NEAR EAST UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
BANKING AND FINANCE PROGRAM

ACCOUNTING INFORMATION SYSTEMS IMPACT ON JORDANIAN BANKS PERFORMANCE: THE MODERATING ROLE OF TRAINING AND EDUCATION

THAER KHASAWNEH

MASTER'S THESIS

NICOSIA

2018

NEAR EAST UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
BANKING AND FINANCE PROGRAM

ACCOUNTING INFORMATION SYSTEMS IMPACT ON JORDANIAN BANKS PERFORMANCE: THE MODERATING ROLE OF TRAINING AND EDUCATION

THAER KHASAWNEH

20157956

MASTER'S THESIS

SUPERVISED BY
ASST. PROF. DR. NIL GÜNSEL REŞATOĞLU

NICOSIA
2018

ACCEPTANCE\APPROUAL

We as the jury members certify the "Accounting information systems impact on Jordanian banks performance: the moderating role of training and education" prepared by THAER KHASAWNEH defended on

11/June/2018

Has been found satisfactory for the award of degree of

JURY MEMBERS

Asst. Prof. Dr. Nil Günsel Reşatoğlu (Supervisor)
Near East University / Department of Banking and Finance

Assist. Prof. Dr. Behiye Tüzel Çavuşoğlu (Head of Jury)
Near East University / Department of Economic

Assoc. Prof .Dr. Aliya Z. Işiksal
Near East University / Department of Banking and Accounting

Prof. Dr. Mustafa Sağsan

Graduate School of Social Sciences

Director

DECLARATION

I am Thaer Khasawneh, hereby declare that this dissertation entitled “Accounting information systems impact on Jordanian banks performance: the moderating role of training and education” has been prepared myself under the guidance and supervision of **“Assoc. Prof. Dr. Nil Günsel Reşatoğlu ”** in partial fulfilment of The Near East University, Graduate School of Social Sciences regulations and does not to the best of my knowledge breach any Law of Copyrights and has been tested for plagiarism and a copy of the result can be found in the Thesis.

☑ The full extent of my Thesis can be accessible from anywhere.

☐ My Thesis can only be accessible from the Near East University.

☐ My Thesis cannot be accessible for (2) two years. If I do not apply for extension at the end of this period, the full extent of my Thesis will be accessible from anywhere.

Date
Signature
Name, Surname : Thaer Khasawneh

ACKNOWLEDEGMENTS

I would like to express my sincere gratitude to my advisor Assist Prof.Dr.Nil Günsel Reşatoğlu for the continuous support of my Master study and research, for her patience, motivation, enthusiasm, and immense knowledge. Her guidance helped me in all the time of research and writing of this thesis. I could not have imagined having a better advisor and mentor for my Master study.

Besides my advisor, I would like to thank the rest of my thesis committee: Assoc. Prof .Dr. Aliya Z. IŞIKSAL and Assist. Prof. Dr. Behiye Tüzel ÇAVUŞOĞLU , for their encouragement, insightful comments, and hard questions

DEDICATION

I would like to thank my family to what I owe a great deal ,my father, mother, , thank you for your support' To my brother ammar , thank you for your support. Also thanks to my sisters , Appreciation also goes to my friends from the banking and finance department at Near East University who have helped me a lot.

ABSTRACT

ACCOUNTING INFORMATION SYSTEMS IMPACT ON JORDANIAN BANKS PERFORMANCE: THE MODERATING ROLE OF TRAINING AND EDUCATION

Developments in financial information technology and communications has penetrated most aspects of doing business, from international trade all the way down to retail. Financial institutions are leading the way for these developments, as banks in particular have been at cutting edge of employing technological advances. This study seeks to investigate the applicability of evaluating accounting information systems integration and implementation in predicting banking organizational performance among financial institutions in Jordan. 442 banks employees participated in this study, which used structure equation modelling techniques to test the hypotheses theorized here. The results indicate that both accounting information systems integration and implementation do in fact affect organizational performance while training and education did not show any significant effect on performance. Additionally, training and education was found to have a moderating impact on the relationship between accounting information systems implementation and integration with performance. The evidence presented here does lead a number of theoretical and practical insights that are proposed in this thesis.

Keywords :- (accounting information systems implementation , accounting information systems integration ,accounting information systems of training and education, Jordanian bank performance)

ÖZ

MUHASEBE BILGI SISTEMLERI ÜRDÜN BANKALARI ÜZERINDE ETKISI PERFORMANS: EĞITIM VE EĞITIM MODERASYON ROLÜ

Finansal bilgi teknolojisi ve iletişiminde gelişmeler, uluslararası ticaretten tüm yol aşağı perakende olarak iş yapmanın en yönlerini nüfuz var. Finansal kurumlar bu gelişmelerin yolunu yönetiyor, özellikle de bankalar, teknolojik gelişmeleri istihdam eden kenar kesimler gibi. Bu çalışmada, Ürdün 'deki finans kurumları arasında bankacılık örgütsel performansının öngörülebilmesinde muhasebe bilgi sistemlerinin entegrasyonunu ve uygulanmasını değerlendirmenin uygulanabilirliği araştırılması amaçlanıyor. 442 bankaların çalışanları bu çalışmada, (SEM) hangi hipotezleri teorize test etmek için yapısal denklem modelleme teknikleri kullanılmış katıldı. Sonuçlar, hem muhasebe bilgi sistemlerinin entegrasyonunun hem de uygulamanın kurumsal performansı etkilediğini gösterirken, eğitim ve eğitim performans üzerinde önemli bir etki göstermedi. Ayrıca, eğitim ve eğitim muhasebe bilgi sistemleri uygulaması ve performans ile entegrasyon arasındaki ilişki üzerinde ılımlı bir etkiye sahip bulunmuştur. Burada sunulan kanıtlar, bu tezde önerilen bir dizi teorik ve pratik anlayışa yol açar.

Anahtar Kelimeler:- (muhasebe bilgi sistemleri uygulaması, muhasebe bilgi sistemleri entegrasyonu, eğitim ve eğitim muhasebe bilgi sistemleri, Ürdün Bankası performansı).

Table of Contents

LIST OF FIGURES

LIST OF TABLES

ABBREVATIONS

AIS:	Accounting Information System
IMP:	Implementation
INT:	Integration
AIS-IMP:	Accounting Information System Implementation
AIS-INT:	Accounting Information System Integration
OP :	Organizational Performance
T&D:	Training And Education
EFA :	Exploratory Factor Analysis
COF :	Confirmatory Factor Analysis

INTRODUCTION

Developments in financial information technology and communications has penetrated most aspects of doing business, from international trade all the way down to retail. Financial institutions are leading the way for these developments, as banks in particular have been at cutting edge of employing technological advances (Malikov, Kumbhakar, & Tsionas, 2016; Salehi, Rostami, & Mogadam, 2010) in different functional areas. This study seeks to investigate the applicability of evaluating accounting information systems integration and implementation in predicting banking organizational performance among financial institutions in Jordan.

This chapter includes a presentation of the topic of the research. This is done by first exploring the back ground of this research. This sets the scope for specifying research aims and questions that enable studying the theorized impact of financial information systems. The outcome from our investigation should add to the theoretical understanding of such an impact, which is presented in the section that follows research questions, where the thesis contributions will be discussed. The final section of this chapter presents the thesis outline.

Since the last two decades accounting information systems have rocketed in their levels of use and adoption throughout the world (Abedifar, Ebrahim, Molyneux, & Tarazi, 2015; Taipaleenmäki & Ikäheimo, 2013). Although, the way accounting information systems are used today is rather different from the early days. In the early versions of accounting information systems they were used as stand-alone accounting and financial systems that served narrowly defined purposes within the adopting firms (Chenhall & Moers, 2015). On the other hand, in today's competitive market of financial services there is more emphasis on accounting information systems implementations to be more integrated today than ever before. This is apparent in the way plethora of research that investigates financial and accounting information systems use as part of the wider enterprise information systems (Grabski, Leech, & Schmidt, 2011; Islam, CH, Bilal, &

Ilyas, 2017; Ram, Corkindale, & Wu, 2013; Simkin, Norman, & Rose, 2014; Trigo, Belfo, & Estébanez, 2014) that are used to enhance organizational performance and competitiveness.

Within such an outlook, accounting information systems are viewed as vehicle to enable performance; for instance, Prasad and Green (2015) theorized that accounting information systems is an organizational resources best viewed as dynamic capability. This study presents, for example, a theoretical extension or enhancement on the dynamic capabilities theory within the industrial organization economics field (Conner, 1991) by investigating accounting information systems. While (Kallunki, Laitinen, & Silvola, 2011) looked at how investigating information systems does affect management control and performance. Other examples of economists' interest in the field include that of (Hyvönen, 2003) who looked the perceived differences between users of stand-alone vs organizationally integrated accounting information systems in Finland based in the diffusion of innovation economic theory. The interest in this field of research is of relevance to both developed and emerging economies; for instance, Firth (1996) has noted that the introduction of accounting information systems while studying the advent of capitalist venturing economic theory the foreign investments and activities of multinational companies in china in the 1990s.

Financial and accounting information systems within such an integrated implementation, as the one described above, poses a particular point for judging its effect on firms' performance (Urquía Grande, Pérez Estébanez, & Muñoz Colomina, 2011). This comes to happen as those financial information systems are accessed and used not only by accountants (Kallunki et al., 2011). Decision makers across firms do have access and usability benefits from using such information. As such, measuring the benefits or impact of these systems is not confined to looking at perceptions, matrices and measures as reported by accountants. Based on this perspective, this research ties to capture such an impact by studying employees in Jordanian banks as opposed to

narrowly looking at how accountants report the impact of financial and accounting information systems.

This investigation overriding aim is to study accounting information systems in the context of Jordanian banking industry. Nevertheless, a list of more explicitly placed aims are proposed to address the general aim (above) while providing insights about the role of this research in filling knowledge gaps from literature as explained below:

- To present a critical analysis of literature related to accounting information systems and their implementation and integration for the context and usability in Jordanian banking industry.
- To assess the main elements of an explanatory model that best explain accounting information systems factors which determine organizational performance in the Jordanian banking industry.
- To appraise the theorized overall impact of accounting information systems within the banking industry in Jordan.
- To estimate the degree of interaction with training and education plays a role between accounting information systems implementation and integration with performance.
- To develop hypotheses to test the above mentioned relationships.
- To identify the significance of the proposed relationships through testing the model and hypotheses

This thesis is based in the positivist research tradition. Such a research approach is well suited to examining field of knowledge of accounting information systems. As a result, we propose the following set of questions to be answered in due course of our investigation, as built upon the research aims postulated above.

- What does scholarly knowledge put forward about accounting information systems impacts on organizational performance?
- Does total accounting information systems implementation affect Jordanian banks performance?
- Does total accounting information systems integration affect Jordanian banks performance?
- Does training and education adoption affect the relationship between accounting information systems integration and performance in Jordanian banks?
- Does training and education adoption affect the relationship between accounting information systems implementation and performance in Jordanian banks?

The lack of research about accounting information systems implementation and integration, in the biggest economic activity in the Jordanian economy, has been the biggest driver for pursuing this research. This interest was informed by practice concerns and intrigue as was relayed to the researcher from personal informal interviews with bank. After scanning the literature, the researcher has found evidence of disagreement of the impact of accounting information systems on firms' performance. This has led the researcher to introduce training and education as moderator to contextualize the relationship in new unexplored way. Put simply, does the theorized moderating role of training and education produce more accurate relationship indicator between Accounting information systems and performance?

This thesis contributes to knowledge by being the first study to look at how training and education affects banks performance in Jordan. By providing empirical evidence, this study instigates an area with mixed results observed in the literature where the relationship is notclearly defined in direction, magnitude and significance. As such, this research first contribution is to provide empirical evidence for the accounting information research field where there is a lack of well-established views on how accounting relates to organizational outputs.

Secondly, this thesis presents readers with a scholarly knowledge synthesis of an area that is of industry importance and interest. As such, it instigates a research area that might prompt more practice engagement with academics and scholars.

Thesis Outline it will be:-

- : introducing the research background, aims, and value for economists and banking experts
- Chapter One: producing a critical evaluation of the literature knowledge that is then used to propose a theoretical framework to enable the researcher from extending theoretical understanding. This theoretical framework will make the case for including the moderating variable.
- Chapter Two: describing the philosophy of science behind using this research approach. That is, to place this positivist, deductive, and empirical research design within the scientific field of economics and accounting.
- Chapter Theer: presenting the statistical analysis conducted beginning with descriptive analysis going through testing the model and presenting a hypotheses appraisals.
- Chapter four: summarizing the research conducted while presenting main takeaways from this research and proposing future studies and limitation of the research.

1.Chapter: Literature Review

1.1 Introduction

This chapter introduces a systematic review of the related research which is tightly knitted into the field of investigation for this thesis. As such, we will focus on bringing into light a critical reflection of how published articles, books and conference proceedings have led the student to identify the literature gap to exploit for the purpose of conducting a thesis research with theoretical contribution that is shown through hypothesis development and empirical testing.

1.2 Accounting Information Systems

Viewing accounting through information systems lens is not genuinely a new development. For instance, (Sajady, Dastgir, & Nejad, 2012) referred to definition given by the American Institute of Certified Public Accountants (AICPA) in 1966 which held that: “Accounting actually is information system and if we be more precise, accounting is the practice of general theories of information in the field of effective economic activities and consists of a major part of the information which is presented in the quantitative form”. The emphasis of on information systems in accounting is so prevalent that it led the American Accounting Association to start publishing two scholarly journals in the field a semiannual one: journal of emerging technologies in accounting and a quarterly one: journal of information systems. The American accounting association defined goal for this quarterly publication does point out the extent of the intertwining relationships between accounting practice as supported by information systems and other related fields:

“*Its goal is to support, promote, and advance Accounting Information Systems knowledge. The primary criterion for publication in JIS is contribution to the accounting information systems (AIS), accounting and auditing domains by the application or understanding of information technology theory and practice. AIS research draws upon and is informed by research and practice in management information systems, computer science, accounting, auditing as well as cognate disciplines including*

philosophy, psychology, and management science." (AmericanAccountingAssociation, 2001)

As apparent from how the field of accounting information systems is defined above, the multi-disciplinary nature of the topic is well documented (Islam et al., 2017; Ismail & King, 2014; Prasad & Green, 2015; Sajady et al., 2012; Simkin et al., 2014; Stefanou, 2006; Wilkin & Chenhall, 2010; Williams, 1992). This far reaching way of thinking AIS was apparent in Urquía Grande, et al (2011) definition as they theorized "Accounting Information Systems (AIS) are a tool which, when incorporated into the field of Information and Technology systems (IT), were designed to help in the management and control of topics related to firms' economic-financial area.". Accordingly, this nature of the Accounting information systems field was apparent in In their attempt to grasp the wide angles that contribute to accounting information systems theory, Mauldin and Ruchala (1999) contemplate a meta theoretical model for accounting information systems that builds on three pillars of cognitive, technological and organizational aspects to produce information that usable in performing tasks.

