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## FACTORS AFFECTING ADOPTION OF COMPUTER ASSISTED AUDIT TECHNIQUES AND TOOLS (CAATs) AMONG EXTERNAL AUDITORS IN JORDAN

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### ABSTRACT

To face the challenges of rapid progress in the usage of information technology, the audit standards suggest that the auditors should use computer-assisted audit techniques (CAATs) in the audit process. However, the level of CAATs adoption and use is still low by audit firms. The main objective of this study is examine the factors that influence the intention to adopt of Computer Assisted Audit Techniques (CAATs) by external auditors in Jordan. This paper uses the Unified Theory of Acceptance and Use of Technology (UTAUT) that including performance expectancy, effort expectancy, social influence, and facilitating conditions and an influence of trust on the performance expectancy, effort expectancy, and intention to adopt CAATs. Data were collected via online questionnaire sent to 181 external auditors that are working at audit firms in Jordan to obtain the data. Only 98 questionnaires completed with a response rate 54%. The results indicate performance expectancy, effort expectancy and social influence, all have a significant impact on intention to adopt CAATs by external auditors in Jordan, while trust and facilitating conditions was not significant. In addition, the results revealed that trust have significant impact on effort expectancy and performance expectancy.

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### INTRODUCTION

In a dynamic business world, there is an increase in pressure on organizations to become a more effective and efficient in order to achieve growth in their present competitive environment. Information system (IS) is one of the mechanisms that can be used to increase their competitiveness and provide a base for providing information for decision making (Kornkaew, 2012). Many organizations select sophisticated information technologies for developing and supporting their business (Ramamoorthi, 2004). Growths in the world become unprecedented concerning public and private investments in IT (Laudon, 2016). CAATs are tools and techniques employed by auditors to extract and analyze client data (Braun & Davis, 2003). CAATs can increase efficiency and effectiveness of audit profession through activities of automating manual audit and improve audit performance, accuracy, completion of the work, quality, efficiency, and the auditor's effectiveness (Curtis & Payne, 2008; JACOB, 2011). There is a need to understand the audit plan in order to understand internal controls and to implement reliable financial reports (Rosli et al., 2012). The level of CAATs adoption and use is still negligible and is not widely utilized by many public accounting firms (Curtis & Payne, 2008; Ahmi, 2012; Widuri, 2014). There is greater possibility of adopting CAATs in big firm. Small to medium sized accounting firms are still facing difficulties in adopting CAATs such as the organization's tight capital (budget) (Curtis & Payne, 2008). Also, the software licensing cost, training cost, hardware cost, time and support from management, usage difficulty, required technical knowledge about GAS (ahmi, 2012). In the preview of the current audit environment, there is a lack of knowledge about CAATs among Jordanian auditors. Therefore, they believe the usage of CAATs is not easy (Mansur, 2016). Despite the efforts made by Jordanian auditing professional bodies, the adoption of CAATs in Jordan is still at its early stage (Mansur, 2016).

### LITERATURE REVIEW.

Many researchers have studied individual information technology acceptance. In 2003, eight original models and theories of individual technology acceptance were summarized, involving all the important research done until then, and a new model has been proposed. This model is UTAUT (Venkatesh et al, 2003). This model was the base in numerous studies that related in adoption or usage CAATs. The original work is one of the most cited references in this area that including performance expectancy, effort expectancy, social influence, and facilitating conditions, however, limited authors have added and tested new determinants to the original UTAUT.

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During the last ten years, several studies on CAATs individual acceptance among internal, external, IT auditors, and statutory auditors that used UTAUT theory such as, in America (e.g. USA), Europe (e.g. UK & Portugal), Asia (e.g. Malaysia). There were three studies about internal auditors such as, Lymer&Mahzan (2014 & 2008) in UK and Malaysia, and Shamsuddin et al (2015) in Malaysia. Also, three studies about external auditors such as, Janvrin, Lowe & Bierstaker (2008 & 2014), Curtis & Payne (2014) in US. While, two studies about statutory auditors such as, Isabel Pedrosa (2015) in Portugal, Ebrahim Mansour (2016) in Jordan. Also, one study about information systems auditors such as Victor Paledi (2011) in South African. There is still lack of information about the adoption and usage CAATs among external auditors due to the lack of previous studies related.

