The Effect of Accounting Information Systems in Accounting

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Abstracts

Generally, ICT have improved the quality of professional services in the accounting organization. The study have achieved the level of accounting information systems usage, and the perceptions of TAM factors such perceived ease of use, perceived usefulness, attitudes towards use, and behaviors intention were determine. The usage of AIS performance of organization factors and social factors was also used to determined computerized accounting information systems in different financial institutions in South Africa. To attain this objective, a total of 104 were participated by survey questionnaires, usage of accounting information systems were majorities’ staffs mainly. Hypothesis was tested; using paired sampled T-test and multiple regression analysis. Authors have found that all four TAM factors have significant influence in using computerized Accounting Information Systems in South Africa context.

Keywords

Accounting, Accounting information systems, Professional Practice, Accounting Organization, South Africa

1. Introduction

ICT has become a majorly tools for rendering or providing a competitive advantage for companies, most especially banking industries, financial institutions and the accounting professions, in terms of the number of computers in use and the level of information technology infrastructure (Odubanjo, 2009). Communication technology deals with the physical devices and software that link various computer hardware components and transfer data from one physical location to another.

(Romney, 2009) AIS helps business units and solve long-term problems of managers in the areas of final price, costs and cash flow through providing information to support and supervise companies in the dynamic and competitive environment, and to help the integration of companies and the operational considerations in a profit way. Ismail (2009) examined accounting information systems (AIS) effectiveness and their influence factors in a specific context of small and medium manufacturing enterprises (SMEs) in Malaysia. He used a proposed model to examine the impact of AIS sophistication, manager participation in AIS implementation, manager AIS knowledge, and effectiveness of external experts such as vendors, consultants, government agencies and accounting firms in AIS effectiveness. The result shows that manager accounting knowledge, effectiveness of vendors and accounting firms make no significant contribution to AIS effectiveness. Overall, the study encourages the managers of SMEs to acquire sufficient accounting information systems knowledge for a better understanding about the business information requirement. By doing this, it will enable SMEs to learn from AIS implementation so that opportunities can be recognized, with initiative to support information needs. Abdullah (2009) investigated AIS based on the usefulness and ease of use only. He, Furthermore term the behavioral and performance change of technology acceptance are expected to occur through performance application to business functions of public sector organizations in Tripoli, Libya. The change was measured through the level of acceptance of technology. The research confirmed that the relationship between perceived usefulness and ease of use contributes positively to AIS adoption among public sector organizations. Sori (2009) also examined the use of accounting information systems (AIS) and their contribution to knowledge management and the strategic role of an organization. He used a construction company as a case study to examine the use of AIS. The company used automated AIS as contract plus financial and a project accounting package commercially developed by a private company. The users of this automated system are the people operating within and outside the company, and they generate the systems for decision-making. The role played by AIS enhances an organization’s accounting functions and adds

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value. Using these automated systems helps to overcome weaknesses in data processing. The study involves upgrading human skills and developing accounting software to speed up accounting work in the construction firms. AIS is an important mechanism of an organization that is vital for effective management decision making in controlling organization (Zymrmm, 1995). Generally, benefits of AIS has impacted decision making process, purchase, software applications, performance evolution, internal control, external control and this have facilitate companies transaction in South Africa organization.

2. The role of Accounting Information System

The role of accounting information systems was summaries according (Sealehi, 2011) is a system that operate functions of data gathering, processing, categorizing, and reporting financial events with the aims of providing relevant information for the purpose of storing information keeping inventories records and decision making, and also provides financial report on a daily and weekly basis. This study have shown that successful implementation of accounting information systems has benefits, improvement in work qualities, improved flow of product, improved flexibility, multifunctional ability, motivation of using software application, problem solving capability of employees, increased productivity and performance in terms of production cost, and finally increased emphasis on suppliers integration. All these mentions make accounting information systems so unique and advantageous in use.

3. Objectives of the study

To achieve this aim, the following use research objectives:
- To investigate of the social factors influencing the use of AIS.
- To investigate of the organizational factors influencing the use of AIS.
- To investigate TAM variable influencing the role of AIS.
- To determine the role of AIS is used by accounting firm to achieve their intended purpose.

4. Theoretical framework and Background

A review of the literature on AIS and the advantage of AIS were discussed in the previous study, in order to establish the theoretical frame work of the research model and to derive the hypotheses that can explain accountant behavior towards the role of AIS in an organization’s setting. This study have examines some theories in the domain of the information systems environment, and explored social factors and organizational behavior and the technology acceptance model (TAM) variables.