Understanding the accounting information systems literature required the researcher to acquaint himself with the general Enterprise resource planning systems literature as both of them feed into each other. A point that was explained by Kanellou & Spathis (2013) "The most important and substantial information technology project that interacts with the accounting function in the last 15 years has been the implementation of enterprise resource planning (ERP) systems. Enterprise resource planning systems integrate several business procedures, applications and departments while sharing one database and assist companies in responding to real-time information"

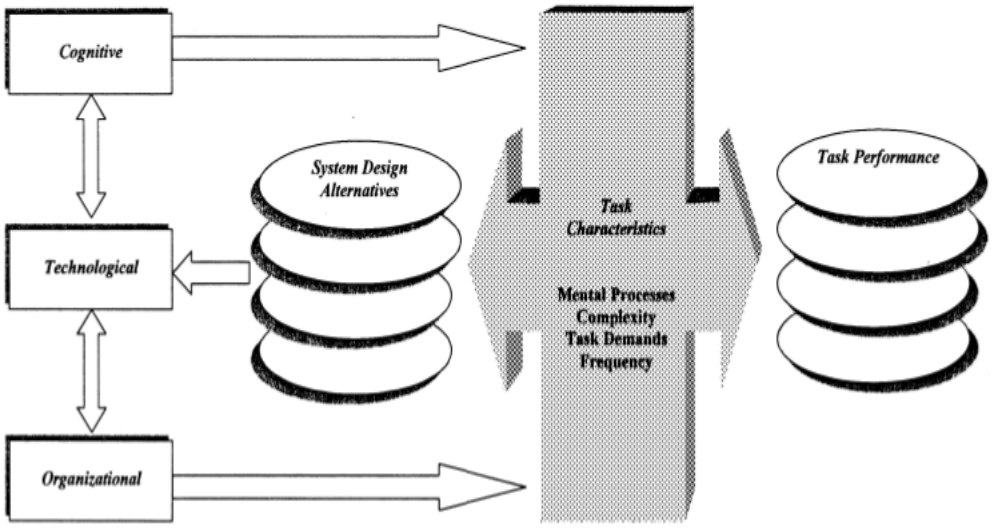

Figure 1*:* Accounting Information Systems

Within this view, a general outline of major interactions that are combined to produce an affective accounting information system is theorized to be judged by their efficacy in streamlining accounting process and tasks. As such, the underlying relations between technology, organizations science, and cognitive science are the main drivers for appreciating or theorizing how accounting information systems are manifested in practice. This builds on (Hopwood, 1989) work who states that “accounting oriented knowledge is more likely to be gained by research which systematically attempts to study the interdependency and interpenetration of the technical and the human and the organizational.'' As such (Ismail & King, 2014) has shown in their study the importance of aligning accounting information systems with organizational goals. This study exemplifies Grabski et al (2011) insistence on research that uncovers the organizational and economic impacts of information systems within organizations. This differentiation in impact was studied by Kallunki et el (2011) as they observed between financial and non- financial performance the two paths of possible organizational effect of organizational information systems.

Later literature has proved such a Meta theorizing attempt to be somehow relevant for scholars. For instance, Mohammady Garfamy (2006) uses data envelopment analysis

from **organization science** field to probe management accounting and supplier evaluation systems. While Dunn and Grabski (2000) produced evidence from a **cognitive science** perspective on how organizational members who use different systems that are based on different accounting models do hold different views on the accuracy of those systems to portray the organizational financial reality. To this end, they have shown that accounting information systems that are perceived to have more accurate semantic expressions that are perceived to have more valuable economic benefits for the organization resulting from better task performance as judged by task accuracy. By the same token, (Alewine, Allport, & Shen, 2016) have shown that information presentation in accounting information systems does in fact lead to a variation in judgments by users. Moreover, Gordon and Narayanan (1984) work from a **technological perspective** has laid bare that accounting information systems are plausibly responsible for providing the right information to reduce environmental uncertainty and solidify performance. It is this technological role that has caught the attention of Taipaleenmäki, & Ikäheimo (2013) who claim that "Information technology (IT) has played and will play a major role in the development of accounting information systems (AIS) by providing the push that drives accounting activities"

This thesis builds on this Meta theoretical understanding by investigating how accounting information systems implementation and integration can drive banks performance in Jordan. As such, we theorize that accounting information systems have a technological manifestation in implementation and integration and that their effects on organizations can be measured by probing the perceived cognitions of employees.

1.3 Accounting Information System Implementation

According to Gantman &Fedorowic (2016) "Implementation of an information system is a complex and ambiguous process which can transform the face of the organization but can also lead to serious financial consequences if it is not managed or controlled well"

The function of accounting information systems have always been thought to best serve an organization when they are aligned to its goals and objectives (Chenhall, 2005). Banks have been working to adapt their work flow by organizing tasks and activities to produce service that create value for their customers. Küng and Hagen (2007) study a Swiss bank process management initiative. Which presents a real life case study of the banking industry on how process management is happening. They conclude that a successful process management and along with the application of modern information technology leads to reduced cycle times while improving the quality of the service, both of which do contribute to gains in performance and productivity. Ram 2013 et al (2103) cite the benefits of implementing accounting information systems as:

- “Increased flexibility in information generation”
- “Increased integration of accounting application”
- “Improved quality of reports”
- “Improved decision making on timely and reliable accounting”

This way for s banks and organizations alike does affect accounting information systems in two ways: first of which, is related to how accounting information systems were traditionally designed. In the traditional sense accounting information systems were aimed collecting data to produce important financial reports or descriptive analysis to the organization. However, they lacked any appreciation of the entailing process that undermines their work in producing more meaningful information. Which can be achieved by analyzing the main value behind their business activities. Secondly, it allows dissemination of related information around business processes. This means that financial and non-financial information can be sent to decision makers around the organization when information is needed to make a decision or when a red flag has been raised, which requires information on how to manage the situation. This description of accounting information systems is more relevant to the recent implementations in the banking industry.

To view accounting information systems as a successfully implemented systems, we do consider timeline of the system's implementation, and whether it was completed on budget to complete the agreed upon requirements as hypothesized by (C. V. Brown & Vessey, 2003). Implementing accounting information systems is hardly a straight forward proposition as Gantman and Fedorowicz (2016) have shown that these differences in complexity do lead to variations in implementation domains. To assess the implementation positive effects of organizational systems Shang and Seddon (2007) developed a framework for managers to use. Nevertheless, those advantages do depend on the organizational capacity to successfully implement accounting information systems. To clarify how information systems in general are being adopted in organizations Bouwman, Van Den Hooff, and Van De Wijngaert (2005) have shown a four stage model that enables organizations to adhere to a four stages of: adoption, implementation, use and effect. While diffusion of innovation along information systems implementation success was also reported in the accounting information systems literature (Bradford & Florin, 2003) as a potentially valid way to evaluate the implementation of accounting information systems. Hence, diffusion of innovation (Baskerville et al., 2014) and a various stage models (J. C. Lee & Myers, 2004; Shang & Seddon, 2007) have been adopted to explain the implantation of accounting information systems.

Based on the previous scholarly literature that supports the notion of organizations' performance inclination to be affected by the implementation of accounting information systems, the author argues that organizational performance can be thought as function of the successful implementation of accounting information systems. Hence, the following hypothesis was developed to be investigated in this study.

H1: *accounting information systems implementation is positively and significantly related Jordanian banks' performance*

1.4 Accounting Information System Integration

Accounting information system integration is characterized as the coordinated innovation that permits sharing of data and applications (Wyse & Higgins, 1993). The principle motivation behind accounting information systems incorporation is to give reliable data bolster all through the association to react to dynamic difficulties in the markets. Salehi et al (2012) found that “The bold claims that technology has had the most important impact as accounting has been transformed into a knowledge services profession have in general been poorly reflected in recent accounting research”. Mudie and Schafer (1985) have examined accounting information systems joining in process terms, as they trust Accounting information system integration ought not just encourage the predictable utilization of information and applications yet in addition give the adaptability to meet future business requests in data and applications (Attaran, 2003).

Accounting information systems joining can be conceptualized as a multidimensional marvel comprising of two interrelated measurements, i.e. information joining and correspondence arrange integration (Madnick, 1995). Communication networks integration is additional decomposed into communication networks property, and communication networks flexibility (Madnick, 1995; Wyse & Higgins, 1993). Thus, accounting information integration is measured through knowledge integration, communication networks property and communication networks flexibility.

On looking to execute accounting information systems, it isn't remarkable for organizations to want to hold some current specialized software packages, as explained by Bingi, Sharma, and Godla (1999) who put case forward that this can happen either because of exceptional business needs or administrative prerequisites. Such a circumstance requires the mix of accounting information systems with these applications. What's more, organizations seeking to grab a market advantage through a competitive or favorable position by integrating parts of their auxiliary functions with other market players. As such, their non-core accounting reporting facilities might

expect to be incorporated with accomplices' frameworks. As the accounting benefits by adopting information systems were shown by Kanellou and Spathis (2013).

Nonetheless, this required integration is a mind boggling process, especially given accounting information systems particular structure (Ngai, Law, & Wat, 2008). Software advancements in the area of Middleware is set serve this purpose, for example, enterprise application integration (EAI), supplement accounting information systems integration prerequisites (Lee et al., 2003). Notwithstanding, middleware items tend to make the technical aspects of integration more streamlined as opposed to connecting the underlining business functionalities. Along these lines organizations and banks in particular may require more preparation and advancement exercises to integrate their custom accounting information systems integration interfaces. Moreover, the cross module incorporation makes the integration procedure more time consuming ((Al-Mashari, Al-Mudimigh, & Zairi, 2003).

(J. Lee, Siau, & Hong, 2003,) has offered a definition for systems integration as "the capability to integrate a variety of different systems functions" banks would prefer to have accounting information systems that cover the vast majority of the organizational working functionality.(Alshawi, Themistocleous, & Almadani, 2004) suggested that a doable method to accomplish this integration of accounting information systems would be through using a modular system framework that lessens needs for case-by-case customization, thus enabling organizations to choose the best modules from various partnering organizations and incorporate them utilizing enterprise application integration (EAI). With the continuous improvement in joining advancements, cloud computing, software activities, and electronic Enterprise Resource Planning '(ERP), it is normal that banks will keep using Accounting information systems, and will utilize different mix of instruments to connect their Accounting information systems with the business needs and applications outer to accounting information systems environment. With the execution of firmly integrated accounting information systems, it is normal that banks will accomplish higher levels of data visibility and enhanced ability to support making the right calls and decisions based on the availability of relevant information.

Banks can achieve these advantages through maximizing their to display better control, improved operations and better cost control, in this manner prompting upgrades in organizational performance (Chapman & Kihn, 2009) according to Al-Mashari et al. (2003)systems integration is viewed as a critical success factor when planning the development stage for any information. Their results strengthens the significance of guaranteeing that all the accounting information systems modules are interfaced to be consistent operation in the wider information systems needs for organizations to yield fruitful usage. It is subsequently expected that accounting information systems coordination on organizational performance.

A recent study by Maiga, Nilsson, and Jacobs (2014) has looked at how information systems integration is responsible for contributing a positive impact on organizational financial performance. Such a result goes in hand with other scholars' work that observed information systems integration as "organization wide software that tightly integrate business functions into a single system with a shared database"(Chapman & Kihn, 2009; Jørgensen & Messner, 2009; Z. Lee & Lee, 2000; Quattrone & Hopper, 2005). As a result integrated information systems more likely to be attuned to environmental pressures and business needs than a "stand-alone" accounting information system would be. Furthermore, timely dissemination of knowledge through integrated systems has been shown to deliver enhanced decision making capacity throughout organizations (Hitt, Wu, & Zhou, 2002)

Albeit the fact that the process of providing integrated accounting information systems lies beyond the work contributions of most accountants, such a process remains firmly associated with accountants daily work and processes (Chapman & Kihn, 2009).

Albeit incorporated data innovation is by and large composed and presented by non-accountants, it is firmly associated with the accounting forms (Chapman, 2005).information and communication technologies does have a central role in the day-to-day business practices within the accounting profession (Efendi, Mulig, & Smith, 2006) and accounting management control (Dechow & Mouritsen, 2005). Some scolars would even argue that the advancement of these technologies that underline most

accounting information systems have gone too far that they have changed the way accountants are now facing up to a changed business related roles (Hunton, 2002) for instance, Maiga et al. (2014) cite Sadagopan (2003) work to offer a list of accounting functions that are embedded in accounting information systems in most organizations, and they are:

- General ledger,
- Accounts receivable,
- Accounts payable,
- Financial control,
- Asset management,
- Funds flow,
- Cost centers,
- Profit centers,
- Profitability analysis,
- Order and project accounting,
- Product cost accounting,
- Performance analysis

Hence, the view of this research is that enabling technology for accounting information systems does have an effect on most, if not all, accounting functions in today business environment which is a view that finds support in the literature as evidenced by the work of (Hunton, 2002; Sutton, 2006). The reason bellying the wide market adoption of these systems is believed to do with saving time resources of accountants by reducing time needed to perform repetitive assignments in everyday accounting (D. A. Brown, Booth, & Giacobbe, 2004; Lowe, 2004) or as in the case with accounting auditors (Arnold & Sutton, 2007). This shift in focus enables the change in accountants' roles form "information gatherers" to a more business involved "information analysts"(Granlund & Lukka, 1998) or as Holtzman (2004) argued for accountants' roles to be business advisors that have the potential and knowledge to move front office roles instead of lurking in the back office supportive roles that they have acquired through the years before the information systems technological advancements. or more simply from the back office to the front office (Holtzman, 2004).

Accounting information systems integration was characterized by Nicolaou (2000) as a “system design state that influences the ability of the system to provide output information that can be effectively used to respond organizational requirements.” This enables the student in his researcher role in this thesis to make a theoretical argument that accounting information systems integration is identified with wider organizational effectiveness. in fact increased system integration was shown to have a positive impact on organizational communication internally (Huber, 1990) and even communications channel beyond the boundaries of the organization (Malone, Yates, & Benjamin, 1987) gains in organizational coordination resulting from better integrated accounting information systems are supposed to lead to higher levels of organizational performance (Huber, 1990).