### RESEARCH FRAMEWORK

UTAUT successfully predict the adoption of IT in approximately 70 percent of the cases (Davis et al., 1989; Venkatesh et al., 2003). This model covers almost the main factors that influence user acceptance of technology such as technology factor and organization factor (Marchewka et al., 2007; Venkatesh et al., 2003). However, although UTAUT was developed by taking into account the similarities across nine previous technology acceptance models but it does not include the trust factor. The factors included in the proposed research model are includes: performance expectancy, trust, effort expectancy, social influence, and facilitating conditions.

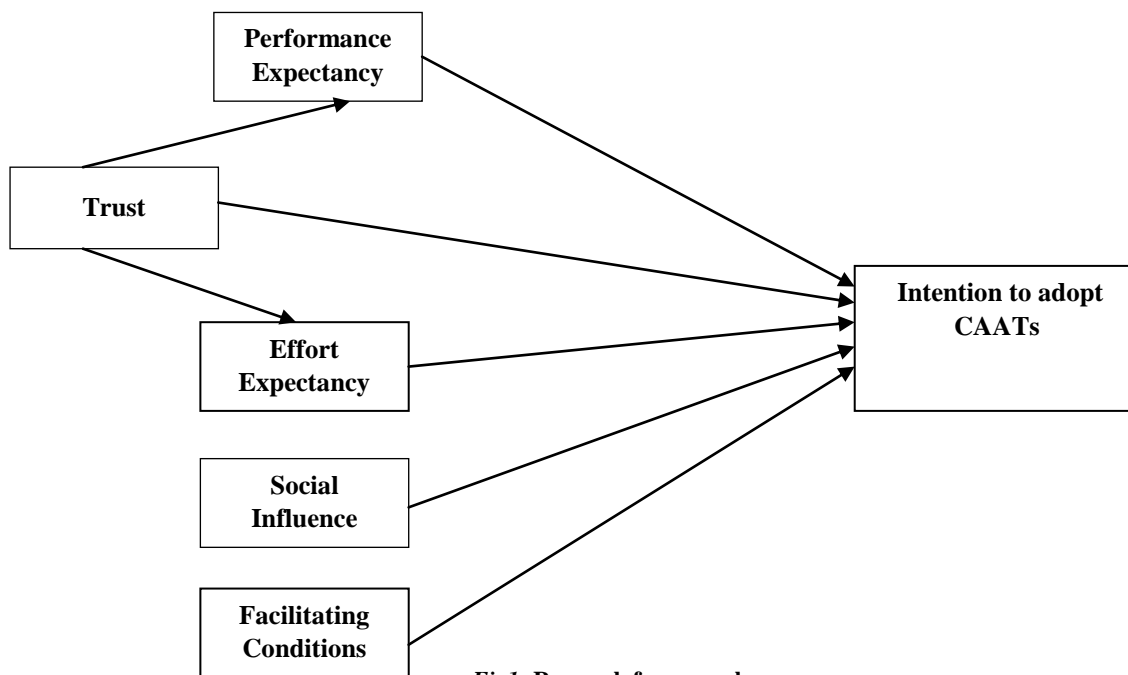


Fig1: Research framework

Table 1 : definition of Terms

<b>Performance expectancy</b>	The degree to which an individual believes that using the system will help him or her to attain gains in a job (Venkatesh et al., 2003).
<b>Effort expectancy</b>	The degree of ease associated with the use of the system. (Venkatesh et al., 2003).
<b>Social influence</b>	The degree to which an individual perceives that significant others believe he or she should use the new system. (Venkatesh et al., 2003).
<b>Facilitating conditions</b>	The degree to which an individual believes that an organizational and technical infrastructure exists to support the use of the system. (Venkatesh et al., 2003).
<b>Trust in technology</b>	a user's belief that the technology has attributes beneficial to the user, will have in a dependable manner and in the interests of the user, and will perform according to the user's expectation (Venkatesh et al., 2003).

