

THE INFLUENCE OF COGNITIVE FACTORS ON INFORMATION TECHNOLOGY COMPETENCIES AMONG ACCOUNTANTS IN CIVIL CONFLICT ENVIRONMENT: THE IRAQI PERSPECTIVE

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Abstract: *The purpose of this paper is to determine the cognitive factors that influence Information Technology competencies among accountants in Iraq. This paper used the survey method with a quantitative approach. Data were collected from 258 respondents who are working as accountants in Iraqi public sector in different cities (Baghdad, Basra, Kirkuk and Erbil). A multiple regression analysis was used to analyze the data collection and explain the extent of the relationships among the research variables. The findings revealed that the cognitive factors (achievement motivation, goal setting, mastery experience, and training effectiveness) significantly and positively contributed to the prediction of IT competencies. The originality of this study can be summarized in two main contributions. Firstly, submitting the model of IT competencies in relation to considering the cognitive factors which determine individual effectiveness of Iraqi accountants under intensity of civil conflict. In addition, there is a paucity of research that has investigated the elements influencing the IT competencies under intensity of civil conflict.*

Keywords: *Information Technology Competencies, Cognitive Factors, Social Cognitive Theory, Competency Theory*

Introduction

Over the past years, information technology (IT) has made tremendous advancement on every field of business domain. IT has adjusted the way data are collected, stored, processed and

distributed between business interested parties (Nasiopoulos, Sakas, & Vlachos, 2014). Accountants were among the first professional categories who affected by this change, since they integrate IT as an integral part of their daily work (Kaye & Nicholson, 1992; Rom & Rodhe, 2007). IT competencies are inevitability for accountants to perform their tasks with competency and professional services (Wessel, 2008). Therefore, international accounting organizations such as the International Federation of Accountants (IFAC), American Institute of Certified Public Accountants (AICPA), Institute of Chartered Accountants in England and Wales (ICAEW), Institute of Chartered Accountants Australia (ICAA) and the Chartered Professional Accountants of Canada (CPA) suggested models of competencies (Damasiotis, Trivellas, Santouridis, Nikolopoulos, & Tsifora, 2014). However, a lot of apprehension about the level of IT competencies required from the accountants has been put forward by many business extremities (Chang & Hwang, 2003).

Nowadays, Iraqi accountants are suffering weakness of IT competencies in workplace (Al-Dhahabi & Jacob, 2014; Al-Fatlawi, 2013; Kaddouri, 2014) because these Iraqi accountants have suffered a long period of internal crisis (civil conflicts) (ABC News, 2015; Al-Fatlawi, 2013). A weakness of educational qualification is in the field of IT among Iraqi accounting graduates (Al-Busisi & Al-Khafaji, 2009; Al-Jaboree, 2012; lallo & Selamat, 2013). The unstable environment and ongoing civil conflicts in Iraq led to undermining the socio economic growth and deterioration of IT infrastructure (United Nations, 2014). The training in the field of IT has not been effectively among Iraqi accountants (Iraq Ministry of Industry and Minerals, 2013), and a weakness of IT experience among Iraqi accountants (Al-Fatlawi, 2013). In this respect, there is a need to study the IT competencies among Iraqi accountants in the Iraqi organizations and to determine the cognitive factors that influence IT competencies among Iraqi accountants.

This issue is particularly important among Iraqi accountants as to improve IT competencies is claimed to be lagging behind those in developed and even some developing countries (Mohamed & Lashine, 2003). Despite the remarkable progress that has been made on information technology (IT) in every field of business domain especially in the field of accounting (Dimitrios, Sakas & Vlachos, 2013). the IT competencies among Iraqi accountants are still weak (Al-Dhahabi & Jacob, 2014; Al-Fatlawi, 2013; Board of Supreme Audit (BSA), 2014; Kaddouri, 2014). Moreover, Iraqi government is aiming to move (from the current manual accounting system) to the electronic accounting system via IT (BSA, 2014; Kaddouri, 2014).

