

A Conceptual Model of the Expectation Confirmation Theory (ECT) Modification on Cybercafés Use Continuance

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Abstract. Prior research has suggested that the price increase in surfacing Internet through cybercafé has resulting effects on usage. Therefore, in order to draw the support of clients (users) in exploring the issue that stimulates them for continuous patronage, exploring those factors became vital for the entrepreneur to remain in business. Understanding the relationship between perceived price and continuance intention based on a modified Bhattachee's model of expectation-confirmation theory is the goal of this research. This paper is an attempt in proposing a conceptual model of ECT Modification with perceived price constructs towards cybercafé continuance intention. The approached adopted is based on literature review on the basis that, the incorporation of perceived price construct into the ECT model in context of cybercafé is vital in understanding the antecedent factors of cybercafés continuance intention. Consequently, the proposed model is set forward as the basis for future empirical study to validate the model in a context of a developing country.

Keywords: — Digital divide, Perceived price, Internet, Information systems, Developing country

1 INTRODUCTION

The trend of globalization has strengthened the importance of the Internet as a foremost tool of information and communication technology (ICT), yet access to the Internet is a far away a dream to the majority of people in developing world most especially the rural inhabitants. The cost of connecting to the internet is still high with most access is by Cybercafé (Bjorn, Stein & Fathhul, 2005). Internet access requires telecommunication links and information technologies particularly networks and computer terminals. Prior research revealed that the adoption of the Internet was hindered by lack of skills on the parts of the users and the high cost of access time (Ani, 2010). Study by Grace and Lenny (2008) opined that Internet access in Sub-Sahara Africa is largely in the capital cities through Cybercafés, leaving people in semi urban and remote area at disadvantage position.

A report by Internet World Statistics in 2012 showed the estimated number of Internet users around the globe was around 2.4 billion. About 48.4 million of the worlds reported Internet users reside in Nigeria. Further, as at June 2012, the Internet penetration rate in the same context was 28.4%. In spite of the stated challenges of affordability accessibility and low level of e-literacy skills, Nigeria is ranked first among the top ten in the Africa region with more population and the most Internet users (IWS, 2012). The demand for the Internet has increased compared to previous years all almost every aspect of the governance, education and the economy have been computerized and government policies have mandated each sector of the governance must be Information Technology (IT) driven. The highlighted statistics inferred that Internet is fast becoming an important part of daily life in Nigeria. Consequently, entrepreneurs, government and NGO's in Nigeria and other developing countries, roll-out Cybercafé, Internet kiosk and Community telecentre for people through shared access (Abdulwahab & Zulkhairi, 2012). The purpose of these initiatives is to cushion the effect of the digital divide. Research has shown that cybercafé served as the foremost medium by which populace is still relying for modes of Internet access and computer services through shared access (IWS, 2012; Alam et al., 2009).

The emergences of the Café mostly in urban areas to some extent bridge the gap in the provision of access to a computer and Internet (Alam et al., 2009; Alao & Folorunsho, 2008). The cybercafé are usually run as a commercial venture, members of the public can have access to the Internet for a fee usually paid per hour (Adomi, 2005). Generally, bandwidth, quality of services offered and the location determines the price of patronage, always a fee not less than a dollar is paid. The Cybercafé operations in Nigeria are faced with daunting challenges of inadequacy of electric power supply usually this has an effect on the wider usage (Adomi, 2005). Even with the proliferation of Cybercafé in the urban areas that provide public access, the issue of universal access regardless of physical location and economic status remains unresolved. The cost of establishing a Café and getting reliable Internet service provider (ISP) and associated demands served as an obstacle in extending the facility to more rural areas. Moreover, Cybercafés are privately funded and meant for profit making, hence, cannot be considered as community based IT initiatives (Abdulwahab & Zulkhairi, 2012). Prior research has suggested that the price increase in surfacing Internet through cybercafé has resulting effects on usage (Adomi, 2005). Therefore, in order to draw the support of clients (users) in exploring the issue that stimulates them for continuous patronage is critical for the entrepreneur to remain in business. Understanding the relationship between perceived price and continuance intention based on a modified, Bhattacharjee model of expectation-confirmation theory is the goal of this research. The approach adopted in the current paper is against the inductive approach reported by many researchers (Aladeniyi & Fasae, 2013; Alao & Folorunsho, 2008)

