A PRELIMINARY STUDY ON IMPACTS OF ACCOUNTING SOFTWARE UTILIZATION ON SKILLS OF POSTGRADUATE INTERNATIONAL ACCOUNTING STUDENTS.

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ABSTRACT

As technology evolution continue to reduce the costs associated with hardware and software for classroom instructions, the instructional environment and teaching pedagogy of business faculty in accounting particularly also have evolved over time. While technology integration in accounting education has been a constant focal point of discussion in recent years, the extant and the usage pattern of various classroom technologies in accounting instructions is unclear. The purpose of this thesis was to encourage the use of computers for accounting purposes (accounting software utilization) and to know the attitudes towards the computer by accounting international postgraduate students in UUM. Questionnaires were distributed to 106 UUM accounting international postgraduate students in UUM in order to acquire their conception on the impact of studying a course in using computers for accounting purposes and on attitudes towards the computer skills perceived by accounting international postgraduate students. Five variables were involved in the regression analysis among which three independent variables (age, GPA and prior experience in using computers) related to demographic characteristics of respondents, an independent variables on attitude (attitudes toward using computer for accounting) and a dependent variable (perceived skills in using computers for accounting purposes). One of the major results emphasized that more or less 26.3% of the variance of students' perceptions was accounted for by its linear relationship with the variables known as GPA, prior experience and their attitudes toward using the computers.

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CHAPTER ONE

INTRODUCTION

1.0 Introduction

Nowadays, with the advance in technology, it can be noted that a certain amount of major changes in both (the international and local environment) have led to realise that accounting education and educators are encountered with a comprehensive and continuous rethink of their approach towards teaching and learning in order to remain relevant. For instance, global phenomena, such as the revolution in information technology, emergence of international capital markets and increasing importance of international accounting standards, have had a far-reaching impact on the requirements in respect of accounting education (Adhikari, Flanigan & Tondkar 1999).

Fast-changing computer technology has had, and still has, a profound effect on business in general and on accounting in particular. In other words, computer tools like the Internet, computer-integrated manufacturing, image processing and expert systems have significantly improved the efficiency and the communication of information in business. According to Jordan (1999), this development has also be proven to be a liability for the accountant, because a purely electronic audit trail has serious shortcomings in respect of accountability and confidentiality for a business and creates scope for fraudulent activities.

On the other hand, it is imperative that students in accounting should be given adequate exposure to new computer technology to prepare them for their future working environment. That is to say, the Internet also presents teachers of accounting with numerous and varied opportunities to offer students different learning approaches and experiences (AAA, 1964).

Baker and White (1999) in their research evoked that universities want to be known as 'high tech' environments; for that sense, students want more exposure to computers and the accounting profession wants more technically knowledgeable graduates. The authors added that those universities also assert that by bringing the Internet into the classroom, a wide array of interesting applications has opened up and that these applications will be continuously expanded.

Nevertheless, the need for incorporating instruction in computers, programming, and electronic data processing concepts into the accounting curriculum has been well documented in studies performed by the American Institute of Certified Public Accountants (Robert and James, 1967), the American Accounting Association (1964) and by individual accounting practitioners and educators. Thus, this need exists on at least two levels:

- A need for basic technical understanding of computers, electronic data processing concepts, and programming skills, and
- An appreciation of the problem-solving capabilities of computers in dealing with the problems commonly faced by managers and accountants.

Generally, the first need on one hand concerns the satisfaction when incorporating a special course on computers and programming into an early part of the student's accounting curriculum. This course should be designed to meet the needs of all business majors. The more specialized technical needs of accounting majors can be met with advanced courses in information systems and related areas (Robert and James, 1967).

The second need which is of an appreciation of the applicability of computers in solving accounting-type problems on the other hand is prob-ably better satisfied by incorporating computer usage into the accounting courses which have traditionally dealt with the problems

themselves. Therefore, doing this reduces the artificial separation of the problem from the tool; from which a synergy is created so that students can learn more about dealing with complex problems and intelligently harnessing the capabilities of the computer (Robert and James, 1967).

The importance of teaching and learning accounting course in business and non-business schools (universities) has been well researched. It has also been recognized and explained as providing necessary skills in developing business students in general and potential accounting majors in particular. In addition, several accounting organizations such as the American Institute of Certified Public Accountants (AICPA), the American Accounting Association (AAA), and the Institute of Management Accountants (IMA), as well as educators and professionals, are among those advocating the importance of the accounting course (Geiger and Ogilby, 2000; Pincus, 1997; Vangermeersch, 1997; the Accounting Education Change Commission, 1996; AAA, 1986).

1.1 Contextual Background

Accounting is the area of knowledge whose aim is "the record and summary of the financial effects of transactions carried out by an economic entity, as well as external economic events affecting them, to inform interested parties in making decisions about finances and financial control of that entity "(Konia, 2005). To the extent that economic globalization processes dominate the behavior of firms which are differentiated by sectors and regions, free trade terms strongly permeate public decisions on higher education, especially in regard to the orientation of plans and programs of study and its influence on vocational training (Mungaray, 2001).Hence, the training concept is defined as the set of practices with its principles, rules and means or instruments through which subjects are produced in different developments of its powers. (ICFES, 2001).

However, the international royalty accounting exercise of determining which is exercised in two distinct levels:

According to Elliott (1997), accounting professional aims at the provision of labor services, advisory and management consultancy to authorities; and composed of linked service work, or outsourcing in areas of taxation, marketing, information collection and analysis, financial assessment, market research, recruitment, finally, actions that are geared to meet the needs of the administration.

On the contrary, the other level of professional public accounting is oriented social satisfaction of requirements of public trust that is, build credibility in relation to certain reports, facts or documents so that others support their decisions on sound safety standards or at least in a reasonable assurance (Ruiz, 2005).

Today, accounting programs have suffered from a conceptual framework that allows, on strong references, obtaining in the analysis of the different interactions and regulatory mechanisms underlying control, to the discourses, practices, agents and contexts involved in the configuration of pedagogic discourse and curriculum models (Pino Martínez, 2005).

The accounting profession requires that individuals entering the profession should at least possess enough knowledge of computer skills in order for them to be successful due to the fact it is pervasive in business activities (Elliott, 1997). The use of computers in Accounting course is an essential approach to help the students by providing needed skills, and it is fundamentally important that accounting students embeded the proper experience and a positive attitude towards computers due to the relationship between attitudes towards computers and motivation and performance (Mcdowall & Jackling, 2006; Mills, 1997; Igabaria, Parasuraman, and Pavri, 1990; Eason & Damodaran, 1981, Shneiderman, 1979).

As accounting profession centrally requires computer skills, it is vital to determine what influence of teaching computer skills in accounting have on accounting students vis-a-vis their perceived skills.

1.2 Statement of the Problem

All international students that enrol for a postgraduate degree (Master or PhD) in the accounting field at UUM (Universiti Utara Malaysia) especially Master students are obliged to take the course of Accounting during their study period. Prior knowledge of Accounting is a prerequisite for better understanding of the course.

The international students are from very diverse groups. They are representative of various cultures, have varying attitudes towards study and display divergent learning styles. For many of them, the languages being used as medium of instruction at the University is English and English is their second or third languages in their countries.

In UUM, Accounting education curricula for postgraduate students still largely ignore the use of computers as tools in the learning process, mainly fault of budgetary and timetable constraints. Another issue to note is that even though most of these Accounting international students are males, yet they lack experience with the computer skills in terms of accounting software utilization.

UUM like most other educational institutions in Malaysia, has unique circumstances and faces unique challenges as it aspires to be in step with the times. The mission statement of UUM includes its intention to "embrace and manifest the spirit and essence of the university's charter and philosophy, and become a center of academic excellence renowned for its nurturance of individuals who become competent and at the same time committed to serving the nation and all of the humanity"(http://www.uum.edu.my).

To achieve this goal, the University has to provide and develop in the field of accounting teaching and research programmes that are worthy of international recognition and accreditation. The use of computers for accounting purposes (accounting software utilization) on attitudes towards the computer skills perceived by accounting international postgraduate students and the innovation in teaching methods need to be encouraged in the striving towards these goals.

1.3. Research Questions

The research questions are as follow:

- What are the international students (males and females)' for accounting attitudes toward using computers?
- Is there a value–added in student's computer skills after studying a course in using computer for accounting purposes?
- Do Accounting international postgraduate students for international accounting (males and females) have pervious experience in using computer?
- What are the factors that affect Accounting international students for accounting perceived skills in using computers for accounting purposes?

1.4 Research Objectives

The main objective of the research is to evaluate the impact of studying a course in using computers for accounting purposes on attitudes towards the computer skills perceived by accounting international postgraduate students as well as considering their behavioral effects and influence perceptions from such a reform. Thus, the specific objectives are the following:

- To reveal international students for accounting attitudes toward using computers.
- To determine the "value–added" in student's computer skills after studying a course in using computer for accounting purposes.
- To investigate whether international postgraduate students for accounting have pervious experience in using computer.
- To find out the factors that affect international postgraduate students for accounting perceived skills in using computers for accounting purposes.