Against this background, the related empirical research on IT competencies, has so far yielded conflicting and ambiguous results (Bassellier, Benbasat & Reich, 2003; Chen, Damtew, Banatte & Mapp, 2009; Damasiotis et al, 2014; Rasit, Rosli & Ibrahim, 2012; Tudor, Gheorghie, Oancea & Robert, 2013). Thus, research findings in the literature could not improve IT competencies among accountants, hence misleading and inconclusive. By reviewing the current literature, this study found the following major gaps:

First, the cognitive perspective ignored the intensity of civil conflicts and how the unique status could influence the IT competency (Faaeq, 2014; Khan, Moon, Rhee & Rho, 2010a, 2010b). Thus far, making previous studies limited and in comprehensive. Second, previous studies mostly have been conducted in the developed nations and European countries that have low rate of failure and stable environment (Albu, Faff, & Hodgson, 2011; Bassellier, Benbasat & Reich, 2003; Chen & Huang, 2009; Damasiotis et al, 2014). Therefore, the

outcomes of these studies may not reflect IT competency among Iraqi accountants under intensity of civil conflict. Third, the literature review reveals that there is scarcity in research that has investigated the factors influencing the IT competencies among accountants in civil conflicts environments which include personal characteristics, ability, experience, cognitive capacities, education and training etc. (Pérez-Lopez & Junquera, 2013). Few studies have been carried out for IT competencies among accountants in developing countries (Bahador & Haider, 2012; 2013).

To narrow the gap, this study intends to extend the current literature by broadening the theoretical framework in the social cognitive theory (SCT) with competency theory under intensity of civil conflicts like Iraq environment. Therefore, there is a need to study the cognitive factors that influence IT competencies among Iraqi accountants. This research is an attempt to fill in part of a gap in the literature on IT competencies for Iraqi professional accountants. Therefore, this study can help the Iraqi organizations to come out with a model of IT competencies among accountants, based on the factors that need to be considered in IT for the Iraqi organizations. To the researchers' best of knowledge, this study will be the first in Iraq to determine the cognitive factors that influence IT competencies among Iraqi accountants under intensity of civil conflicts.

Literature Review

The Concept of IT Competencies

The term "IT competencies" represents a collection of IT knowledge and IT skills that allow an employee to act effectively in his/her work within various situations. As knowledge is defined as what one knows while skill is what one can do (Stone, Arunachalam & Chandler, 1996). The importance of distinguishing between these two terms, and especially between the accounting related knowledge and skills has been acknowledged by various accounting academics and organizations (Deppe, Sonderegger, Stice, Clark, & Streuling, 1991; Stone et al., 1996). On the other hand, Gold, Malhotra & Segard (2001) define IT competencies as the shared IT capability that enables the flow of knowledge in organizations. Tippin & Sohi (2003) said IT competencies consist of three important components, namely IT knowledge, IT operation, and IT objects.

Bassellier, Benbasat, and Reich (2003) define IT competencies as the set of IT-related knowledge and skills that a business manager knowledge worker possesses. The authors propose two dimensions; IT knowledge and IT skills. According to Bahador and Haider (2012), IT competencies consist of four dimensions, i.e. those are technical skills, organizational skills, people skills and conceptual skills. According to IFAC (2003), the professional accountants must possess necessary IT competencies because the credibility of the accountancy profession depends on their success in fulfilling this obligation. Thus, every professional accountant is expected to act as a user, designer, manager, planner or evaluator of information systems; or a combination of these roles (Wessel, 2008). It has to be recognized that these roles required technical skills, organization skills, interpersonal skills, and other social skills. In contemporary context, interpersonal skills are extremely important as these skills are basic components of the skill required to support the professional accountants (IFAC 2003). IFAC identifies two types of IT knowledge, i.e. the conceptual IT knowledge and the practical IT skills. When it refers to IT competencies, it should be clear that competencies concern these two basic categories (IFAC 2003).

From the above discussion, there is no unified definition of IT competencies. All definitions focus that IT competencies is a set of IT knowledge, IT skills, and attitudes towards IT that determines the level of performance in a particular work context (job, role or group of jobs, function). These competencies enable employees to achieve results, thereby creating value. Organizations should understand their IT competencies needs, the technical skills, IT knowledge, behaviours and abilities that are necessary for them. It is well established that competence is a prerequisite for a good performance at any job. The real challenge is how to develop competence and what factors really affect it? and the results of work reflect the level of competency. Employee need to develop competencies through a series of experiences (i.e. undergo training, peer learning, etc). The final result is that they are able to perform competently. Thus, the researchers conclude that competency building is a process rather than an event.