2 LITERATURE REVIEW

Foremost theories like the theory of planned behaviour proposed by Ajzen (1991) and technology acceptance model Davis (1989) have explored variables that inspire an individual to accept and use a new IS initiative. In the same perspective, the unified theory of acceptance and use of technology (UTAUT) model was acclaimed to have depicted a more complete picture of variables that inspire the acceptance of IS initiatives (Abdulwahab & Zulkhairi,

2012 ; Venkatesh et al., 2011). Though initial acceptance of an information system is an important step toward realizing its success, Bhattacharjee (2001) argued that long-term viability of an IS and its eventual success depend on its continued use rather than initial adoption. Consequently assessing use continuance is a crucial factor in appraising the IS success (Barnes, 2011; Bhattacharjee 2001). Prior research adopting the expectation confirmation theory to IS use focuses on the use of information systems for operations, decision-making or other organizational activities.

The uniqueness of cybercafé as an avenue for surfing the Internet usually for fee differs from other information system platform in which to some degree users are cognizant of monetary cost associated with usage. And have made an informed decision prior to usage. Although the satisfaction as a construct from an expectation confirmation model might play a crucial role in predicting users' continuance intentions, it is not known if satisfaction might be the main factor in cybercafé use continuance. While cybercafés may offer dissimilar services, prior research has shown perceived price has potential to attract or distract users (Chen et al., 2010).

Price perceived as an important indication in evaluating a user's decision to continue patronizing cybercafé (Adomi, 2005). Specifically, users tend to consider the relevant connection between price and their expectations by comparing it with their previous experiences of cybercafé usage. Relationships linked to price focus on service quality, performance, and user satisfaction that matches an expectation of price fairness for a service offered (Chen et al., 2010; Zhu & Fui-Hoon, 2002). If user perception of performance or quality of service exceed his or her expectations, then their perception of the price would lead to a favorable attitude toward accepting IS platform and the price would be perceived to be fair because the user's perception of service exceeds his or her perceived value (Chen et al., 2010; Zhu & Fui-Hoon, 2002).

Chen et. al. (2010) examine role internet self efficacy using the ECT, the finding suggested that the self-efficacy has no significance on perceived usefulness and continuance intention. Atcharyachanvanich et al. (2006) extended expectation-confirmation theory by introducing a new factor customer loyalty. The finding suggested that not only basic factors of satisfaction, confirmation , perceived incentives and perceived usefulness also a new factor, customer loyalty, is found to significantly influence the online customers 'intention to revisit the Internet. Fig 1 shows Bhattachee's (2001) model of expectation-confirmation theory

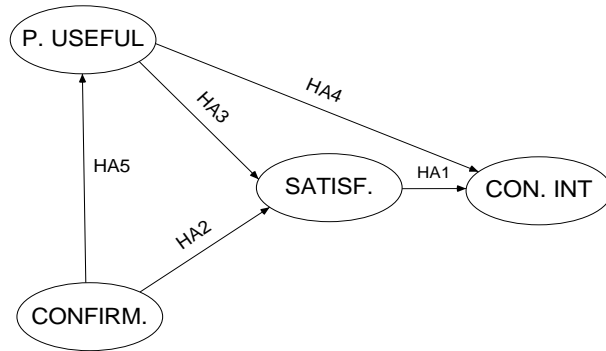


Fig 1 A Post Acceptance Model of IS Continuance

Thus, in order to adapt ECT to a different context (i.e., cybercafé) theoretical extension associated with the cost of services offered is required. Therefore, this research intends to integrate perceived price construct into the expectation confirmation theory to enhance the understanding of continuance intention of user in perspective of cybercafé based on the literature review (Zhu & Fui-Hoon, 2005). The conceptual model is presented in Fig 2

