *ECIS 2003 Proceedings*, 24.
- Anderson, J., & Gerbing, D. (1988). Structural equation modeling in practice: a review and recommended two-step approach. *Psychological bulletin*, 103(3), 411 - 423.
- Appiah, A., & Agyemang, F. (2006). *Electronic retail payment system: User acceptability and payment problems in Ghana*. (Master's thesis). Retrieved from

[http://planarkitekterna.se/fou/cuppsats.nsf/all/2317be39b43b8abfc125712a00397464/\\$file/Microsoft%20Word%20-%20BTH%20Master%20Thesis.pdf](http://planarkitekterna.se/fou/cuppsats.nsf/all/2317be39b43b8abfc125712a00397464/$file/Microsoft%20Word%20-%20BTH%20Master%20Thesis.pdf)

- Armenakis, A. A., & Bedeian, A. G. (1999). Organizational change: A review of theory and research in the 1990s. *Journal of management*, 25(3), 293-315. doi: 10.1177/014920639902500303
- Armstrong, J. S., & Overton, T. S. (1977). Estimating nonresponse bias in mail surveys. *Journal of marketing research*, 14(3), 396-402.
- Arthur, W. B. (2009). *The nature of technology: What it is and how it evolves* (2nd ed.). New York: Free Press.
- Ayo, C. K., & Ukpere, W. I. (2012). *Further development of a secured unified e-payment system in Nigeria: A critical viewpoint* P. Ifinedo (Ed.) *E-Business–Applications and Global Acceptance* (pp. 41-52). doi:10.5772/2256
- Bacon, T. R. (2003). Helping people change. *Industrial and Commercial Training*, 35(2), 73-77.
- Bagozzi, R., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, 16(1), 74-94. doi: 10.1007/bf02723327
- Bagozzi, R. P., Yi, Y., & Phillips, L. W. (1991). Assessing construct validity in organizational research. *Administrative science quarterly*, 36(3), 421-458.
- Bamberg, S., & Möser, G. (2007). Twenty years after Hines, Hungerford, and Tomera: A new meta-analysis of psycho-social determinants of pro-environmental behaviour. *Journal of environmental psychology*, 27(1), 14-25. doi: 10.1016/j.jenvp.2006.12.002

- Bamberger, P. A., & Pratt, M. G. (2010). Moving forward by looking back: reclaiming unconventional research contexts and samples in organizational scholarship. *Academy of Management Journal*, 53(4), 665-671. doi: 10.5465/AMJ.2010.52814357
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. London, UK: Prentice-Hall, Inc.
- Bandura, A. (1997). *Self-Efficacy: The Exercise of Control* (1st ed.). New York: Worth Publishers.
- Barclay, D., Higgins, C., & Thompson, R. (1995). The partial least squares (PLS) approach to causal modeling: Personal computer adoption and use as an illustration. *Technology studies*, 2(2), 285-309.
- Baron, R. M., & Kenny, D. A. (1986). The moderator-mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), 1173-1182.
- Bates, S. R., & Jenkins, L. (2007). Teaching and learning ontology and epistemology in political science. *Politics*, 27(1), 55-63. doi: 10.1111/j.1467-9256.2007.00279.x
- Belasco, J. (1990). Enlist champion change agents. *Executive Excellence*, 7(8), 9-10.
- Bertrand, M., & Bouchard, S. (2008). Applying the Technology Acceptance Model to VR with people who are favorable to its use. *Journal of CyberTherapy & Rehabilitation*, 1(2), 200-207.
- Bhaskar, R. (1975). Feyerabend and bachelard: two philosophies of science. *New Left Review*, 94(3), 31-55.

- Bickel, R. (2012). *Multilevel analysis for applied research: It's just regression!* London: Guilford Press.
- Biola, K., & Dan, O. (2012). Research Shows Friends are No.1 Influence on Nigerian Youths, as Airtel Repositions as Friendship Network. Retrieved 15 April, 2013, from TMKG Publishing www.brandworknigeria.com
- Birch, A., & Irvine, V. (2009). Preservice teachers' acceptance of ICT integration in the classroom: applying the UTAUT model. *Educational media international*, 46(4), 295-315.
- Brett, J. M., Tinsley, C. H., Janssens, M., Barsness, Z. I., & Lytle, A. L. (Eds.). (1997). *New approaches to the study of culture in industrial/organizational psychology*.
- Bryman, A., & Bell, E. (2007). *Business research methods* (2nd ed.). New York: Oxford University Press.
- BurgeSmani, R. A., & Wheelwright, S. C. (2004). *Strategic management of technology and innovation* (5th ed.). New York: McGraw Hill.
- Burton-Jones, A., & Hubona, G. S. (2006). The mediation of external variables in the technology acceptance model. *Information & Management*, 43(6), 706-717. doi: 10.1016/j.im.2006.03.007
- Callaghan, W., Wilson, B., Ringle, C. M., & Henseler, J. (Eds.). (2007). *Exploring Causal Path Directionality for a Marketing Model Using Cohen's Path Method*. Aas, Norway: MATFORSK.
- Carlsson, C., Carlsson, J., Hyvonen, K., Puhakainen, J., & Walden, P. (2006). *Adoption of mobile devices/services—searching for answers with the UTAUT*. Paper

presented at the System Sciences, 2006. HICSS'06. Proceedings of the 39th Annual Hawaii International Conference on.

Carter, L., Schaupp, L. C., & McBride, M. E. (2011). The US e-file initiative: an investigation of the antecedents to adoption from the individual taxpayers' perspective. *e-Service Journal*, 7(3), 2-19.

Casebeer, A. L., & Verhoef, M. J. (1997). Combining qualitative and quantitative research methods: considering the possibilities for enhancing the study of chronic diseases. *Chronic diseases in Canada*, 18(3), 18-13.

Central Bank of Nigeria. (2011). *Guidelines on Point of Sale (POS) Card Acceptance Services*. Abuja: Retrieved from www.cenbank.org.

Central Bank of Nigeria. (2012). Central Bank of Nigeria: The Cashless Nigeria Project. Retrieved October 2nd, 2012, from www.cenbank.org/cashless/#

Chang, M. K., & Cheung, W. (2001). Determinants of the intention to use Internet/WWW at work: A confirmatory study. *Information & Management*, 39(1), 1-14. doi: 10.1016/S0378-7206(01)00075-1

Chang, S.-C., & Tung, F.-C. (2008). An empirical investigation of students' behavioural intentions to use the online learning course websites. *British Journal of Educational Technology*, 39(1), 71-83. doi: 10.1111/j.1467-8535.2007.00742.x

Charbaji, A., & Mikdashi, T. (2003). A path analytic study of the attitude toward e-government in Lebanon. *Corporate Governance*, 3(1), 76-82. doi: 10.1108/14720700310459872

Chen, L.-L., Kuan, C. J., Lee, Y.-H., & Huang, H.-L. (2011). *Applicability of the UTAUT model in playing online game through mobile phones: Moderating effects*

of user experience. Paper presented at the IEEE International Technology Management Conference (ITMC), 2011 San Jose, CA, USA.

Cheng, D., Liu, G., Qian, C., & Song, Y.-F. (2008). *Customer acceptance of internet banking: Integrating trust and quality with UTAUT model.* Paper presented at the IEEE International Conference on Service Operations and Logistics, and Informatics, 2008. IEEE/SOLI 2008, Beijing, China.

Cheng, S.-Y., Tsai, M.-T., Cheng, N.-C., & Chen, K.-S. (2012). Predicting intention to purchase on group buying website in Taiwan: Virtual community, critical mass and risk. *Online Information Review*, 36(5), 698-712. doi: 10.1108/14684521211275984

Cheng, X., & Wang, L. (2010). *A comparative study of consumers' acceptance model in mobile-commerce.* Paper presented at the 2nd International Conference on Computer Engineering and Technology (ICCET), 2010 Chengdu, China.