Cognitive Factors and IT Competencies

Cognitive factors refer to characteristics of the person that affect performance and learning. These factors serve to modulate performance such that it may improve or decline. These factors involve cognitive functions such as achievement motivation, goal setting, mastery experience and training effectiveness (Danili & Reid, 2006). Cognitive factors are internal to each person and serve to modulate behaviour and behavioural responses to external stimuli like stress. Performance on various activities of daily living has been found to be affected by these factors (Vaughn & Giovanello, 2010). According of Bandura (1986; 2002) social cognitive theory (SCT) has been used in psychology, education, and communication, holds that portions of an individual's knowledge acquisition can be directly related to observing others within the context of social interactions, experiences, and outside media influences. The theory states that when people observe a model performing a behaviour and the consequences of that behaviour, they remember the sequence of events and use this information to guide subsequent behaviours.

In addition, the competency approach is conceptualized based on vocational education and training ideologies (Albanese, 1989; Garavan & McGuire, 2001; Hager & Beckett, 1995). Bias towards cognitive factors in competency frameworks seems in the context of workplace learning (Jamil, 2015). The key and most common thrust is based on Kruger and Dunning (1999) competency theory which supports epistemological and psychological objectives. This principle is prevalent in competency frameworks developed in the disciplines of education, management, accounting, human resource, and to a certain extent, psychology (e.g. Boyatzis, 1982; Clardy, 2008; Hamel, 1991). The following four sub sections will explain the influence of cognitive factors on IT competencies.

Achievement Motivation and IT Competencies

Motivation plays an important role in individual competency. The social cognitive theory (SCT) strongly claims that achievement motivation is positively related to competency at an individual level (Bandura, 1986; McClelland, 1961). Research to date indicates that voluntary computer use is driven, to a large extent, by perceived usefulness. Hill, Smith, and Mann (1987) found that the instrumentality of computers for achieving various performance related consequences was significantly linked to usage intentions, with path coefficients of 0.53 in their first study and 0.39 in a second study. Davis, Bagozzi, and Warshaw (1989) reported 0.76 correlations between perceived usefulness and intentions to use a word processing system. Davis (1989) found that usefulness correlated 0.63 with system usage in one study

and 0.85 with usage intentions in a second study. He also pointed out that perceived usefulness appears to exhibit a stronger and more consistent relationship with usage behaviour and intentions than other variables reported in the literature, including various attitude, satisfaction, and perception measures. People show an enduring self-motivation for activities in which they have higher competency (Bandura, 1982). Bandura and Cervone (1986) indicated that effects of internal standards on motivation are mediated through competency mechanism. Matsui, Okada, and Kakuyama (1982) indicated that achievement motivation influences performance indirectly through competency. Phillips and Gully (1997) found an insignificant positive relationship between achievement motivation and competency. Roberts and Dyer (2005) found a significant positive correlation between motivation and competency. Prat-Sala and Redford (2010) found a positive correlation between motivation and competency in a study of student population. Accordingly, it was revealed that the majority of previous studies have proved a positive relationship between motivation and competency (Dweck & Elliot, 2005). Furthermore, this study differs from previous studies in terms of investigating the relationship between achievement motivation and IT competency among Iraqi accountants under the intensity of civil conflicts as the Iraqi environment. Based on this, Thus, it is important to include this element in the research framework.

Goal Setting and IT Competencies

The goals affect in developing competency (Bandura & Schunk, 1981). In an experimental study conducted on a sample of undergraduate students, Phillips and Gully (1997) argued that personality factors could be assumed to have a significant effect on competency. They further found that goal orientation positively affect competency. Knight, Durham and Locke (2001) conducted a study among a group of students and found that goals are positively related to the team competency. Anyster, Goodman and Wallis (2006) found that performance goals built competency belief in a qualitative inquiry of fifteen employees. The effects of goals outcomes are mediated through competency mechanism as per the study conducted by Bandura and Cervone (1983). The results of a study by Seijts, Latham, Tasa, and Latham (2004) indicated that the specific goals significantly affect both competency and performance Locke and Latham (1990, 2002) integrated the competency construct into the goal setting theory and stated that goals affect performance through competency. In a similar vein, Anyster et al. (2006) found that personal performance goals are good competency builders in a study at South African fruit export organization.