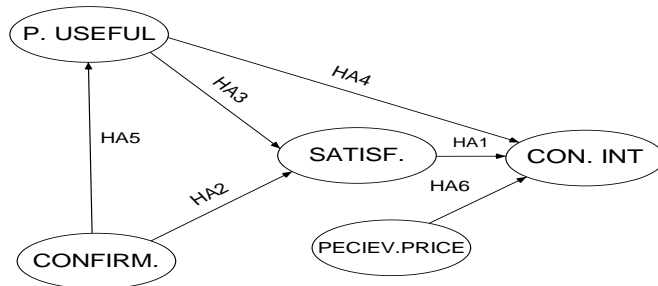


Fig 2 Conceptual Model

The ECT model is adapted to include individual factors (IS continuance, satisfaction, perceived usefulness, confirmation and perceived price which could influence continuance intention of cybercafé (Bhattacharjee 2001; Davies, 1989; Luo, Tsou & Shu, 2008). The constructs could be the main influencing factors of cybercafé continuance intention in Nigeria; theoretically, these claims have not been tested empirically. The factors shown in the conceptual model are thus defined based on (Bhattacharjee 2001; Davies, 1989; Oliver, 1980 & Liao et al., 2008). The next section presents operational definitions of the proposed model.

2.1 Satisfaction

Satisfaction is defined as the degree of contentment or displeasure obtained by comparing the performance of a product or service to its expected level (Chen et al., 2010). Bhattacharjee (2001) suggested that continuance intention is mainly affected by satisfaction of previous experience in the evaluation of an IS adoption. Satisfaction is increased by positive emotions and decreased by negative emotions that could be attributed to service failure (Chen et al., 2010). Prior researches have shown that satisfaction is a determinant of IS continuance intention (Bhattacharjee 2001). In the context of this study, satisfied users would form a

continuance intention, while dissatisfied users discontinue subsequent use of the cybercafé. Thus, the following hypothesis is proposed:

H_{A1}. Satisfaction has a positive impact on cybercafé continuance intention

2.2 Confirmation

Confirmation is defined as the objective judgment of client on the difference in experience of pre-expectation and actual experience (Oliver, 1980). ECT forwarded that satisfaction is affected by expectation and disconfirmation (Chen et al., 2010). Literarily, disconfirmation indicates the gap between expectations and perceived performance. Bhattacharjee (2001) argued that the confirmation is positively related to satisfaction with IS use because it implies realization of the expected benefits of IS use, whereas disconfirmation (perceived performance lagging expectation) indicates failure to achieve expectation. Furthermore, Bhattacharjee (2001) proposed that confirmation has a positive influence on satisfaction and perceived usefulness. Thus, the following hypotheses are proposed:

HA₂. Confirmation has a positive impact on satisfaction.

HA₅. Confirmation has a positive impact on perceive usefulness

2.3 Perceived Usefulness

Perceived Usefulness is the degree in which an individual believes that using a particular IS would enhance his/her job performance Davies (1989). Usefulness is quantified into three; job performance, productivity and time saving. Accordingly, using IS enhances job performance, productivity and makes jobs to be accomplished on time (that is, by reducing the time to carry out a task or providing timely information (Karahanna, Straub & Cherverny, 1999; Davies & Bagozzi, 1989). In the context of this study, the quality and variety of services offered by cybercafés operators will affect users' perceived usefulness. Thus the following hypotheses are proposed.

H_{A3}. PU has a positive impact on satisfaction.

H_{A4}. PU has a positive impact on continuance intention

2.4 Perceived Price

Perceived priced is defined as evaluating a client (user) choice to patronize IS platform (Liao et al., 2008). Particularly users are inclined to judge the relationship between price and their expectations by comparing it with their past experiences (Liao et al., 2008). Prior studies suggested that client's perception of price unfairness tends to lower their patronage intention (Campbell, 1999) Further, Wu and Wang (2005) cited in Liao (2008) suggested that cost of service (i.e., service fee, access fee, and training fees) by the cybercafé operators has a negative effect on intention to use. Thus a competitive price of service offered by cybercafés operators has an influence on continuance intention. Consequently the following hypothesis is proposed.

H_{A6}. PP has a positive impact on continuance intention

3 METHODOLOGY

The study is expected to be based on a positivist epistemology (Myers, 1997). A deductive approach shall be used to test the proposed conceptual model of the expectation confirmation theory (ECT) modification on cybercafés use Continuance in an empirical setting. Prior studies on IS have adopted a positivist epistemology (Wang et al. 2009; Barnes, 2011 and Venkatesh et al., 2011). The unit of analysis for the study would be individual; this is justifiable based on the stated reasons: Firstly, the individual is seen as the most suitable respondent of this research, being the end users of a cybercafés. There is empirical evidence by previous researchers that have used individual as their main respondents (Wang & Shih, 2008; Wang et al., 2009; Loo et al., 2009 and Venkatesh et al., 2011). Simple random sampling would be adopted in selecting the users of cybercafés from students, civil servants, applicants' and other cybercafés adopters. The questionnaires as shown in appendix was developed using a 7- point interval scale in measuring the constructs, including endogenous and exogenous variables. An individual chooses a scale from the ranges of seven scales starting from "strongly disagree" to "strongly agree". The interval scale was selected because it can measure the degree of the difference in the preference among the individual (Sekaran, 2006). All the questionnaires to be used in this study will be adapted from previous researches (Davis et al., 1989; Karahanna et al. 1999; Bhattacharjee, 2001; Bjorn et al., 2005 and Barnes, 2011).