1.5 Scope of the Research

In an educational environment in which global trends prompt educators to consider alternative approaches to teaching and learning, new ways should be found to educate more efficiently and effectively. In line with this learner/customer-centred approach, this research is centered on the perceived computer skills of Accounting international postgraduate students for accounting purposes. In other words, the study seeks to determine general trends in education and to establish how computers can be utilised as an educational medium for diverse groups of accounting international postgraduate students in UUM.

1.6 Significance of the Research

The main significance deriving from this research is that there is a need to move away from rules and to give precedence to concepts of accounting and also to enhance skills in the process. This approach provides accounting international postgraduate students with a foundation that permits them to subsequently comprehend the rules better and to remember them longer.

In addition, this approach facilitates other commonly stated goals of accounting education, such as to develop thinking, communication and problem-solving skills and a capability for lifelong learning. The researcher beleives that this thesis would enhance a sound curriculum by preparing accounting international postgraduate students for a career in the future by developing computer skills, relevant technical skills and teamwork and interpersonal skills.

1.7 Organization of the Thesis

The remainder of the research is divided into five chapters. The actual chapter gives a brief background of the study whereby the problem of the research is put into light; the objectives and research questions are set. Moreover, the research scope and significance are also pointed out.

The next chapter, Chapter two (2), provides a review of related literature regarding the effectiveness of teaching international postgraduate accounting students courses in using computer in accounting, students computer skills in accounting, and the impact on attitudes towards the perceived skills from using computers for accounting purposes.

Chapter three (3) emphasizes on the research methodology, which begins with the theoretical framework, the hypotheses development, the variables measurement and data collection.

Chapter four (4) presents the empirical findings and results obtained from the questionnaire, validity analysis, reliability analysis and multivariate regression.

Finally, chapter five (5) provides the discussion and implications of the study as well as suggestions and recommendations for future research.

CHAPTER TWO
PRIOR STUDIES & HYPOTHESES DEVELOPMENT

2.0 Literature Reviews

Universally recognized is that, in our knowledge and technology-driven global village, each country's economic and social well-being depends on its ability to harness its human resources through a dynamic and innovative educational system that thrives on, and propels, technological development. This required relationship between the so-called educational and technological development is particularly critical at the higher levels of the educational system, and especially, university education.

This Chapter discusses and summarizes the literatures on all variables concerned with the study. The first part of this chapter discusses how the demographic characteristics such as gender, age, Grade-Point Average (GPA) and prior experience in using computers and attitudes toward using computers could predict students' perceptions toward the value-added of studying computer skills in accounting. The rest of the chapter summarizes all the related works that evolve using computers to acquire computer skills in accounting.

2.1 Demographic Characteristics and Attitudes

Nowadays, the increasing advances in technology require that accountants need to possess skills to obtain information from various sources, complete computer-based projects, and use computers as a tool to achieve other business-related objectives.

For instance, students not only need to develop skills to access information, but, more importantly, they also need to improve their perceived ability to utilize computers successfully. However, the issue to reveal is whether differences in computer attitudes exist amongst accounting students based on their gender.

Many gender studies report that males generally have more favorable attitudes towards computers than females, whether in primary, secondary or higher education (Eining, Brown, and Cook (1992); Shashaani, 1997; Bhargava, Kirova-Petrova and McNair (1999); Butler, 2000; Sax, Astin, Korn, and Mahoney, 2000; Young, 2000). Daigle and Morris (1999), however, found results for accounting students contrary to most findings for students, in general. Based on a survey given to students in four courses across an accounting curriculum at the beginning of a semester, Daigle and Morris (1999) failed to find an attitude or experience difference towards computers based on gender amongst students later in an accounting curriculum after finding some minor differences amongst students early in an accounting curriculum. The reserachers also failed to find a difference in attitudes or experience based on gender of students who had selected to emphasize their studies in studying Computer in Accounting course.

Thus, Daigle and Morris' (1999) results indicate that gender differences for experience and attitudes towards computers may not exist because of a self-selection bias when choosing a major and in choosing an area of emphasis within accounting.

However, if gender differences in experience and attitudes towards computers do in fact exist /with regard to accounting students, accounting programs and the profession should seek to ensure that gender differences not exist amongst those choosing careers in accounting because of the relationship between attitudes towards computers and motivation and performance.

Considering some criteria in the USA (the majority of current accounting students are female; the profession's emphasis on computer skills; and the relationships between computer attitudes and both motivation to use and performance with computers) any difference in computer attitudes amongst accounting students based on gender is recognized and sought to be minimized so that all entering the profession have an equal opportunity for career achievement and advancement (U.S. Department of Education, 2002).

Another important issue is whether differences in computer attitudes exist between the ages of accounting students. Students 25 years of age and older currently comprise 40% of all postsecondary students (U.S. Department of Education, 2002). There is a common assumption that traditional students "grow up" with computers and are therefore less likely to be intimidated by computers (Orr, Allen, and Poindexter (2001)). However, the results of studies that focus on the relationship between age and computer attitudes are mixed (Al-Jabri and Al-Khaldi, 1998).

Hence, there were many studies that report a direct relationship between computer attitudes of students and computer experience. Some studies focus specifically on measuring the impact of an introductory college computer course on student attitudes towards computers. Both Omar (1991) and Harris (1992) report an improvement in student attitudes while taking an introductory computer course. While Torkzadeh and Koufteros (1993) reports mixed results, most studies report that as one acquires more computer experience, one's attitudes towards computers typically become more positive.

Despite the expectation that computer exposure improves attitudes, researchers like Ravel (1991) and Dunn and Grabski (1998) provide the concern that accounting students tend to have unfavorable attitudes towards AIS (Accounting Information System) courses, especially compared to other traditional accounting courses. This concern is based on AIS course

content typically emphasizing subjective, abstract concepts such as systems, processes, controls, design, and evaluation, as opposed to the majority of accounting courses emphasizing objective procedures, rules, and precision. Ravel (1991) and Dunn and Grabski (1998) warn that unfavorable attitudes towards AIS lead to frustration and alienation with course subject matter, which includes more and more computer-related material as IT continues pervading business activities.

Another study focuses on measuring computer attitudes of accounting students. Orpen and Ferguson (1991) surveyed 155 graduating accounting students at two universities. They report a direct relationship between computer experience and computer attitudes, and that the majority of those surveyed had positive attitudes towards computers. However, the applicability of these results with current students may be difficult for two reasons:

- First, Orpen and Ferguson's (1991) survey instrument only included one experience question ("time spent with computers," which was rated on a seven-point Likert Scale ranging from "very little" to "very much") and only nine attitude questions. A more extended questionnaire is likely needed to capture more detailed measures of experience and attitudes of respondents. As an example of the likely need for more detailed measures, their study fails to find a difference in computer attitudes of accounting students based on socioeconomic background, which was measured through one demographic question ("social class, given by father's occupational status," which was based on a five-point Likert Scale ranging from "unskilled worker" to "professional"). However, Gibson and Hunton (1996) use an experimental design and report that accounting students from lower socioeconomic backgrounds (including measures of ethnic origin and regional effects) have higher computer anxiety, lower

computer performance levels, and higher stress when using computers than accounting students from higher socioeconomic backgrounds.

- A second reason Orpen and Ferguson's (1991) study may not be currently applicable is because of the possibly limited amounts of computer exposure of those surveyed. No mention is given as to what computer concepts those surveyed had been exposed to. Computer-related coverage in accounting curriculums has dramatically increased in the last decade. With the introduction of a variety of computer-related topics in AIS courses (such as enterprise resource planning systems, electronic commerce, and IT auditing, to name a few), Orpen and Ferguson's (1991) results may not be applicable for determining the computer attitudes of current accounting students.

Neverthless, the impact of technology on accounting courses and the computer attitudes of students is very important to study because an individual's attitudes towards computers may affect his or her job performance and job satisfaction. Both Ferguson (1997) and Mills (1997) founnd this relationship to exist specifically amongst accounting professionals. Applying this relationship to students in Accounting courses, an unfavorable attitude towards computers may lead to poor course performance and dissatisfaction with course material, which could lead some well-qualified students to either not reach the level of success desired in the profession, try to focus on an area within the profession that minimizes computers, or choose a different major.

2.2 Attitudes towards Using Computer in Accounting education

Monitoring the computer attitudes in accounting skills and developing an understanding of the factors that affect computer attitudes will assist educators in providing appropriate learning experiences to students. The successful integration of computers in educational environments depends, to a great extent, on students' attitudes towards them. In order to identify the factors

that contribute to the formation of students' attitudes, institutions need to provide the development and validation of widely used Computer Attitude Scale (CAS) especially designed for accounting information systems students. Based on CAS used by Selwyn (1997), there are 6-point scale consisting of factors such as self-confidence in previous knowledge, hardware usage anxiety, computer engagement, fears of long-lasting negative consequences of computer use and evaluation of positive consequences of computers.

Woodrow (1992) in his study demonstrates that a positive computer attitude is a necessary prerequisite and an integral part of computer literacy. Kernan and Howard (1990) on the other hand examine computer attitude and anxiety scales and find that computer anxiety and attitude toward computers should be treated as separate constructs. They demonstrate some evidence of the convergent validity of the computer anxiety construct but conclude that the predictive validity of computer anxiety and various computer attitudes is low.