Previous studies refer to the relationship between goal setting and competency, but did not address this relation in the context of IT among accountants. Therefore, this study will investigate the relationship between goal setting and competency in the context of IT among accountants under the intensity of civil conflicts like the Iraqi environment. Moreover, this study is different from previous studies; where the focus is on Iraqi accountants under the intensity of civil conflicts.

Mastery Experience and IT Competencies

The social cognitive theory indicates that individual competency is strengthened by acquiring knowledge through direct experiences which is known as mastery experience. The theory explains that the extent to which individuals increase or decrease their competency through mastery experiences (Bandura, 1986). Computer experience has also been associated with determining levels of IT competency. Torkzadeh and Koufteros (1994) found that the IT competency. of a sample of 224 undergraduate students increased significantly following a computer training course (Torkzadeh & Koufteros, 1994). Hill, Smith and Mann (1987),

Karsten, and Roth (1998a, 1998b) also found a significant positive correlation between previous computer experience and individual competency of computer usage beliefs in a sample of 133 female undergraduates. They also found that experience only influenced behavioural intentions to use computers indirectly through self-efficacy beliefs.

Thus, positive past experience with computers will increase self-efficacy beliefs while negative experience will reduce self-efficacy beliefs. This view is supported by Ertmer, Evenbeck, Cennamo, and Lehman (1994) who found that although positive computer experience increased computer self-efficacy, the actual amount of experience (i.e., time on task) was not correlated with self-efficacy beliefs of undergraduate students. A further study by Cassidy and Eachus (2000) found that levels of computer self-efficacy failed to increase in a sample of undergraduate students following completion of an introductory information technology module. This was despite an increase in self-reported familiarity with computers (i.e., number of software applications used) in the group. This suggests that it is the quality not the quantity of experience which is a critical factor in determining self-efficacy beliefs. According to Chowdhury, Endress, and Lanis (2002), strong experiences create strong competency while weak sources of experience weaken the competency. Anyster, Goodman, and Wallis (2006) found that employees derive competency information primarily through direct experiences. The study was conducted in the employees of a fruit marketing company. They further stated that this source of experiences is stronger than information derived from any other source. Smith (2002) has indicated that the strongest source of competency is mastery experience because mastery experience is based on direct and personal experiences of the individual. Debowski, Wood, and Bandura (2001) investigated the relationship between mastery experiences and competency and found a significant positive relationship. Wise and Trunnell (2001) coupled the vicarious experience and social persuasion as sources of competency in a single factor repeated measure experimental design and found significant results. Dawes, Horan, and Hackett (2000) reported insignificant impact of mastery experience on the competency. Zhao, Seibert, and Hills (2005) reported that entrepreneurial experience is a good source of entrepreneurial competency. Accordingly, the social cognitive theory has provided a base for the relationship between competency and mastery experiences (Bandura, 1986). In addition, many other studies have proven that the mastery experiences are the strongest source of competency (Mueller & Goic, 2003; Wilson, Kickul, & Marlino, 2007; Zhao et al., 2005). Only one study proved an insignificant relationship between two variables (Joet, Usher, & Bressoux, 2011). Furthermore, mastery experience has not been previously studied in the context of the IT competencies among accountants under intensity of civil conflicts as the Iraqi environment. The above discussion shows that mastery experience is an element that influences the good IT competencies. Thus, Mastery experience can assist in preparing accountants to face challenges in the workplace and need to be integrated in this research's conceptual framework. Thus, it is important to include this element in the research framework.

Training Effectiveness and IT Competencies

Training influences IT competency. Research studies have indicated that some training methods can enhance competency in the areas of self-management (Frayne & Latham 1987), cognitive modelling (Gist, 1989), and behavioural modelling (Gist, Schwoerer & Rosen, 1989). Competency is a dynamic construct that changes over time as new information and experiences are acquired.