### METHODOLOGY

This study will adopt a quantitative method of research, which is the most appropriate research methodology for this study. The quantitative method encompasses a system of inquiring clarification through the association between distinct variables, which can be condensed to numerical data, and possibly could be generalized to superior populations (Finnerty et al., 2013).

Bryman and Bell (2007) stressed that research design guides and provides a framework for the collection and analysis of data through the reflection of decisions about the priority being given to a range of dimensions of the research process. On the other hand, De Vaus (2001) argued that the prime function of a research design is to ensure that the obtained evidences enable the researcher to answer the initial or research question clearly. According to Yin (1994), there are three ways of research available when dealing with a research problem exploratory, descriptive, or explanatory (Casual study). Causal research, also called explanatory research. The basic aim of causal studies is to identify the cause and effect relationship between variables (Brains, Willnat, Manheim & Rich, 2011). Also, explain the relationships between independent variables and dependent variables (Zikmund, 1994). In our study will use casual study to examine the factors that affecting on intention to adopt CAATs by external auditors in Jordan.

The questionnaire as an instrument to collect the study primary data to achieve the objectives of the study and to collect the necessary data, a questionnaire was used as the primary mechanism of data collection. Questionnaires are widely used for social research and they were described by Ghauri & Gronhaug (2005) as the most popular data collection method in business studies, whereby the researcher can satisfy many objectives concurrently in a single survey, in particular measure numerous variables, and test several hypotheses (Neuman, 2003).

The questionnaires will be distributed using online. The advantages of using online questionnaire as a method for collecting data are related to reduced cost, speed to collecting data, and decreased data entry error (Wharton et al., 2003; McDaniel & Gates, 2005; Skarupova, 2014). For these reasons, an online questionnaire will employed for this study.

Data were collected via online questionnaire sent to 181 external auditors that are working at audit firms in Jordan. Only 98 questionnaires completed with a response rate 54%.

### RELIABILITY TEST

Reliability testing is to test the degree to which extent is consistent and stable in measuring what it is intended to measure. At the simply level, the test is reliable if it is consistent in itself and the whole time. Reliability test issued to measure the internal consistency so that it can determine all projects in the questionnaire whether each variable has highly relevant or reliable. In this research project, the scale items were tested by the reliability test. (Malhotra & Birks, 2007) mentioned that the reliability coefficient varies from 0 to 1. If the value of Cronbach's Alpha is less than 0.60, that shows not satisfied internal consistency reliability. However if the value of Cronbach's Alpha is more than 0.60, that showed satisfied internal consistency reliability.

The results of the Cronbach's Alpha on the sample that was taken at the beginning as shown in Table 2

*Table 2: Reliability Result*

Construct	Cronbach's Alpha
Intention to adopt	0.951
Effort expectancy	0.879
Facilitating condition	0.853
Performance expectancy	0.912
Social influence	0.846

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### RELATIONSHIPS BETWEEN IV AND DV

The table 2 shows the relationship between (performance expectancy, effort expectancy, social influence, facilitating conditions) and intention to adopt CAATs.

Structural path	P value	RELATIONSHIP
Performance expectancy with intention to adopt CAATs	0.092	*Sig
Effort expectancy with intention to adopt CAATs	0.002	**Sig
Social influence with intention to adopt CAATs	0.000	***Sig
Facilitating conditions with intention to adopt CAATs	0.556	In.Sig
Trust with intention to adopt	0.639	In.Sig
Trust with Performance expectancy	0.000	***Sig
Trust with Effort expectancy	0.000	***Sig

\* Significant at 0.01 level \*\* Significant at 0.05 level \*\*\* Significant at 0.001 level. 2-tailed test

### CONCLUSION

The results from the analyses showed that performance expectancy, effort expectancy and social influence have positive impacts on the adopt of CAATs in Jordan. And have positive impacts between trust and (performance expectancy and effort expectancy). While trust and facilitating conditions do not have any significant effect on the intention to adopt of CAATs in Jordan.

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