Computer anxiety has received considerable attention in the psychologically-based literature and is defined as generalized emotional distress or the tendency of an individual to be uneasy, apprehensive and/or a fear (a feeling not a belief) towards current or future use of computers (Chu and Spires 1991; Torkzadeh and Angulo 1992; Igbaria and Iivari 1995).

Nonenethless, it can be noted that computer anxiety may include worries about embarrassment, looking foolish or even damaging computer equipment (McInerney *et al.*, 1994). However, a research suggests that computer anxiety is relatively common among college-age undergraduate students (Lepper 1985; Pop-Davis and Vispoel 1993; Rosen and Maguire 1990). Previous researches have determined that computer anxious individuals tend to show negative attitudes about using computers and exacerbate rather than resolve the problem, with additional computer experiences promoting further computer avoidance.

Although evidence on the effects of instruction and training on computer anxiety is mixed, there is some evidence that well-designed instruction and training can reduce computer anxiety (Rosen and Maguire 1990). Thus, it can be concluded that computer anxiety may be a function of individuals' prior computing experiences, attitude towards computing, perceptions of self-efficacy and expectations of success (McInerney, McInerney, and Sinclair (1994)).

2.3 Students' Perceptions toward Computer Skills in Accounting

In a research conducted by Vernooii, Thijssen and Schermerhorn (2000), the authors found that the use of the Internet as a tool in distance learning allows students to enter into an active, constructive and self-regulated process that improves the quality of learning. On the downside, some technical problems could lead to severe disappointment and frustration. The researchers concluded that the potential of the new media can only be realised by getting students to express their expectations of it (new media).

In addition, the employment of the Internet in the teaching of accounting was on the increase while, according to Hall (2000) a decade ago, more could still be done. Londt (1999) states that the intranet makes it possible for students to access tutorials, information and data on demand. He found that students generally welcome the Web-based elements of the course.

However, Londt (1999) cautioned that the usefulness of the Web should not be overstated and that it should be viewed as a tool to provide an extra dimension to teaching and greater flexibility to students. Boyce (1999) on the opposite refers to the importance of placing the adopted learning technology within a pedagogical framework and points out that the emphasis in computer-assisted learning should be on learning. Boyce also emphasizes that, as the computer becomes more important, more time should be devoted to considering the human dimensions of accounting and to developing human and interpersonal skills.

Furthermore, student demographics such as age, gender, and prior work experience have received extensive attention as predictors of performance (Eikner and Montondon 2001; Frakes 1977; Turner, Holmes, and Wiggins (1997); Christensen, Fogarty, and Wallace (2002); Didia and Hasnat 1998; and Burdick and Schwartz 1982) when studying accounting course. However, one criticism of these traditional variables is that they offer little commentary as to how they can be used to evaluate accounting education (Rebele, Apostolou, Buckless, Hassell, Paquette, and Stout (1998)). Moreover, moving beyond the use of traditional demographic variables is thought of as a way to significantly increase the reliability and predictability of a performance model (Frakes (1977). Evidence suggests that both approaches may have merit.

Turner *et al.* (1997) find a model that makes use of an expanded set of demographic and environmental variables that can improve the student's performance predictability. In addition, Lawrence and Taylor (2000) note that the inclusion of a variable that captures how students are likely to evaluate and process information being taught has predictive merit. While these approaches are noteworthy, it is important to understand that not all student attributes are readily accessible. Keef and Roush (1997) make this point by investigating the determinants of student performance using a set of general and specific attributes. Based on the results obtained, Keef and Roush (1997) argue that it is important to observe that student performance is driven by two sets of factors namely a traditional and straight forward (objective-external) set; and 2) a more elusive and ambiguous (subjective-internal) set. Objective-external factors in one hand are readily identifiable and easily obtained. Examples of these factors include demographics and prior performance. Subjectiveinternal factors on the other hand represent monopolistic information known only to students themselves such as motivation and effort. A central premise also embedded in the Keef and Roush (1997) model is that the relationship between certain demographic variables is moderated by self-concept

(the way one perceives oneself). Results obtained suggest that self-concept impacts the predictive power of other variables. As such, Keef and Roush (1997) conclude that isolating and measuring the impact of self concept is an inquiry worthy of further investigation.

Additionally, the determinants of student performance cannot be purely associated with traditional background characteristics (e.g., objective-external factors). Indeed, given the large amount of variation in academic performance that remains after controlling for these known individual characteristics, it may be important to identify and assess the impact of certain unobservable or privately held attributes (Stinebrickner and Stinebrickner, 2003). This is particularly true for accounting students due to the fact that accounting programs depend on the development of skills over time (Jacking, 2005).

Indeed, Bartlett, Peel, and Pendlebury (1993) suggest that as accounting students progress through an academic program, certain intangible characteristics related to motivation and ability will emerge and act as intervening variables (e.g., subjective-internal factors) relative to performance. Thus, while difficult to measure, Bartlett *et al.* (1993) go on to state that any attempt to assess performance without a consideration of these variables will, at best, produce only marginal results.

One attribute receiving attention in the literature as a possible predictor of accounting student performance is perception. For instance, Ferreira and Santoso (2008) observe that students' perceptions influence learning approaches and that this, in turn, impacts learning outcomes (e.g., student performance). Accordingly, the authors contend student perceptions are a necessary component of any learning environment. Mladenovic (2000) agrees and contends student perceptions play an important part in the learning process as they influence learning approaches and learning outcomes.

Weil, Oylelere, Yeoh, and Firer (2001) on the other hand provide more evidence of such a link through a study of how student perceptions relate to the choice of accounting pedagogy and the development of key business skills. Results obtained suggest such relationships do exist. Furthermore, Lucas (2001) suggests that both the curriculum and learning environment affect student perception and as such, the extent to which these perceptions contribute to academic performance is an important inquiry worthy of review.

Finally, Barsky and Catanach (2001) add an interesting twist to existing commentary. Specifically, the authors assert that managing student perceptions and expectations is critical to enhancing the attractiveness of accounting as an academic major as well as a business activity. As such, the authors indicate reform models that include student perceptions can help to promote the sustainability of accounting as both an academic and professional pursuit.

In the literature, the skill set/performance link and its relation with self-concept has been addressed via the theory of self-efficacy. Self-efficacy is a person's belief concerning his or her ability to successfully perform a given task (Bandura 1977; 1982; Bandura, Adams, Hardy, and Howells (1980). Operationally, self-efficacy can be viewed as the upper level of confidence or comfortableness that an individual possesses relative to his/her ability to execute actions deemed important to a specific outcome. In other words, self-efficacy influences one's choice of activities (Bandura 1977; 1982; and Bandura *et al.* 1980).

In one sense or another, self-efficacy plays a critical role in self-motivation when dealing with unfamiliar tasks and is often thought of as an important determinant of future performance (Tesch, Murphy, and Crable (2006); Silver, Mitchell, and Gist (1995); and Lent, Brown,. and Larkin (1986)). Such is the case because self-efficacy beliefs control a person's ability to mobilize the physical, intellectual and emotional resources needed to successfully accomplish a task (Stone, Arunachalam, and Chandler (1996)). Thus, self-efficacy beliefs can influence

the thought patterns and choices of behavior directed towards task performance (Hackett and Betz 1989).

Research linking self-efficacy to accounting education is limited. Stone *et al.* (1996) in their study investigate the relationship between self efficacy, knowledge and skills by conducting studies exploring the differing effects of accounting education instruction. The findings reveal that perceptions are useful as a diagnostic measure of student ability but the predictive power of self-efficacy could diminish after an extended period of the delivery of common, course specific instruction. Given these mixed signals, the authors call for future research to investigate the complex relationship between student knowledge, accounting skill and self - efficacy, and how the results obtained might be used to guide approaches adopted to reform accounting education.

Burnett, Friedman, and Yang (2008) in addition explore the perceptions that both accounting and non-accounting majors students have about their accounting abilities before and after the administration of a practice set designed to provide a review of the accounting cycle. The outcomes obtained find both groups have similar perceptions of their accounting skills at initial and follow-up evaluations. However, changes in perception within the two groups vary.

Burnett *et al.* (2008) indicate that while their results can be used to guide certain direct resource allocation and curriculum change tasks, they should be viewed as incomplete because they have not been benchmarked against any actual performance related to the direct application of these skills. Consequently, they call for future research to do so. Finally, Christensen *et al.* (2002) investigate the extent of the direction of self efficacy. Results obtained imply little is known about the self regulatory nature of student behavior. As such, the authors call for future research to identify ways to raise student competency and

confidence relative to their skills and to assess what students can anticipate from having such skills.

Taken together, current evidence implies that an analysis of the predictive power of self - efficacy could prove useful to efforts adopted to address accounting education reform. Indeed, as the Frederickson and Pratt (1995) model indicates, accounting education reform should be motivated by a desire to capture how student demographics, self-efficacy, and an assessment of skill affect performance. Yet, a reasonable observation can be made that current efforts to address this link have been limited to using only traditional or readily observable student attributes (Burnett *et al.* 2008, Christensen *et al.* 2002).

