External Auditors' Effort Expectancy for CAATs Usages: A Study of the Effect of Gender

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Abstract

Effort expectancy is one of the three Unified Theory of Acceptance and Use of Technology (UTAUT) determinants that are moderated by gender. It predicts the use of computer-assisted audit techniques (CAATs) by external auditors. However, when gender is introduced as a moderator, the prediction may be different. Therefore, a study of external auditors' effort expectancy for CAATs usage without considering the moderating effect of gender does not give an informed comprehensive view. Hence, the objective of this study was to examine the effect of gender on external auditors' effort expectancy for CAATs usage. A set of questionnaire framed in Likert scale-style was used to collect primary data. A response of over 67% was recorded from the questionnaire that were distributed. Cronbach's alpha and Kaiser Meyer Olkin were used to confirm the reliability and validity of the research instrument. Using Kruskal-Wallis H-Test, the research hypothesis was tested at 5% level of significance. The study found that gender has a positive significant effect on external auditors' effort expectancy for CAATs usage. Thus, the research implication indicated that except the effect of gender on external auditors' effort expectancy for CAATs usage is taken into consideration in predicting external auditors' CAATs usage, the use of CAATs would be adversely affected. Based on the research findings, it was concluded that the effect of gender on male external auditors' effort expectancy for CAATs usage is stronger than that of female external auditors. The study recommended that gender should be taken into consideration when determining external auditors' effort expectancy. As a contribution to knowledge, the study demonstrated that male external auditors' effort expectancy for CAATs usage is stronger than that of female external auditors.

Keywords: CAATs, determinants, effort expectancy, gender, UTAUT.

Introduction

The ease that a prospective user of information technology associates with the use of a system he or she is considering using determines the likelihood of the user using the system. According to Venkatesh, Morris, Davis and Davis (2003), the "ease-of-use" characteristics of a technology positively affect a prospective system user's behavioural intention to use the system and consequently would influence the system's actual usage.

Thus, an external auditor will use computer-assisted audit techniques (CAATs) in the audit of financial statements if the techniques are easy to use. Effort expectancy is one of the three Unified Theory of Acceptance and Use of Technology (UTAUT) determinants that are moderated by gender. It predicts the use of CAATs by external auditors. However, when gender is introduced as a moderator, the prediction may be different.

According to Sharma, Ganpati and Kumar (2013) though UTAUT determinants predict users' acceptance of information technology, when moderators are introduced, different results are obtained. UTAUT moderators consist of age, gender, experience and voluntariness of use. Venkatesh et al. (2003) also argued that moderators, to a great extent, affects the determinants of a user's intention and subsequent usage of information system. In essence, UTAUT moderators are important in predicting the effect of UTAUT determinants on user acceptance and use of information technology. Thus, external auditors would use CAATs so long as their intention and behaviour towards CAATs are positive and are not adversely moderated by gender. However, Goswami and Dutta (2016) argued that though gender plays a significant role in determining the intention of accepting new technology, there are cases where gender differences cannot be discerned. Williams, Rana, Roderick and Clement (2016) identified a number of significant differences in the use of information technology based on the use of the moderators such as gender.

Most previous authors explored the use of UTAUT in the study of the effect of auditors-related factors at the individual level on the use of CAATs without considering the effect of gender (Tumi, 2013; Ebimobowei, Ogbonna, & Enebraye, 2013; Mansour, 2016; as well as Mohammed, Kamil and Noor, 2017). Thus, to the best of the researcher's knowledge, most previous authors who studied external auditors' effort expectancy for CAATs usage did not explore the effect of gender as a UTAUT moderator. Furthermore, studies that considered the effect of gender on the use of information technology did not focus on the use of CAATs by external auditors. Venkatesh et al. (2003), Ainin, Lim and Wee (2005), Calvert et al. (2005), Ong and Lai (2006), Foon and Fah (2011), Yu (2012), Alkhunaizan and Love (2013), Jaradat and Rababaa (2013) Sharma et al. (2013), Tai and Ku (2013), Raman, Don, Khalid and Rizuan (2014), Goswami and Dutta (2016), and Williams et al. (2016) studied the effect of UTAUT moderators on the use of information technology but did not align their studies to external auditors' use of CAATs. Thus, there is a paucity of studies on CAATs usage by external auditors which considered gender.