This has been investigated heavily since the 1920s, by many authors like Burke (1989), Black & Mendenhall (1990), Emad and Roth (2008), Gibbs and Coffey (2004), etc..

Some countries like England, Scotland Wales, Australia and New Zealand have linked education to industrial business models, and integrated competency - based training into the national education system (Emad & Roth, 2008). Australia, for example, introduced a system: Vocational Education and Training (VET) scheme and England applied the National Vocational Qualification (NVQ). The (VET) was needed by the government in 1980s to develop individual's skills to meet the industrial needs. The individuals received these trainings with varying degrees depending on different factors: attitudinal, emotional, motivational and personality-related factors such as self-efficacy, confidence, and motivation to complete tasks and achieve goals.

Both VET and NVQ systems are based on competency for the individuals to meet organizational needs (Roodhouse, 2004). However, Emad and Roth (2008) study about maritime education and training systems shows that education and training did not help knowledge to transfer to the job requirement nor to fulfil the targeted objectives. Gist et al. (1989) studied the effect of training on self- efficacy to master a computer program by novice users. They found that:

- The trainees showed a better performance when they followed a behavioural modelling training program than computer aided training program.
- The trainees with high levels of computer self-efficacy perform better than trainees with low computer efficacy.
- The trainees in a behavioural modelling condition exhibit higher self-efficacy in using the software, as the training progresses, than trainees in a computer aided situation.

Studies on IT training for staff provide information on the type of training and type of infrastructures needed (Agabiti,1997; Torkzadeh, Pflughoeft & Hall,1999) The relationship between training and IT competency was examined for male and female respondents. The relationship between training and user attitudes was also examined for male and female respondents. The results suggest a clear influence of training on IT competency, as expected. There were no gender differences in mean scores for IT competency. The studies above show the significant relationship between training and IT competency for employees in general or staff of higher education. In addition, the studies above also did not investigate this kind of relationship between training and IT competency among Iraqi accountants under intensity of civil conflict such as the current intense environment in Iraq. Therefore, this study will investigate the relationship between training and IT competency among Iraqi accountants under the intensity of civil conflict. As a result, it is important to include this element in the research framework.

Research Framework and Research Hypotheses

According to Sekaran and Bougie (2010) a conceptual framework has been developed in a logical manner, in order to give a vision for the relevant variables and with the problems identified by conducting a review of previous literature. This study is trying to assist the accountants to perform better in technology-driven accounting job market with integration between four elements of social cognitive theory (SCT) and competency theory in field of technology. The IT competencies entail all forms of IT knowledge that can make the accountants to be capable enough in undertaking any accounting task-related activities. Therefore, the study extended the literature review for further exploration of the cognitive factors in IT competency models. The extended literature review found out the existing gaps

related to types of elements. Based on the gaps the research model was built up with possible independent structural paths as shown in figure 1.

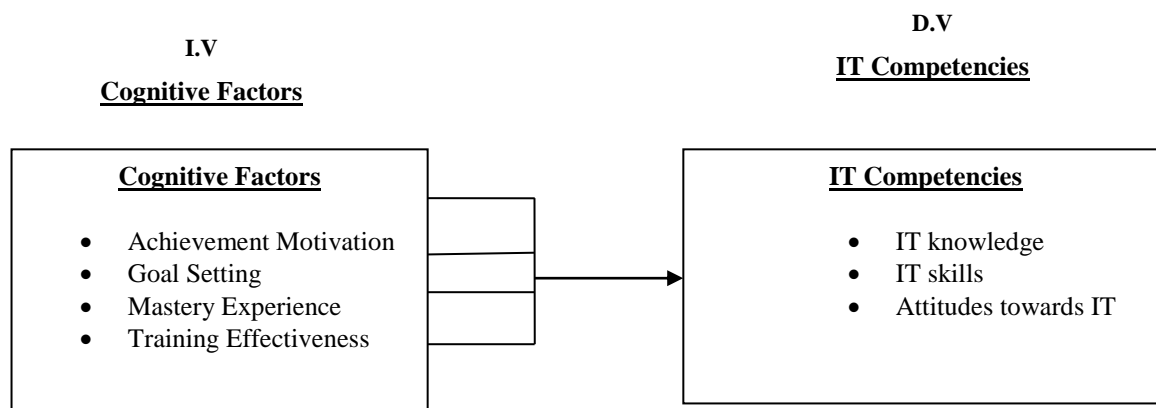


Figure 1: Research framework

Based on the above discussion, the hypotheses are formulated as follow:

H1: There is a relationship between achievement motivation and IT competencies among Iraqi accountants under the intensity of civil conflicts.