4 CONCLUSION

Review of the prior literatures on IS continuance, reveals dearth of research that essentially address the issue of perceiving price incorporation into post acceptance model of IS continuance. This paper under studies the Bhattacharjee model of expectation-confirmation theory and proposed a modification particularly as it regard to cost of service and the needs for the incorporation of the perceive price construct in to Bhattacharjee's model in context of cybercafés. Perceive price could be a crucial factor when accessing the continuance use of cybercafés. This paper only proposes a conceptual model for measuring the proposed construct in context of cybercafés. The research presented is limited being that, the proposed model is only based on literature review. Subsequent researches should focus on empirical validation of the conceptual model using the survey instruments described in the appendix.

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REFERENCES

- Abdulwahab, L., & Zulkhairi, M.D. (2012). Modeling the determinants and gender, age and ethnicity differences in telecommunication centre acceptance. *Research Journal of Information Technology*, vol. 4, no. 3, pp.85-105.

- Adomi, E. (2005). The effects of a price increase on cybercafé services in Abraka, Nigeria. *Bottom Line: Managing Library Finances*, 18(2), 78-86.
- Ajzen, I. (1991). *Theory of planned behavior*, *Organizational Behavior and Human Decision Processes* ,. 179-211.
- Aladeniyi, F., & Fasae, L.K. (2013). Use of cybercafé for internet access by the students of Rufus Giwa Polytechnic, Owo, Nigeria. *Electronic library and information systems*, 47(1), 4 - 14.
- Alam, S., Abdullahi, Z , & Ahsan, N. (2009). Cyber Café usage in Malaysia. *An exploratory study*”, *Journal of Internet Banking and Commerce* ,14(1), 1-13.
- Alao, A., & Folorunsho, A.L. (2008). The use of cybercafes in Ilorin, Nigeria. *The Electronic Library* , 26(2), 238 – 24.
- Ani, O.E.(2010). Internet access and use: A study of undergraduate students in the Nigerian universities”, *The Electronic Library*, 28(4), 555-567.
- Atcharyachanvanich, K., Okada, H., & Sonehara, N. (2006). What Keeps Online Customers Repurchasing through the Internet? *ACM SIGecom Exchanges*, 6(2), 47-57.
- Barnes, U. (2011). Understanding use continuance in virtual worlds:An: empirical test of a research. *Information & Management*, 48, 313–319.
- Bhattacharjee, A. (2001). Understanding s continuance: an expectation-confirmation model. *"MIS Quarterly* ,25(3), 351-370.
- Bjorn, F., Kristianson,S , & Wahid, F. (2005). Information dissemination in a developing society: Internet cafe users in Indonesia. *EJISDC*, 22(3), 1-16.
- Campbell, M.C. (1999). Perceptions of price unfairness: antecedents and consequences,” *Journal of Marketing*, 36, (22).187-199.
- Chen, Y.Y., Chien Hsu, Y., Chau Tseng, H & Chen Lee, Y. (2010). Confirmation of Expectations and Satisfaction with the Internet Shopping: The Role of Internet Self-efficacy, *Computer and Information Science*, 3(3), 14-22.
- Davies, F. (1989). Perceived usefulness, perceived ease of use and user acceptance of information technolog. *MIS Quarterly*, 13(3) 3, 19-340.
- Davis, F.D., Bagozzi, R.P & Warshaw, P.R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models” *Management Science*, .35(8), 982- 1003.
- Garrido, M., Sey, A, Hart, T, & .Santana, L. (2012). *Literature Review of how Telecentres operate and have an Impact on eInclusion* . Spain: European Commission Joint Research Centre of Prospective Technologies.
- Grace, A.A & Lenny, R. (2008). The level of internet access and ICT training for health information professionals in sub-Saharan Africa”, *Health Information and Libraries Journal*, . 25(3),. 175-185.
- Haseloff, A. (2005). Cybercafés and their potentials as community development tools in India . *The Journal of Community Informatics*,1(3), 29-46.
- Internet Statistics, W. (n.d.). *world internet users and population statistics:http://*. Retrieved from IWS: www.internetworldstats.com/stats.htm
- Karahanna, E., Straub, D.W & Chervany, N. (1999). .Information Technology Adoption across Time: A Cross-Sectional Comparison of Pre-Adoption and Post-Adoption Beliefs, *MIS Quarterly* ,.23(2) 183-213.
- Liao, C., Tsou, C & Shu, Y. (2008). The Roles of Perceived Enjoyment and Price Perception in Determining Acceptance of Multimedia-on-Demand” *International Journal of Business and Information*, 3(1), 27-52.