The connection between the utilization of integrated information systems and assessments provided by systems’ users of the "task-technology fit,", which measures extent of support provided by information processing capabilities of technology to enable better organizational task performance was investigated by (Goodhue & Thompson, 1995) add to that Electronic integration among inter-organizational or electronic data inter-change (EDI systems) and internal information systems was shown to account for a significant positive impact on users’ satisfaction (Premkumar, Ramamurthy, & Nilakanta, 1994) while exhibiting a reduction in errors of delivery in the manufacturing industry (Srinivasan, Kekre, & Mukhopadhyay, 1994),. Taking everything into account, accounting information systems’ integration appears to be of critical value as an impactful construct in past research. Accounting information systems integration are, thus, primed to influence organizational output through the use of accounting functions forms for exchanging, preparing, announcing, process checking, and execution assessment. Accordingly, this examination analyzes the impact of accounting information systems integration on organizational performance effectiveness through the following hypothesis.

H_2*: Accounting information system integration is positively and significantly related to performance in Jordanian banks*

1.5 Training and Education

Training and education are usually the focal point for any organizational information systems adoption initiative (Ip, Lai, & Lau, 2004). In adopting new accounting information systems banks do embark on a change in managing their accounting processes; as such, new skills and knowledge has to be learnt to fully exploit the functionality of the accounting information system. according to (Grabski et al., 2011) this includes two broad categories of knowledge: firstly, “component knowledge” which in turn revolves around two points the actual tasks that an accounting job requires and the enabling functionality provided by the accounting information system to support accountants work. Secondly, “architectural knowledge” which is viewed by (Balogun & Jenkins, 2003) as a understanding the interlinked nature of accounting to the core business proposition through going into the interdependencies of business processes that rely on each other. In this sense, training and education squarely looks into how to best prepare accountants to understand how the use of accounting information systems does contribute to the overall functionality of the banks.

As a result there is a breadth of research about the importance of training and education at the early stages of information systems adoption that consider the role of training and education as a critical success factor. As such evidence that supports the notion of the integral part played training and education to organizational information systems (Ngai et al., 2008). According to the literature review done by Ngai et al. (2008), which included scholarly evidence from 10 countries training and education came as one of the top two factors in predicting success for organizational information systems. Other researchers (Bueno & Salmeron, 2008; Umble, Haft, & Umble, 2003) do agree with the

same view. In fact (Umble et al., 2003) claim that “reserving 10–15 percent of the total organizational information system implementation budget for training will give an organization an 80 percent chance of implementation success.”

Furthermore, training and education is viewed as an essential ingredient in ensuring a strategic fit between accounting information system implementation and banks strategy (Somers & Nelson, 2003). With this in mind, it remains a mystery as to why an effective conceptualization of the most productive ways to carry out training and education as (Markus, Axline, Petrie, & Tanis, 2000) claim that accounting information systems implementations usually do fail to provide an adequate training and education. More negative concerns were raised by Kang and Santhanam (2003) who noted that organizations usually decline or forget to continue their investments in training and education after the initial set up of organizational information systems.

In essence, appropriate training and education needs to be a well thought process to induce users to work effectively and efficiently by using these accounting inflation systems (Bradley, 2008; Dezdar & Ainin, 2011; Zhang, Lee, Huang, Zhang, & Huang, 2005) Nah and Delgado (2006) expressed that adequate preparing can expand the likelihood of ERP system execution achievement, while the absence of suitable preparing can block the usage. Training and education have been credited with reducing change resistance that comes with implementing new way of doing this work. (Bradley, 2008) having invested in developing and implementing an accounting information system leaves a huge question mark over organizations’ reluctance about providing valid and reliable training programs which is thought to lead to negative results (Somers & Nelson, 2004)

Based on the arguments provided in this section the author hypothesize that:

H_3: training and education significantly and positively impact on the relation between accounting information systems implementation and organizational performance

H_4: training and education significantly and positively impact on the relation between accounting information systems integration and organizational performance

Author/ date	Topic	Methodology	Observation	Findings
Urquía Grande, E., Pérez Estébanez, R., & Muñoz Colomina, C. (2011).	The impact of Accounting Information Systems (AIS) on performance measures: empirical evidence in Spanish SMEs	survey based on responses from 632 firms and the statistical analysis was done via ANOVA	Carried out among small and medium-sized firms in Spain.	SMEs which use AIS for their bank and fiscal management there was a significant relationship with the performance indicators
Grabski, S. V., Leech, S. A., & Schmidt, P. J. (2011).	A future agenda for accounting information systems.	Systematic critical literature	Accounting information systems is part of wider ERP and a distinction in economic impact is be studied yet	This research encouraged the development of several major AIS research areas: (1) critical success factors, (2) the organizational impact
Kallunki, J. P., Laitinen, E. K., & Silvola, H. (2011). International Journal of Accounting Information Systems	investigate the role of formal and informal management control systems as mechanisms which mediate the effect of enterprise resource planning systems adoption on firm performance	Survey: drawn from 96 CFOs in Finnish businesses. Analysis via structure equation modeling	Data drawn from 70 Finnish business units Finland	enterprise systems results in improved firm performance in the long run
Noor Azizi Ismail, Malcolm King (2014)	alignment of accounting information systems in	Survey: quantitative data 214 respondents.	data from 214 firms was collected on nineteen	AIS alignment was related to the firm's: level of IT maturity;

	small and medium sized Malaysian manufacturing firms	Data analysis via cluster analysis routine	accounting information characteristics for both requirements and capacity Malaysia	level of owner/manager's accounting and IT knowledge; use of expertise from government agencies and accounting firms; and existence of internal IT staff.
Ram, J., Corkindale, D., & Wu, M. L. (2013). International Journal of Production Economics	critical success factors (CSFs) for ERP: Do they contribute to implementation success	Survey: 209 usable surveys	The structural equation modelling (SEM) technique using Smart PLS3.0 was used to analyze the data	t project management (PM) and training and education (TED) are critical success factors for implementation success (IMP) while system integration (SI) and business process re-engineering (BPR) are not
Hank C. Alewine, Christopher D. Allport, Wei-Cheng Milton Shen (2016) . International Journal of Accounting Information Systems	accounting information system (AIS) influence environmental performance	Experimental survey: 206 students from an American business college. Statistical analysis done through ANOVA test	Analyzed the presentation of environmental data with accounting information systems. USA	suggests low measurement evaluability when low measurement knowledge and non-inherently understood measures exist
Gantman, S., & Fedorowicz, J. (2016). International Journal of Accounting Information Systems	Communication and control in outsourced information systems development projects	online survey: 432 project managers, data analysis was done through comparing means of projects of	In this study we bring together Information Systems and Accounting perspectives to investigate how internal	control objectives and types of project complexity are each supported by different communication tools

		high complexity vs projects with comlexity	controls are incorporated into existing communication practices in outsourced information systems development projects USA	
Taipaleenmäki, J., & Ikäheimo, S. (2013). International Journal of Accounting Information Systems	analyze the convergence of Management Accounting and Financial Accounting	Conceptual analysis and development	Technical & Technological and Behavioral & Organizational domains are examined.	find that IT plays an important or even crucial role in the convergence process
Kanellou, A., & Spathis, C. (2013) International Journal of Accounting Information Systems	aim of our study was to investigate the accounting benefits that the adoption of an ERP system by companies may entail in relation to ERP user satisfaction	Survey The participants of this study comprised 175 accountants and 96 IT professionals from 193 companies	The study of ERP is showing many similarities with the study of AIS due to their overlapping roles in organizational contexts. Greece	identifies factors related to accounting benefits and ERP
Salehi, M., Rostami, V., & Mogadam, A. (2010) International Journal of Economics and Finance	Usefulness of Accounting Information System in Emerging Economy	600 survey questionnaire. Analysis with Chi Square Test	the managers which are aware of AIS benefits should take more as well as academicals action for reducing such gaps in developing	results of this study show that although AIS is very useful to Iranian corporation, it is a gap between what AIS is and what should be

			countriues corporate sector . Iran	

In this section we describe relevant literature in the aforementioned table. First, work done by Urquía Grande et al. (2011) has revealed that accounting information systems implementation and development has significantly improved productivity 632 Spanish small and medium enterprises. The statistically significant relationship was conformed by conducting ANOVA test where productivity had an F value of 1,644. Second article by Grabski et al. (2011) has adopted a systematic literature review methodology and concluded by encouraging researchers to further study the field in three main areas: "critical success factors, organizational impact, and economic impact of ERP systems. This thesis followed their advice and pursued an organizational impact research stream of AIS. Third paper is research done by (Kallunki et al., 2011) that examined the effect of ERP on performance (both financial and non-financial) on 70 business units from Finland. They found that ERP effect on non-financial β=.076, on financial performance β=.133. Fourth research the author relied on (Ismail & King, 2014) has used survey responses from 214 firms to conduct cluster analysis finding that AIS integration is significantly related to firm size ($F = 7.195$; $df = 212$; $p = 0.05$).

While Ram et al. (2013) used SEM to analyze data from 209 Australian firms and found that ERP implementation to positively affect performance (β=0.263; p<.001), integration had a similar positive effect (β=0.276; p<.001) , and training and education had a direct effect on performance (β=0.208; p<.01). Alewine et al. (2016) found that positive or negative framing of the measurement scale does influence environmental performance judgment of AIS ($F = 808.866$; $df = 808$; $p = 0.025$). The next research paper (Gantman & Fedorowicz, 2016) has conducted an online survey: 432 project managers, data analysis was done through comparing means of projects of high complexity vs projects with lower complexity. They found that over all low complexity has a Mean =3.64 while high complexity has mean =4.34 where t=-4.82 and p=.000. Thus complexity does have

an impact on the choice of communication tools of AIS development and integration. On the other hand, Taipaleenmäki and Ikäheimo (2013) have conducted a literature review that explained the responsibility of information technology in converging management accounting and financial accounting processes and practices as they conclude that “The manifestations and outcomes of these changes could be detected in the technical and technological as well as in the behavioral and organizational domain” (Taipaleenmäki & Ikäheimo, 2013). In a separate study, Kanellou and Spathis (2013).found among 193 participating Greek firms that IT accounting benefits are related to organizational accounting benefits (R^2=0.635; p<0.01). Finally, the study by (Salehi et al., 2010) conducted among the participating 498 financial manager of Iranian firm found that “utilizing of accounting information does cause to increases accounting and financial performance” (chi-square=8.6, df=2; p=,o14).

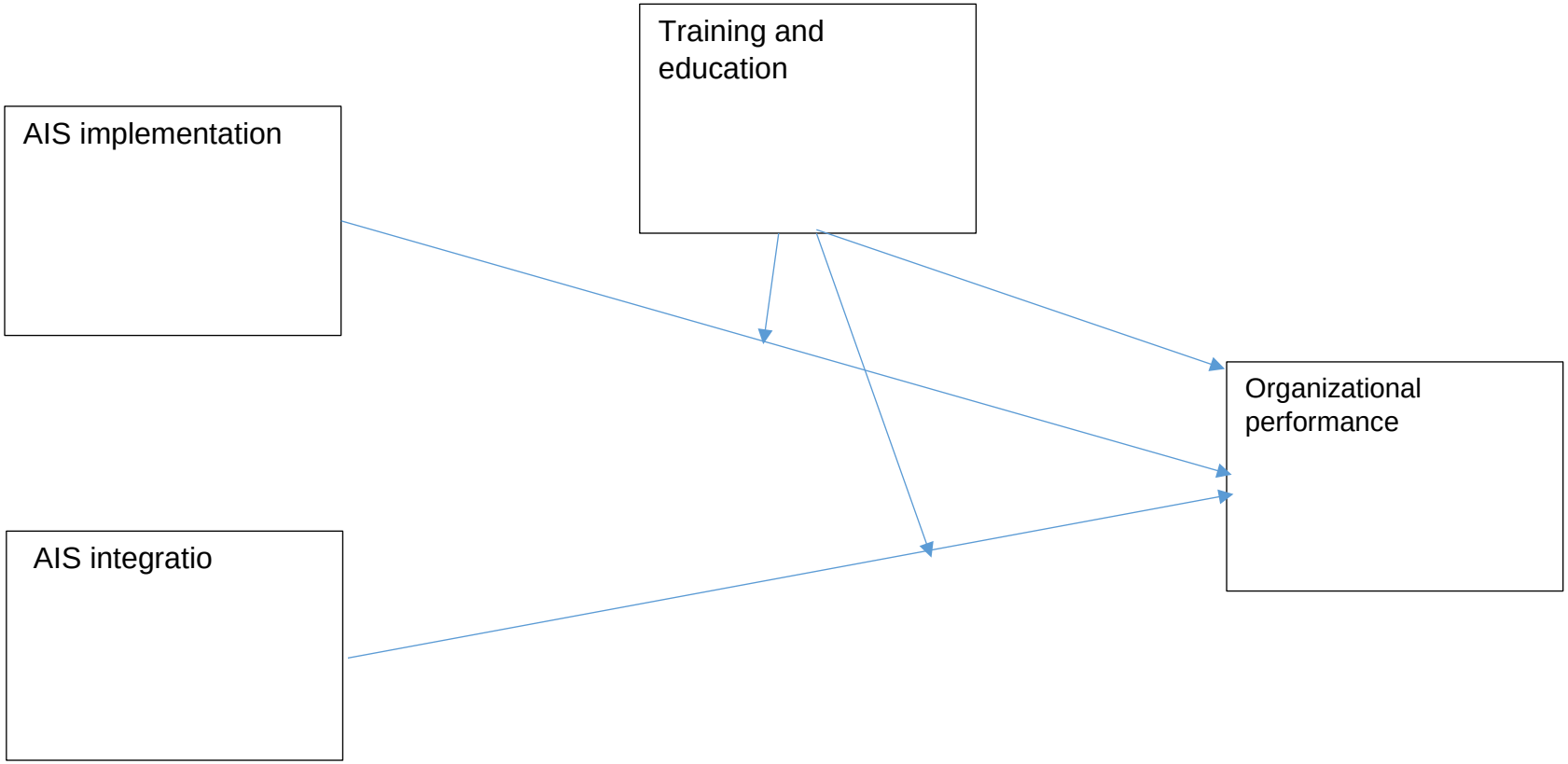

Figure 2*:* model

Conclusion

This chapter has laid the knowledge base for this thesis by incorporating a critical view of the current state of the knowledge in the related fields to the model of the study. As such, a understanding of the accounting information systems is developed which leads to observing the role of accounting information systems implementation and integration. An additional contextual factor is studied as it has been revealed from the literature above that training and education do have a central role in enabling accounting information systems success so this research considers the moderating role of training and education on the main hypothesized relations.