H2: There is a relationship between goal setting and IT competencies among Iraqi accountants under the intensity of civil conflicts.

H3: There is a relationship between mastery experience and IT competencies among Iraqi accountants under the intensity of civil conflicts.

H4: There is a relationship between training effectiveness and IT competencies among Iraqi accountants under the intensity of civil conflicts.

Research Method

This research used the survey method with a quantitative approach. Data were collected from respondents who are working as accountants in Iraqi public sector in different cities (Baghdad, Basra, Kirkuk and Erbil). A multiple regression analysis has used to analyze the data collection to explain the extent of the relationships among the research variables.

Data collection exercise, which was carried out by the researcher, ended with a reasonable response rate of 301, out of 547 questionnaires distributed to the respondents. Out of the 301 returned questionnaires, 258 were usable while 43 were incomplete and removed. 258 usable survey constitutes overall response rate of 47% which signifies an adequate response rate for survey (Sekaran, 2003).

Profile of Respondents

In this section, the questionnaire provide the information about the respondents specialization, Work specification, Educational Level, Gender, age, Working experience. Table 1 below summarizes the results of respondents' profile.

Table 1: The results of respondent profile section

Demography	Indicators	Frequency	Percentage%
Work specification	Accountant	111	43
	Auditor	147	57
	Total	258	100
Educational Level	Graduate	132	51
	Postgraduate	126	49
	Total	258	100
Gender	Male	194	75
	Female	64	25
	Total	258	100
Age	20-29 years	43	17
	30-39 years	134	52
	40-49 years	55	21
	50-59 years	22	8
	60 years and above	4	2
	Total	258	100
Working experience	Less than 1 year	1	.4
	2-5 years	71	28
	6-9 years	60	23
	10 years and above	126	49
	Total	258	100

The results as shown in Table 1 above confirmed that the respondents are of diverse backgrounds, indicating that the data used in the study are from the respondents of diverse demographic backgrounds, and thus enriching generalizability of the result of the research.

Reliability Test

According to Tabachnick and Fidell (2007), reliability refers to the degree to which the items making up a given construct are error-free when measured many times. In the current study Cronbach's Alpha's value, which signifies reliability of the constructs, firmness and stability of the items that constitutes a given construct, is used. The value of Cronbach's Alpha is also employed to assess the goodness of a measure (Sekaran, 2003).

To determine the consistency of the above factors, reliability test using Cronbach's alpha value was conducted. The results in Table 2 below show that the Cronbach's alpha values were above the minimum accepted value of .6 as suggested by Nunnally (1978). This provided confidence to use those variables for subsequent analysis.

Table 2: Reliability Coefficient for Each Construct

Construct	Cronbach's Alpha
IT Competencies	0.847
Achievement Motivation	0.818
Goal Setting	0.669
Mastery Experience	0.795
Training Effectiveness	0.602

From Table 2 above, there is an indication that the Cronbach's alpha coefficients represent high and acceptable level and thus the constructs of the research are reliable. The Cronbach's alpha values for IT competencies, achievement motivation, goal setting, mastery experience, and training effectiveness, are 0.847, 0.818, 0.669, 0.795, and 0.602 respectively. Therefore, the result from Table 2 indicates strong scale and a good internal consistency of the constructs of the study. In view of this, the constructs of the research are reliable and fit for further analysis.

Descriptive Analysis of the Constructs of the Current Study

Descriptive analysis of the constructs of the current study offers a general view regarding how the survey respondents have responded to the survey instrument used in the study (Sekaran & Bougie, 2010). Descriptive analysis is explained through mean and standard deviation.