Moreover, while studies have investigated the role of self efficacy in accounting education (Stone *et al.* 1996; Burnett *et al.* 2008; and Christensen *et al.* 2002), none have done so in a fashion that attempts to link self-efficacy and its impact on performance to the development of approaches to address accounting education reform. For example, while Burnett *et al.* (2008) do attempt to associate self-efficacy in Intermediate (1) with reform, they fall short in that they do not actually include the impact of self-efficacy on performance.

As such, any inferences they make about the relationship are incomplete. Thus, given these shortcomings the question of how student perceptions affect performance and how the perception/performance link can be used to guide efforts to address accounting education reform remains an open inquiry.

2.4 Related Reviews

Technology in general or computers in particular have been integrated since into financial accounting practices in business for years (Nearon, 1999); however, higher education has not fully capitalized on technology in the classroom for accounting students. According to De

Lange, Suwardy, and Movondo (2003), while commercial enterprise are generally the first to adopt new technologies, educators and their institutions have also seen the necessity to remain abreast of change in information technology. The need for the integration of technology and accounting education appears to be clear. Specifically, the accounting profession (American Accounting Association; Accounting Education Change Commission, and academics) and others concede that there is a need for new technologies to be incorporated into the classroom (De Lange *et al.,* 2003). Because technology is continually changing the way businesses operate, these advancements also force educators to re-examine and modify their delivery methods.

Although the need for higher education to make changes in the accounting curriculum is apparent (Bryant, 2001), higher education has been slow to respond. According to Ainsworth (2001), most accounting educators believe this change is needed, but they disagree about the depth and breadth of needed change. Nevertheless, educators must continue to develop new programs, approaches, and pedagogies as well as evaluate their success or failure against institutional learning objectives (Ainsworth, 2001).

Bryant and Hunton (2000) claim that the accounting literature offered little research on the pedagogical benefits of delivering instruction through the use of technology. However, in the educational technology research arena, studies have focused on evaluation research, media-comparison, intra-medium, aptitude-treatment interaction, and alternative research designs (Thompson, Simonson, and Hargrave (1992)). De Lange *et al.* (2003) agree that the need for research and evaluation is now more pressing as technological advancements are increasing at an ever faster pace especially with respect to telecommunications and multimedia.

Bryant and Hunton (2000) state that, among other foci, research in accounting education needs to be conducted (and assessments created) regarding student satisfaction and attitudes regarding classroom technologies. Finally, Boyce (1999) and Lane and Porch (2002) evoke their concern over the lack of research to substantiate the views that educational technology specifically in accounting education enhances student learning.

It is also important to note that the discipline of accounting has evolved to include a worldwide audience. In addition, an interest in improving and expanding accounting education has also received international attention among educators. Educators will ultimately have the opportunity to capitalize on the use of technology in the classroom. Currently, nearly anyone (instructor or student) who has access to the web also has the availability of a high-tech classroom. Many online classes are now becoming virtually paperless.

The advantage for online accounting education is the electronic homework feature, available to any student worldwide, which now ties together electronic texts, PowerPoint, practice exercises, practice quizzes, and article links. Virtual training and education can now be managed anywhere in the world, and international virtual presentations are being implemented successfully.

Many publishers appear to be in tune with the international market and are committing more resources to make these products widely available. Fortunately, among accounting educators throughout the world there is agreement that the need for research into the integration of technology and education is now more pressing than ever before. In as much as students are increasingly using cutting-edge technology, it is important to ascertain their satisfaction with and attitudes about the technologies utilized in accounting classrooms (Bryant & Hunton, 2000).

Nonethless, by referring to the cognitive learning theory, this latter argues that the learner's degree of interactive participation is highly influential in enhancing learning outcomes (Bryant & Hunton, 2000; Thompson *et al.,* 1992). Thompson *et al.* (1992) explain that when students actively and interactively participate in the learning process (understanding and interpreting), the learning experience is heightened. This theoretical perspective on learning, according to Bryant and Hunton, indicates that educational technology is likely to be most effective if it provides for a dual exchange between the technology and the learner.

Cognitive learning theory outlines eight primary components or elements (Bryant & Hunton, 2000; Thompson *et al,* 1992). In other words, educators and researchers (Albrecht & Sack, 2000; Bhattacharjee & Shaw, 2001; Bryant, 2001) have addressed the criticism that the traditional accounting and management curriculum is falling short of providing many of the critical skills required by the accounting profession (Bryant, 2001). Skill areas that graduates were found to be deficient in include written and oral communication, analytical/critical thinking, decisionmaking, problem solving, teamwork, leadership, continuous learning, interpersonal, project management, professional demeanor, and computing technology.

For almost seventeen years now, Bromson, Kaidonis, & Poh (1994) argue that computers in accounting education should be acknowledged as a part of a process that should be understood and influenced. Nicholson and Williams (1994) warn that the way technologies are used in accounting and management teaching settings needs to be carefully scrutinized to make certain they are achieving meaningful and worthwhile educational objectives (Mabey, Topham, and Kaye (1998). Another important element of teaching and learning through information technology is the discovery of how technology has reshaped what people do (Albrecht & Sack, 2000).

Bryant and Hunton (2000) explain that, among other areas, accounting education research needs to focus on student satisfaction and attitudes regarding classroom technologies. Limited research in these aspects of accounting education has been reported. However, Angelo and Cross (1993) do confirm that students must have positive perceptions of their technological ability to have successful expectations. Their findings validate that self- efficacy and outcome expectations affect a student's reactions and interactions with information technology.

Further, Lane and Porch (2002) study changes in performance, attitudes, and perceptions of non-specialist accounting students towards Computer Aided Learning and accounting. Bhattacharjee and Shaw (2001) investigate students who participated in a financial analysis project where independent research primarily on the Internet was required. Students responded to various questions on their Internet skills and perceptions both before and after the project. These researchers found that enhancing an existing teaching tool like a company analysis research project can not only develop computer-based skills but, more crucially, improve perceptions toward technology.

Bhattacharjee and Shaw concluded that while today's students have many opportunities to develop their technology-related skills, improving their perceived abilities to use technology is vital to ensure the successful utilization of computers in the workplace. They determined that technology can be effectively used to supplement the traditional education process and help teach technological skills and perceptions.

2.5 Underpining Theory

As the research is about a change in instruction mode by using a computerized system for learning accounting, the appropriate theory that links all variable in the study is the TAM (Technology Acceptance Model) theory. TAM developed by Davis (1985) is an adaptation of the Theory of Reasoned Action (TRA) to the field of IS. The theory posits that perceived

usefulness and perceived ease of use determine an individual's intention to use a system (computerized system for accounting purpose) with intention to use serving as a mediator of actual system use. Researchers' attempts to extend TAM have generally taken one of three approaches: by introducing factors from related models, by introducing additional or alternative belief factors, and by examining antecedents and moderators of perceived usefulness and perceived ease of use (Wixom and Todd, 2005).

2.6 Hypotheses Development

From the above narrated literature reviews and the findings of many researches related to the topic, the hypotheses developed for the study are as follow:

- **H1:** The age and GPA of international accounting postgraduate students in UUM have effect on their perceived skills in using computer for accounting purposes.
- **H2:** The attitudes toward using computers and prior experience of international accounting postgraduate students in UUM have effect on their perceived skills in using computer for accounting purposes.
- **H3:** The age, GPA, the attitudes toward using computers and prior experience of international accounting postgraduate students in UUM have effect on their perceived skills in using computer for accounting purposes.

2.6 Summary of the Chapter

This chapter discusses the literature overview of the demographic characteristics and the attitudes toward using computers and their effect on the perceived skills in using computer for accounting purposes. Many studies have been carried out in this field with different findings observed.

Different previous studies and results are discussed on the demographic variables consisting of gender, age, GPA and prior experience. Additionally, various results which relate to the perceived skills in using computer for accounting purposes for this research have also been reviewed. At the section before the hypotheses development of this chapter, a short review of related works is conducted on both the independents and dependent variables of the study. The next chapter of this report brings about the methodology of the research adopted by the researcher in order to collect the relevant data for analysis.

CHAPTER THREE
RESEARCH METHODS

3.0 Introduction

This section on research design will help to explain where we obtained the data, how we operationalized the dependent and independent variables, and what form of analysis is being undertaken to test the hypothesis. The primary objective of this chapter is to identify the research method and test the research questions based upon testable hypotheses emphasized in the prior chapter (review of literatures and hypotheses development) and illustrated in this chapter under the section of conceptual framework.