2.CHAPTER: RESEARCH METHODOLOGY

2.1 INTRODUCTION

This chapter presents a general synopsis of the research process adopted in this thesis. Chief among the concerns of this research are the underlying research philosophy that lays the foundations for this scientific empirical investigation. Building on this understanding, the author then discusses the ensuing methodical implementations of data collection and analysis. Finally, this research was held to high ethical standards that are presented to ensure researcher's transparency in relaying research procedures and methods. The aim of this chapter is produce an argument backed by scholarly evidence that justifies the choice and implementation of this research methodology.

The research design presented here is based on a positivist research approach that uses survey data to conduct quantitative statistical analysis. To this end, the statistical method of choice is structure equation modelling (SEM), covariance based one as opposed to partial least square, which was used to analyze data using IBM AMOS tools and software. Furthermore, a discussion of the followed research procedure that has led to developing a survey research instrument which was then used to a sample of the total population is put forward. Lastly,..

2.2 RESEARCH PHILOSOPHY

The philosophical underpinning section explains the philosophy of science paradigm adapted in this thesis. Two dimension of the philosophical choice are evaluated, namely: ontology and epistemology. This builds up the case for choosing positivism as a research paradigm.

According to Bryman and Bell (2015), research philosophy aims at explicitly unlocking the 'nature of reality' as assumed by the research. This is done through tackling the question of what constitutes reality. Such an exercise would push researchers to consider how their research is built on assumptions about the nature and /or knowledge surrounding their research problem. Through being thorough examiner of research

philosophy, researchers are able to produce scientific knowledge that leans in its defensibility on the philosophical foundations of knowledge used to produce scientific learnings (Flick, 2015).

A systematic scan through literature reveals the depth of thought researchers in accounting and economics (and related fields) reach to in order to present scholarly knowledge through research (Lukka, 2010). For the purpose of this thesis, and after having fully examined the implied philosophical assumptions, the author is able to carry a well-designed accounting research that aims to produce accounting scholarly knowledge.

The assumptions produced here through examining the research philosophy support a defensible position for how a certain research inquiry is taken (Flick, 2015). Varying research philosophies do offer competing ways to contemplate research aims and goals while supporting the way to answer them through different ways of conducting research. For our purpose, understanding the research philosophy implications enables us to design a research that has type of knowledge that is possible to be examined in such a research design. Hence, the research assumptions set here are in line with research process and the research methodology adopted.

In this thesis accounting information systems field, research philosophy reflects how the research thinks about the suitable way to produce scholarly knowledge. According to Saunders and Lewis (2012), research philosophy, in the simplest form, is a description of the production of scientific knowledge. In particular there are two mainstream research philosophical stances and they are positivism and interpretivism (Lukka, 2010).

These two paradigm of scientific inquiry yield varying ways to contextualize knowledge reality and how to engage in creating new viable knowledge that is considered valid according to paradigm adopted to produce it. According to Lukka (2010), although the accounting field exhibits more examples of positivist research, it is not the only accepted form of scholarly research in accounting and finance respectable journals. He further asks for future researchers in accounting to challenge the dominance of economics related methodologies as more research methodologies applications would lead to

enriching the field value and impact. While others have called for using mixed methods approaches to achieve the same end of enriching the field (Modell, 2010).

3.2.1 Research Onion

In the figure presented here (Saunders & Lewis, 2012) talks about how to conceptualize research endeavor from a holistic view. Hence, giving birth to the notion of 'research onion' that presents scientist from different fields with a roadmap through which they can build rigorous research. This is done, mainly, through having research formulated as a robust methodical investigation. The general steps are ordered as:

- Taking a philosophical stance on what constitutes valid knowledge (i.e. deductive vs inductive)
- Choosing a research approach that is compatible with adopted philosophy
- Building a research strategy that suits previous decisions. Examples include: surveys, experiments, or action research.
- Considering how mixing research methods might affect research questions and outcomes
- Framing the timeline of the study by considering whether it is best conducted as a cross sectional or longitudinal
- Examining the possible data collection and analysis procedures avaible for such a research.

Such a way of conceptualizing research presents scholars with a tools to guard against loose research that is built on questionable assumptions. Thus, researchers are equipped with a tool to check the fit of their philosophical assumptions, research approaches, methods used, data collected, and analysis performed.

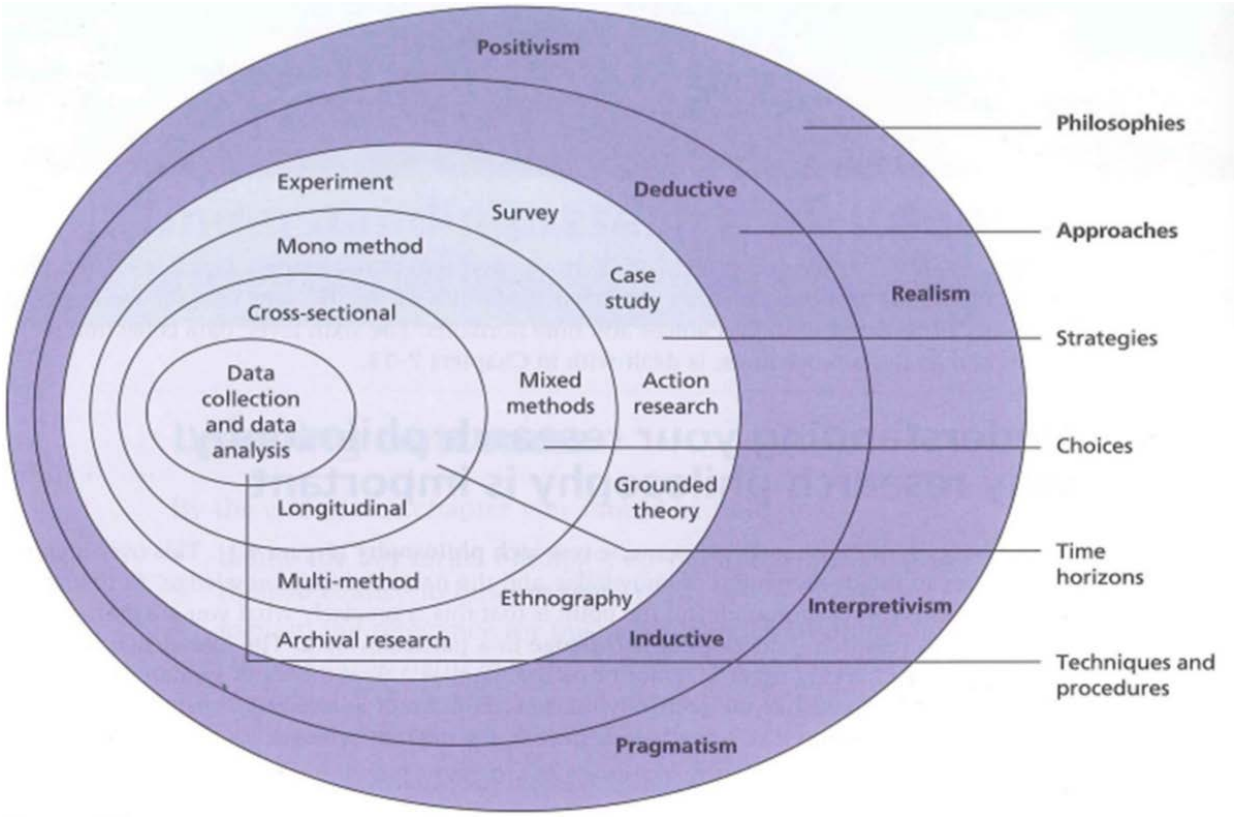

Figure 3: research onion'

In this proposition, the outmost layer refers to philosophy of science that is includes all other research decisions and actions. At this level, the ontology and epistemology of accounting information systems research is examined:

Ontologically speaking researchers are concerned with the nature that a phenomenon exists and how it should be categorized. Ontology is word with roots in Latin "Ontolgia" which refers to the scientific knowledge and scholarship of existence, reality or being. Epistemological understanding looks at how best investigate and study the nature of knowledge, this highlights what does count as a valid belief and how propose justifiable knowledge. Epistemology linguistically comes from Greek "Episteme" which refers to knowledge. Epistemology is, alternatively, sometimes referred to as knowledge that as opposed to knowledge how (Bengson & Moffett, 2011).

2.3 Research Paradigms Philosophical Elements

The philosophy of science elements of this research field as presented in the previous section are explained from the four of the most widely four adopted paradigms in accounting and financial information systems research on the four mostly used research in table 3.1. As far as this research is concerned the researcher pays attention to how different philosophical stances tend to use varying methods that suit the needs of how scientific knowledge is accepted.

Element / stance	Positivism	Constructivism	Critical theory	Realism
Ontology	Reality is an understandable manifestation of the real world. that is, reality is real	Multiple views on constitutes a specific constructed realty	Reality is a "virtual" phenomenon that is a reflection of social, economic, political, ethnic, cultural, and gender values all of which are processed over periods of time	Reality is real but only imperfectly and probabilistically apprehensible. So a combination of different sources is analyzed together to make sense of it
Epistemology	Findings true: researcher is objective by viewing reality through one way mirror	Created findings: researcher is a subjective participant within the world being investigated	Value mediated findings: researcher is a transformative intellect whose role is to change the social world within which research is conducted	Findings probably true: researcher is value aware and needs triangulation to account for perceptions of reality

Methodology	Mostly concerned with testing theory. Thus, mainly quantitative such as surveys to verify hypotheses	In depth unstructured interviews, participant observation, and grounded theory research	Participant observation, action research	Mainly qualitative methods such as: case studies and convergent interviews.

Table1: Research Paradigms Philosophical Elements

Positivist scientific view sees social world as an independent existence that enjoys a separate state of being from scientists. So, the scientists have research goals of looking at it and examining its properties. Furthermore, researchers in this world view do employ objectivity in their quest to find these properties as opposed to reflections of understanding reality (Easterby-Smith, Thorpe, & Lowe, 2002).

As a result, positivist scholars are thought to be non-biased and objective instigators whose aims are to distill knowledge through providing meaningful ways to grasp data as found in the 'real world'. According to (Saunders & Lewis, 2012), collecting research data within the positivist paradigm is thought of 'value-free', that is data exists despite of or regardless of researchers' existence as an entity on its own right. This is the view the student adopted for investigating accounting information systems integration and implementation throughout this thesis. Consequently, data collected for this research does represent accounting information systems integration and implementation in a way that the student could not and did not influence through data collection.

2.4 RESEARCH APPROACH

Research in accounting information systems can be viewed to be following either a deductive approach or inductive approach (Cavaye, 1996). In this section the student compares and contrasts both of them to adopt an approach for thesis research.

Research relying on inductive approach can be described as one that studies the details to understand the general (Bryman & Bell, 2015). In inductive approach, scholars

starting point is quite often the observed data that leads to constructing structures and configurations through data analysis (Zalaghi & Khazaei, 2016). The focal point of scientific investigation here is data is takes the driving seat in relation to theory. As a result this approach is suited to investigation where data ultimately provide theoretical development (Sabherwal & King, 1991). The line of theory thinking behind theory development was explained by Flick (2015) to be a one that constructs meaningfully structured descriptions of the phenomena under study after data is collected. Furthermore, Bryman and Bell (2015) argues that data theoretical development is not the only possible aim of an inductive approach as it is being used to accept or contradict an existing theoretical descriptions developed through earlier research.

As for methods chosen in parallel with an inductive approach they are mainly qualitative in nature. Qualitative methods can overcome the lack of theoretical propositions before approaching a research problem, which Bryman and Bell (2015) suggest is suited to eliminating researchers' bias towards enforcing an existing theoretical understanding that might lead to manipulating their data collection process. So, Flick (2015) observes that the research process starts with scholars collecting data about an interesting event or phenomenon through a multiple methods but Interviews are considered a main source for qualitative accounting information systems, see: (Halabi, Barrett, & Dyt, 2010; Rotchanakitumnuai & Speece, 2003), then gradually build an emerging pattern that is argued to be a theoretical advancement. As presented in these arguments the author feels that such an approach has distinctive merits that are not suited for this thesis research aims and scope.

In comparison, deductive research approaches make researchers start their research process by understanding the theory they are about to investigate empirically, then produce a testable arrangement of hypotheses that can either be accepted or rejected once data about the research problem has been collected (Silverman, 2013). Such an approach seems more in line with the student needs for this thesis research, as observed by Wiles, Crow, and Pain (2011) who note the suitability of this approach where researchers are interested in testing the confirmability of reality to a known theoretical understanding.

According to the analysis provided here, the thinking behind inductive approach represents more of a natural fit to this accounting information systems thesis as our main aim to observe how integration and implementation confirms to existing theoretical literature understanding as observed by (Wiles et al., 2011) above. The researcher choice at this stage follows known pattern of suitability between a philosophical underpinning and research approach as explained by Snieder and Larner (2009), who note that positivist studies provide solid grounding of for deductive research where researchers engage in hypotheses testing through statistical testing of the data. It is worth to remember; however, that is not an exclusive way to structure research as researchers can develop a positivist deductive research which is not reliant on statistical testing, see: (Dubé & Paré, 2003), where researcher rely on qualitative research that is built of positivist stance.

This thesis follows in the footsteps of deductive approach that is based on a positivist stance to investigate the how accounting information systems implementation and integration impacts on organizational performance and the role training and education plays in moderating the relationship in the case of Jordanian banks. This does yield a theoretical proposition, as developed in chapter 2, with a set of hypotheses that are testable via statistical analysis. In short, the author starts from a theoretical understanding and move to look at detailed event through empirical investigation as elaborated on by Venkatesh, Brown, and Bala (2013).

2.5 RESEARCH METHOD

Research methods refer to actions related to data collection and analysis aiming at answering a research question (Crotty, 1998). Three key ways to conduct research are identified by Creswell (2013) as: quantitative, qualitative, mixed methods. This thesis uses a quantitative method by collecting data from Jordanian banks employees through a survey instrument. Hence, this thesis enables a predictive statements to be made backed by empirical evidence about the nature of accounting information systems in the population of the study.