The failure of previous empirical studies that examined external auditors' effort expectancy for CAATs usage to consider the moderating effect of gender leaves a researchable gap in the literature. An understanding of the effect of gender as UTAUT moderator on external auditor's effort expectancy for CAATs usage will give an informed comprehensive view. Thus, there is a need to study the effect of gender on external auditor's effort expectancy for CAATs usage.

Therefore, the objective of this study was to explore the effect of gender on external auditors' effort expectancy for CAATs usage so as to contribute to the literature in that area. On the basis of existing literature, the following research question was asked: what is the effect of gender on external auditors' effort expectancy for CAATs usage in Nigeria? Furthermore, the following hypothesis was formulated in nullity:

Ho 1: Gender does not have any significant effect on external auditors' effort expectancy for CAATs usage.

This study is of benefit to researchers, standard setters, professional accounting bodies, audit practitioners, software developers and policy makers

Definition of Research Variables

The Effort Expectancy

The dominant variables in this study are effort expectancy and gender. Effort expectancy is UTAUT concept that refers to the ease a prospective user of information technology associates with the use of the system he or she is considering using. Ease-of-use characteristics of a technology positively affect user's behavioural intention to use a system and consequently would influence the system's actual usage (Venkatesh et al., 2003). In essence, CAATs effort expectancy is the ease an individual external auditor associate with the use of CAATs. Thus, for the purpose of this study, effort expectancy is the agreement of an external auditor that CAATs are easy to use. This connotes that an external auditor with positive effort expectancy concerning the use of CAATs is likely to use them.

Gender

Gender is a social construction while sex reflects differences in biological configurations. Gender is often based on biological sex (Gillard, Howcrot, Mitev & Richardson, 2007). According to Elson (1995), people are categories into male or female at birth and with the passage of time acquire gender identity which is feminine or masculine. Men and women differ in terms of positions in society and experiences. According to Goswami and Dutta (2016), gender plays a significant role in determining the intention of accepting new technology, but there are cases where gender differences cannot be discerned.

Theoretical Review and Conceptualized Framework

Performance expectancy, effort expectancy, social influence, and facilitating conditions are UTAUT determinants of information technology adoption and use. Vankatesh et al. (2003) developed UTAUT and argued that if there is the intention to use information system and the subsequent positive behavior on the part of the user, such user's gender, to a great extent, affects his or her intention and subsequent usage of the system. They averred further that with a given level of experience and willingness to volunteer to

use, those in certain age bracket would use an information technology so long as their intention and behaviour towards such technology are positive. The arguments of UTAUT are modeled in Figure 1.

The model revealed that while social influence, performance and effort expectancies determine a user's behavioural intension and subsequent behavior, facilitating condition only determines user behavior. Experience moderate's facilitating condition, effort expectancy and social influence without moderating performance expectancy. Age moderates facilitating condition, social influence, performance and effort expectances. Social influence, performance and effort expectancies are moderated by gender. Voluntariness of use moderates only social influence.