This research will investigate the relationship between demographic characteristics (age, GPA and prior experience) and the attitudes toward using computers being the independent variables and the perceived skills in using computer for accounting purposes as the dependent variable, among international accounting postgraduate students in UUM. One of the reasons why gender was not consider in this study is because there are many males international accounting postgraduate students (90%) compared to international accounting postgraduate females students. In other words, the demographics charactersitics employed as independent variables are:

- Age
- GPA
- Prior Experience

3.1 Conceptual Framework

Many researches have discussed the relationship between demographic characteristics (age, GPA and prior experience), the attitudes toward using computers and the perceived skills in using computer for accounting purposes. Based on prior studies, Dickens and Harper (1986) have investigated the impacts of computer use on student achievement and attitudes in an intermediate accounting course. The researchers have required students to use an interactive computer program to solve either an interperiod tax allocation problem or an earning per share problem. It was found from the study that the examination performance of students who used compute and those who did not was the same. However, contrary to Borthick and Clark's (1986) results, they reported that students reacted positively to using computers.

Moreover, Austin (1989) examined the performance and behavioral effects of using computers and spreadsheets in the introductory financial accounting course. The author concluded that there is no performance differences on examinations of either problems or essay questions between the control and experimental groups; however, he detected a decline in enthusiasm for using computers.

Finally, Kachelmeier, Jones, and Keller (1992), using a spreadsheet based template for pension accounting, observed a performance difference on examinations between the students who used the spreadsheet program and those who did not. They founded that the students in the study had been extensively exposed to computers in other classes so discounted the novelty effect of sparking interest in the subject matter which might be shown in heightened interest in the subject matter. Thus, the theoretical framework of the study is drawn below.

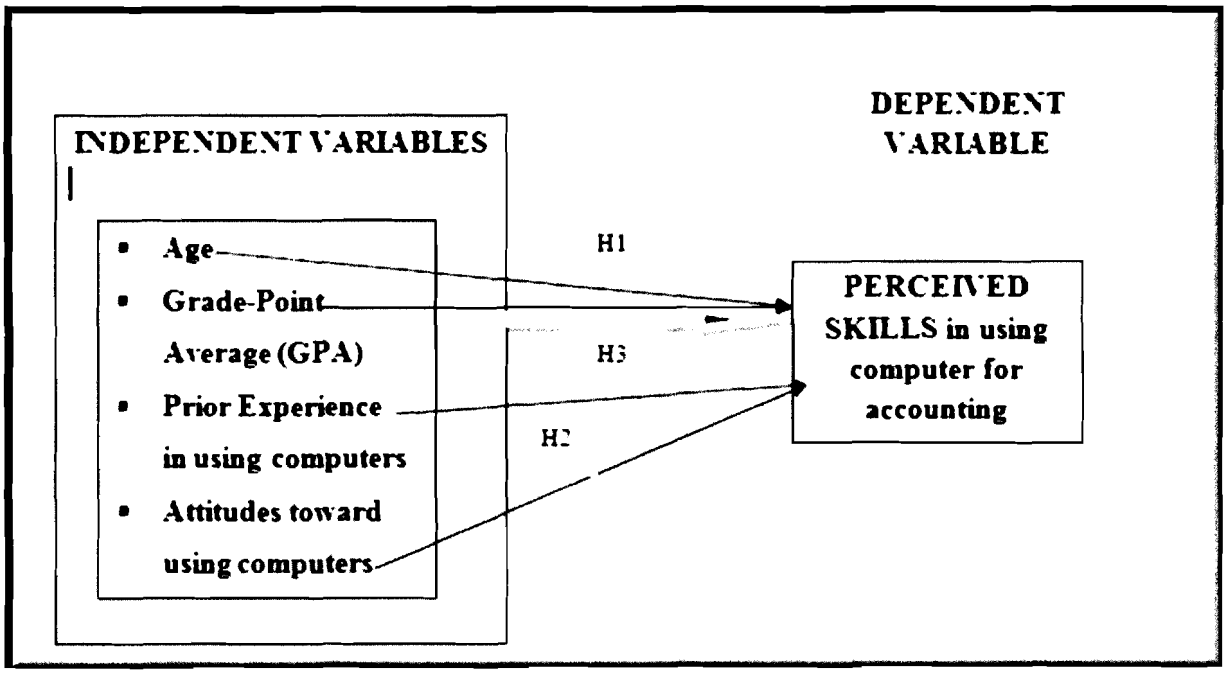

Figure 3.1: Conceptual Framework

3.2 Research Design

The intention of this research is to examine the relationship between demographic characteristics (age, GPA and prior experience), attitudes toward using computers and the perceived skills in using computer for accounting purposes.

This research adopts a survey design, using a combination of a modified version of the Adapted Bath County Computer Attitude Scale of some attitude and experience questions developed by Qureshi and Hoppel (1995). Moreover, in reference to students prior experiences in using computers, questions were retrieved from the study conducted by Lowe and Krahn (1989). Therefore, the questionnaire consists of four (4) sections emphasized as follow:

The First Section of the survey instrument asks for demographic data regarding gender, maritial status, major, concentration area of current interest in accounting and GPA.

The second Section of the instrument was designed to evaluate the students' responses toward attitude questions of using computers in general.

Section Three was added to collect information about students experience in using computers. Finally Section Four is also included to collect information regarding students' responses toward the perceived skills after studying a course in using computers for accounting purposes.

3.3 Sample Selection

The respondents (participants) of this study are postgraduate accounting students (Master degree and PhD degree) who are familiar with accounting course at Universiti Utara Malaysia (UUM). A sample of 106 questionnaires were distributed to postgraduate accounting students mosly Yemeni who reside in maybank and off-campus.

According to Cochran (1977) one method of determining sample size is to specify margins of error for the items that are regarded as most vital to the survey. An estimation of the sample size needed is first made separately for each of these important items. The author added that when these calculations are completed, researchers will have a range of *n*'s, usually ranging from smaller *n*'s for scaled, continuous variables, to larger *n*'s for dichotomous or categorical variables.

Therefore, I made my sampling decisions based on these data. If the n's for the variables of interest are relatively close, the researcher can simply use the largest n as the sample size and be confident that the sample size will provide the desired results. However, in our case, the total population of postgraduate accounting students is not too large. Therefore, 106 questionnaires distributed are relevant for this study.

3.4 Research Analysis

In this research, data is collected and analyzed using the Statistical Package for the Social Science (SPSS version 14) for the statistical analysis. The data collected is regressed using this software. Additionally, to justify the strength of correlation between the dependant-independent variable pairs, Pearson correlation coefficient will also be used in this analysis.

3.5 Summary of the Chapter

This chapter has explained the research method adopted in the study. The chapter has illustrated the theoretical framework, enlightened the research design and analysis. The questionnaire sections were stated as well as the sample section was estimated. Moreover, all the results of the different analysis obtained from the SPSS will be discussed in the next chapter of results and discussions.

CHAPTER FOUR

ANALYSIS & RESULTS

4.0 Introduction

This chapter highlighted all the results of the study. Descriptive statistics have been shown to represent the general condition of the selected variables and then multicollinearity result has been displayed in order to look whether there is any relation among independent variables. Then correlation matrix (Pearson's Correlation analysis) for the variables has been displayed in order to look for significant correlations among the variables. Correlation analysis is the statistical tool that can be used to describe the degree to which one variable is linearly related to another (Levin & Rubin, 1998).

Moreover, regression analysis has also conducted to test the strength of associations between the studied variables. The Statistical Package for Social Science (SPSS) software (version 14) has been employed to carry out the above analyses through using the data collected from the annual reports.

As stated in the previous chapter, 106 questionnaires were distributed, only 83 were returned. Therefore, our study presented a response rate of about 78.30%. It is believed that such result is satisfactory and the study is reliable.

4.1 Analysis

4.1.1 Respondents' Profiles

Respondents' profiles are summarized in the below tables (4.1 - 4.6). There are 6 items included in the demographic section.

Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Male	79	95.2	95.2	95.2
Female	4	4.8	4.8	100.0
Total	83	100.0	100.0	

Table 4.1: Descriptive Statistics of Gender

The above table 4.1 illustrates that from the 83 respondents, 79 (95.2%) of them are males. Only 4 respondents are females. That means most of international accounting postgraduate students are males. Thus, from such result, there is no need to conduct a gender difference analysis on students' attitudes towards using computer and their perceived skills in using computer for accounting purposes.

Age

	Frequency	Percent	Valid Percent	Cumulative Percent
Under 25	2	2.4	2.4	2.4
26-31	56	67.5	67.5	69.9
32-37	17	20.5	20.5	90.4
Over 38	8	9.6	9.6	100
Total	83	100.0	100.0	

Table 4.2: Descriptive Statistics of Age

Regarding the ages of respondents, the table 4.2 explained that most of international accounting postgraduate students are young. In other words, almost 70 % of them are either between 26-31 years old or under 25 years old. The remaining 30% is subdivided between those whose ages are between 32 and 37 years (20.5%) old or over 38 years old (9.6%).

Marital Status

	Frequency	Percent	Valid Percent	Cumulative Percent
Single	52	62.7	62.7	62.7
Married	31	37.3	37.3	37.3
Total	83	100.0	100.0	

Table 4.3: Descriptive Statistics of Marital Status

The table 4.3 explains the marital status of the study's respondents. As it can be seen 52 of them are single and they make up 62.7%. However, the remaining 31 who compose 37.3% are married.