In the past, technology acceptance model (TAM) represents an important theoretical contribution towards the understanding of AIS (Davis, 1989). The focus on the theory-based model of TAM by (Davis, 1989) explains computer usage behavior towards the role of accounting information systems. The goals of TAM also provided an explanation of the determinants of computer acceptance that are generally capable of explaining user behavior across a broad range of end-user computer technology and user populations. (Davis, 1993) predicting human behavior and suggests how users come to accept and use a technology and proposes that when a person is adopting a new technology, a number of factors such as the perceived usefulness, perceived ease of use, attitude towards use and behavior intention can influence their decision about how and when he or she will use it. Also (Bergeron, 1995) implies TAM framework, as a theory from social psychology, explicitly shows the social, cultural, individual and organizational factors that influence the behavior. Davis developed TAM framework, while under contract to IBM Canada Limited to evaluate the market potential for a variety of the then-emerging PC-based applications in the area of multimedia, image processing, and pen-based computer in order to guide investment in a new development.

Dalci (2009) study of social influence was motivated by his interest in understanding the change brought about in individual attitude by external input, in such as information communicated to easy them. Specifically, his research attempted to understand whether the change in attitude resulting from external stimuli was a temporary superficial change or a more lasting change that became integrated in the person’s value systems. He suggested that change in attitude and action is produced by social influence. His study employs a theory-based model to investigate and examine the social, individual, organizational and
critical success factors that might explain accountants’ behavior and role of AIS (Bagozzi 1992). These theories are in the AIS domain because they enable researchers to gain a useful insight into the reactions of people towards computer technology and factors affecting their reactions (Davis et al 1989). A brief discussion of each of the TAM variables was presented for this study.

Perceived Usefulness: Davis et al (1989) define PU as the user probability that using a specific application system will increase his or her job performance within an organizational context.

Perceived Ease of Use: Davis defines PEOU as the degree to which an individual believes that using a particular system would be free of physical and mental effort (Davis 1993). While PEOU relates to the assessment of the intrinsic characteristic of IT such as ease of use, ease of learning, flexibility and clarity of IT interface, PU on the other hand is a response to user assessment of the extrinsic, i.e. task-oriented outcome: how IT helps the user achieve task-related objectives, such as task efficiency and effectiveness. These two beliefs can create a favorable disposition or intention towards using the AIS.

Behaviour Intention: according to the TRA, an individual behavior intention (BI) is a function of two basic determinants: one is a personal factor in nature and the other reflects the social influences. The former refers to an individual’s positive or negative evaluation of performing the behavior. This is termed as attitude towards the behavior. The latter reflects an individual’s perception of the social pressure put on him or her to perform or not to perform the behavior in question. These are termed subjective norms. In other words, BI is determined by an individual perception of personal factors such as attitude towards the behavior and subjective norms, which are the social pressure on the behavior in question (Azjen and Fishbein 1991).

Attitudes towards use: TAM is based on the TRA attitude paradigm which specifies how the behavior-relevant component of attitudes can be measured. It distinguishes between belief and attitudes and specifically how external stimuli such as objective features of the attitudes to the object are casually linked to belief, attitudes and behavior (Davis 1989). In TAM, an attitude towards usage is referred to as the evaluative effect of positive or negative feeling of individual in performing a particular behavior (Fishbein, 2000).

5. The important of TAM in the research study

Since its original development, TAM has been the focus of considerable academic attention (Venkatesh, 2003). TAM had received, adapted and extended by numerous researchers (Johnson et al 2003). These adaptations have variously explored TAM’s constructs and variables (Davis, 1993), issue of social influence, the temporal dimension of IT adoption behavior (Johnson, 2003), the degree of voluntary attitudes in IT adoption and usage (Davis, 1989), usage self-measurement bias and the case of object-oriented systems development (Johnson 2003).

Furthermore, the theoretical importance of TAM as a determinant of user behavior is revealed by various kinds of research studies including the adoption of innovations, the cost-benefit paradigm, expectancy theory and self-efficacy theory (Davis 1989). An overview of scholar research studies (Davis 1989; Johnson 2003) on IS acceptance and usage suggests that TAM has emerged as one of the most influential models in this stream of research, including e-commerce and the adoption of internet technology (Johnson, 2003). TAM with its original emphasis on system design characteristics represented an essential theoretical contribution in understanding IS usage and acceptance behavior. For instance, Davis (1989) originally examined an email system and file-editor used at the time at IBM Canada and found the PEOU and PU to be significantly correlated with self-reported use of the system.

Moreover, evidence of the research community’s growing acceptance of TAM is more or less reflected in the fact that the Institute for Scientific Information’s social science citation index, as referenced in Money and Turner (2004), recently listed 335 journal citations since 1999 of the initial research paper published by Davis et al (1989). More than a decade after its original publication, TAM continues to play a significant role in social science research studies (Johnson 2003).