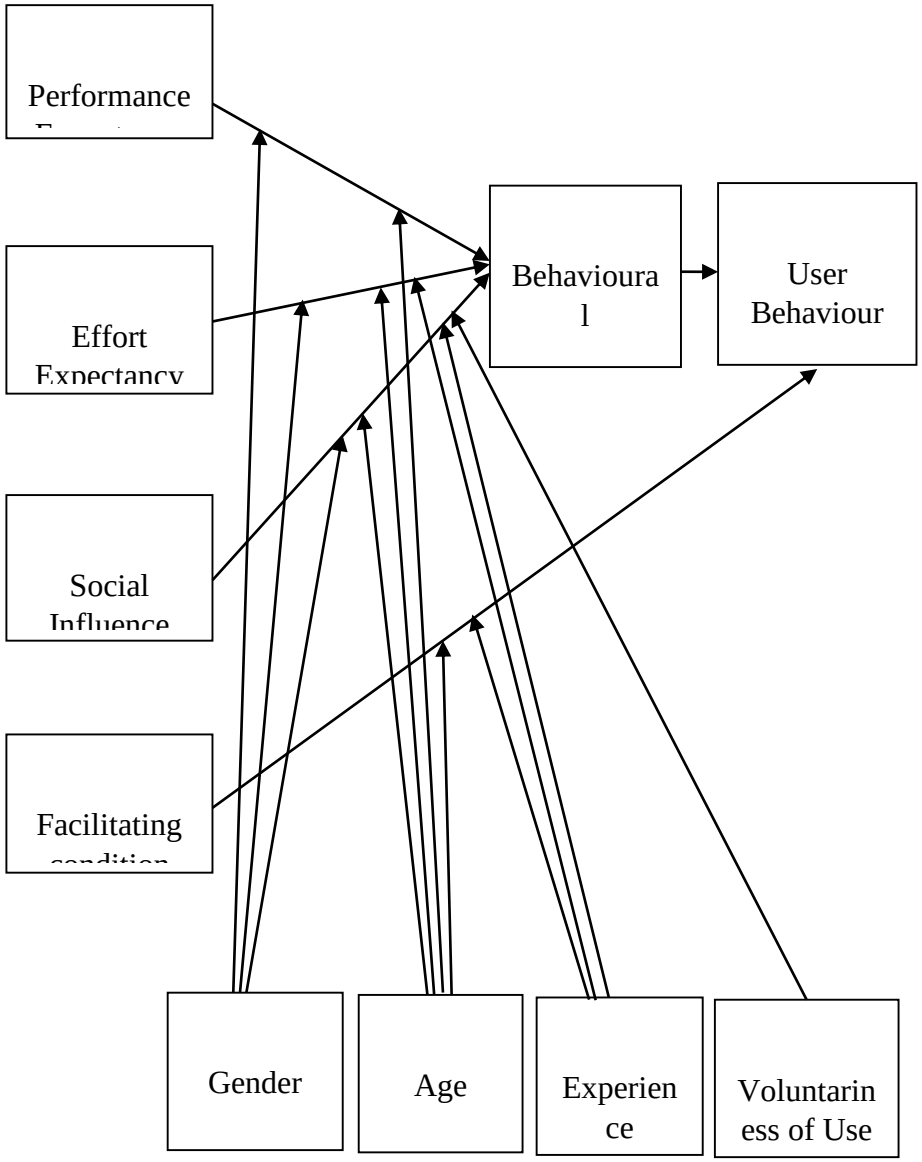

Figure 1: Graphical Presentation of Unified Theory of Acceptance and Use of Technology

Source: Venkatesh et al. (2003)

Empirical Studies

Empirical studies that explored the effect of gender on the use of information technology did not take external auditors' use of CAATs into consideration. Venkatesh et al. (2003) studied user acceptance of information technology: toward a unified view and found that information technology user's gender, to a great extent, affects his or her

intention and subsequent usage of the information system. Ainin et al. (2005) examined prospects and challenges of e-banking in Malaysia and found that gender difference is not significant in the use of information technology. Calvert et al. (2005) carried out a national survey on gender, ethnicity, and socioeconomic patterns in early computer use and found that there is no significant difference between young boys and young girls with regards to computer usage. Ong and Lai (2006) studied gender differences in perceptions and relationships among dominants of e-learning acceptance and found that women are more interested in effort expectancy than men. Foon and Fah (2011) explored internet banking adoption in Kuala Lumpur: an application of UTAUT model and revealed that gender difference is not significant in the use of information technology. Yu (2012) examined the factors affecting individuals to adopt mobile banking and revealed that effort expectancy was moderated by gender. Alkhunaizan and Love (2013) studied the effect of demography on mobile commerce frequency of actual use in Saudi Arabia and averred that gender does not moderate effort expectancy. These studies did not deal with external auditors' use of CAATs.

Furthermore, Jaradat and Rababaa (2013) surveyed key factor that influence the acceptance of mobile commerce based on modified UTAUT and argued that gender does not moderate effort expectancy. Sharma et al. (2013) examined the effect of moderators on determinants and found that though UTAUT determinants have direct influence on behavioural intention, when moderators are introduced, different results are obtained. Tai and Ku (2013) embarked on a benefit-risk assessment based on a modified UTAUT model and concluded that the influence of effort expectancy is not controlled by gender. Raman et al. (2014) examine the usage of learning management system among postgraduate students with focus on UTAUT Model and found that effort expectancy is not influenced by gender. Goswami and Dutta (2016) reviewed gender differences in technology usage and found that gender plays a significant role in determining the intention of accepting new technology but there are cases where gender differences cannot be discerned. Williams et al. (2016) identified a number of significant differences based on the use of the moderators such as gender. Also, these studies are not related to external auditors' use of CAATs.