Citizenship

	Frequency	Percent	Valid Percent	Cumulative Percent
Iraqi	11	13.3	13.3	13.3
Yemeni	43	51.8	51.8	65.1
Libyan	7	8.4	8.4	73.5
Palestinian	7	8.4	8.4	81.9
Jordanian	15	18.1	18.1	100
Total	83	100.0	100.0	

Table 4.4: Descriptive Statistics of citizenship

From the above table (table 4.4), it can be concluded that most of UUM international accounting postgraduate students are of Arab origin. Therefore, from the findings, 43 (51.8%) are Yemeni; 15 (18.1%) are Jordanian, 11 (13.3%) are Iraqi; and the remaining 14 (16.9%) are respectively 7 (8.4%) are Libyan and 7 (8.4%) are Palestinian. It can be concluded in UUM, most of international Arab accounting postgraduate students are from Yemen.

Major

	Frequency	Percent	Valid Percent	Cumulative Percent
Auditing	18	21.7	21.7	21.7
F. A. & R.	37	44.6	44.6	66.3
Regulation	11	13.3	13.3	79.6
B. E. & C	17	20.4	20.4	100
Total	83	100.0	100.0	

Table 4.5: Descriptive Statistics of Major

The results of international accounting postgraduate students' majors are diversified. It is indicated on the above table 4.5 that 44.6% of international accounting postgraduate students

are majoring in Financial Accounting and Reporting; 21.7% in Auditing; 20.4% in Business Environment and Concepts. However, the remainig 13.3% are majoring in Regulation course.

GPA

	Frequency	Percent	Valid Percent	Cumulative Percent
Less than 3.00	14	16.9	16.9	16.9
3.01-3.33	57	68.7	68.7	85.6
3.34- 3.67	11	13.3	13.3	98.9
Over 3.67	1	1.20	1.20	100
Total	83	100.0	100.0	

Table 4.7: Descriptive Statistics of GPA

The final item included in the demographic characteristics is GPA and it is also a dependent variable in the study. The outcomes present that 68.9% of the respondents have GPAs between 3.01 and 3.33. Almost 17% could not fulfil the university requirement of maintain a 3.00. There is only one student who is assumed to be an A student. To conclude, the majority of UUM international accounting postgraduate students have a GPA of average (B and B+).

4.1.2 Descriptive Statistics of All Variables

This session explains the descriptive statistics consisting of the mean and median of all the variables. The below table (Table 4.7) emphasises the summarized result.

	N	Minimum	Maximum	Mean	Std. Deviation
AGE	83	1.00	2.00	1.1853	.57121
GPA	83	1.00	4.00	3.1026	1.43693
EXPR.	83	1.00	3.00	.82417	.81046
ATC	83	1.00	4.00	1.5271	.70139
PSCA	83	1.00	5.00	3.1653	1.44857
Valid N (listwise)	83				

Table 4.7: Descriptive Statistics of all Variables

As shown in the above table, the descriptive statistics demonstrate the following: the table shows that Perceived skills in using computer for accounting course (PSCA) have a mean of 3.1653 and standard deviation 1.44855. The variable "age" denoted (AGE) in the table represents a mean of 1.1853 with a standard deviation .57121. The average score of students

GPA (GPA) is 3.1062 with a standard deviation 1.43693. However, the average level of students' prior experience in computer (EXPR.) is only .82417 and the standard deviation for this variable is .81046. Finally, the variable "attitude toward computer" noted (ATC) has a mean of 3.1653 and a standard deviation of 1.44857.

4.1.3 Reliability & Validity Testing

Variables	Number of Items	Total of items	α Crobach Value
Attitudes toward using computers	17	17	0.72
Prior experience in using computers	16	16	0.80
Peerceived skills in using using computers for accounting purposes	10	10	0.71

Table 4.8: Reliability Test

The above table (4.8) discussed the reliability of instrument in order to determine which item is more consistent than the others. The values of the reliability coefficient (Alpha Cronbach) of the study include all independent variables (IVs) and dependent variable which is the central concept of the study. Nevertheless, as it was stated earlier, the reliability coefficients of all variables in the study exceeded the acceptable value of 0.50 recommended by Hair, Anderson, Tatham and Black (1992).

In regards to the validity test of the questionnaire, the study had used both face validity and content validity for the research questions. In other words, the questionnaire was reviewed by the expert in the field of accounting.

4.2 Multicollinearity

Multi-colinearity was used to check whether there is any relation among the independent variables. multicollinearity describes the degree to which any variable's effect can be predicted by the other variable (Hair *et al.,* 1995). The existence of multicollinearity, i.e. high correlation between the independent variables, is a serious problem in multiple regressions because the effect of each independent variable on the dependent variable

becomes difficult to identify. A widely used method to detect for and measure multicollinearity is the Variance Inflation Factor (VIF) for each independent variable (Naser *et al.*, 2002).

In circumstances where the VIF is above 10, the independent variables are considered highly correlated, causing a multicollinearity problem (Silver, 1997). Thus, the multicollinearity diagnostics command to include the VIF was selected when running the multiple regression models. The results in table 4.8 revealed that there is no multicollinearity problem because the VIF for each independent variable is less than 10.

Variables	VIF
Age	1.536
GPA	2.465
Prior experience	1.675
Attitudes toward computers	1.772

Dependent variable PSCA.

Table 4.9 Variance Inflation Factor

4.3 Correlation Analysis

		PSCA	AGE	GPA	EXPR.	ATC
PSCA	Pearson Correlation	1	-.240	.286(**)	.234(**)	.273
	Sig. (1-tailed)		.376	.000	.000	.375
	N		83	83	83	83
AGE	Pearson Correlation		1	.568(**)	.240(**)	-.391(*)
	Sig. (1-tailed)			.000	.000	.016
	N			83	83	83
GPA	Pearson Correlation			1	.642(**)	.273
	Sig. (1-tailed)				.000	.032
	N				83	83
EXPR.	Pearson Correlation				1	.112
	Sig. (1-tailed)					.277
	N					83
ATC	Pearson Correlation					1
	Sig. (1-tailed)					
	N					

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

* Correlation is significant at the 0.05 level (2-tailed).

Table 4.10: Correlation Matrix for all the dependent and independent variables

Correlation analysis is the initial statistical technique employed to analyze the relationship between the dependent and independent variables. Findings from Pearson's correlations as shown in Table 4.10 indicate that GPA, prior experience and attitudes towards computers are significantly positively related to the perceived skills in using computers in accounting. However, age was not significantly positively related to the perceived skills in using computers in accounting.

4.4 Enter Method

In the enter method section, multiple regressions method and enter method were employed to reveal the variables that can be used in the regression. Moreover, the results were analyzed for the model with accurate and more defined results. The below table (table 4.10) indicates the enter method.

Regression

Variables Entered/Removed (b)

Model	Variables Entered	Variables Removed	Method
1	AGE, GPA, EXPR., ATC(a)	.	Enter

a All requested variables entered.
b Dependent Variable: PSCA

Table 4.11: Enter Variable Method

The above table 4.11 showed that the enter method added the four independent variables one by one. After adding the independent variables one by one, the data was examined using multiple regressions to proliferate most lucid results.

The model shown in Table 4.11 indicates that "age" is used as the first independent variable in the regression. The first regression will only use age (AGE) as the independent variable that influences the dependant variable (Perceived Skills in using Computers for Accounting). The second model of regression will add GPA (GPA) as a second variable in determining the level of Perceived Skills in using Computers for Accounting. The third model of regression will add prior experience (EXPR.) as a third variable in determining the level of Perceived Skills in using Computers for Accounting. Finally, the fourth and last model of regression includes all four independent variables (including ATC) in order to determine the Perceived Skills in using Computers for Accounting.

4.4.1 Adjusted R Square and Standard Error of Estimate

After all the independent variables were entered, the researcher opted to observe the value of the adjusted R square. The main goal of observing the adjusted value of the R square is to apprehend the best model that can explain the Perceived Skills in using Computers for Accounting. The table below (table 4.12) recapitulates the model summary.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.112(a)	.058	.034	2.42672
2	.148(b)	.061	.138	2.49909
3	.279(c)	.162	.296	2.58293
4	.385(d)	.263	.231	2.88216

a Predictors: (Constant), AGE
b Predictors: (Constant), AGE, GPA
c Predictors: (Constant), AGE, GPA, EXPR.
d Predictors: (Constant), AGE, GPA, EXPR., ATC

Table 4.12: Model Summary of adjusted R square

As indicated in the above table 4.11, the results show that there are variations in the value of adjusted R square and from model *1* to model *4*. The first model uses one independent variable (age, AGE). The adjusted R square for this model is .034, which indicates that 3.4% of perceived skills in using computers for accounting can be explained by the four

independent variables, while 96.6% of perceived skills in using computers for accounting can be explained by some other factors. Thus, one independent factor cannot explain much of the perceived skills in using computers for accounting.

The second model added GPA (GPA) to the regression model. From able 4.11, the result shows that there is considerable increase of the value of adjusted R square for this model compared to the first model. The adjusted R square for this model is .138. The difference of adjusted R square value is as much as .104 from the first model. This result indicates that two independent variables (AGE, GPA) can explain perceived skills in using computers for accounting as more as 13.8% and 86.2% of perceived skills in using computers for accounting can be explained by other factors. We can conclude that hypothesis one (1) is rejected.