Nevertheless, TAM has been replicated and tested extensively to provide empirical evidence on the relationship that exists between PU and PEOU (Davis et al 1989). The result of the study has confirmed the validity and reliability of the Davis instrument, and supports its use with different populations of users and different software choices.
TAM uses multiple-item scales to operationalize ATU, PU and PEOU in order to measure these constructs more reliably than would be possible with a single-item scale (Davis 1989). The Cronbach Alpha reliability of TAM scales has been found to exceed 0.9 across numerous fields (Davis 1993). In addition, TAM item scales exhibit a high degree of discriminate, convergent and nomological validity (Venkatech 2003). The importance of these psychometric properties and the high proportion of variance in TAM for studying IS adoption is shown by (Davis 1993 and Venkatech 2003).

However, there is potential bias in TAM. One of the major biases is that TAM assumes that when someone forms an intention to act, that the person will be free to act without limitation (Bagozzi 1992). However, in the real world, there will be many constraints such as limited ability, time limit and individual freedom to act (Bagozzi, et al 1992). TAM with its original emphasis on the system design characteristic does not account for social norms, subconscious habits and facilitating condition of the organisational environment in the adoption and utilisation of new IS including AIS (Venkatesh, 2003).

Further, most of the existing studies on TAM were conducted in North American countries (Davis et al 1989). When TAM is tested in the other countries such as Switzerland and Japan, the results vary on TAM’s predictive power, culture, social norms, habit and facilitation in individual IS, including AIS adoption.

Davis et al (1989) had observed that the omission of a subjective norm from TAM represented an important area that needed further research. They had noted that the theoretical basis of TRA makes it difficult to distinguish whether usage behaviour is caused by the influence of the referent on one’s intent or by one’s own attitude (Davis 1989). For instance, Davis (1986) observed that the subject may want to do what referent: X thinks he or she should do, not because of X’s influence, but because the act is consistent with the subject’s own [attitude]. Davis (1989) not only underscores the importance of social norms that can explain behaviour in the adoption and use of IS in the real world application of TAM, but states that they failed to recognise the importance of habit and other facilitating conditions suggested above to have an important influence on behaviour. Davis (1993) encourages future research to consider the role of additional [external variables] within TAM. In other words, his study highlighted the growing importance of developing knowledge from TAM. This study employs TAM variables and incorporates selected variables such as social factors, and organization factors. The theoretical foundation and research model have explained the role of AIS and behaviour towards the adoption AIS.

6. Research model and Hypothesis

The technology acceptance model (TAM) was used in this study, for it does predict ability in the role of accounting information systems usage. The relationship between Social factors, Organizational factors, perceived usefulness, (PU), perceived ease of use (PEOU), attitudes towards usage (ATU), behavioral intention (BI) and accounting information systems (AIS). Technology is specified in the TAM adoption and it reflects in the organization structures. Informed by the empirical evidence shown below, is the modified model showing the Social factors, has direct influence in organizational factors. Together with perceived usefulness has direct influence on attitudes towards use, similarly perceived ease of use has direct influence attitude towards use, while behavioral intention is posited to affect (AIS). Empirically evidence was conducted in justifying TAM variables and other factors, the below was conceptualize model that was tested with the prove of hypotheses.
Figure 1: A conceptual model for Accounting Information system usage

Informed by the theoretical frameworks, the following hypotheses were tested, in order to achieve the aim and objectives of this work:

**Hypothesis 1:**
H<sub>i</sub>: There is a positive relationship between social factors and organizational factors in the use of AIS  
H<sub>0</sub>: There is no positive relationship between social factors and organizational factors

- Organization factors consider the increase the level of commitment of the end-user by educating.
- Organization factors influence the way of capturing, processing, storing, and distributing information in usage of AIS
- Organization factors consider the training sufficient communication and employee relation in adoption AIS
- Organization Factor influence efficient control to ensure data quality.

**Hypothesis 2:**
H<sub>i</sub>: There is a positive influence between social factors and perceived usefulness of AIS  
H<sub>0</sub>: There is no positive influence between social factors and perceived usefulness

- Social Factor influence change about individual attitude in usage of AIS
- Social Factor consider the process that determine the individual commitment in usage of AIS
- Social Factors influence AIS and they are compliance, identification and internalization
- Social Factors as Norms, roles and Values at society can influence an individual in Usage of AIS.
- It shown that Social factors have an indirect influence on behavior by mean of PU, PEOU and ATU

**Hypothesis 3:**
H<sub>i</sub>: There is a positive relationship between organizational factors and perceived ease of use of AIS  
H<sub>0</sub>: There is no positive relationship between organizational factor and perceived ease of use AIS

- Perceived ease of use ensure that there would be no error or omission in usage of AIS
- Using AIS in turn is influenced by perceived ease of use

**7. Methodology of the study**

**Sample size**
A total 150 respondents have been surveyed from different types of financial institution on random sampling. 140 employees are majorities, who familiar with use of AIS. They engaging in using AIS and this have make AIS to played a vital role in their industry.