Cheng, Y.-S., Yu, T.-F., Huang, C.-F., Yu, C., & Yu, C.-C. (2011). The comparison of three major occupations for user acceptance of information technology: Applying the UTAUT model. *iBusiness*, 3(2), 147-158. doi: 10.4236/ib.2011.3202

Chiemeke, S., & Evwiekpae, A. (2011). A Conceptual framework of a modified unified theory of acceptance and use of technology (UTAUT) Model with Nigerian factors in E-commerce adoption. *Educational Research*, 2(12), 1719-1726.

Chima, O. (2011, 6 Oct. 2011). CBN: Cash Mgt Cost May Rise to N192bn, News, *ThisDay*. Retrieved from <http://www.thisdaylive.com/articles/cbn-cash-mgt-cost-may-rise-to-n192bn/99900/>

Chin, W. W. (1998a). Commentary: Issues and opinion on structural equation modeling. *MIS quarterly*, 22(1), 7-16.

- Chin, W. W. (1998b). The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), *Modern methods for business research* (pp. 295-336). London, UK: Psychology Press.
- Chin, W. W. (2010). Bootstrap cross-validation indices for PLS path model assessment. In V. E. Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of partial least squares* (pp. 83-97). Verlag Berlin Heidelberg: Springer.
- Chin, W. W., & Gopal, A. (1995). Adoption intention in GSS: relative importance of beliefs. *ACM SigMIS Database*, 26(2-3), 42-64. doi: 10.1145/217278.217285
- Chin, W. W., Marcolin, B. L., & Newsted, P. R. (2003). A partial least squares latent variable modeling approach for measuring interaction effects: Results from a Monte Carlo simulation study and an electronic-mail emotion/adoption study. *Information systems research*, 14(2), 189-217. doi: 10.1287/isre.14.2.189.16018
- Chin, W. W., & Newsted, P. R. (1999). Structural equation modeling analysis with small samples using partial least squares. In R. H. Hoyle (Ed.), *Statistical strategies for small sample research* (Vol. 1, pp. 307-341). New York, US: SAGE Publications, Inc.
- Chiu, C.-m., Chang, C.-c., Cheng, H.-l., & Fang, Y.-h. (2009). Determinants of customer repurchase intention in online shopping. *Online Information Review*, 33(4), 761-784. doi: 10.1108/14684520910985710
- Christensen, C. M., & Bower, J. L. (1995, January). Disruptive technologies: catching the wave. *Harvard Business Review*, 35 (1), 43-53.

- Chtourou, M. S., & Souiden, N. (2010). Rethinking the TAM model: time to consider fun. *Journal of Consumer Marketing*, 27(4), 336-344. doi: 10.1108/07363761011052378
- Chuan-Chuan Lin, J., & Lu, H. (2000). Towards an understanding of the behavioural intention to use a web site. *International Journal of Information Management*, 20(3), 197-208. doi: 10.1016/S0268-4012(00)00005-0
- Coakes, S. J., & Steed, L. (2009). *SPSS: Analysis without anguish using SPSS version 14.0 for Windows*. New York, NY, USA: John Wiley & Sons, Inc.
- Cochran, W. G. (2007). *Sampling techniques* (6th ed.). New York NY, US: John Wiley & Sons.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, NJ: Lawrence Erlbaum Associates.
- Cohen, J. (1992). A power primer. *Psychological bulletin*, 112(1), 155.
- Cohen, J., & Cohen, P. (1983). *Applied multiple regression/correlation analysis for the behavioral sciences* (2nd ed.). Hillsdale NJ: Erlbaum.
- Compeau, D., Higgins, C. A., & Huff, S. (1999). Social cognitive theory and individual reactions to computing technology: A longitudinal study. *MIS quarterly*, 23(2), 145-158. doi: 10.2307/249749
- Compeau, D. R., & Higgins, C. A. (1995). Computer self-efficacy: Development of a measure and initial test. *MIS quarterly*, 19(2), 189-211.
- Covington, J. (2001). Leading successful, sustainable change. *Executive Excellence*, 2(5), 15-16. http://www.strategyletter.com/CD0905/guest_article.php

- Cox, D. R., & Hinkley, D. V. (1979). *Theoretical statistics* (2nd ed.). Florida, US: CRC Press.
- Cox, R., & Brittain, P. (2004). *Retailing: an introduction* (Fourth ed.). Upper Saddle River, New Jersey: Pearson Education Limited.
- Creswell, J. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3rd ed.). Calofonia: Sage Publications.
- Creswell, J. W. (2002). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (1st ed.). Saddle River, NJ: Prentice Hall
- Creswell, J. W. (2012). *Qualitative inquiry and research design: Choosing among five approaches* (3rd ed.). London, UK: SAGE Publications, Incorporated.
- Cronbach, L. J. (1951). Coefficient alpha and the internal structure of tests. *Psychometrika*, 16(3), 297-334.
- Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*. Newcastle upon Tyne, UK: SAGE Publications Limited.
- Daniel, B., & Bush. (2002). *Marketing research without SPSS* (4th ed.). Upper Saddle River, New Jersey: Prentice Hall.
- Dankwambo, I. H. (2009). *Understanding the e-Payment System*. Abuja: Budget Office, Nigeria Retrieved from <http://www.budgetoffice.gov.ng/workshop%20paper/e-payment%20BoF.pdf>.
- Davenport, T. H., & Short, J. E. (2003). Information technology and business process redesign. *Operations management: critical perspectives on business and management*, 1, 1-27.

- David-West, O. (2012). *Retail electronic banking quality (EBQ) in Nigeria: a performance evaluation*. Paper presented at the 24th National Conference of the Nigeria Computer Society (NCS), Uyo.
- Davis, F. D. (1985). *A technology acceptance model for empirically testing new end-user information systems: Theory and results*. Massachusetts Institute of Technology, Sloan School of Management.
- 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.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in the workplace1. *Journal of Applied Social Psychology*, 22(14), 1111-1132. doi: 10.1111/j.1559-1816.1992.tb00945.x
- Dawes, J. G. (2008). Do data characteristics change according to the number of scale points used? An experiment using 5 point, 7 point and 10 point scales. *International journal of market research*, 51(1), 61-104.
- Deal, K. (2006). Structural equation modeling statistics for softies. *Marketing Research*, 18(4), 38-40.
- Deng, S., Liu, Y., & Qi, Y. (2011). An empirical study on determinants of web based question-answer services adoption. *Online Information Review*, 35(5), 789-798. doi: 10.1108/1468452111176507
- Diamantopoulos, A., & Siguaw, J. A. (2006). Formative versus reflective indicators in organizational measure development: a comparison and empirical illustration.

British Journal of Management, 17(4), 263-282. doi: 10.1111/j.1467-8551.2006.00500.x

Diamantopoulos, A., & Winklhofer, H. M. (2001). Index construction with formative indicators: an alternative to scale development. *Journal of marketing research*, 38(2), 269-277.

Drejer, A. (1996). Frameworks for the management of technology: towards a contingent approach. *Technology Analysis & Strategic Management*, 8(1), 9-20.

Drucker, P. F. (1969). *The age of discontinuity: guidelines to our changing society* (1st ed.). New York: Harper & Row.

Du, H., Zhu, G., Zhao, L., & Lv, T. (2012). An empirical study of consumer adoption on 3G value-added services in China. *Nankai Business Review International*, 3(3), 257-283. doi: 10.1108/20408741211264576

Duncan, O. D. (1952). Urbanization and Retail Specialization. *Social Forces*, 30(3), 267-271.

El-Gayar, O. F., & Moran, M. (2006). College students' acceptance of Tablet PCs: an application of the UTAUT model. from Dakota State University
<http://www.homepages.dsu.edu/moranm/research/publications/dsi06-rip-tam-utaut.pdf>

Erdfelder, E., Faul, F., & Buchner, A. (Cartographer). (1996). G*POWER: A general power analysis program. Retrieved from
<http://link.springer.com/article/10.3758/BF03203630>

Euromonitor International. (2012). *International Marketing Data and Statistics 2013*. (1), Euromonitor International Ltd.