The third model added prior experience (EXPR.) to the second regression model. From the table 4.11, the result shows that the adjusted R square for this model is .296. The difference of adjusted R square value is as much as .158 from the second model. This result indicates that three independent variables (AGE, GPA, and EXPR.) can explain perceived skills in using computers for accounting of 29.6%. That is to say, the third model can explain 29.6% of perceived skills in using computers for accounting, while 70.4% of perceived skills in using computers for accounting may be explained by other factors. The second hypothesis (2) is accepted.

The fourth model uses all four independent variables (AGE, GPA, EXPR. and ATC). From Table 4.11, the result indicates that there is also a positive value for adjusted R square in this model. The adjusted R square for the fourth model is 0.231, which means that the perceived skills in using computers for accounting can be explained as much as 23.1% by the four independent variables while 76.9% is explained by other factors. Although the fourth model has a higher value of adjusted R square, but those four models can explain a reasonable

portion of perceived skills in using computers for accounting (23.1%) indicating that there may be other factors 76.9%) that could explain perceived skills in using computers for accounting by UUM international accounting postgraduate students. Therefore, the third hypothesis (3) is accepted.

The standard error of the estimate increases from the first model to the fourth model though there was a slight fluctuation in the third model (model) as shown in Table 4.11. In the first model the standard deviation is 2.42672 while in the fourth model, the standard deviation is 2.49909. This value of standard deviation (2.88216) in the fourth model is higher than the value of standard deviation of dependant variable. It indicates that the regression model can be used as a better predictor of perceived skills in using computers for accounting though its standard deviation is greater than the first model and lesser than the fourth model as well.

4.4.2 Significance Level of Regression Model

Model Summary (b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.385 (a)	.263	.231	2.88216

a Predictors: (Constant), AGE, GPA, EXPR., ATC
b Dependent Variable: PSCA

ANOVA (b)

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	15.590	4	11.732	1.492	.000(a)
	Residual	76.710	78	23.836		
	Total	92.300	82			

a Predictors: (Constant), AGE, GPA, EXPR., ATC
b Dependent Variable: PSCA

Table 4.13 Multiple Regression Analysis

The results of regressing four independent variables on perceived skills in using computers for accounting are presented in Tables 4.13. The first table in the result titled "Model Summary"

showed the four independent variables were entered into the regression model, the R (.385), which is the correlation of all variables with the dependent variable, after all the inter-correlations among the four independent variables were taken into account, the R square is obtained (.263) . This was the total variance explained by the four independent variables that is 26.3% variance was explained on perceived skills in using computers for accounting from those variables.

The ANOVA table showed that the F value is not significant at p= 0.05 and when all variables were entered together. However, the F Test ANOVA table below will demonstrate which variable among the four is significant and meet the criteria of the hypotheses.

4.5 F Test (ANOVA)

This section discusses the results derived from the Anova table in Table 4.13. F value was determined to see the level of significance, whether it falls in range of -0.05 and 0.05.

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	13.615	1	33.615	.776	.601(a)
	Residual	48.685	81	19.596		
	Total	62.300	82			
2	Regression	12.770	2	17.885	.574	.425(b)
	Residual	46.530	80	20.242		
	Total	59.300	82			
3	Regression	13.216	3	12.072	.875	.037(c)
	Residual	46.084	79	21.003		
	Total	59.300	82			
4	Regression	12.590	4	11.732	1.715	.047(d)
	Residual	47.710	78	23.836		
	Total	60.300	82			

a Predictors: (Constant), AGE
b Predictors: (Constant), AGE, GPA
c Predictors: (Constant), AGE, GPA, EXPR.
d Predictors: (Constant), AGE, GPA, EXPR., ATC
f Dependent Variable: VDEXT

Table 4 .14 F Test (ANOVA) Table

From the Table 4.14, the highest value of F is derived from the fourth model(d) which is at 1.715.The level of significance for the fourth model is 0.047 (close to 0.05) implying that the model is significant. The third model that includes three independent variables (Age, GPA, EXPR.) is also significant (0.037). The other two models (1&2) are not significant because they showed F values higher than 0.05. It can be concluded that when all the variable are entered, the model shows significance (0.047).

4.8 Summary of the Chapter

This chapter has presented the results of the hypotheses of four different variables onto a dependent variable (perceived skills in using computers for accounting). There were three different variables under the demographic characteristics (AGE, GPA, EXPR.) and one attitude variable (ATC). The conclusions of these results are subject of the next chapter. The next chapter will give account to the conclusion of the whole report and few recommendations would be enumerated for further work.

From the hypotheses developed, the first hypothesis was rejected. Moreover, the results indicated that the second and the third hypotheses are those found accepted. In addition, the discussions related to the findings and acceptance or rejections of the hypotheses are illustrated in the concluding chapter.

CHAPTER FIVE

CONCLUSIONS & RECOMMENDATIONS

5.0 Introduction

This thesis sought to determine the relationship between demographic characteristics (age, GPA and prior experience), the attitudes toward using computers and the perceived skills in using computer for accounting purposes among UUM accounting postgraduate students. In this chapter, the findings are discussed related to the hypotheses and the research questions. The main findings and their implications are highlighted. Based on the findings of the study, conclusions are drawn. The last section in this chapter encompasses few recommendations that describe the area that can be explored or future research that could be carried out by other researchers.

5.1 Conclusions

In this study, multiple regressions were carried out to test the relationship between demographic characteristics (age, GPA and prior experience), the attitudes toward using computers and the perceived skills in using computer for accounting purposes among UUM accounting postgraduate students. The multiple regressions employed three models in which the independent variables were selected. Hence, in the first model, only age and GPA were included. The results showed that GPA was a predictor in the perceived skills in using computer for accounting purposes among UUM accounting postgraduate students; but age was found not significant.

As far as the second model is concerned, it employed two independent variables (prior experience and attitudes toward using computers); the results of these two variables showed that both demonstrated some significance. In other words, prior experience and attitudes toward using computers both predict the perceived skills in using computer for accounting purposes among UUM accounting postgraduate students.

Finally, the third model or last model was the complete model that used all four independent variables. Therefore, this model was found to be statistically significant. In terms of hypothesis testing, the findings proved that all three hypotheses corresponded to the requirement and meet their objectives.

The first hypothesis stated that age and GPA are related to the perceived skills in using computer for accounting purposes. This hypothesis is partially accepted due to the fact that GPA was significantly correlated with the perceived skills in using computer for accounting purposes even though age was not significantly correlated. The results are similar to those of Barsky *et al.* (2001) highlighting that grades play a part in Intermediatel performance. They explained such argumentation by evoking that most of accounting students assign value to their educational experience based on how academic performance contributes to employment Moreover, because grades play a major role in Intermediate 1 performance assessment, students invariably develop and use grade targets (higher GPA) to guide the amount of study time and other resources they will allocate to the course (Turner *et al.* 1997).

The second hypothesis stated that the attitudes toward using computers and prior experience of international accounting postgraduate students in UUM would be significantly related their perceived skills in using computer for accounting purposes. This hypothesis is accepted due to the fact that both the attitudes toward using computers and prior experience were positively correlated with the students'perceived skills in using computer for accounting purposes.

This result could be pleasing due to the fact that few researches have given account to these variables (attitudes toward using computers and students' prior experience in computers). For example, Omar (1991) and Harris (1992) report an improvement in student attitudes while taking an introductory computer course. Moreover, there is also a study conducted on measuring computer attitudes of accounting students with similar findings. Orpen and Ferguson (1991) surveyed 155 graduating accounting students at two universities. They report a direct relationship between computer experience and computer attitudes, and that the majority of those surveyed had positive attitudes towards computers. Furthermore, several gender studies (even though our thesis does not include gender as an indepenent variable) report that males generally have more favorable attitudes towards computers than females, whether in primary, secondary or higher education (examples include: Eining et al., 1992; Shashaani, 1997; Bhargava *et al.*, 1999; Butler, 2000; Sax *et al.*, 2000; Young, 2000). Therefore, the relationships between computer attitudes and both motivation to use and performance with computers, any difference in computer attitudes amongst accounting students based on gender should be recognized and sought to be minimized so that all entering the profession have an equal opportunity for career achievement and advancement.

The third and final hypothesis stated that age, GPA, prior experience and the attitudes toward using computers would be positively related to the perceived skills in using computer for accounting purposes among UUM accounting postgraduate students. The results of this hypothesis are assorted. Among the four independent variables (age, GPA, prior experience and the attitudes toward using computers), only three of them (GPA, prior experience and the attitudes toward using computers) predicted the perceived skills in using computer for accounting purposes among UUM accounting postgraduate students. This hypothesis was accepted as it was found in some previous study.

Overall, as UUM accounting postgraduate students agreed on the idea of being taught computer skills in accounting course, it is crucial to understand and predict students' perceptions toward the value-added of studying such course. By being able to predict students' perceptions, UUM accounting lecturers and decision-makers can improve and enhance their accounting students' learning experience.