However, empirical studies on external auditors' effort expectancy for CAATs usage abound in the literature. Rosli et al. (2012) examined the factors influencing audit technology acceptance by audit firms with full regards to auditors and audit clients-related factors as well as at individual and firms' levels. The study found that audit firms are also influenced by external environment. Bierstake et al. (2013) examined the factors that influence auditors' use of CAATs and found that effort expectancy was not positively significant in influencing auditor's use of CAATs. Ebimobowei et al. (2013) applied UTAUT in their empirical survey of external auditors' usage of computer-assisted audit tools and techniques in the audit practice and found that effort expectancy was positively associated with the use of computer-assisted audit tools and techniques by accounting firms. Mansour (2016) explored the lack of CAATs' usage in Jordan and found that

Jordanian external auditor's intention to adopt CAATs is driven by auditor's effort expectancy. Ojaide and Agochukwu (2017) studied the effect of effort expectancy on computer-assisted audit technique used by external auditors in Nigeria and concluded that effect expectancy was positively significant in influencing auditor's use of CAATs. Mohammed et al. (2017) studied factors influencing adoption of CAATs by external auditors in Jordan using UTAUT determinants and found that effort expectancy has a positive significant influence on the adoption of CAATs. These studies did not consider the effect of UTAUT moderators. Thus, their results may have been different if the effect of gender was taken into consideration.

Literature Gap

The gap in the literature revealed that previous studies that explored the effect of effort expectancy on the use of CAATs by external auditors did not take gender into consideration. Furthermore, the studies that explored the effect of gender did not take external auditors use of CAATs into consideration (Venkatesh et al., 2003; Calvert et al., 2005; Sharma et al. 2013; Williams et al., 2016). Also, the studies that considered the effect of effort expectancy on the use of CAATs by external auditors did not consider gender. Therefore, there is a paucity of studies on the effect of gender on effort expectancy as it relates to external auditors' use of CAATs (Janvrin et al., 2012; Bierstaker et al., 2013; Ebimobowei et al., 2013; Mansour, 2016; as well as Mohammed et. al., 2017). Thus, the failure of previous studies that examined the effect of effort expectancy on CAATs usage by external auditors to consider the effect of gender left a gap in the literature. Also, the inability of previous studies on the effect of gender on information technology usage without considering external auditors use of CAATs left a gap in the literature.

Materials and Methods

This study relied on positivism and interpretivism (Gay, 1976). Purposively, the study was limited to 944 audit firms in Kaduna and Lagos States of Nigeria out of which a sample size of 281 was drawn. A set of questionnaire framed in Likert scale-style was used to collect primary data. A response of over 67% was recorded from the questionnaire that were distributed. This response rate is acceptable because according to Evans, Peterson and Demark-Wahnefried (2004), a response rate of 60% or more is the standard acceptable rate of response to most research questionnaires. Furthermore, prior to full scale distribution, the questionnaire indicated Cronbach's alpha and Kaiser Meyer Olkin (KMO) values of 0.821 and 0.562 respectively. These values satisfied the Cronbach's alpha acceptable standards of 0.7 and Kaiser Meyer Olkin (KMO) standard of 0.5 set for the study (Nunnally & Bernstein, 1994). Using Kruskal-Wallis H-Test, the research hypothesis was tested at 5% level of significance.

Result of the Findings

The hypothesis of this study was tested at 5% level of significance using Kruskal-Wallis H Test and the results of the test are presented in Table 1.

Table 1: Gender and External Auditors' Effort Expectancy (EE) for CAATs usage

Median	No.	Avg. Rank	
2.5	187	223.26	Questions on EA's gender and EE for CAATs usage
2.5	187	588.06	Questions on strength of Male and Female EE for CAATs usage.
2.5	187	480.77	Questions on Female and Male EE for CAATs usage
2.5	187	205.91	Questions on Gender discrimination and EE for CAATs usage
2.5	748		Total

490.442	H (corrected for ties)
3	d.f
0.000	p-value

The results shown in the Table revealed that the calculated value of H (i.e. 490.442) is greater than 0 and the p-value is lesser than 0.05 (i.e. 0.000). Thus, while female external auditors' effort expectancy for CAATs usage is strong, male external auditors' effort expectancy for CAATs usage is stronger. Furthermore, the respondents agreed that gender discrimination affects external auditors' effort expectancy for CAATs usage. Therefore, the relationship between gender and external auditors' effort expectancy for CAATs usage did not occur by chance. The relationship is statistically significant. Therefore, we fail to accept the null hypothesis and accept that gender has a significant positive effect on external auditors' effort expectancy for CAATs usage.