- Fagbemi, T. O., Uadiale, O. M., & Noah, A. O. (2010). The ethics of tax evasion: Perceptual evidence from Nigeria. *European journal of social sciences*, 17(3), 360-371.
- Falk, R. F., & Miller, N. B. (1992). *A primer for soft modeling*. Akron, OH, US: University of Akron Press.
- Fani-Kayode, F. (2014). Jonathan, Sanusi and the birth of a hero, *Premium Times*. Retrieved from <http://www.premiumtimesng.com/opinion/155613-jonathan-sanusi-and-the-birth-of-a-hero-by-femi-fani-kayode.html>
- Faul, F., Erdfelder, E., Buchner, A., & Lang, A.-G. (2009). Statistical power analyses using G* Power 3.1: Tests for correlation and regression analyses. *Behavior research methods*, 41(4), 1149-1160. doi: 10.3758/BRM.41.4.1149
- Feldman, D. C. (2004). What are we talking about when we talk about theory? *Journal of management*, 30(5), 565-567. doi: 10.1016/j.jm.2004.05.001
- Field, A. (2009). *Discovering statistics using SPSS* (3rd ed.). London: Sage publications.
- Fillion, G., Hassen, B., & Jean-Pierre, E. (2011). *Testing UTAUT on the use of ERP systems by middle managers and end-users of medium- to large-sized Canadian enterprises*. Paper presented at the Allied Academies International Conference.
- Fiorini, R., Hattingh, D., Maclaren, A., Russo, B., & Sun-Basorun, A. (2013). Africa's growing giant: Nigeria's new retail economy. *Consumer and Shopper Insights*. from <http://mckinseyonmarketingandsales.com/sites/default/files/pdf/Nigerian%20consumer.pdf>
- First Bank Nigeria. (2012). POS Terminals. 2012, from www.firstbanknigeria.com/EBanking/PoSTerminals/tabid/114/Default.aspx

Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behavior: An introduction to theory and research* (1st ed.). Boston, US: Addison-Wesley Publishers.

Fisher, R. A. (1925). *Theory of statistical estimation*. Paper presented at the Mathematical Proceedings of the Cambridge Philosophical Society.

Foon, Y. S., & Fah, B. C. Y. (2011). Internet banking adoption in Kuala Lumpur: An application of UTAUT model. *International Journal of Business and Management*, 6(4), 161-167.

Fornell, C., & Cha, J. (1994). Partial least squares. *Advanced methods of marketing research*, 407, 52-78. doi: 10.1002/0471667196.ess1914.pub2

Fornell, C., & Larcker, D. F. (1981a). Evaluating structural equation models with unobservable variables and measurement error. *Journal of marketing research*, 18(1), 39-50.

Fornell, C., & Larcker, D. F. (1981b). Structural equation models with unobservable variables and measurement error: Algebra and statistics. *Journal of marketing research*, 18(3), 382-388.

Freeman, M., Preissle, J., Roulston, K., & Pierre, E. A. S. (2007). Standards of evidence in qualitative research: An incitement to discourse. *Educational Researcher*, 36(1), 25-32. doi: 10.3102/0013189X06298009

Gao, T., & Deng, Y. (2012). *A study on users' acceptance behavior to mobile e-books application based on UTAUT model*. Paper presented at the IEEE 3rd International Conference on Software Engineering and Service Science (ICSESS), 2012 Beijing, China.

- Gbegi, D. (2013). An evaluation of the effect of fraud and related financial crimes on the Nigerian economy. *Kuwait Chapter of Arabian Journal of Business and Management Review*, 2(7), 81-91.
- Gefen, D., Straub, D. W., & Boudreau, M.-C. (2000). Structural equation modeling and regression: guidelines for research practice *Communications of the Association for Information Systems*, 4(7), 1-70.
- Geisser, S. (1974). A predictive approach to the random effect model. *Biometrika*, 61(1), 101-107. doi: 10.1093/biomet/61.1.101
- Geyer, G., Kuhn, C., & Schmid, B. (1996). *Designing a market for quantitative knowledge*. Paper presented at the 29th Hawaii International Conference on System Sciences, 1996., Maui, Hawaii, USA.
- Gholami, R., Ogun, A., Koh, E., & Lim, J. (2010). Factors affecting e-payment adoption in Nigeria. *Journal of Electronic Commerce in Organizations (JECO)*, 8(4), 51-67. doi: 10.4018/jeco.2010100104
- Glynn, S. M., & Koballa, T. (2006). Motivation to learn in college science. *Handbook of college science teaching*, 25, V32.
- Goodhue, D. L., & Thompson, R. L. (1995). Task-technology fit and individual performance. *MIS quarterly*, 19(2), 213-236.
- Götz, O., Liehr-Gobbers, K., & Krafft, M. (2010). Evaluation of structural equation models using the partial least squares (PLS) approach. In V. E. Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of partial least squares* (pp. 691-711): Springer.

- Graeber, D. (2001). *Toward an anthropological theory of value: the false coin of our own dreams* (1st ed.): Palgrave New York.
- Gravetter, F., & Wallnau, L. (2007). *Statistics for the behavioral sciences* (7th ed.). Balmont, CA: Thomson Wadsworth.
- Green, S. B., & Salkind, N. J. (2010). *Using SPSS for Windows and Macintosh: Analyzing and understanding data* (5th ed.). Upper Saddle River, New Jersey: Prentice Hall Press.
- Griffiths, A. (2006). *101 ways to really satisfy your customers: How to keep your customers and attract new ones* (2nd ed.). Crows Nest, Australia: Allen & Unwin.
- Guarino, N., Oberle, D., & Staab, S. (2008). What is an Ontology. In S. S. R. Studer (Ed.), *Handbook on Ontologies: International Handbooks on Information Systems* (1 ed., pp. 1-17). Karlsruhe, Germany: Springer.
- Guriting, P., & Ndubisi, N. O. (2006). Borneo online banking: evaluating customer perceptions and behavioural intention. *Management Research News*, 29(1/2), 6-15.
doi: 10.1108/01409170610645402
- Guy, C. M. (1998). Classifications of retail stores and shopping centres: some methodological issues. *GeoJournal*, 45(4), 255-264. doi: 10.1023/A:1006960414161
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2014). *A prima on partial least squares structural equation modeling (PLS-SEM)* (1st ed.). Los Angeles: Sage.
- Hair, J. F., Money, A. H., Samouel, P., & Page, M. (2007a). *Research methods for business* (2nd ed.). West Sussex: John Wiley & Sons

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *The Journal of Marketing Theory and Practice*, 19(2), 139-152. doi: 10.2753/MTP1069-6679190202

Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science*, 40(3), 414-433. doi: 10.1007/s11747-011-0261-6

Hair, J. F., Tatham, R. L., Anderson, R. E., & Black, W. (2007b). *Multivariate Data Analysis* (6th ed.): Pearson Prentice Hall Upper Saddle River, NJ.

Hair, J. J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate Data Analysis* (7th ed.). Upper Saddle River, New Jersey: Prentice Hall.

Hamel, G. (2000a). *Leading the Revolution* (1 ed.). Boston, MA, USA: Harvard Business School Press.

Hamel, G. (2000b). Waking up IBM: How a gang of unlikely rebels transformed Big Blue. *Harvard Business Review*, 78(4), 137-146.

Hamilton, D., & Gabriel, J. (2012). Dimensions of fraud in Nigeria quoted firms. *American Journal of Social and Management Sciences*, 3(3), 112-120. doi: 10.5251/ajSMS.2012.3.3.112.120

Hammer, M., & Champy, J. (1993a). Business process reengineering. *London: Nicholas Brealey*.

Hammer, M., & Champy, J. (1993b). *Reengineering the corporation: a manifesto for business evolution* (2nd ed.). London: Nicholas Brealey.

Harari, O. (1996). Why did reengineering die. *Management Review*, 85(6), 49-52.