- Loo, W., Yeow, P.H, & S. Chong, S. (2009). User acceptance of Malaysian government multipurpose smartcard application. *Government Information Quarterly* , 26(2), 358-367.
- Myers, M. (1997). Qualitative research in information systems. *MIS Quarterly Discovery* , 241-248.
- Oliver, R.L (1980). A Cognitive Model for the Antecedents and consequences of Satisfaction”, *Journal of Marketing Research*, 17, 460-469.
- Sekaran, U., & Bougie, R. (2010). *Research methods for business: A Skill Building* . New York, USA: 5th ed, John Willey & Sons.
- Venkatesh, V., & Davis, F. (2000). A theoretical extension of the technology acceptance model: For longitudinal field studies. *Management Science*., 46(2), 186-204.
- Venkatesh, V., Sykes,T , & Zhang, X.X. (2011). Just what the Doctor ordered: A revised UTAUT for EMR system adoption and use by Doctors. *44th Hawaii International conference on system sciences*, (pp. (pp. 1-10)). Hawaii: hicc.
- Wang, Y. –S., & Shih, Y. –W. (2008). Why do people use information kiosk? A validation of the unified theory of acceptance and use of technology. *Government Information Quarterly* ,36,(1), 501-519.
- Zhu, W.W & Fui-Hoon, N. (2002). Factors Influencing Adoption of Mobile Computing” Proceedings of the Conference on Issues and Trends of IT Management in Contemporary Organizations (IRMA). Hershey, PA: Idea Publishing Group.
- Zulhairi, M., Nor Iadah, Y , Huda,I , Khairudin,M , & Zahuri,M. (2009). Socio–economic benefits of telecentre implementation in peninsular Malaysia. *2nd Proceeding of the International Conf. 2009* (pp. 374-376). Computing & Informatics.

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Appendix

The Survey Instruments

	Perceived usefulness
PU1	Using facilities in Cybercafés is beneficial to me
PU2	The advantages of using facilities in cybercafés outweigh the disadvantages
PU3	Using facilities in cybercafés will improve my job performance
PU4	Using facilities in cybercafés enhances my effectiveness on the job
PU5	Using facilities in cybercafé increases my productivity
PU6	Overall, using facilities in cybercafés is advantageous
	Continuance Intention
CI1	I intend using facilities in cybercafés rather than use any alternative technology
CI2	My intentions are to continue using facilities in cybercafés rather than use any

	alternative technology
CI3	My continue use of facilities in Cybercafés largely depend on enabling environment.
CI4	My continue use of facilities in Cybercafés depend on my IT skills
CI5	If I could, I would continue utilizing facilities in cybercafés
	How do you feel about your overall experience of cybercafé use (Satisfaction)
	Satisfaction
SAT1	Very dissatisfied/Very satisfied
SAT2	Very displeased/Very pleased
SAT3	Very frustrated/Very contented
SAT4	Absolutely terrible/Absolutely delighted
	Perceived price
PP1	The registration fee (air time) and other fees are adequate to me
PP2	The cost of using facilities is adequate
PP3	To the best of my understanding, there are no health hazards while using facilities in cybercafés
PP4	Generally, the cost of frequent use of cybercafé is adequate
PP5	The registration fee (air time) and other fees are adequate to me
	Confirmation
COM1	My experience with using Cybercafé was better than my expectation
COM2	The services provided by Cybercafés was better than my expectation
COM3	Overall, most of my expectations from using Cybercafés were confirmed