**Data collection**
The study is mainly based on primary data. A structured survey questionnaire has been used to carry out the research. While the user of (AIS) were interested, and fully participated to filling the questionnaire provided.

**Unit of analysis**
Unit of analysis was conducted and targeted a set of people in an organization, mainly usage of AIS software, and accountants

**Data analysis**
Data have been analyzed by using Statistical Package for the Social Science (SPSS) was used to perform correlation on the result from the questionnaire. The correlation analyses were tailored towards achieving the set objectives.

**Experimental and Result**

### Table 1: Summary of Descriptive analysis Correlation

<table>
<thead>
<tr>
<th>Factors</th>
<th>PU</th>
<th>PEOU</th>
<th>ATU</th>
<th>IN</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>1.000</td>
<td>.589**</td>
<td>.464**</td>
<td>.291**</td>
</tr>
<tr>
<td>Social Factors</td>
<td>.000</td>
<td>.000</td>
<td>.003</td>
<td>.003</td>
</tr>
<tr>
<td>Intention of</td>
<td>.589**</td>
<td>1.000</td>
<td>.381**</td>
<td>.382**</td>
</tr>
<tr>
<td>Use</td>
<td>104</td>
<td>104</td>
<td>104</td>
<td>104</td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).**

The above table 1; indicate TAM construct has determine the role of AIS, shows correlation between the organizational factors, social factors and intention of use of AIS, the correlation coefficient indicates a positive trend of 0.589 in (PEOU) while (ATU) determine 0.464 in Social Factors which is significant at the 0.01 level at 2-tailed. A positive relationship also exists based on the result and framework. Between the organizational factors and the intention of use of AIS with correlation coefficient of 0.291 in (PU), significant at 0.03 levels at 2-tailed. In addition, correlation coefficients of 0.382 in (PEOU), which indicate a positive relationship, also exist between the social factors and the intention to use AIS, significant at 0.01 level of 2-tailed test. Therefore implies that there is a strong relationship in TAM variables to easily adopted (AIS). This indicates that between the social factors and the organizational factors there is a co-orderly relationship that leads to intention to use AIS.

### Table 2: Correlation Analysis between Social factors and Organizational factors

<table>
<thead>
<tr>
<th>Factors</th>
<th>Organizational Factors</th>
<th>Social Factors</th>
<th>Correlation Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organization</td>
<td>1.000</td>
<td>.589**</td>
<td>.464**</td>
</tr>
<tr>
<td></td>
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<td>.000</td>
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<td></td>
<td>.589**</td>
<td>1.000</td>
<td>.381**</td>
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<tr>
<td>Intention of</td>
<td>.000</td>
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</tr>
<tr>
<td>Use</td>
<td>104</td>
<td>104</td>
<td>104</td>
</tr>
<tr>
<td>Sig. (2-tailed)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**. Correlation is significant at the 0.01 level (2-tailed).**

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As shown in Table 2, the result of the correlation analysis indicate that there is a positive relationship between organizational factors and social factors with a correlation coefficient of 0.589 and 0.464, indicating a positive relationship between organizational factors and general consideration of the use of AIS in the organization. This is significant at 0.01 level of 2 tailed analyses.

### Table 3: Correlation co-efficient

<table>
<thead>
<tr>
<th>Correlation co-efficient</th>
<th>Co-efficient</th>
<th>Intention of use</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sig. (2-tailed)</td>
<td>1000.1000</td>
<td>.381** .382**</td>
</tr>
<tr>
<td></td>
<td>.104</td>
<td>0.000 0.000</td>
</tr>
<tr>
<td>Social Factors Correlation Co-efficient</td>
<td>.381** 1.000 .133</td>
<td>.000 .255</td>
</tr>
<tr>
<td></td>
<td>.104</td>
<td>0.104 104</td>
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<tr>
<td>Intention of use Sig (2-tailed)</td>
<td>.382** .133</td>
<td>1.000</td>
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<tr>
<td></td>
<td>.000</td>
<td>.255 104</td>
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<td></td>
<td>.104</td>
<td>104 104</td>
</tr>
</tbody>
</table>

*** Correlation is significant at 0.01 level (2-tailed)

As shown in Table 3, the figure consistent with factors, showing Social factors demonstrated a significant influence on Intention of use with (.381) similarly; Intention of use demonstrated a significant influence on Social influence with (.382). A correlation of the two factors shows significant at the .000 level and while the coefficient support the level of 104.