- Hayduk, L. A., & Littvay, L. (2012). Should researchers use single indicators, best indicators, or multiple indicators in structural equation models? *BMC medical research methodology*, 12(1), 159-175. doi: 10.1186/1471-2288-12-159
- Hayes, A. F. (2013). *Introduction to mediation, moderation, and conditional process analysis: A regression-based approach* (1st ed.). New York: Guilford Press.
- Henseler, J. (2012). PLS-MGA: A non-parametric approach to partial least squares-based multi-group analysis *Challenges at the interface of data analysis, computer science, and optimization* (pp. 495-501). Berlin Heidelberg: Springer.
- Henseler, J., & Chin, W. W. (2010). A comparison of approaches for the analysis of interaction effects between latent variables using partial least squares path modeling. *Structural Equation Modeling: A Multidisciplinary Journal*, 17(1), 82-109. doi: 10.1080/10705510903439003
- Henseler, J., & Fassott, G. (2010). Testing moderating effects in PLS path models: An illustration of available procedures. In V. E. Vinzi, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of partial least squares* (pp. 713-735). London: Springer.
- Henseler, J., Ringle, C., & Sinkovics, R. (2009). The use of partial least squares path modeling in international marketing. *Advances in International Marketing (AIM)*, 20, 277-320. doi: 10.1108/S1474-7979(2009)0000020014
- Hewing, M. (2014). *Business process blueprinting: A method for customer-oriented business process modeling* (1st ed.). Berlin, Germany: Imprint: Springer Gabler.
- Hill, T., Smith, N. D., & Mann, M. F. (1987). Role of efficacy expectations in predicting the decision to use advanced technologies: The case of computers. *Journal of applied psychology*, 72(2), 307-313.

- Ho, K. K. W., & See-To, E. W. K. (2010). *An Exploratory Study on the Impact of Trust on Different E-Payment Gateways: Octopus Card Vs. Credit Card*. Paper presented at the Pacific Asia Conference on Information Systems, Taipei, Taiwan.
- Hong, W., Chan, F. K., Thong, J. Y., Chasalow, L. C., & Dhillon, G. (2013). A Framework and Guidelines for Context-Specific Theorizing in Information Systems Research. *Information systems research*, 25(1), 111-136.
- Hong, W., Chan, F. K. Y., Thong, J. Y. L., Chasalow, L. C., & Dhillon, G. (2014). A framework and guidelines for context-specific theorizing in information systems research. *Information systems research*, 25(1), 111-136.
- Huang, N., & Qin, G. (2011). *A study of online virtual fitting room adoption based on UTAUT*. Paper presented at the International Conference on E -Business and E - Government (ICEE), 2011, Shanghai, China.
- Huh, H. J., Kim, T. T., & Law, R. (2009). A comparison of competing theoretical models for understanding acceptance behavior of information systems in upscale hotels. *International Journal of Hospitality Management*, 28(1), 121-134.
- Hui, B. S., & Wold, H. (1982). Consistency and consistency at large of partial least squares estimates. In K. G. Jöreskog & H. Wold (Eds.), *Systems under indirect observation* (pp. 119-130). North Holland, Amsterdam: Springer.
- Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: a review of four recent studies. *Strategic management journal*, 20(2), 195-204. doi: 10.1002/(SICI)1097-0266(199902)20:2<195::AID-SMJ13>3.0.CO;2-7
- Humphrey, C. (1985). Barter and economic disintegration. *Man*, 20(1), 48-72.

- Humphrey, C., & Hugh-Jones, S. (1992). *Barter, exchange and value: an anthropological approach* (1st ed.). Cambridge: Cambridge University Press.
- Humphrey, D., Kim, M., & Vale, B. (2001). Realizing the gains from electronic payments: costs, pricing, and payment choice. *Journal of Money, Credit and Banking*, 33(2), 216-234.
- Iacobucci, D., & Churchill, G. (2004). *Marketing research: methodological foundations* (9th ed.). Mason, OH: Thomson/South-Western.
- Iacobucci, D., & Churchill, G. (2009). *Marketing research: methodological foundations* (10th Ed.). Boston, MA, US: Cengage Learning.
- Idowu, B. (2014). Cashless: PoS Transactions Value Hits N27bn In 2 years – CBN, *Leadership*. Retrieved from <http://leadership.ng/business/387937/cashless-pos-transactions-value-hits-n27bn-2-years-cbn>
- Ifinedo, P. (2012). Factors influencing e-government maturity in transition economies and developing countries: a longitudinal perspective. *ACM SigMIS Database*, 42(4), 98-116. doi: 10.1145/2096140.2096147
- Ilesanmi, F. (2012). Cashless Policy: Disconnects Must be Fixed - Adeyemi | Nigeria CommunicationsWeek. Retrieved 10/9/2012, from Communicationsweek Media Limited (Nigeria) www.nigeriacommunicationsweek.com.ng/e-guest/cashless-policy-disconnects-must-be-fixed-adeyemi
- International Monetary Fund. (2012). World Bank list of economies.
- Jankowicz, A. D. (2005). *Business research projects*: Cengage Learning Business Press.
- Jean, L., Scott, B., & Patrick, D. (2011). World Payments Report. Scotland

- Jessup, L. M., Valacich, J. S., & Wade, M. (2008). *Information systems today: Why IS matters*: Pearson Prentice Hall.
- John, D. (2002). *Organisational learning and effectiveness*: Routledge.
- Johns, G. (2006). The essential impact of context on organizational behavior. *Academy of Management Review*, 31(2), 386-408. doi: 10.5465/AMR.2006.20208687
- Kale, Y. (2012). *Nigerian economy in the first half of 2012 & revised economic outlook for 2012 - 2015*. Abuja: National Bureau of Statistics Retrieved from <http://www.nigerianstat.gov.ng/>.
- Kendall, S. D. (2006a). Customer service from the customer's perspective. In L. Fogli (Ed.), *Customer service delivery: Research and best practices* (pp. 3-21). San Francisco: Jossey-Bass.
- Kendall, S. D. (2006b). Customer service from the customer's perspective. *Customer service delivery: Research and best practices*, 3-21.
- Khong, K. W., & Richardson, S. (2003). Business process re-engineering in Malaysian banks and finance companies. *Managing service quality*, 13(1), 54-71.
- Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision support systems*, 44(2), 544-564.
- Kitchenham, B., & Pfleeger, S. L. (2002). Principles of survey research part 5: Populations and samples. *ACM SIGSOFT Software Engineering Notes*, 27(5), 17-20. doi: 10.1145/571681.571686
- Kotter, J. B. (1995). Leading change: Why transformation efforts fail. *Harvard Business Review*, 59-67.

- Kotter, J. B. (1996). *Leading change* (1st ed.). Boston MA: Harvard Business Review.
- Kotter, J. P. (2008). *A sense of urgency* (1st ed.). Boston, Massachusetts: Harvard Business Press.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educ Psychol Meas*, 30(3), 607-610. doi: 10.1177/001316447003000308
- Kumar, M., Talib, S. A., & Ramayah, T. (2013). *Business research methods*. Kuala Lumpur: Oxford Fajar/Oxford University Press.
- Kuo, Y.-F., & Yen, S.-N. (2009). Towards an understanding of the behavioral intention to use 3G mobile value-added services. *Computers in Human Behavior*, 25(1), 103-110. doi: 10.1016/j.chb.2008.07.007
- Kwek, C. L., Tan, H. P., Lau, T.-C., & Rahman, A. (2010). Investigating the shopping orientations on online purchase intention in the e-commerce environment: A Malaysian study. *Journal of Internet Banking and Commerce*, 15(2), 1-22.
- Lai, D. C.-F., Lai, I. K.-W., & Jordan, E. (2009). *An extended UTAUT model for the study of negative user adoption behaviours of mobile commerce*. Paper presented at the The 9th International Conference on Electronic Business, Macau.
- Lallmahamood, M. (2007). An examination of individual's perceived security and privacy of the internet in Malaysia and the influence of this on their intention to use e-commerce: Using an extension of the technology acceptance model. *Journal of Internet Banking and Commerce*, 12(3), 1-26.
- Lam, T., Cho, V., & Qu, H. (2007). A study of hotel employee behavioral intentions towards adoption of information technology. *International Journal of Hospitality Management*, 26(1), 49-65. doi: 10.1016/j.ijhm.2005.09.002

