

## **FACTORS INFLUENCING ADOPTION OF COMPUTER ASSISTED AUDIT TECHNIQUES (CAATs) BY EXTERNAL AUDITORS IN JORDAN**

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### **ABSTRACT**

The main objective of this paper is to 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) main factors that including performance expectancy, effort expectancy, social influence, and facilitating conditions. Data were collected via online questionnaire sent to 181 external auditors that are working at (national, international, and Big4) audit firms in Jordan. 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, while facilitating conditions was insignificant.

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### **INTRODUCTION**

Nature of today's economy makes organizations depend on information technology (IT) for recording and processing business transactions encompassed the corporate digital infrastructure (Arens, Elder & Beasley, 2012). The digital universe will double every two years (Gantz & Reinsel, 2012). The increasing volume of transactions and the digitization of accounting processes increase business risks (Khorwatt, 2015). Therefore, there are many risks facing accounting information systems data. For instance, errors in data by computer usage in preparing financial and accounting reports, thefts, and violation of internal controls (Abu-Musa, 2004). Therefore, the auditing is one of the ways to make sure that the accounting reports does not contain errors and misstatements. By using the appropriate tools such as CAATs, it is expected to be helpful and will enhance the efficiency and effectiveness of the auditing operation (Ahmi & Kent, 2012).

the audit standards suggest that the auditors should use computer-assisted audit techniques (CAATs) in the audit process (IFAC, 2009; SAS No. 99; PCAOB, 2010; AICPA, 2006). Not only has the usage of CAATs become a fruitful choice for some businesses but it has become an important part of methodology's audit. However, a few is known about the benefits of these tools (Mahzan & Lymer, 2008). CAATs are computer tools and techniques described as part of audit procedures (Singleton & Flesher, 2003). Moreover, it can reduce the audit time (Rosli, Yeow & Siew, 2012). By using of CAATs, auditors can evaluate the data extracted and to cross-examine the live data in a scope of application software and databases (Braun & Davis, 2003; Debreceny, Lee & Neo 2005).

It 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).

Despite the benefits of CAATs in the auditing process and standards audit that encourage the application of contemporary audit technologies in the audit firms, previous studies show that auditors do not often use CAATs (Janvrin, Bierstaker & Lowe, 2009; Aidi & Kent, 2012; monuk, 2015; Payne & Curtis, 2014).

### **LITERATURE REVIEW**

#### **Definition of CAATs**

CAATs is a techniques use in order to perform various procedures in auditing (ASOSAI, 2003, P.68). CAATs are computer programs and data that auditors use as part of the audit procedures to process data of audit significance, and which allow auditors to develop new ways to achieve the general audit objectives (Kamesam,

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2001; Sayana, 2003). Similarly, Debreceeny, et al. (2005) stated that CAATs help auditors to assess the financial statement assertions, such as validity, completeness, ownership, valuation, accuracy, classification and disclosure.

### Types of CAATs.

Hall (2000) identifies five types of CAATs advanced in popular audit literature namely; Test data, Integrated test facility, parallel simulation, embedded audit module, and generalized audit software.

*Table 1: Typology of CAATs, Adapted from (Braun & Davis, 2003; Jaksic, 2009)*

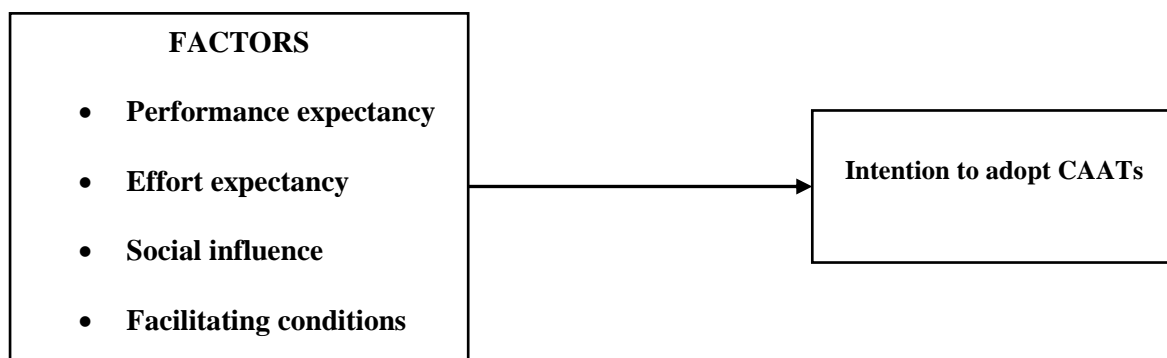
<b>Test data</b>	Fictitious-prepared data by auditor, which will be processed by the audited systems. The evaluation bases on a comparison between the results of the test data and the auditor’s expectations.
<b>Integrated test facility</b>	Processing of Test Data in separated areas or modules within the audited system. The results of the internal system controls are visible for the auditor.
<b>parallel simulation</b>	Auditor-developed application, which is completely separated from the client’s systems. The results of processing real data are compared with the results of the client’s systems.
<b>embedded audit module</b>	Auditor-developed module which is implemented within a client’s system. EAM evaluates real data by predefined criteria while it is processed. Results of EAM evaluations can be written into a SCARF, which is send to the auditors for further examination.
<b>generalized audit software</b>	Auditor-developed and self-contained applications, which evaluate extracted real data and analyze them, regarding predefined criteria. Specifically, the programs designed for auditors to facilitate and automates testing of 100% of population, to focuses attention on specific risk areas or transactions and to identify duplicate items. Two most of the popular GAS are Audit Command Language (ACL) and Interactive Data Extraction and Analysis (IDEA)

### Benefits of CAATs

According to Braun and Davis (2003), CAATs improve audit productivity, efficiency, effectiveness and complete routine tasks faster. CAAT is also regarded as a cost effective tool to conduct audit assignment (Saygili, 2010). Moreover, AICPA (2001), Singleton (2006), and Curtis and Payne (2008) stated that CAATs reduce total audit hours and increase the reliability of conclusions for test performed.

### 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).



*Fig1: Research framework*



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### Definition of Terms

**Performance expectancy:** 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).

**Effort expectancy:** The degree of ease associated with the use of the system. (Venkatesh et al., 2003).

**Social influence:** The degree to which an individual perceives that significant others believe he or she should use the new system. (Venkatesh et al., 2003).

**Facilitating conditions:** The degree to which an individual perceives that significant others believe he or she should use the new system. (Venkatesh et al., 2003).

**Intention to adopt CAATs:** Relates to our having formulated conscious plans to perform or not perform some specified future behavior (Warshaw & Davis, 1984, p. 3).

### 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). 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.

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
Effort expectancy	0.879
Facilitating condition	0.853
Intention to adopt	0.951
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	t-value	RELATIONSHIP
Performance expectancy with intention to adopt CAATs	1.934	Sig
Effort expectancy with intention to adopt CAATs	3.995	Sig
Social influence with intention to adopt CAATs	4.979	Sig
Facilitating conditions with intention to adopt CAATs	0.989	In.Sig

t-value > 1.645\* (p<0.05); t-value > 1.96\*\* (p<0.02); t-value > 2.33\*\* (p<0.01) 1-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, while facilitating conditions was insignificant. The results revealed that social influence was the most significant factor effecting on Jordanian external auditors.

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