Discussion of Findings

The findings of this study revealed that the gender of external auditors has a positive significant effect on their effort expectancy for CAATs usage. Gender discrimination affects external auditors' effort expectancy for CAATs usage. Moreover, male external auditors' effort expectancy for CAATs usage is stronger than female external auditors' effort expectancy for CAATs usage. Thus, gender affects external auditors' effort expectancy for CAATs usage. The effect of gender on external auditors' effort expectancy

for CAATs usage is positively significant. The findings of this study confirmed the findings of Williams et a. (2016) which identified a number of significant differences in the use of information technology based on the use of a moderator such as gender. They are in consonance with Goswami and Dutta (2016) finding that gender plays a significant role in determining the intention of accepting new technology. Thus, the finding supported Sharma, Ganpati and Kumar (2013) assertions that irrespective of the fact that UTAUT determinants have a direct effect on behavioral intention, when moderators are taken into consideration, different results towards the use of technology occur. The findings also revalidated Venkatesh et al. (2003) argue that so long as people's intention and behavior towards an information system are positive and are not adversely moderated by gender they would use the system. Therefore, an information system user's gender affects his or her intention and subsequent usage of the system. Also, young male individuals are more likely to adopt new technologies than their old male and female counterparts (Venkatesh et al., 2003).

However, these findings of this study disprove the findings of Ong and Lai (2006) that women are interested in the effort expectancy while men are not. The findings of this study are also not in consonance with Raman et al. (2014) result that effort expectancy is not influenced by gender. The finding of Yu (2012) that effort expectancy was not significantly moderated by gender disagreed with the findings of this study**.** The findings of this study are also not in agreement with Jaradat and Rababaa (2013) finding that effort expectancy is not moderated by gender as well as Alkhunaizan and Love (2013) finding that gender does not influence effort expectancy. The findings of this study also disproved Raman et al. (2014) argument that effort expectancy is not affected by gender. Calvert et al. (2005) conclusion that information technology usage is not significantly moderated by gender disagreed with the findings of this study. The findings of this study are also at variance with Foon and Fah (2011) finding that gender difference is not significant in the use of information technology; Calvert et al. (2005) finding that no significant difference exits between young boys and young girls with regards to computer usage as well as Ainin et al. (2005) finding that gender difference is not significant in the use of information technology.

The implication of these findings is that, except the effect of gender on external auditors' effort expectancy for CAATs usage is taken into consideration in predicting external auditors' CAATs usage, the use of CAATs would be adversely affected. Furthermore, positive significant effect of gender on effort expectancy for CAATs usage rests with male external auditors. Therefore, except female external auditors' effort expectancy for CAATs usage is encouraged and male external auditors' effort expectancy for CAATs usage is consistently sustained, the use of CAATs may record unfavourable response in the long run.

Conclusion

This study concluded that gender affects male and female external auditors' effort expectancy for CAATs usage differently. Thus, though gender has a positive significant effect on external auditors' effort expectancy for CAATs usage, it is not being taken into consideration in determining external auditors' effort expectancy for CAATs usage. It was further concluded that male external auditors' effort expectancy for CAATs usage is higher than female auditors' effort expectancy for CAATs usage. However, the male external auditors' effort expectancy for CAATs usage would wane if not encouraged. Furthermore, if the female external auditors' effort expectancy for CAATs usage would not improve if deliberate attempts are not taken to encourage them cultivate it.

Recommendations

This study recommends that:

i. Gender should be taken into consideration when determining external auditors' effort expectancy for CAATs usage.
ii. Female external auditors should be encouraged to cultivate effort expectancy for CAATs usage while male external auditors should be encouraged to sustain their effort expectancy for CAATs usage.
iii. Gender discrimination in the use of CAATs should be strongly discouraged.

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