- Laudon, K. C., & Traver, C. G. (2007). *E-commerce: business technology society business. technology. society.* (4th ed.). Upper Saddle River, New Jersey: Pearson Prentice Hall.
- Laudon, K. C., & Traver, C. G. (2010). *E-Commerce 2010: Business Technology, Society* (6th ed.). London, UK: Pearson.
- Ledez, R. E. (2008). Change management: getting a tuned up organization. *Business Intelligence Journal*, 111-119.
- Lee, L., Petter, S., Fayard, D., & Robinson, S. (2011). On the use of partial least squares path modeling in accounting research. *International Journal of Accounting Information Systems*, 12(4), 305-328. doi: 10.1016/j.accinf.2011.05.002
- Li, H., & Huang, W. (2009). Applying theory of perceived risk and technology acceptance model in the online shopping channel. *World Academy of Science Engineering and Technology*, 53(4), 919-925.
- Li, L. (2010). *A critical review of technology acceptance literature*. Accounting, Economics and Information Systems. College of Business, Grambling State University. Grambling, LA. Retrieved from http://www.swdsi.org/swdsi2010/sw2010_preceedings/papers/pa104.pdf
- Liao, C., Liu, C.-C., & Chen, K. (2011). Examining the impact of privacy, trust and risk perceptions beyond monetary transactions: An integrated model. *Electronic Commerce Research and Applications*, 10(6), 702-715. doi: 10.1016/j.elerap.2011.07.003

Lim, W. M., & Ting, D. H. (2012). E-shopping: An analysis of the uses and gratifications theory. *Modern Applied Science*, 6(5), 48-63. doi: 10.5539/mas.v6n5p48

Limayem, M., Hirt, S. G., & Chin, W. W. (2001). *Intention does not always matter: the contingent role of habit on IT usage behavior*. Paper presented at the The 9th European Conference on Information Systems, Bled, Slovenia.

Lin, C.-P., & Anol, B. (2008). Learning online social support: an investigation of network information technology based on UTAUT. *CyberPsychology & behavior*, 11(3), 268-272. doi: 10.1089/cpb.2007.0057

Lin, C.-S., Tzeng, G.-H., Chin, Y.-C., & Chang, C.-C. (2010). Recommendation sources on the intention to use e-books in academic digital libraries. *Electronic Library, The*, 28(6), 844-857. doi: 10.1108/02640471011093534

Ling, K. C., Chai, L. T., & Piew, T. H. (2010). The effects of shopping orientations, online trust and prior online purchase experience toward customers' online purchase intention. *International Business Research*, 3(3), 63-76. doi: 10.5539/ibr.v3n3p63

Little, T. D., Bovaird, J. A., & Widaman, K. F. (2006). On the merits of orthogonalizing powered and product terms: Implications for modeling interactions among latent variables. *Structural Equation Modeling*, 13(4), 497-519. doi: 10.1207/s15328007sem1304_1

Lohmöller, J.-B. (1989). *Latent variable path modeling with partial least squares* (1st ed.). Berlin Heidelberg: Springer-Verlag

Lowe, R. F., & Montagu, D. (2009). Legislation, regulation, and consolidation in the retail pharmacy sector in low-income countries. *Southern Med Review*, 2(2), 35-44.

- Lowry, P. B., & Gaskin, J. (2014). Partial least squares (PLS) structural equation modeling (SEM) for building and testing behavioural causal theory: When to choose it and how to use it. *IEEE Transactions on Professional Communication*, 57(2), 123-146. doi: 10.1109/TPC.2014.2312452
- Lu, H., Hsu, C., & Hsu, H. (2005). An empirical study of the effect of perceived risk upon intention to use online applications. *Information Management & Computer Security*, 13(2), 106-120. doi: 10.1108/09685220510589299
- Lu, Y., Cao, Y., & Yang, S. (2010). *An empirical investigation of behavioral intention to use online services*. Paper presented at the The 2nd IEEE International Conference on Information Management and Engineering (ICIME), 2010 Chengdu, China.
- Makama, S. D. (2010). *2006 Population and Housing Census*. Abuja, Nigeria.
- Maldonado, U. P. T., Khan, G. F., Moon, J., & Rho, J. J. (2011). E-learning motivation and educational portal acceptance in developing countries. *Online Information Review*, 35(1), 66-85. doi: 10.1108/1468452111113597
- Malhotra, N. K., Kim, S. S., & Agarwal, J. (2004). Internet users' information privacy concerns (IUIPC): The construct, the scale, and a causal model. *Information systems research*, 15(4), 336-355. doi: 10.1287/isre.1040.0032
- Mangin, J. P. L., Bourgault, N., León, J. A. M., & Guerrero, M. M. (2012). Testing control, innovation and enjoy as external variables to the technology acceptance model in a north American French banking environment. *International Business Research*, 5(2), 13-26. doi: 10.5539/ibr.v5n2p13

- Marchewka, J. T., Liu, C., & Kostiwa, K. (2007). An application of the UTAUT model for understanding student perceptions using course management software. *Communications of the IIMA*, 7(2), 93-104.
- Mardikyan, S., Beşiroğlu, B., & Uzmaya, G. (2012). Behavioral Intention towards the Use of 3G Technology. *Communications of the IBIMA*, 2012(2012), 1-10. doi: 10.5171/2012.622123
- Marsh, D., & Stoker, G. (2002). *Theories and methods in political science* (2nd ed.). Basingstoke, UK: Palgrave.
- Martins, E. P., & Garland Jr, T. (1991). Phylogenetic analyses of the correlated evolution of continuous characters: a simulation study. *Evolution*, 45(3), 534-557.
- May, T. (2011). *Social research: Issues, methods and research* (4th ed.). New York City, US: McGraw-Hill International.
- Mingers, J. (2001). Combining IS research methods: Towards a pluralist methodology. *Information systems research*, 12(3), 240-259.
- Mintzberg, H. (1988). Generic strategies: toward a comprehensive framework. *Advances in Strategic Management*, 5(1), 1-67.
- Mitchell, M. L., & Jolley, J. M. (1992). Generating the research hypotheses : Tapping intuition, theory and existirrg research. *Journal of Clinical Neuroscience*, 15(2), 37-90.
- Mofleh, S., Wanous, M., & Strachan, P. (2008). The gap between citizens and e-government projects: The case for Jordan. *Electronic Government, an International Journal*, 5(3), 275-287. doi: 10.1504/EG.2008.018875

- Moghavvemi, S., Salleh, N. A. M., Zhao, W., & Mattila, M. (2012). The entrepreneur's perception on information technology innovation adoption: An empirical analysis of the role of precipitating events on usage behavior. *Innovation: Management, Policy & Practice*, 14(2), 231-246. doi: 10.5172/impp.2012.14.2.231
- Montalvo, C. (2006). What triggers change and innovation? *Technovation*, 26(3), 312-323.
- Moore, G. C., & Benbasat, I. (1991). Development of an instrument to measure the perceptions of adopting an information technology innovation. *Information systems research*, 2(3), 192-222.
- Morgan, G. (1980). Paradigms, metaphors, and puzzle solving in organization theory. *Administrative science quarterly*, 25(4), 605-622.
- Naibbi, A. I., & Healey, R. G. (2014). Using geographically weighted regression to estimate the spatial patterns of fuelwood utilization in Nigeria. *American Journal of Geographic Information System*, 3(3), 109-121. doi: 10.5923/j.ajgis.20140303.01.
- Nambisan, S., Agarwal, R., & Tanniru, M. (1999). Organizational mechanisms for enhancing user innovation in information technology. *MIS Quarterly*, 23(3), 365-395. doi: 10.2307/249468
- National Bureau of Statistics Nigeria. (2012). Nigerian economy in the first half of 2012 & revised economic outlook for 2012 - 2015. Abuja, Nigeria: National Bureau of Statistics.
- National Youth Service Corps. (2013). About the scheme. Retrieved 1st June, 2013, from <http://www.nysc.gov.ng/about/about.php>