Qualitative research in accounting and financial information systems, on the other hand, does not require gathering quantitative datasets. Data refers to the investigator's preferred method of collection as it might be observational, documents or interviews to grasp reality through the eyes of participants (Saunders & Lewis, 2012). Lastly, mixing qualitative and quantitative methods is opted for when the research aims and questions cannot be answered with one method or the other(Goddard & Melville, 2004).

The arguments presented here support the choice made in this thesis for a quantitative research as it provides a better fit for the studied research question studied here. Some of the advantage of this choice include: first of all, a structured way to conduct research that enables studying large samples. Secondly, enables researchers to conduct pre-test studies as a way to make sure of the viability of the research ahead of committing time and financial resources in the study. Finally, empirical data analysis is

This discussion leads into a justifiable use of a research method for the sake of our study. "Quantitative method" was used in this research as it presents a better fit with the nature and scope of research conducted in this thesis. Among the advantages that the researcher observed in this research method are: firstly, structured in nature and tolerates big sample size. Secondly, using a pilot study procedure allows the researcher to pretest the study before full commitment in effort and time to collect data. Thirdly, data analysis takes shorter time to complete.

2.6 RESEARCH STRATEGY

In this chapter we introduced Sounder's (2012) 'research onion' that postulates a number of strategies for researchers to follow, they are: experiment, survey, archival research, case study, ethnography, action research, grounded theory and narrative inquiry. Survey research is the chosen strategy as it is noted to be a well-grounded and respected strategy to create scientific knowledge in the field of this thesis and accounting in general as noted by (Ittner & Larcker, 2001; Shields, 1997; Van der Stede, Young, & Chen, 2005, 2006).

Furthermore, this strategy suits research aims presented here as sample is large and collecting data through other means might prove to be too expensive and time consuming as suggested by (Creswell, 2013). Hence, a self-administered survey was conducted to offer explanations about the theorized relationships as proposed by Bryman and Bell (2015).

Research Sampling Technique:

Since this research aims at understanding how managers within the banking industry utilize accounting information systems, the population of this study the working managers at Jordanian banks. According to the Central Bank of Jordan there are 13 banks and there are 2558 managers, heads of departments and deputies in these banks. In order to calculate number of a representative sample the researcher has used sample size calculator from survey monkey tool box that uses the following formula to estimate a representative sample. The margin of error applied in our calculation was 5% for the managers in the banking industry sample.

$$\text{Sample Size} = \frac{\frac{z^2 \times p(1-p)}{e^2}}{1+\left(\frac{z^2 \times p(1-p)}{e^2 N}\right)}$$

Where; *Population Size = N* | *Margin of error = e* | *z-score = z.*

The calculation described above has yielded a sample size of 335 at the confidence level 95% and margin error 5%, which means that there is only 5% chance that our results do not reflect the overall opinions of the population at the 95% confidence level.

This research developed a survey from English written literature, so we adopted the procedure exploited by (Perrewé et al., 2002). As a result two independent translators were used to translate the questionnaire form English to Arabic and translate Arabic version to English back again. This is done to ensure that translation was meaningfully reflective of what the constructs understudy are. Furthermore, to the author has done a small scale pre-test by visiting some of banks and giving out surveys to branch

managers in order to validate the survey tool before the actual study. A total of 20 surveys were collected and the resulting Cronbach alpha value were higher than 70%. As such the researcher went ahead data collection by contacting each headquarters of the Jordanian banks and to seek permission for data collection. A short research introduction was presented to each bank visited that explained the scholarly nature and value of this research. And what possible research deliverables the bank might gain from participating in this study. The next step was arrange with the human resources departments how the distribution and collection of the survey instruments based on voluntary participation.

CONCLUSION

This chapter has argued for research method used in this study based on the philosophical underpinnings of the research. And explained how the researcher has carried this research using a representative sample from managers in the Jordanian banking industry.

3. CHAPTER: EMPIRICAL DATA ANALYSIS

3.1 INTRODUCTION:

This chapter shows the data collected and processed through using a covariance structure equation modelling approach. This chapter is presented as follows: first a descriptive analysis shows the percentages of respondents across gender, bank of employment, salary, education, marital status and age. Secondly, an exploratory factor analysis was conducted to reveal the underlying relations in data. Thirdly, confirmatory factor analysis was conducted to study how items from variables are structured as observed variables. Fourthly, the structural model is developed and argued for through achieving a host of thresholds of model fit indices. Finally, an interaction analysis revealed the extent by which training and education affected the two main hypothesized relations of the research model.

3.2 Description Of Collected Data

Out of the 1350 distributed questionnaires, the research has retrieved 441out of total population 2558. 22 surveys were dropped due to the lack of engagement in responding to the survey's questions. So 419 respondents were eventually included in the empirical data analysis conducted in this thesis, which makes responce rate 31.5%of the total distributed surveys.

The percentage of male respondents was (about 75%). The percentage of respondents with PhDs was 0.5%. 12% Masters level. 85% first level university degree. 2.5% High School or lower. Age distribution was as follows: 14% Less than 29 years, 25% from 30-39 years old, 37% from 40-49 years old, 19% from 50-59 years old, 5% above 60 years old. Marital status indicates that 74% are married. Monthly Income has revealed that: 3% earn Less than 500 JDs, 16% earn between 500 - 999 JDs, 39% earn between 1000-1499 JDs, 28% earn between 1500 - 2000 JDs, and 14% earn a monthly figure above 2000 JD.

	Frequency	Percentage (%)
Gender		
- Female	104	25%
- Male	313	75%
- No Response	2	
Age		
- Under 18	28	7%
- 18 – 30	29	8%
- 31 – 40	104	25%
- 41 – 50	155	37%
- 51 – 60	79	19%
- Over 61	21	5%
- No response	3	
Education		
- High School	9	2.5%
- University	356	85%
- Postgraduate	50	12%
- PhD	2	0.5%
- No response	2	
Marital Status		
- Single	109	26%
- Married	310	74%
- No response	4	
Monthly Income		
- Under 500	12	3%
- 500 to 999	67	16%
- 1,000 to 1,499	163	39%
- 1,500 to 2,000	117	28%
- Above 2,000	56	14%
- No response	4	

Table 1: Description Of Collected Data

3.3 EXPLORATORY FACTOR ANALYSIS

In this part of the analysis, the researcher aims to investigate the question of how appropriate were the items used in the survey? In order to answer this question we look into the internal structure of the constructs being measured through the adapted survey instrument. Hence, the researcher has conducted an exploratory factor analysis that aims at appraising the factor structure of the survey instrument used in this thesis.

Hence, using exploratory factor analysis is done to demonstrate the validity of data collected through our thesis accounting information systems survey. This is done through identifying and checking the appropriateness of survey items, as a result those items that are deemed inappropriate are excluded from further data analysis. Additionally, exploratory factor analysis was used to detect the dimensionality of the data by looking at how items are related to constructs when those items are being tested in a different or new research context (Netemeyer, Bearden, & Sharma, 2003).

The procedure followed here was one that has started by checking measurement appropriateness by looking at the descriptive analysis in advance of conducting the exploratory factor analysis. In particular, two measurement values were emphasized for this process: standard deviation and mean. The investigator has adopted the argument offered by Kim (2011), who claims that items that have mean values close to 1 or 5 might be flagged for elimination. The reason put forward was to guard against negative effects on correlation for the rest of the data. All these measures reported in this exploratory factor analysis section are for exploratory factor analysis after removing Item OP2 as it proved to be problematic in the initial run of EFA analysis.

According the scree plot produced here four factors had Eigenvalues greater than one, which indicates that four factors are expected to show the underlying structure of data in line with the four variables used in conducting this research.

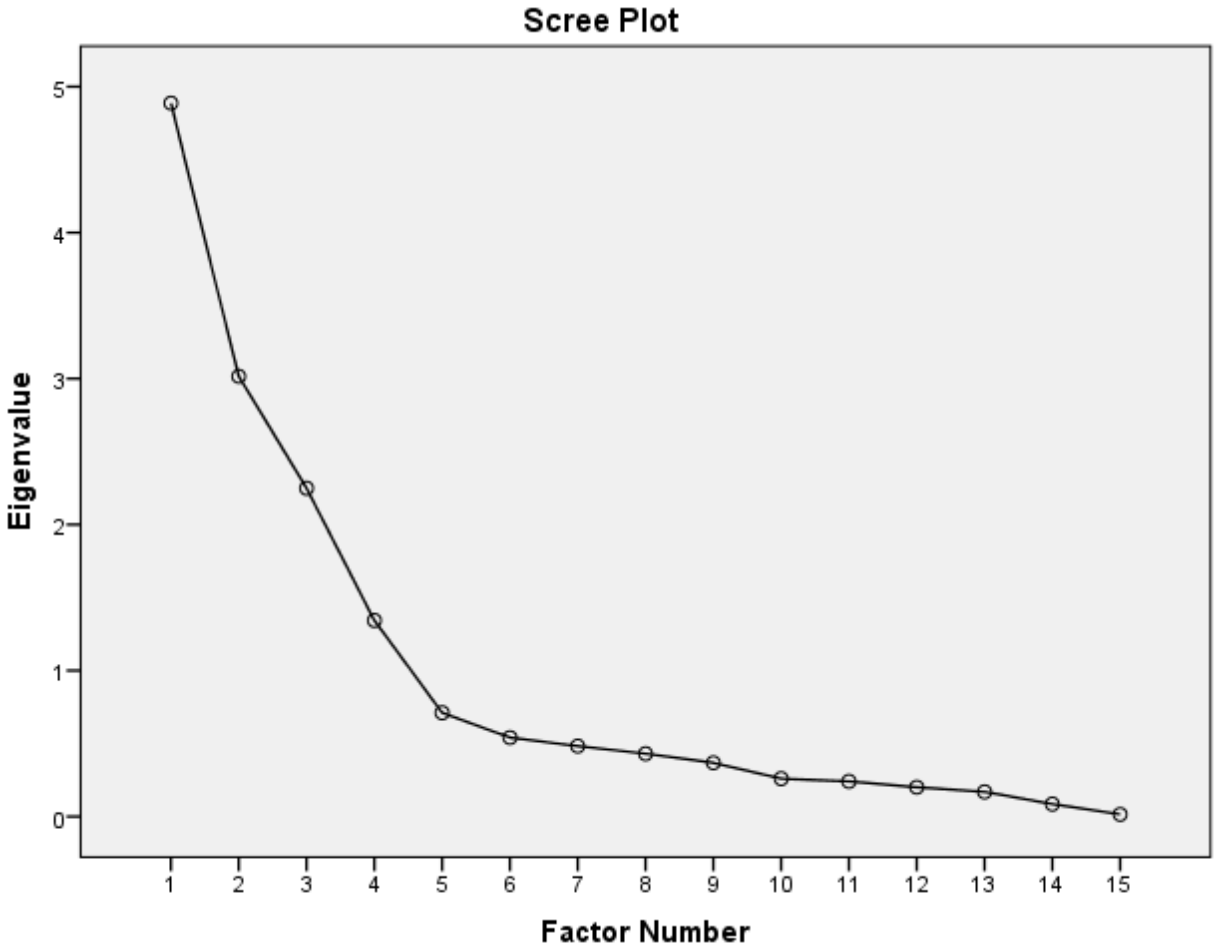

Figure 4:Scree Plot

Furthermore, the researcher has looked into normality of the distribution by evaluating the kurtosis and skewness tests before engaging in exploratory factor analysis. The normality of distribution was established through skewness figures for the items, where items did display values between 1 and -1 meaning that there are not any skewness issues in the data. In order to estimate how data is shaped as in whether it is peaked or flat the kurtosis test examines this through comparing the standard kurtosis error vs the kurtosis value, where three times the values of kurtosis error is less than kurtosis test value. For example, the following figure is shown to emphasize this point by assessing the normality of the distribution for answers for the first question.

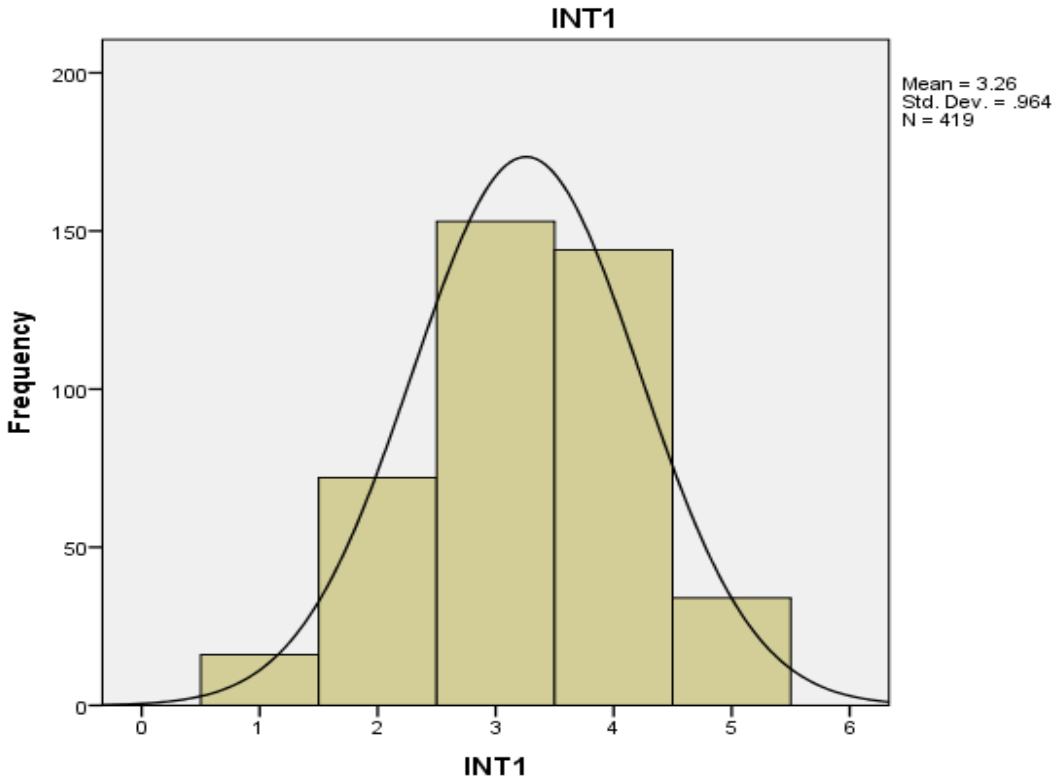

Figure 5: Normality Of The Distribution

Kaiser-Meyer-Olkin (KMO) is reported to examine the sampling adequacy that shows how each variable is predicted without error. In this research KMO test has a value of 0.781 that exceeds the 0.6 threshold as suggested by Kaiser (1974). Bartlett test of sphericity results were Sphericity, χ^2 (105) = 4746, p < .000, The test aims to report on the fitness of factor analysis for the data and it does so by looking at the inter-correlations among the variables of our research. This result means that correlations are acceptably large to run an exploratory factor analysis as the results for the test are significant with the above mentioned p value. As a result we proceeded with the exploratory factor analysis as the data seemed to follow normal distribution conventions.