The rationale of this study was to determine the extent to which age, GPA, prior experience in using computers and attitudes toward using computers could predict students' perceptions toward the value-added of studying computer skills in accounting. The results of the study determined that only age has no positive and significant relationship with the students' perceptions toward the value-added of studying computer skills in accounting. On the hand, it was obtained from the outcomes that GPA, UUM postgraduate accounting students' prior experience in using computers and their attitudes toward using computer course operated as predictors of their perceptions toward the value-added of the accounting course. More specifically, this thesis emphasized that more or less 26.3% of the variance of students' perceptions was accounted for by its linear relationship with the variables known as GPA, prior experience and their attitudes toward using the computers.

5.2 Limitations of the Thesis

As the thesis is completed, however few limitations can be enumerated and taken into consideration for further work. The limitations can be summarized as follow:

- The sample size taken in the current study symbolized by only hundred students (100) or less and it is assumed to be insufficient.
- The study was condensed and assumed to be completed within a trimester. Such duration is deficient to a master student in writing his or her thesis for graduation..

- The total number of demographic variables is less and this need to be taken into consideration.

Even if UUM accounting postgraduate students were provided with opportunities to develop their technology-related skills in accounting course, still improving their perceived abilities to use the technology is vital to insure the successful utilization of computers (accounting software) in the workplace. This is because the higher perceived abilities, combined with the necessary skills, should allow UUM accounting postgraduate students to access, synthesize, and analyze timely information from various information sources when working on an appropriate independent assignment, the very competencies that are being called for by accounting recruiters.

Additionally, another limitation of the study is that perceived benefits from this thesis might not actually translate to changes in learning. That is, the increases in perceptions could simply result from students' overall positive impressions of the perceived skill to acquire when studying accounting course through computers. However, testing on several dimensions of students' perceptions, improvements in skills, and project interest would provide support for the findings.

5.3 Recommendations for further Research

As there were few limitations cited above, the researcher suggests some recommendations for future work in the same topic in order to come out with more satisfactory results.

First, the sample of the study should be upgraded even if the next researcher would consider two or Malaysian universities for sampling. The next study should be completed within a semester (at least six months). Nevertheless, the future researcher should also induce other demographic characteristics besides the ones used in this paper.

Finally, from the lecturers' perspectives, developments in technology provide unique opportunities for educators, it would be suggestive that the benefits of technology may be dependent upon the learning situation and the characteristics of the students because some types of technology can be used effectively to supplement the traditional education process and help teach skills and perceptions needed by future accountants..

The results of the study imply the importance of software-specific training to students. Particularly, in Accounting class, computer anxiety also increased over time though learning occurred. Therefore, instructors should be encouraged to explore some ways to reduce students' computer anxiety.

From the managerial perspective, this research has brought some insights by concluding on the importance of adopting a broader view of the scope of software utilization in the context of accounting education. It has been argued that understanding the emerging accounting software utilization through all the proposed elements enables the university and its management to tackle better the challenges involved in teaching accounting course. This kind of broader view is specifically needed in relation to the kind of managerial challenges faced by an organization operating as a center of education. As this study has illustrated, it is not easy for the university to suddenly concentrate on developing and sharpening the teaching processes and practices through computers for accounting purposes. Moreover, in this kind of situation, UUM also needs to understand and try to influence the full adoption of computers in accounting teaching, or more importantly, the nature and progression of such mode of instruction.

From the theoretical perspective, this study has brought some theoretical contributions by enlightening UUM to teach computer skills in accounting for their accounting students, it is imperative to understand and predict students' perceptions toward the value-added of studying such course. By being able to predict students' perceptions, instructors and decision-makers can improve and enhance students' learning experience.

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APPENDIX

QUESTIONNAIRE

Universiti Utara Malaysia

College of Arts and Sciences

My name is Mohamed Abreima and I am a student in Msc. International Accounting under the supervision of Mr. Abdul Manaf Bohari. For your information, I am conducting a research on a preliminary study on impacts of accounting software utilization on skills of postgraduate international accounting students. .

Access to the questionnaire is restricted to my supervisor and me. Completion of the questionnaire is voluntary. If you decide that you no longer want to be involved in this study you are free to withdraw at any time without adverse consequences. If you would like to obtain a summary of the results of this research, I am happy to send you copies of future publications.

Yours sincerely

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A. Demographic Background

Please kindly tick (√) your answers to the given statements.

1. What is your GENDER?

[ ] Male [ ] Female

2. What is your AGE group?

[ ] Under 25 Years old [ ] 26-31 Years old

[ ] 32-37 Years old [ ] Above 38Years old

3. Marital Status

[ ] Married [ ] Single

4. Citizenship

[ ] Iraqi [ ] Yemeni [ ] Libyan

[ ] Palestinian [ ] Jordanian [ ] Others

5. Major

[ ] Auditing [ ] Financial Accounting and Reporting

[ ] Regulation [ ] Business Environment and Concepts

6. GPA

[ ] Less than 3.00 [ ] 3.01- 3.33

[ ] 3.34-3.67 [ ] Over 3.68

Please read each statement and circle the number next to the response indicating how much you agree or disagree with the statement as a description of you. You should only tick one box per statement to disclose how positive are you in attitudes towards using computers. Indicate your response by circling one of the ranking from "positive" coded 3 to "negative" coded 1. Neutral is coded 2.

B. ATTITUDE QUESTIONS TOWARD USING COMPUTERS

1	Working problems on a computer is fun.	1 ☐	2 ☐	3 ☐
2	It is easy to get tired of using a computer.	1 ☐	2 ☐	3 ☐
3	Studying computers in university would be a good idea.	1 ☐	2 ☐	3 ☐
4	People who use computers in their occupations are the only ones who need to study about computers.	1 ☐	2 ☐	3 ☐
5	Learning about computers is interesting.	1 ☐	2 ☐	3 ☐
6	University would be a better place without computers.	1 ☐	2 ☐	3 ☐
7	I enjoy using a computer.	1 ☐	2 ☐	3 ☐
8	Computers are boring.	1 ☐	2 ☐	3 ☐
9	Working on a computer is a good way to spend spare time.	1 ☐	2 ☐	3 ☐
10	Using a computer becomes boring after about 30 minutes.	1 ☐	2 ☐	3 ☐
11	Learning about computers is something I can do without.	1 ☐	2 ☐	3 ☐
12	Computers are not exciting.	1 ☐	2 ☐	3 ☐

13	Studying about computers is a waste of time.	1	2	3
14	It is fun to figure out how computers work.	1	2	3
15	Computers help people think.	1	2	3
16	Classroom discussions about the uses of computers in society are a waste of time.	1	2	3
17	Learning about the different uses of computers is interesting.	1	2	3

C. QUESTIONS ON STUDENTS' PRIOR EXPERIENCE IN USING COMPUTERS

You should only tick one box per statement to disclose how often you are using computers. Indicate your response by circling one of the ranking from "always " coded 5 to "never" coded 1. Very often, sometimes and rarely are respectively coded 4, 3 and 2.

1	If you have access to a personal computer at home, how often do you use it?	1	2	3	4	5
2	If you do not have a personal computer, but had the ability to get one, would you acquire one?	1	2	3	4	5
3	How often do you use the college computer labs?	1	2	3	4	5
4	If you have access to a computer at work, how often do you use it?	1	2	3	4	5
5	Before going to Uni, did you ever take a course that met six times or more to learn about computers?	1	2	3	4	5
6	Approximately how many such courses did you take before entering college?	1	2	3	4	5
7	How many such courses have you taken in college?	1	2	3	4	5
8	Besides this course, are you enrolled this semester in a	1	2	3	4	5

	computer-related course?					
9	Which of the following skills do you have with using a computer? (The scale yes:1 and No: 2)					
10	Playing games	1 ☐	2 ☐			
11	Data entry	1 ☐	2 ☐			
12	Word processing	1 ☐	2 ☐			
13	Spreadsheets	1 ☐	2 ☐			
14	Programming	1 ☐	2 ☐			
15	Statistical analysis	1 ☐	2 ☐			
16	Database management	1 ☐	2 ☐			

D. QUESTIONS OF VALUE-ADDED OF STUDYING COMPUTER SKILLS IN ACCOUNTING

Indicate your response by circling one of the ranking from "strongly agree" coded 5 to "strongly disagree" coded 1

1	Reading and talking about how computers might be used in the future is boring.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
2	Learning about the using of Excel in accounting is interesting.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
3	Learning about using computers as tools to record and analyze financial transactions is interesting.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
4	Learning about using accounting commercial programs is interesting.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
5	I enjoy learning about how computers are used in accounting profession.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

6	Studying about the uses and misuses of computers in accounting issues will help me to be a more responsible accountant.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
7	I wish I had more time to use computers in doing accounting issues.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
8	Taking a computer related course can have a positive impact on my attitude towards using computers in accounting.	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
9	It is fun to figure out how computers are used by accountants	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐
10	I wish I had more courses about using computer in accounting	1 ☐	2 ☐	3 ☐	4 ☐	5 ☐