- Neuman, W. L. (2004). *Basics of social research* (2nd ed.). Boston, Massachusetts: Pearson.
- Ngai, E. W., & Gunasekaran, A. (2004). Implementation of EDI in Hong Kong: An empirical analysis. *Industrial Management & Data Systems*, 104(1), 88-100. doi: 10.1108/02635570410514124
- Nunnally, J., & Bernstein, I. (1978). *Psychometric theory* (2nd ed.). New York: McGraw-Hill.
- Nunnally, J., & Bernstein, I. (1994). *Psychometric Theory* (3rd ed.). New York: McGraw-Hill.
- Nwankwo, O., & Eze, O. R. (2013). Electronic payment in cashless economy of Nigeria: Problems and prospect. *Journal of Management Research*, 5(1), 138-151. doi: 10.5296/jmr.v5i1.2650
- Nwaolisa, E. F., & Kasie, E. G. (2011). Electronic retail payment systems: User acceptability and payment problems in Nigeria. *Arabian Journal of Business and Management Review*, 1(9), 111-123.
- Nwokoji, C. (2014). N4.8bn lost to e-fraud in 9 months —NIBSS, *Nigerian Tribune*. Retrieved from <http://tribune.com.ng/news/news-headlines/item/21388-n4-8bn-lost-to-e-fraud-in-9-months-nibss>
- Nysveen, H., Pedersen, P. E., & Thorbjørnsen, H. (2005). Intentions to use mobile services: antecedents and cross-service comparisons. *Journal of the Academy of Marketing Science*, 33(3), 330-346. doi: 10.1177/0092070305276149
- O'Sullivan, D., & Abela, A. V. (2007). Marketing performance measurement ability and firm performance. *Journal of Marketing*, 71(2), 79-93. doi: 10.1509/jmkg.71.2.79

- Odumeru, J. A. (2012). The acceptance of e-banking by customers in Nigeria. *World Review of Business Research*, 2(2), 62 – 74.
- Ogbodo, D. (2013). Nigeria: Mobile money transactions hit N10.1 billion in August, *This Day*. Retrieved from <http://allafrica.com/stories/201309240418.html>
- Ogunleye, G. O., Adewale, O. S., & Alese, B. K. (2012). *An exploratory study on electronic retail payment systems: user acceptability and payment problems in Nigeria*. Paper presented at the 24th National Conference of the Nigeria Computer Society; "Towards a Cashless Nigeria: Tools and Strategies", Lagos.
- Ojiako, U., Chipulu, M., Maguire, S., Akinyemi, B., & Johnson, J. (2012). User adoption of mandatory enterprise technology. *Journal of enterprise information management*, 25(4), 373-391. doi: 10.1108/17410391211245847
- Oladejo, M., & Akanbi, T. (2012). Bankers perceptions of electronic banking in Nigeria: A review of post consolidation experience. *Research Journal of Finance and Accounting*, 3(2), 1-11.
- Omar, K., Ala'a, Al-Nasrallah. (2011). *Determinants of e-Gov adopt in Kuwait: The case of the traffic violation e-payment system (TVEPS)* Paper presented at the Second Kuwait Conference on e-Services and e-Systems, Kuwait.
- Onyema, A. (2011). Internet infiltration to Nigeria: Burden of cyber-crime to e-commerce. *Internet and Society: Technology and Politic of Control*, 7(1), 23-31.
- Ooi, K.-B., Sim, J.-J., Yew, K.-T., & Lin, B. (2011). Exploring factors influencing consumers' behavioral intention to adopt broadband in Malaysia. *Computers in Human Behavior*, 27(3), 1168-1178. doi: 10.1016/j.chb.2010.12.011

Oshlyansky, L., Cairns, P., & Thimbleby, H. (2007). *Validating the Unified Theory of Acceptance and Use of Technology (UTAUT) tool cross-culturally*. Paper presented at the 21st British HCI Group Annual Conference on People and Computers, Swinton, UK.

Özkan, S., Bindusara, G., & Hackney, R. (2010). Facilitating the adoption of e-payment systems: theoretical constructs and empirical analysis. *Journal of enterprise information management*, 23(3), 305-325. doi: 10.1108/17410391011036085

Pallant, J. (2011). *SPSS survival manual: A step by step guide to data analysis using SPSS* (4th ed.). Crows Nest, Australia: McGraw-Hill International.

Pappas, I., Giannakos, M. N., Pateli, A., & Chrissikopoulos, V. (2011). *Online purchase intention: Investigating the effect of the level of customer perceptions on adoption*. Paper presented at the IADIS International Conference e-Society 2011, Avilla, Spain.

Parmjit, S., Chan, Y., & Gurnam, K. (2006). *A comprehensive guide to writing a research proposal* (1st ed.). Kuala Lumpur: Venton.

Pather, S., & Remenyi, D. (2004). *Some of the philosophical issues underpinning research in information systems: from positivism to critical realism*. Paper presented at the 2004 Annual Research Conference of the South African Institute of Computer Scientists and Information Technologists on it Research in Developing Countries, Cape Town, South Africa.

Payne, E., & Curtis, M. (2008). Can the unified theory of acceptance and use of technology help us understand the adoption of computer-aided audit techniques by auditors: Working paper, University of Louisville.

- Peng, D. X., & Lai, F. (2012). Using partial least squares in operations management research: A practical guideline and summary of past research. *Journal of Operations Management*, 30(6), 467-480. doi: 10.1016/j.jom.2012.06.002
- Phau, I., & Poon, S. M. (2000). Factors influencing the types of products and services purchased over the Internet. *Internet Research*, 10(2), 102-113. doi: 10.1108/10662240010322894
- Phillips, E., & Pugh, D. (2010). *How to get a PhD: A handbook for students and their supervisors* (4th ed.). Berkshire, England: McGraw-Hill International.
- Pilkington, A., & Teichert, T. (2006). Management of technology: themes, concepts and relationships. *Technovation*, 26(3), 288-299.
- Plouffe, C. R., Hulland, J. S., & Vandenbosch, M. (2001). Research report: Richness versus parsimony in modeling technology adoption decisions—understanding merchant adoption of a smart card-based payment system. *Information systems research*, 12(2), 208-222. doi: doi:10.1287/isre.12.2.208.9697
- Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: a critical review of the literature and recommended remedies. *Journal of applied psychology*, 88(5), 879-903. doi: 10.1037/0021-9010.88.5.879
- Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organizational research: Problems and prospects. *Journal of management*, 12(4), 531-544. doi: 10.1177/014920638601200408

- Porter, A. C., & Brophy, J. (1988). Synthesis of research on good teaching: Insights from the work of the Institute for research on Teaching. *Educational leadership*, 45(8), 74-85.
- Qureshi, I., & Compeau, D. (2009). Assessing between-group differences in information systems research: a comparison of covariance-and component-based SEM. *MIS Quarterly*, 33(1), 197-214.
- Raj, D. (1968). *Sampling theory* (1st ed.). New York: McGraw-Hill.
- Rajapakse, J. (2011). *Extending the unified theory of acceptance and use of technology (UTAUT) model*. Paper presented at the 4th International Conference on Interaction Sciences (ICIS), 2011, Busan, Korea.
- Rasheed, J., & Shiratuddin, N. (2009). The moderating effect of gender on behavioural intention to use iris authentication approach for public authentication among Nigerian users of public terminals. *Jurnal Sistem Teknik Industri*, 10(3), 918-922.
- Reffat, R. (2003). *Developing a successful e-government*. Paper presented at the Symposium on e-Government: Opportunities and Challenge. Muscat Municipality, Oman.
- Rehman, M., Esichaikul, V., & Kamal, M. (2012). Factors influencing e-government adoption in Pakistan. *Transforming Government: People, Process and Policy*, 6(3), 258-282. doi: 10.1108/17506161211251263
- Reinartz, W., Haenlein, M., & Henseler, J. (2009). An empirical comparison of the efficacy of covariance-based and variance-based SEM. *International Journal of research in Marketing*, 26(4), 332-344. doi: 10.1016/j.ijresmar.2009.08.001