According to the produced variances in table below, the author concludes that factor one (Accounting information systems integration) explains 32% of the variance while factor two (Accounting information systems implementation) explains 20%, factor three (training and education) explains 15% of the variance in the outcome of the model. The

research model studied, after dropping item OP2, does indeed explain 76.6% of the variance.

Total Variance Explained									
Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.850	32.336	32.336	3.107	20.712	20.712	3.044	20.292	20.292
2	2.995	19.966	52.302	2.390	15.931	36.643	2.933	19.552	39.843
3	2.243	14.955	67.257	3.015	20.097	56.740	2.231	14.873	54.716
4	1.363	9.089	76.346	1.772	11.810	68.550	2.075	13.834	68.550
Extraction Method: Maximum Likelihood.									

Table 2: Total Variance Explained

Based on the work provided by (Hair, Black, Babin, & Anderson, 2010; Kaiser, 1974; Tabachnick & Fidell, 2007) the student has screened the items of the variables of this research through exploratory factor analysis based on a number of recommended assumptions:

- The author looked for a satisfactory number of correlations that are statistically significant in the rotation matrix.
- The author used The Kaiser- Meyer- Olkin (KMO) measure of sampling adequacy, the recommended threshold is greater than 60% to fit the sample.
- The author conducted Bartlett's test of sphericity whose results should not be less than one.
- The author relied on (Tabachnick & Fidell, 2007) recommendation that loading should not be less than 0.4, while paying attention to the lack of cross loadings in other factors that might indicate multicollinearity.
- The Eigenvalue should not be less than one.

Based on these working principles item OP2 was dropped out form our research and the following exploratory factor analysis is produced in the following table.

Rotated Factor Matrix[a]				
Factors	AIS Integration	AIS Implementation	Training & education	Organizational Performance
	1	2	3	4
INT1	.692			
INT2	.942			
INT3	.717			
INT4	.923			
IMP1		.834		
IMP2		.878		
IMP3		.848		
IMP4		.753		
TE1			.567	
TE2			.839	
TE3			.577	
TE4			.882	
OP1				.916
OP3				.422
OP4				.952
Extraction Method: Maximum Likelihood. Rotation Method: Varimax with Kaiser Normalization.[a]				
a. Rotation converged in 5 iterations.				

Table 3: **Rotated Factor Matrix**

3.4 Confirmatory Factor Analysis

3.4.1 Reliability Analysis

The student has conducted a confirmatory factor analysis in order to assess how reliable is the measurement model for this research. Three measures were applied to gauge the reliability: Cronbach's alpha, composite reliability, an average variance extracted (AVE). Nunnally and Bernstein (1978) have had put a statistical argument for using 0.70 as an acceptable value that should be achieved for both Cronbach's Alpha and composite reliability. By scanning the literature is seems that accounting information systems scholars have adopted this value too (Chapman & Kihn, 2009; Choe, 1996; Nicolaou, 2000; Soudani, 2012).

Measuring the average variance extracted gives researchers a way to judge how the variance on average is shared between the study's constructs and the measures (L. Lee, Petter, Fayard, & Robinson, 2011; Mahama & Cheng, 2012). Hence, it is considered to lay on the conservative side of assessments as compared to Cronbach's Alpha and composite reliability (Ferreira, Moulang, & Hendro, 2010). Hair et al. (2010) recommend using 0.50 as a minimum threshold to judge average variance extracted. This implies that 50% or higher of latent constructs variance is explained by the measurement items. The table below show that Composite reliability, Cronbach's Alpha and Average variance extracted have values that meet the minimum thresholds as applied in literature.

3.4.2 Validity Analysis

This research examines validity of the measurement model through applying fitness indices that examine the overall goodness of fit for the researched model. Although some scientists lament the fact that exact cut-off values are not (Hopper, Lambeth, Schapiro, & Whiten, 2008). However, some fit indices are commonly use and reported to give supportive evidence of the fitness of the researched models (Ferreira et al., 2010) such as: chi-square (x^2), normed chi-square (x^2/df), goodness of fit index (GFI), comparative fit index (CFI), Normed fit index (NFI) and the root mean square error of approximation (RMSEA), Standardized Root Mean Square Residual (SRMR). In

In addition, the research has investigated the construct validity by look at convergent and discriminant validity. Convergent validity is assessed by examining observable variable correlations among themselves, which should be higher than their correlation with different observed variables that relate to another latent construct.(Cole, 1987) On the other hand, discriminant validity examines how observed variables load higher on the corresponding latent variable than other latent variables in the research model (Tallon, 2008). Convergent validity in this research was examined by assessing the standardized loading of the measures on their respective latent variables which should be significant and at least 0.50 (Hair et al., 2010; Sun, 2005). In the factor loadings table these values are specified along with the corresponding t- values for each survey item. In this thesis research all factor loadings were significant and had an estimate value of above 0.5 indicating a respectable levels of convergent validity (Agostinhoa et al., 2015; Hair et al., 1995).

.In term of convergent validity, the researcher evaluates convergent validity by inspecting the standardized loadings of the measures on their respective constructs which should be significant and estimate a value at least .50, (preferably .70) (Agostinhoa et al., 2015; Hair et al., 1995). As shown in factor loadings table below, the standardized loadings of all items for each construct are above the acceptable value and all items are significant on their loading at the level of 0.05.

Discriminant validity has been evaluated by making a comparison between the square root of the average variance extracted (AVE) for each construct, shown in bold in a diagonal line in assessing validity table, with the correlations exhibited for this construct as explained by Fornell & Larcker (1981). Applying this method meant that researcher had to check the square root of an AVE of a each latent variable and make sure the value of which is higher than the square correlations between the same latent variable and all other variables analyzed in the model. The significance of this discriminant validity technique is that it implies that a given latent variable shares more variance with its own observed variables than with other latent variables (Yang & Liu, 2012).

Table**:** Factor loadings and t-value.

Scale Items	item loadings (t-value)
Accoutning Information systems implemntation	
"Implementation was completed on time"	.84(15.80)
"Implementation was completed within budget"	.93(16.48)
"Implementation was completed as expected".	.80(18.93)
"Users are satisfied with the implemented system".	.70(-)
Accoutning Information systems integration	
"Accounting information systems are linked with information systems of partner organizations or clients "	.70(19.89)
"Accounting information systems are functionally linked with other management information/legacy systems within the organization"	.97(20.03)
"The same information is stored in separate systems for different application areas" (R).	.73(-)
"Communication networks for the accounting information systems have been designed to support and adapt to the bank's business technology needs (e.g. smartphones apps, online banking)"	.94(19.79)

Table 4: Factor loadings and t-value

Table: Factor loadings and t-value (cont).

Scale Items	item loadings (t-value)
Traing and Education	
"Training and education efforts related to accounting information systems was of adequate length and detail"	.50(10.20)
"Training and education efforts related to accounting information systems Substantially improved the level of users understanding" "	.85(-)
"Training and education efforts related to accounting information systems gave users confidence in the new system"	.56(11.73)
"Training and education efforts related to accounting information systems was handled by knowledgeable and competent trainers"	.92(17.48)
Organizational Performance	
"My bank exhibited improved service delivery cycle time"	.96(42.95)
"My bank does seek to Acquire precise knowledge of customer buying patterns"	*
"my bank shows achieves increased sales of existing products"	.53(12.55)
"my bank does seek to Establish strong and continuous relationship with customers"	.99(-)

Notes: -* dropped items during confirmatory factor anal

Table 5: Factor loadings and t-value

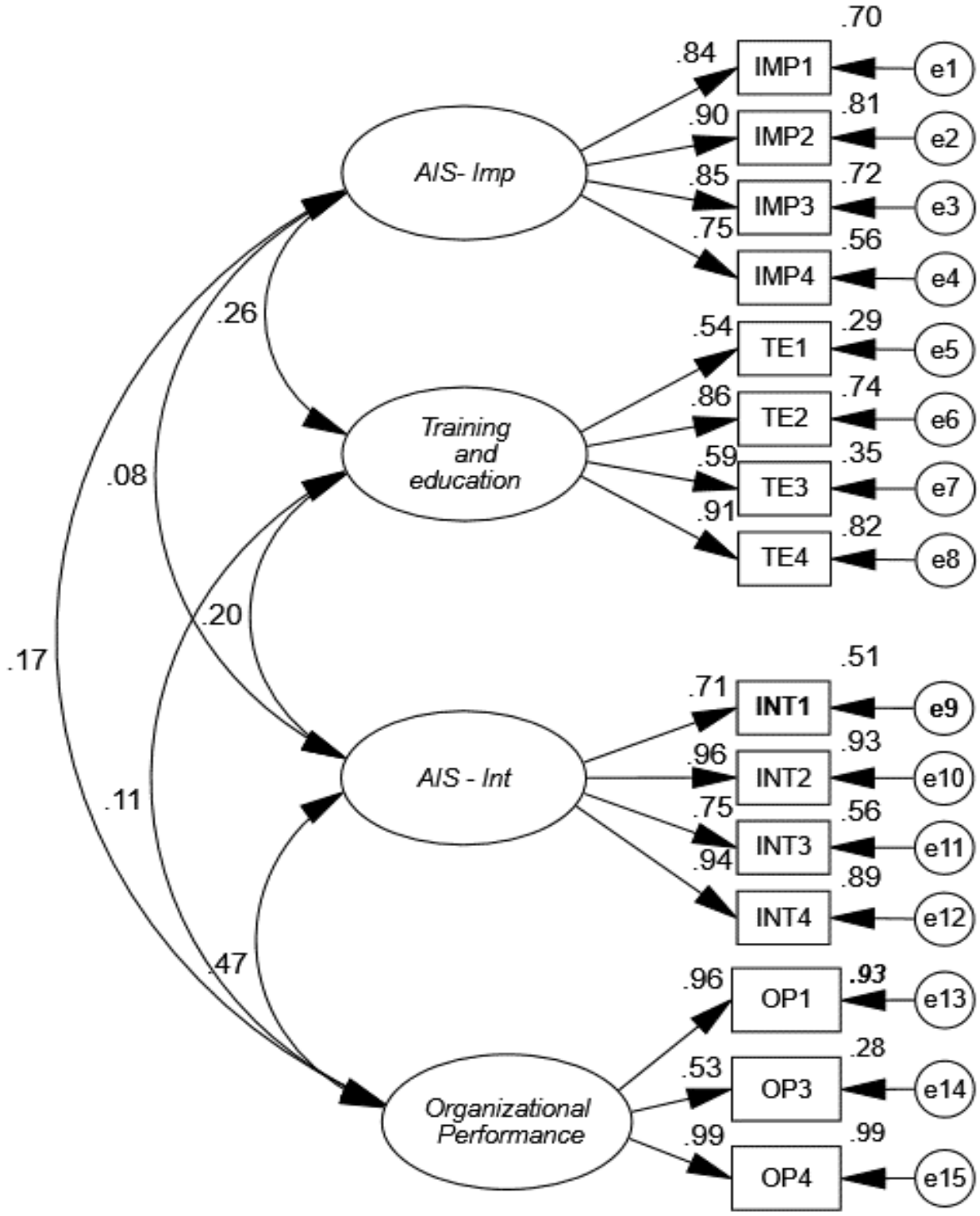

Figure 6*: CFA befor mod*

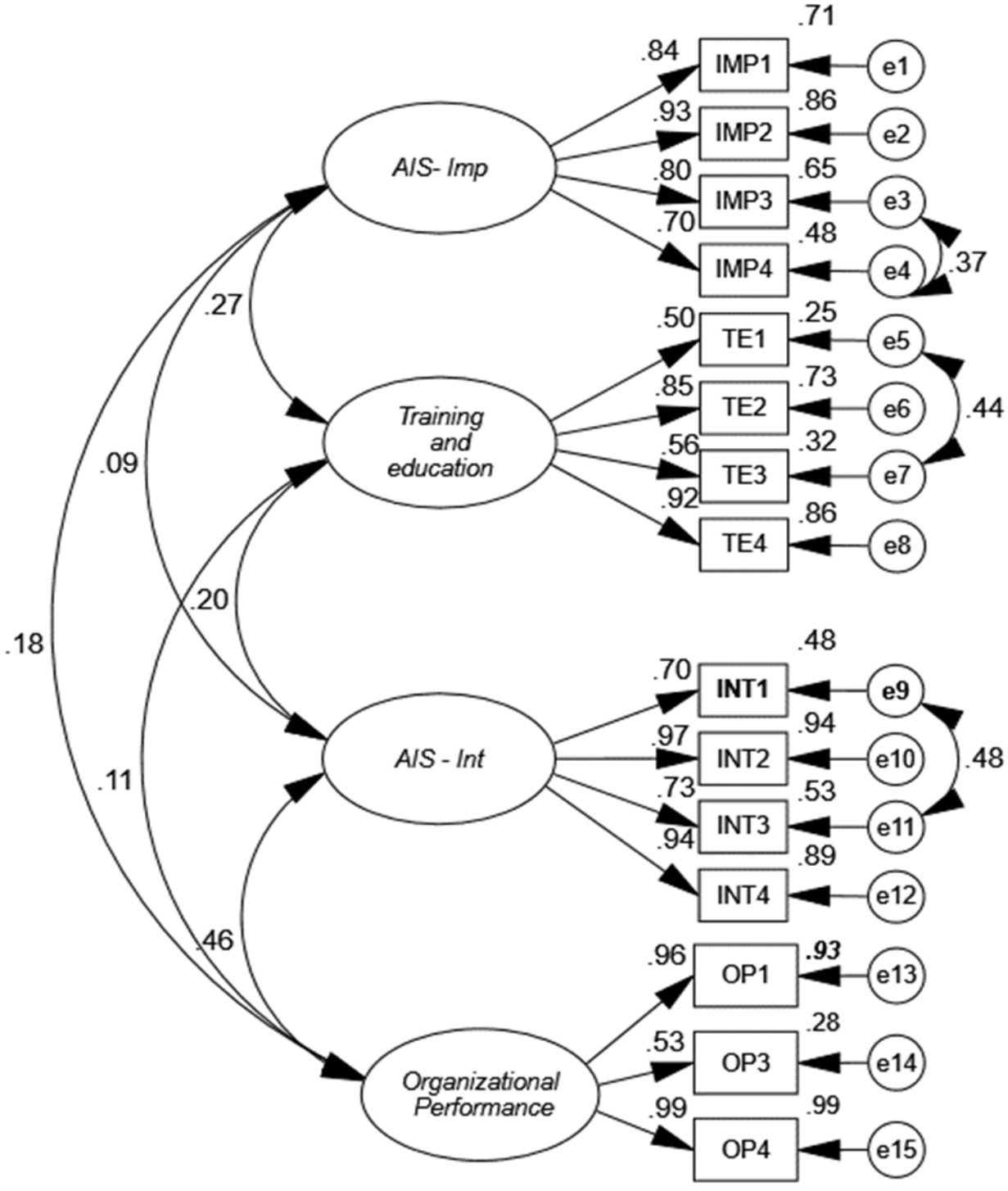

Figure 7 :CFA after *modifications*

Goodness of fit measure	Index	Cut-off criteria
	Before modification	
$CMIN^2/df$	5.96	≤3
Goodness of fit (GFI)	.87	>.90
Normed fit index (NFI)	.90	>.90
Comparative fit index (CFI)	.97	>.90
Adjusted goodness of fit (AGFI)	.82	>.80
RMSEA	.10	<.08
Standardized RMR (SRMR)	.09	<.09