Table 3: Descriptive Statistics for the Variables of the Current Study

Latent Constructs	No. of Items	Min	Max	Mean	St. Deviation
ITC_DV	31	1.7	5.0	3.393	0.765
MTV_IV1	10	1.0	5.0	3.535	0.932
GST_IV2	6	1.8	5.0	4.074	0.588
MEP_IV3	6	1.0	5.0	3.103	0.958
TEF_IV4	9	1.0	5.0	3.575	1.097

Note: ITC = IT Competencies, MTV = Achievement Motivation, GST = Goal Setting, MEP = Mastery Experience, TEF = Training Effectiveness.

Table 3 shows that all variables of the current study possessed a mean ranging from 3.103 to 4.074, and the standard deviation of all the variables ranged from 0.588 to 1.097. These values of overall mean scores and standard deviation scores for all the variables and are quite acceptable. Hence, it can be asserted that the respondents of the current study have good understanding of the studied constructs. Given the previous analyses, next presents the result of the hypotheses testing.

Correlation Test

The correlation test was being conducted on the study data, the results as show in Table 4 below depicts that there is significant positive relationship between mastery experience and IT competencies. On the other hand, training effectiveness correlated significantly and negatively with information technology competencies while other independent variables, i.e. achievement motivation, goal setting have non-significant correlation with IT competencies.

Table 4: Correlations Between Variables of the Study

	ITC	MTV	GST	MEP	TEF
ITC	1				
MTV	.023	1			
GST	.027	.205**	1		
MEP	.701**	-.141*	.052	1	
TEF	-.271**	.135*	.317**	-.209**	1

Note: ** Correlation is significant at the 0.01 level (2-tailed); * Correlation is significant at the 0.05 level (2-tailed); ITC = IT Competencies, MTV = Achievement Motivation, GST = Goal Setting, MEP = Mastery Experience, TEF = Training Effectiveness

Multiple Regression Test

Multiple regression is adopted to test the effect of the studied independent variables (achievement motivation, goal setting, mastery experience, and training effectiveness), on the studied dependent variable. Table 5 below presents the result of multiple regression.

Table 5: The Coefficients (a) Value

Construct	Standard Errors	Beta	t-value	Sig
MTV_IV1	.078	0.180	3.119	.002
GST_IV2	.069	0.174	3.170	.002
MEP_IV3	.067	0.549	9.904	.000
TEF_IV4	.031	0.093	2.075	.039
R Square				0.367
F-Value				32.242
Sig of F-value				0.000

Note: P<0.10*; P<0.05**; P<0.01***; ITC = IT Competencies, MTV = Achievement Motivation, GST = Goal Setting, MEP = Mastery Experience, TEF = Training Effectiveness

Table 5 that achievement motivation, goal setting, mastery experience, and training effectiveness significantly and positively contributed to the prediction of IT competencies at varied significant levels ($\beta = 0.180$, $t = 3.119$, $p < .01$; $p < .05$; $\beta = 0.174$, $t = -3.170$, $\beta = 0.549$, $t = 9.904$, $p < .01$; $\beta = 0.093$, $t = 2.075$) respectively. Hence, hypotheses 1, 2, 3, and 4 are supported. Going by Cohen's (1988) R2 taxonomy, of value 0.02 is weak, R2 of value 0.13 is moderate while R2 of value 0.26 is substantial. The R2 of the current study, which stands at 0.367, indicates that the independent variables (achievement motivation, goal setting, mastery experience, and training effectiveness) thus, R2 is substantial.

Discussion of the Findings

Relationship Between Achievement Motivation and IT Competencies

The statistical result from the SPSS revealed that there is a strong positive correlation between achievement motivation and IT competence. This implies that the cognitive construct of achievement motivation has an influence of the attainment of IT competence. This finding is consistent with the previous findings of Prat-Sala and Redford (2010), Roberts and Dyer (2005), and Phillips and Gully (1997).

Based on this result, accountants, especially in Iraq, need to be extrinsically motivated to appreciate and accept the application of different computer applications such as word processors, excel spreadsheet, electronic mail, data management among others. This will boost their IT competence, and work performance, and at the same time avoid investment loss by the organizations. Also, the motivation of accountants in the face of the current economic, political, social, and market instability and uncertainty will go a long way in enhancing the IT competence.