- Reizenstein, R. (2004). Customer. In M. J. Stahl (Ed.), *Encyclopedia of health care management* (1st ed.). Thousand Oaks, California: Sage Publishers Inc.
- Rigopoulos, G., & Askounis, D. (2007). A TAM framework to evaluate users' perception towards online electronic payments. *Journal of Internet Banking and Commerce*, 12(3), 1-6.
- Ringle, C. M., Wende, S., & Will, A. (2005). SmartPLS 2.0 (beta): Hamburg, Germany.
- Rogers, E. M. (1962). *Diffusion of Innovation* (1st ed.). New York: Free Press.
- Rogers, E. M. (1995). *Diffusion of innovations* (4th ed.). New York: Free Press.
- Rouibah, K. (2012). *Trust factors influencing intention to adopt online payment in Kuwait*. Paper presented at the Southern Association for Information Systems Conference, Atlanta, GA, USA.
- Rouibah, K., Abbas, H., & Rouibah, S. (2011). Factors affecting camera mobile phone adoption before e-shopping in the Arab world. *Technology in Society*, 33(3), 271-283. doi: 10.1016/j.techsoc.2011.10.001
- Salisbury, W. D., Pearson, R. A., Pearson, A. W., & Miller, D. W. (2001). Perceived security and World Wide Web purchase intention. *Industrial Management & Data Systems*, 101(4), 165-177. doi: 10.1108/02635570110390071
- Sanchez-Franco, M. J. (2006). Exploring the influence of gender on the web usage via partial least squares. *Behaviour & Information Technology*, 25(1), 19-36. doi: 10.1080/01449290500124536
- Sanusi, S. L. (2011). *Banks in Nigeria and national economic development: A critical review*. Paper presented at the Seminar on Becoming An Economic Driver While Applying Banking Regulations, Lagos.

- Sekaran, U. (2003a). *Research methods for business: A skill building approach* (4th ed.). New York, NY: John Wiley and Sons.
- Sekaran, U. (2003b). Research Methods for Business: A Skill Building Approach, : John Wiley and Sons.
- Sekaran, U., & Bougie, J. (2009). *Research methods for business: A skill building approach* (5th ed.): Wiley.
- Seneler, C. O., Basoglu, N., & Daim, T. U. (2010). An empirical analysis of the antecedents of adoption of online services: A prototype-based framework. *Journal of Enterprise Information Management*, 23(4), 417-438. doi: 10.1108/17410391011061753
- Service Related Credit Cards Processing. (2012). How an electronic payment process takes place. Retrieved 22nd November, from <http://www.servicerelated.com/>
- Sharma, S., Durand, R. M., & Gur-Arie, O. (1981). Identification and analysis of moderator variables. *Journal of marketing research*, 18(3), 291-300.
- 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.
- Simonin, B. L. (1999). Ambiguity and the process of knowledge transfer in strategic alliances. *Strategic management journal*, 20(7), 595-623. doi: 10.1002/(SICI)1097-0266(199907)20:7<595::AID-SMJ47>3.0.CO;2-5
- Sin, S. S., Nor, K. M., & Al-Agaga, A. M. (2012). Factors affecting Malaysian young consumers' online purchase intention in social media websites. *Procedia-Social and Behavioral Sciences*, 40(5), 326-333. doi: 10.1016/j.sbspro.2012.03.195

Standard Chartered. (2012). FAQs on CBN Cash-less Society Policy. In S. Chartered (Ed.), (pp. 1-5). Abuja.

Starkweather, J. (2012). Step out of the past: Stop using coefficient alpha; there are better ways to calculate reliability. *Research and Statistical Support*.

Stigler, S. (2008). Fisher and the 5% level. *Chance*, 21(4), 12-12. doi: 10.1080/09332480.2008.10722926

Stone, M. (1974). Cross-validatory choice and assessment of statistical predictions. *Journal of the Royal Statistical Society. Series B (Methodological)*, 36(2), 111-147.

Su, S.-P., Tsai, C.-H., & Chen, Y.-K. (2012). *Applying the technology acceptance model to explore intention to use Telecare system in Taiwan*. Paper presented at the 13th ACIS International Conference on Software Engineering, Artificial Intelligence, Networking and Parallel & Distributed Computing (SNPD), 2012, Kyoto, Japan.

Suki, N. M., & Ramayah, T. (2010). User acceptance of the e-government services in Malaysia: structural equation modelling approach. *Interdisciplinary Journal of Information, Knowledge & Management*, 5(1), 395-413.

Sumak, B., Polancic, G., & Hericko, M. (2010). *An empirical study of virtual learning environment adoption using UTAUT*. Paper presented at the 2nd International Conference on Mobile, Hybrid, and On-Line Learning, 2010. ELML'10, Saint Maarten, Holland.

Sundel, M., & Sundel, S. S. (2004). *Behavior change in the human services: Behavioral and cognitive principles and applications*. Thousand Oaks, California: SAGE Publications, Inc.

- Susskind, A. M., Kacmar, K. M., & Borchgrevink, C. P. (2003). Customer service providers' attitudes relating to customer service and customer satisfaction in the customer-server exchange. *Journal of applied psychology*, 88(1), 179-187. doi: 10.1037/0021-9010.88.1.179
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). Boston: Pearson Education.
- Tacq, J. J., & Tacq, J. (1997). *Multivariate analysis techniques in social science research: From problem to analysis* (1st ed.). London: Sage Publications Limited.
- Tan, A. (2012). Industry of POS. Retrieved 14 Nov. 2012, from <http://www.irrica.com/point-of-sales-system-pos/133-industry-of-pos.html>
- Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. *Information systems research*, 6(2), 144-176. doi: 10.1287/isre.6.2.144
- Thompson, R. L., & Higgins, C. A. (1991). Personal computing: Toward a conceptual model of utilization. *MIS quarterly*, 15(1), 125-143.
- Thompson, R. L., Higgins, C. A., & Howell, J. M. (1995). Influence of experience on personal computer utilization: Testing a conceptual model. *Journal of Management Information Systems*, 11(1), 167-187.
- Toffler, A. (1970). *Future shock* (1st ed.). New York: Random House.
- Tong, D. Y. K. (2009). A study of e-recruitment technology adoption in Malaysia. *Industrial Management & Data Systems*, 109(2), 281-300. doi: 10.1108/02635570910930145

- Trochim, W. M., & Donnelly, J. P. (2008). *Research methods knowledge base* (3rd ed.). Boston: Atomic Dog/Cengage Learning.
- Troshani, I., & Rao, S. (2007). Drivers and inhibitors to XBRL adoption: A qualitative approach to build a theory in under-researched areas. *International Journal of E-Business Research (IJEBR)*, 3(4), 98-111. doi: 10.4018/jebr.2007100106
- Tsang, E. W. K., & Williams, J. N. (2012). Generalization and induction: Misconceptions, clarifications, and a classification of induction. *MIS Quarterly-Management Information Systems*, 36(3), 729-748.
- Tuckman, B. W., & Sexton, T. L. (1992). Self-believers are self-motivated; self-doubters are not. *Personality and Individual Differences*, 13(4), 425-428. doi: 10.1016/0191-8869(92)90070-6
- Tunde, D., & Medinat, A. (2013). Fuel retailers defraud Nigerians of N20bn in 3 months —Investigation, *Nigerian Tribune*. Retrieved from <http://tribune.com.ng/news2013/index.php/en/news/item/10646-fuel-retailers-defraud-nigerians-of-n20bn-in-3-months-investigation>
- Turban, E., Lee, J. K., King, D., Liang, T. P., & Turban, D. (2009). *Electronic commerce 2010* (6th ed.). Upper Saddle River, New Jersey: Prentice Hall Press.
- Uzonwanne, J. (2011). *Investing in Nigeria: A Brief Strategy Guide*. Abuja: Monitor Company Group Limited Partnership.
- Uzor, B. (2012, 22 Aug. 2011). Only 3, 000 functioning PoS terminal in Nigeria, Newspaper, *BusinessDay* Newspaper. Retrieved from <http://www.businessdayonline.com/NG/index.php/tech/78-computing/26343-only-3-000-functioning-pos-terminal-in-nigeria>