Table 6: model fit indices before modifications

Goodness of fit measure	Index	Cut-off criteria
	After modification	
$CMIN^2/df$	2.96	≤3
Goodness of fit (GFI)	.93	>.90
Normed fit index (NFI)	.95	>.90
Comparative fit index (CFI)	.97	>.90
Adjusted goodness of fit (AGFI)	.90	>.80
RMSEA	.07	<.08
Standardized RMR (SRMR)	.07	<.09

Table 7 :model fit indices after modification

3.5 Structural Model

The structural model examination performed in our thesis research has been reasoned to have a satisfactory parameters, this is supported by the following model fit indices, The ratio of X^2 / DF is 2.96, while the CFI is 0.93 which is above 0.90 (Bagozzi, Yi, & Phillips, 1991), SRMR is 0.107 which is less than 0.9 and finally RMSEA was 0.07 which is less than 0.8. As judged by Mulaik et al. (1989) leading the researcher to claim that the developed structural model has good fit. This is a result of a number of model fitness indices achieving satisfactory results, this is backed by supposed the cut-off rates that were put forward the work of Browne and Cudeck (1993) and (Bagozzi et al., 1991). Hence, we have in this research a set of data that can be adequately fitted to the hypothesized research model studied here.

	CR	AVE	MSV	MaxR(H)	Cronbach's Alpha	Training & Education	Organizational Performance	AIS Implementation	AIS Integration
Training Education	0.811	0.533	0.073	0.899	.827	**0.730**			
Organizational Performance	0.883	0.728	0.212	0.984	0.855	0.110	**0.853**		
AIS Implementation	0.892	0.675	0.073	0.920	.901	0.270	0.180	**0.822**	
AIS Integration	0.906	0.712	0.212	0.962	.914	0.200	0.460	0.090	**0.844**

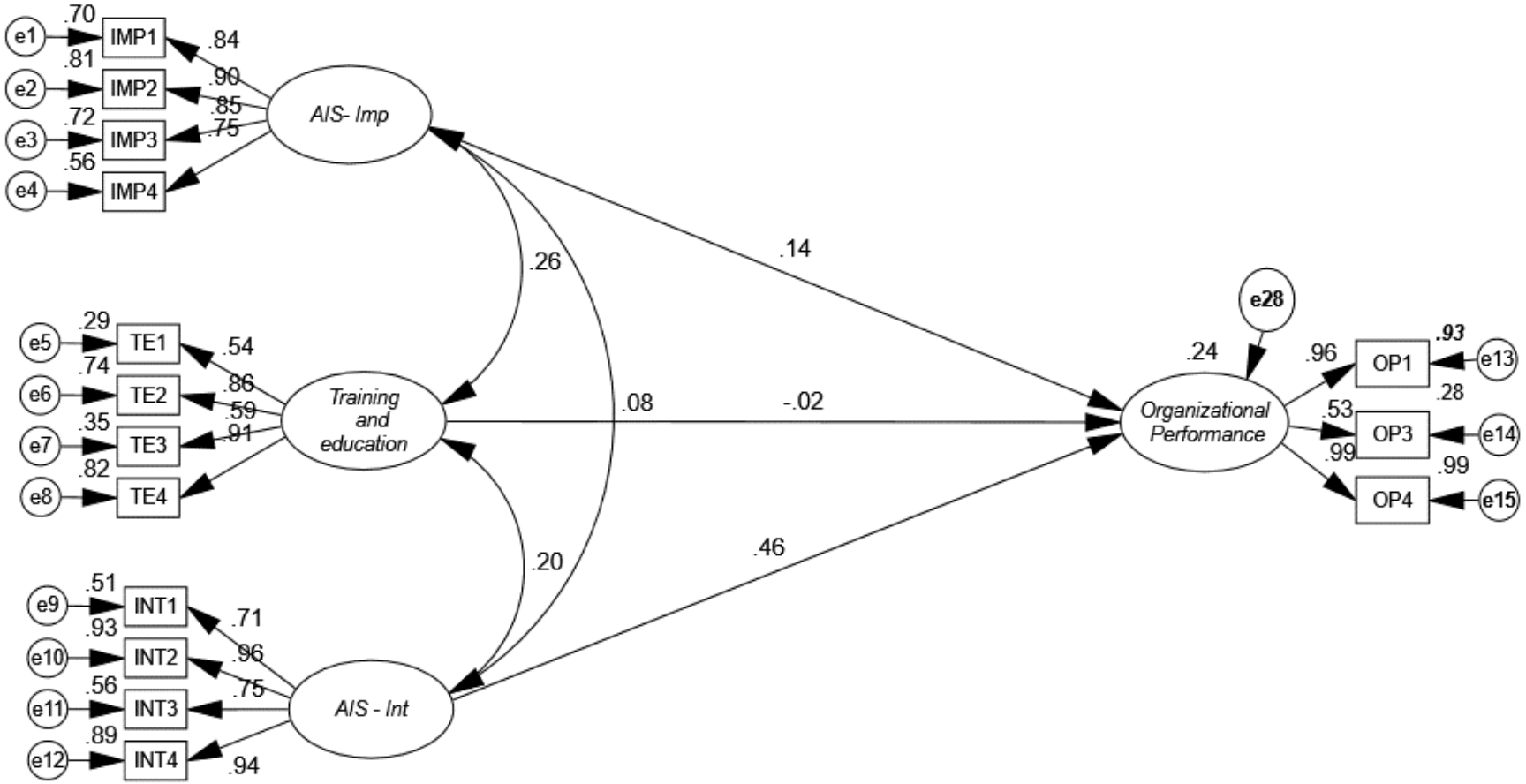

Figure 8: Structural Model befor mod

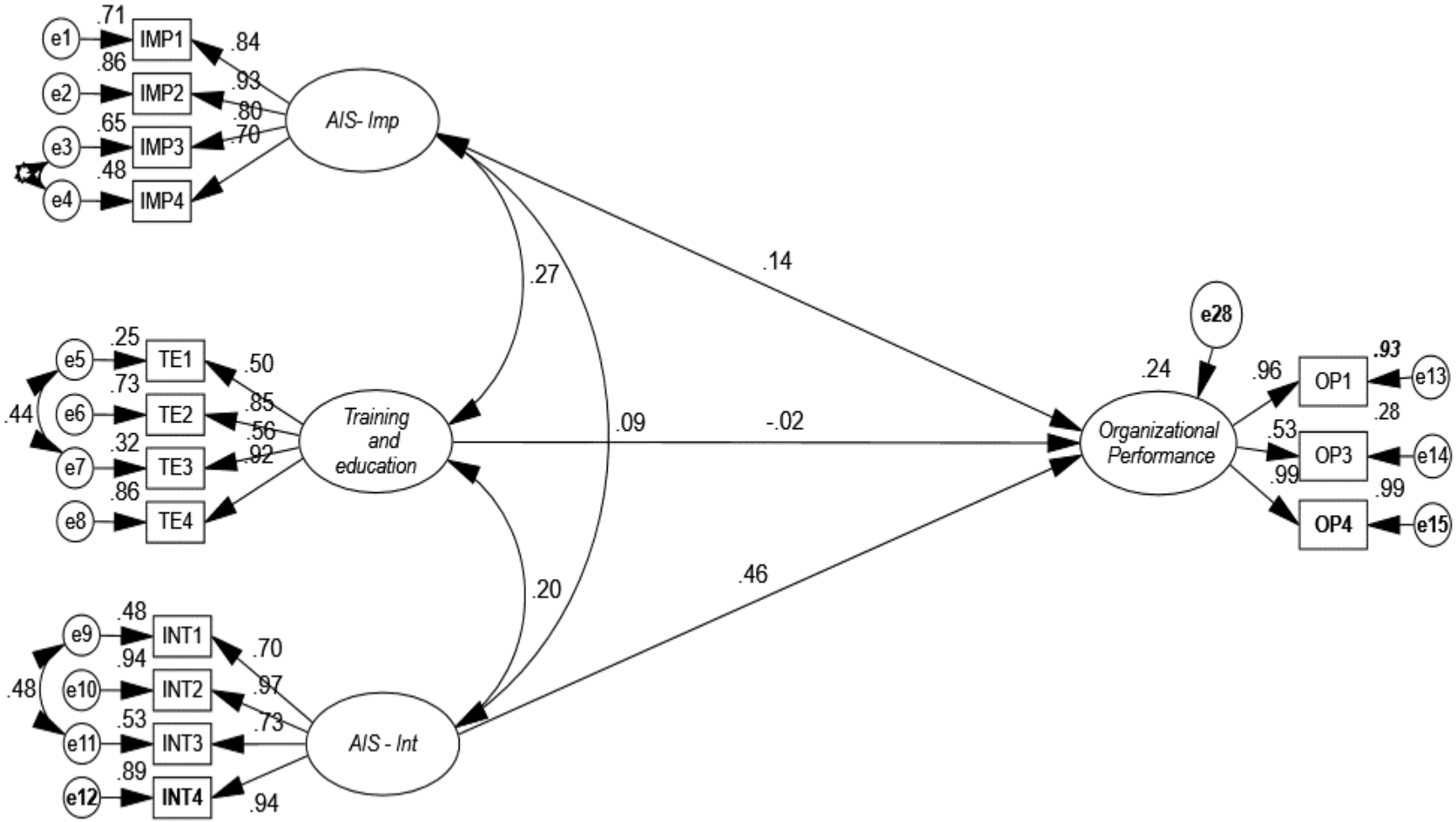

Figure 9 :Structural Model after mod

3.6 Main Hypotheses Testing:

	Exogenous Variables	Endogenous Variables	Beta	S.E.	*CR*	*P*	Result
H_1	AIS IMP	OP	.14	.03	2.95	.00	Accepted
H_2	AIS INT	OP	.46	.35	8.18	.000***	Accepted
H_3	TE	OP	-.02	.06	-.46	.64	Reject

Table 8 : Main Hypotheses Testing ****p<.01*

The results achieved in our accounting information systems research do exhibit an effect of accounting information systems integration and accounting information systems implementation on organizational performance. While failing to note the impact of training and education of those systems on organizational performance. These strong significant correlation imply that organizations' performance in Jordanian banks can viewed as a function of how well banks do implement and integrate their information systems.

The results of this thesis fascinatingly disclose that accounting information systems had a divergent impact on performance. While accounting information systems integration had a beta value of 0.46, accounting systems implementation showed a significantly positive correlation to organizational performance but to a much lower extent at beta 0.14. This observation leads the student to believe that accounting information systems integration is likely to be more important than accounting information systems implementation for this study population. And that accounting information systems integration is rather more aligned with benefitting organizational performance as compared to accounting information systems implementation. Producing such an exciting result does, indeed, put forward an opportunity for the banking sector in Jordan to target their by realigning their accounting information systems implementation efforts so that process gains are achieved as well as accounting information systems implementation scores.

3.7 Interaction Hypotheses:

Exogenous Variables	Endogenous Variables	Estimate	S.E.	*CR*	*P*
Training and education	OP	.06	.04	1.49	.14
AIS IMP	OP	.16	.04	3.78	.000***
TE X AIS IMP	OP	.17	.03	4.23	.000***
AIS INT	OP	.50	.04	12.26	.000***
TE X AIS INT	OP	-.12	.03	-2.91	0.05**

S.E.= Standard Error; ***p <.01 **p<.05

Table 9: Interaction Hypotheses

The procedure applied in this research to explore the moderation effect of training and education on the relationships between accounting information systems implementation and accounting information systems integration with organizational performance has been conducted as advised by Aiken, West & Reno,(1991) recommendation. Firstly, Z scores for accounting information systems implementation, accounting information systems integration, and banks organizational performances were calculated then new multiplication variables were computed using SPSS. The new variables were the multiplication of the Z scores calculated in the aforementioned step. The logic underlying this way calculation has been noted by (Aiken, West, & Reno, 1991) as to sidestep any possible multicollinearity issues. The resulting model is presented below.

The p value of the interaction impact is deemed acceptable at 95% confidence level for accounting information systems integration. While for accounting information systems implementation we can report that a 99% confidence level is observed. As a result we accept the moderation hypothesis number four which implies that training and education does significantly and positively impact the relationship between accounting information

systems implementation and organizational performance in banks. While we do reject hypothesis 5 as we observed a significant as predicted in H_5, however: the impact reached in this research was a negative one as opposed to the positive impact theorized in our model.