In summary, the respondents were mostly female between the ages of 18 to 25 years, their highest educational level was a diploma and their current position in the organization they work for is account manager. The quantitative analysis conducted revealed that the majority of the respondent have been privileged to personally use the computer for about 1 to 4 years, during which their use of AIS was considered to be equivalent to their use of computers and they have been aware of AIS ever since. They make use of AIS more than four times a month on average. The respondents have used two different types of AIS packages/Software.

According to the perceived usefulness of AIS, the majority of the respondents strongly agreed that their use of AIS would improve how their data is kept, facilitate the growth of their organization, enable them to process accounting work quickly, improve the process of publishing work and that overall AIS was very useful. The respondents also strongly agreed that AIS was easy to use, as it was easy to learn to operate the system. It was equally easy to operate AIS within the work schedule, it made work easy and it was also capable of making the publication of accounting work easy. Teaming the different aspects of AIS together was equally strongly agreed to be easy and, finally, their interaction with AIS was clear and understandable.

Considering the facilitating condition of the respondents, the entire group of respondents had undergone a training section at some point in time concerning the usage of AIS. They were trained within five or more days and the majority of them agreed that the AIS training they received was satisfactory in terms of its quality. A larger percentage of the respondents agreed that they were satisfied with the duration of their training on AIS. Most of the respondents agreed they were also satisfied with the pace of the training and the competence of their trainers. A little above average of the respondents can operate AIS with confidence. According to the majority of the respondents it could be concluded that AIS is always available, reliable and effective, thus there was a strong agreement to this effect. AIS was agreed upon to be flexible and
also easy to use, but on the overall satisfaction rate, 50% agreed to this.

There is a strong agreement that information required from AIS is always reliable. It was also agreed that the information required from AIS has been found to be accurate, timely, precise, adequate and meaningful.

From the information extracted from the 104 respondents, they strongly agreed that they usually get help from IT support personnel in the organization when difficulties are encountered during the usage of AIS. Aside from this, help can also be assessed easily from the Institute of Chartered Accountants, the AIS manual and from colleagues. The support services provided by AIS head office staff were agreed to be always adequate, relevant, provided within an acceptable time frame, provided with a positive attitude and overall was regarded as satisfactory.

Considering the organizational factors, it was agreed that the encouragement of AIS usage comes from the support from circuit office, availability of computers in the organization, follow-ups made after the implementation of the system, encouragement from the head office and finally commitment from the Institute of Chartered Accountants supporting AIS. Socially, respondents agreed that their use of AIS had been influenced by their colleagues, circuit office officials, head of department, accountant, head office management, head office AIS staff and subordinates. The use of AIS was generally agreed upon by the organization of the respondents to be productive, rational, efficient and effective.

There arose a strong agreement that AIS’s introduction was aimed at centralizing the control by the Institute of Chartered Accountants. It was agreed that its introduction improves organizational administration, the work of accountants, the administrative and management skills of organization personnel and equally so makes the work of organization personnel easier.

8. Conclusion

From the results of the statistical analysis, it can be deduced that the use of AIS is relatively accepted within accounting firms, which is largely as a result of the ‘change’ that comes with the use of such application. The use of AIS which is a computer-based application brings a new trend of change from the conventional way of accounting to a computerized way which most people are not prepared for or find very difficult to adapt to. It is seen that its usage is majorly influenced by the institution. It was also found out that the majorities of recent users are within the diploma level of education and have minimal experience with the use of computers. This therefore creates a level of difficulty for effective usage of the applications available. The use of AIS is seen to have improved the productivity and delivery of the users’ work, although this was not quantified in this study. In addition, this study found out that all three factors influencing the AIS process were found to have a direct effect on attitude, although no direct effect of this process on behavioral intentions were observed. Hence, this emphasis on innovation adoption and diffusion initiatives should be focused on developing user attitudes that are conducive to effective utilization and acceptance behavior.

9. Recommendation

For proper and effective usage of AIS, there must be an increased awareness of the usage and of AIS to facilitate its wide adoption. Therefore, higher levels of formal education should be encouraged, alongside workshops, training and re-training of users for adequate improvement. In addition, further studies should be conducted to quantify the impact of AIS on accounting firms, in order to be able to establish its full potential.

Reference


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