- Vakola, M., Tsaousis, I., & Nikolaou, I. (2004). The role of emotional intelligence and personality variables on attitudes toward organisational change. *Journal of Managerial Psychology*, 19(2), 88-110. doi: 10.1108/02683940410526082
- Van Biljon, J., & Kotzé, P. (2007). *Modelling the factors that influence mobile phone adoption*. Paper presented at the Annual Research Conference on IT Research in Developing Countries, Pretoria, South Africa.
- Van Birgelen, M., de Ruyter, K., & Wetzels, M. (2003). The impact of attitude strength on customer-oriented priority setting by decision-makers: An empirical investigation. *Journal of Economic Psychology*, 24(6), 763-783. doi: 10.1016/S0167-4870(03)00052-7
- Van Dijk, J. A., Peters, O., & Ebbers, W. (2008). Explaining the acceptance and use of government Internet services: A multivariate analysis of 2006 survey data in the Netherlands. *Government Information Quarterly*, 25(3), 379-399. doi: 10.1016/j.giq.2007.09.006
- Van Slyke, C., Belanger, F., & Comunale, C. L. (2004). Factors influencing the adoption of web-based shopping: the impact of trust. *ACM SigMIS Database*, 35(2), 32-49.
- Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management science*, 46(2), 186-204. doi: 10.1287/mnsc.46.2.186.11926
- 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 behavior. *Management Information Systems Quarterly*, 24(1), 115-140.

- 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.
- Venkatesh, V., Sykes, T. A., & Zhang, X. (2011a). 'Just what the Doctor ordered': A revised UTAUT for EMR system adoption and use by Doctors. Paper presented at the 44th Hawaii International Conference on System Sciences (HICSS), 2011 Kauai, HI.
- Venkatesh, V., Thong, J. Y. L., Chan, F. K. Y., Hu, P. J. H., & Brown, S. A. (2011b). Extending the two-stage information systems continuance model: incorporating UTAUT predictors and the role of context. *Information Systems Journal*, 21(6), 527-555. doi: 10.1111/j.1365-2575.2011.00373.x
- Viinikkala, M. (2003). Ontology in Information Systems. *Disponible en*. from <http://www.cs.tut.fi/~kk/webstuff/Ontology.pdf>
- Walker, J. (2014). The RetroPsychoKinesis Project. *Chi-Square Calculator*. Retrieved 15 July, 2014, from <https://www.fourmilab.ch/rpkp/experiments/analysis/chiCalc.html>
- Wan, C., Cheung, R., & Shen, G. Q. (2012). Recycling attitude and behaviour in university campus: a case study in Hong Kong. *Facilities*, 30(13/14), 630-646. doi: 10.1108/02632771211270595
- Wang, H. I., & Yang, H. L. (2005). The role of personality traits in UTAUT model under online stocking. *Contemporary Management Research*, 1(1), 69-82. doi: 10.7903/cmr.v1i1.73
- Warshaw, P. R. (1980). A new model for predicting behavioral intentions: An alternative to Fishbein. *Journal of marketing research*, 17(5), 153-172.

- Watson, J. B. (1913). Psychology as the behaviorist views it. *20*(2), 158-177. doi: 10.1037/h0074428
- Whetten, D. A. (2009). An examination of the interface between context and theory applied to the study of Chinese organizations. *Management and Organization Review*, 5(1), 29-55. doi: 10.1111/j.1740-8784.2008.00132.
- Wills, M. J., El-Gayar, O., & Bennett, D. (2008). Examining healthcare professionals' acceptance of electronic medical records using UTAUT. *Issues in Information Systems*, 9(2), 396-401.
- Wilson, B. J. (2011). *An investigation into three consumer constructs: explaining the nature of relations influencing brand relationship quality*. (Doctor of Philosophy), RMIT University.
- Wold, H. (1974). Causal flows with latent variables: partings of the ways in the light of NIPALS modelling. *European Economic Review*, 5(1), 67-86. doi: 10.1016/0014-2921(74)90008-7
- Wold, H. (1982). Soft modelling: The basic design and some extensions. In K. G. Jöreskog (Ed.), *Systems under indirect observation, Part II* (pp. 36-37). Amsterdam: North Holland Publishing.
- Wong, I. A., & Dioko, L. D. A. (2013). Understanding the mediated moderating role of customer expectations in the customer satisfaction model: The case of casinos. *Tourism Management*, 36, 188-199. doi: 10.1016/j.tourman.2012.10.010
- Wong, K.-T., Russo, S., & McDowall, J. (2013). Understanding early childhood student teachers' acceptance and use of interactive whiteboard. *Campus-Wide Information Systems*, 30(1), 4-16. doi: 10.1108/10650741311288788

Wu, L. (2012). An empirical research on poor rural agricultural information technology services to adopt. *Procedia Engineering*, 29, 1578-1583. doi: 10.1016/j.proeng.2012.01.176

Wu, M.-Y., Yu, P.-Y., & Weng, Y.-C. (2012). A Study on User Behavior for I Pass by UTAUT: Using Taiwan's MRT as an Example. *Asia Pacific Management Review*, 17(1), 92-111.

Wu, Y. L., Tao, Y. H., & YangJ, P. C. (2007). *Using UTAUT to explore the behavior of 3G mobile communication users*. Paper presented at the IEEE International Conference on Industrial Engineering and Engineering Management, 2007, Singapore.

Yahya, M., Nadzar, F., Masrek, N., & Rahman, B. A. (2011). *Determinants of UTAUT in measuring user acceptance of e-syariah portal in syariah courts in Malaysia*. Paper presented at the The 2 nd International Research Symposium in Service Management Yogyakarta, Indonesia.

Yamin, M., & Lee, Y. (2010). *Level of acceptance and factors influencing students' intention to use UCSI University's e-mail system*. Paper presented at the International Conference on User Science and Engineering (i-USer), 2010, Selangor, Malaysia.

Yaqub, J., Bello, H. T., Adenuga, I. A., & Ogundesi, M. O. (2013). The cashless policy in Nigeria: Prospects and challenges. *International Journal of Humanities and Social Science*, 3(3), 200-212.

- Yu, C.-S. (2012). Factors affecting individuals to adopt mobile banking: Empirical evidence from the UTAUT model. *Journal of Electronic Commerce Research*, 13(2), 104-121.
- Zhou, T. (2008). *Exploring mobile user acceptance based on UTAUT and contextual offering*. Paper presented at the International Symposium on Electronic Commerce and Security, 2008 Guangzhou City, China.
- Zhou, T. (2011). The impact of privacy concern on user adoption of location-based services. *Industrial Management & Data Systems*, 111(2), 212-226. doi: 10.1108/0263557111115146
- Zhou, T. (2012). Examining location-based services usage from the perspectives of unified theory of acceptance and use of technology and privacy risk. *Journal of Electronic Commerce Research*, 13(2), 135-144.
- Zhu, G., Sangwan, S., & Lu, T.-J. (2010). A new theoretical framework of technology acceptance and empirical investigation on self-efficacy-based value adoption model. *Nankai Business Review International*, 1(4), 345-372. doi: 10.1108/20408741011082543