Relationship Between Goal Setting and IT Competencies

The result of the Multiple regression and correlation analysis showed that there is a relationship between the two variables (goal setting and IT competencies), hence, the hypothesis H2 of this study is supported. This result is consistent with the findings of Anyster, et al. (2006), Seijts et al. (2004), and Knight, Durham and Locke (2001) who also found that there is a relationship between goal setting and the performance. This, therefore, implies that goal setting is one of the determinants of IT competence. Without a goal, which serves as one

of the starting points for the actualization of the targeted performance, the realization of competence becomes difficult and perhaps unrealistic.

Arising from this result, therefore, the accountants, especially in the Iraqi context, can achieve IT competence in terms of knowledge, skills, and good attitude towards IT if they have a proper goal setting. In other words, the goal setting as a cognitive variable affects their action towards the achievement of the IT competence in line with the goal-setting theory. The study provides that the conceptual and the practical IT skills, as spelt out by the International Federation of Accountants (IFAC), are attainable if the accountants set their goals right in the fulfilment of IT competence that will enhance their performance and the organizational performance.

Moreover, since there is a relationship between goal setting and IT competences, accountants in the contemporary organizations where manual operations are no more in vogue, need to have an inquisitive goal towards the attainment of IT competence. This drive will lead them to be effective and efficient. They are also going to remain competitive among peers and likewise remain relevant in the local and international accounting profession.

Relationship Between Mastery Experience and IT Competencies

The outcome of the multiple regression analysis revealed a strong positive significant relationship between mastery experience and IT competency. Hence, this result gives an empirical support for the hypothesis H3 of this study. In fact, the statistical result indicates that mastery experience is the strongest determinant of IT competence by having the highest t-value among other variables. This result is in line with the assertion of Smith (2002) that mastery experiences constitute the major source of competence. This finding is consistent with the earlier findings of Wilson, Kickul, and Marlino (2007), Mueller and Goic (2003), and Zhao et al. (2005).

The implication of this result is that the personal and previous computer experience of the accountants can go a long way in enhancing their competencies in IT knowledge, skills, and attitude towards the usage of IT. Cognitive experience of accountants such as those gathered in the course of academic and professional training; experience emanating from the use of computer applications and software; and that gathered in the course of observation all have an impact on their IT competence. Therefore, accountants in Iraq and globally need to take the concept of experience as a priority for the actualization of IT competence.

Relationship Between Training Effectiveness and IT Competencies

The regression analysis result revealed that there is a positive significant relationship between effective training and the IT competence. This implies that when an organization embarks on training that leads to the improvement of the IT skill and the proficiency of the accountants, the competence tends to increase. In other words, skill acquisition in IT through organizational training has an effect on the IT competence of employees. This result is consistent with the finding of Torkzadeh, Pflughoeft, and Hall (1999).

In view of this, if the organizations give priority to on-the-job training that aim at improving the computer skill, capability, and proficiency of the accountants, the IT competence will improve and the overall performance of the organizations will be enhanced.

Therefore, the accountants in Iraq tend to achieve IT competence if they are exposed to different computer training and skill acquisition relating to their job.

Conclusion and Future Research

This paper examined the relationship between achievement motivation, goal setting, mastery experience, training effectiveness and the IT competencies. The results provided evidence that there is a significant relationship between achievement motivation, goal setting, mastery experience, training effectiveness with IT competencies. Thus it is important to recommend that the Iraqi public organizations should give more consideration to the achievement motivation, goal setting, mastery experience, training effectiveness in their efforts to supporting the IT competencies among accountants. The current study also observed the gap in the literature which confirmed that there are few studies that discussed the influence of cognitive factors on the IT competencies among accountants under intensity of civil conflict. By considering the above significant independent variables, it is argued that the IT competencies in the Iraqi public organizations can be improved to be in the same level as of those in the developed countries or at least with its counterparts developing countries. This will lead to provide qualified accountants who can work in the multinational companies or on the global audit firms. This study is very important, because one of the major priorities of the Iraqi public organizations is to develop the IT competencies among accountants.

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