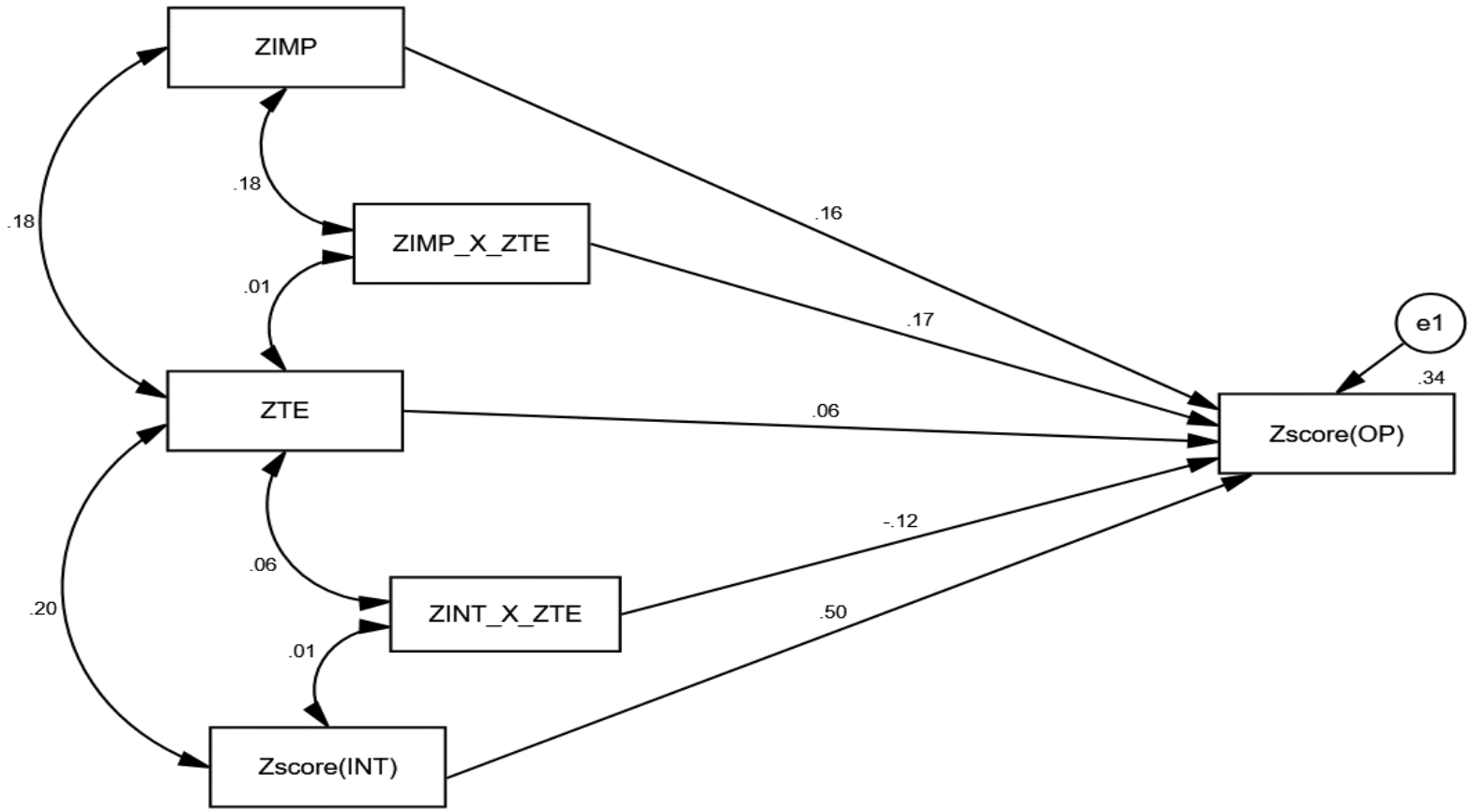

Figure 10:Interaction Hypotheses

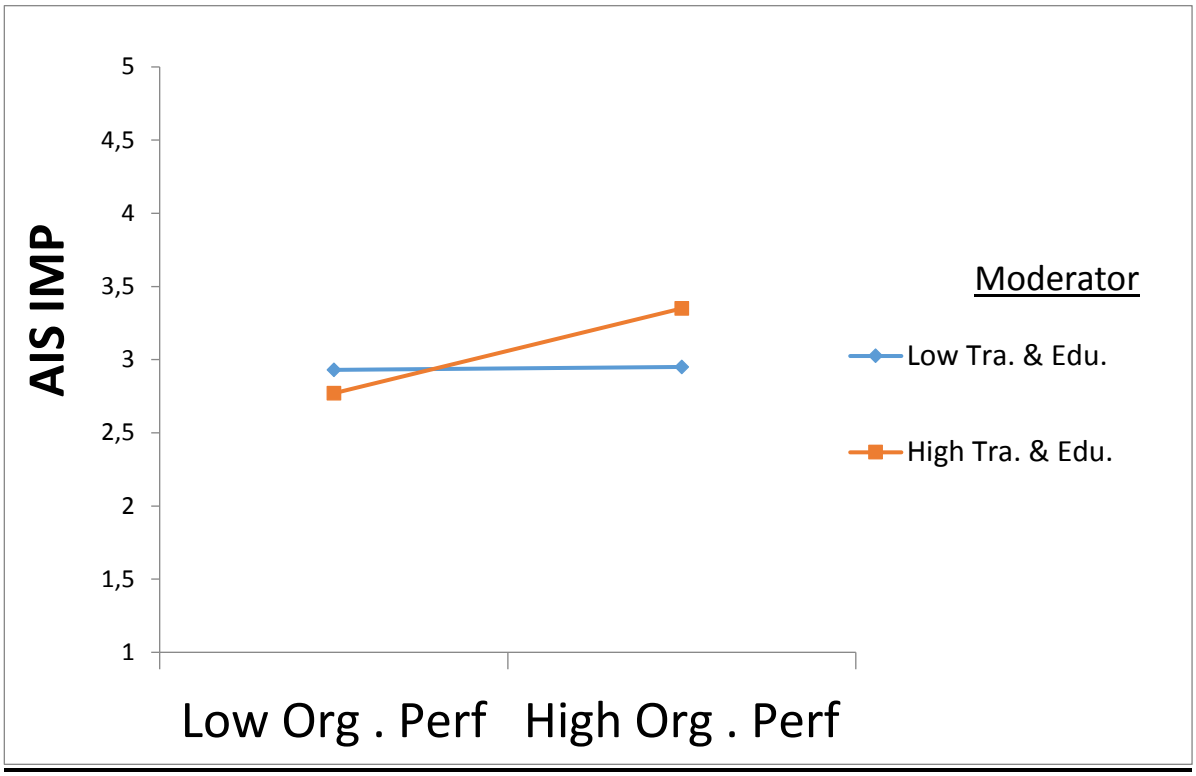

Figure 11 :T&E strengthens the positive relationship between OP and AIS Implementation

Training & Education strengthens the positive relationship between Organizational Performance and AIS Implementation.

In the figure above we mapped out the interaction effect of training and education on the relationship between accounting information systems implementation and organizational performance. Which shows how higher levels of training and education are accompanied with more positive impact of accounting information systems implementation on organizational performance.

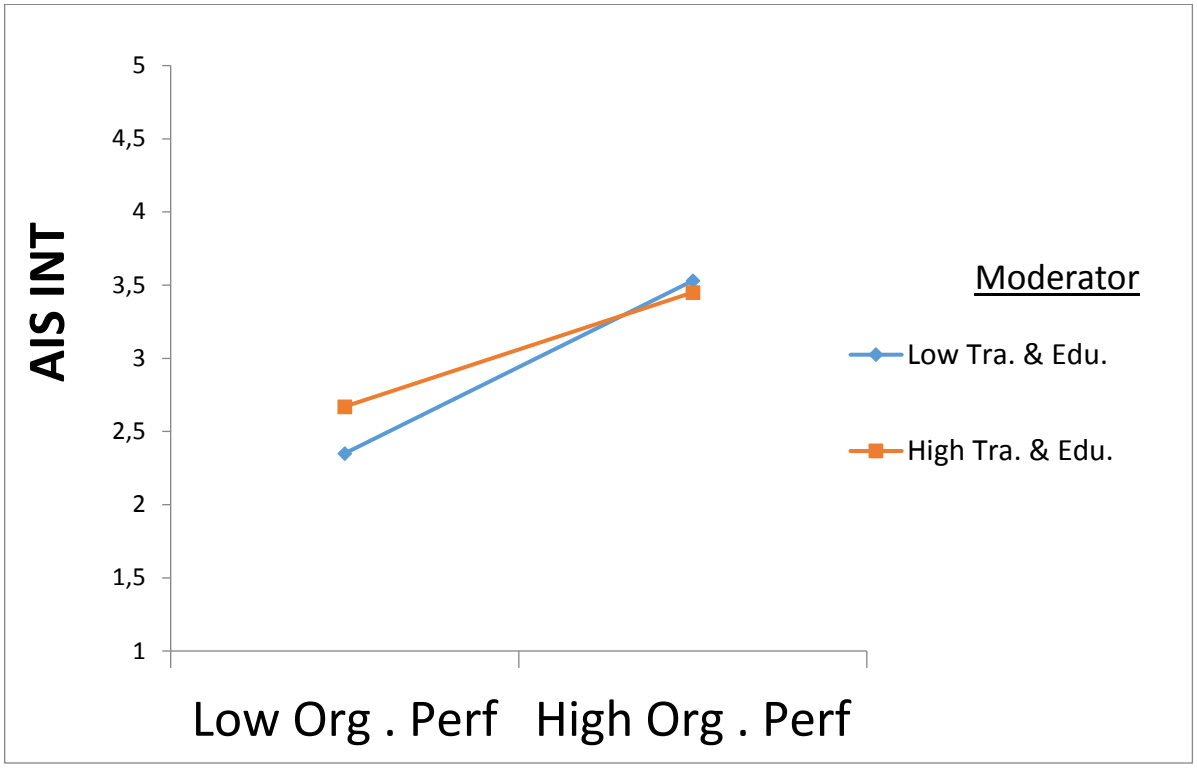

Figure 12 :*T&E dampens the positive relationship between OP and AIS Integration*

Training & Education dampens the positive relationship between Organizational Performance and AIS Integration.

In the figure above we mapped out the interaction effect of training and education on the relationship between accounting information systems integration and organizational performance. Which shows how higher levels of training and education are accompanied with a slight negative impact of accounting information systems integration on organizational performance.

Conclusion:

This chapter has revealed the empirical findings of the statistical analysis performed in this thesis. Structure equation modelling using AMOS software use employed as the main statistical method to probe the three main hypotheses. The empirical findings have shown that two out of the three main hypotheses were statistically significant and therefore accepted (accounting information systems implementation impact on organizational performance and accounting information systems integration

impact on organizational performance) while rejecting the remaining third hypothesis (training and education effect on organizational performance)

As for the remaining hypotheses: the two interaction hypotheses relating the role played by training and education on the relationship between accounting information systems integration and implementation on organizational performance have seen a divergent effect: the fourth hypothesis was supported signifying the positive impact of training and education on the relation between accounting information systems implementation on organizational performance, while the fifth hypothesis was rejected as we have concluded that the moderating effect was a negative one, albeit a slight one

4.CHAPTER: CONCLUSION: IMPLICATIONS AND CONCLUDING REMARKS

4.1Introduction:

This chapter offers a summary of how the researcher developed a theoretical position and why such an academic appreciation has implication for those interested in the fields of accounting information systems and performance in financial institutions. Furthermore, the empirical evidence here does offer a view that might have a consequence on the process of thinking and doing accounting information systems in the Jordanian banking sector and the consequences for that on organizational performance. Likewise, looking into accounting information systems in this thesis does offer a reassuring evidence to counter skeptics who might argue that an unnecessary expenditure in the form of training and education can be avoided or reduced, as the data revealed that training puts banks in a better off position by having a positive impact on performance.

4.2 Theoretical contributions

Accounting information systems practices in organizations have been proposed by researchers to pose an improving impact on organizations' competitive positioning in their industries. While academics that link the supporting roles of accounting information systems to performance are not certain beyond any doubt about the strength of the association. The student theorized a model that links accounting information systems implementation, accounting information systems integration and performance, this examination has contributed to literature through understanding the process of how these occurrences might interrelate among themselves in the Jordanian banking sector. This was done through advising a conceptual model that plainly studies the impact of accounting information systems implementation and accounting information systems integration on organizational performance and the concurrent impact of training and education on these relationships between accounting information systems with performance. The empirical testing was conducted via a structural model of these constructs together as we were able to assess the three main hypotheses: accounting information systems implementation impact on organizational performance, accounting information systems integration impact on organizational performance, training and education of accounting information systems impact on organizational performance. The first two hypotheses were accepted signifying the existence of a direct and positive relationship while the training and education hypothesis was rejected. Based on the

evidence raised in this research both accounting information systems integration and implementation were found to pose a significant positive effect on financial institution in Jordan or banks in particular; nonetheless, training and education of accounting information systems as surveyed in this study has not displayed any experimental significant impact on organizational performance. So this research proposes an interesting theoretical model that accepts the role of training and education on accounting information systems as an interacting effect rather than an existing independent variable in its own right as it was proved to not have a performance enhancing role for the Jordanian banks.

4.3 Practical Implications:

This master thesis research has provided grounds for practical implications to be drawn for the banking industry in Jordan. The investigated relationships provide an aide as to how financial institutions might achieve higher levels of performance through accounting information systems integration and implementation. So paying attention to accounting information systems implementation execution to be on time, within budget, while meeting expectations and attaining users' satisfaction does indeed enhance Jordanian banks organizational performance. By the same token, planning the process of accounting information systems integration to be functionally linked with other management information/legacy systems within the bank, and adopting communication networks for the accounting information systems that have been designed to support and adapt to the bank's business technology needs do indeed contribute positively to organizational performance in the banking sector. As a result, the scale of measurements adopted in this study bids for a practical prospect for banking institutions to execute a self-assessment of how their accounting information systems programs are heading to as far as organizational performance is concerned. Besides, banking institutions are recommended to pay more attention of the effects of training and education of accounting information systems, as we have noticed that such an effect has a diverging impact between implementation and integration. While the impact of these training and education efforts on accounting information systems implementation was a positive one, accounting information systems integration was affected adversely suggesting that these training efforts lacked and integrative perspective on how to link such systems within the organizational business and technology context. This represents both a threat and opportunity for accounting information systems development in the Jordanian banking sector. Another takeaway for practitioners in the banking sector is that organizational performance should be on the forehead of their plans while approaching training and education as we revealed the lack of any effect of training and education on organizational performance. Quintessentially, how to better embed our accounting information systems training and education to fit into the bottom line of enhancing organizational performance?

4.4 Limitations And Future Research:

This research has a number of limitations: Firstly, appraising the effect of the non-response bias has proved to be obstacle tough to tackle. As a way to deal with this bias the researcher was not able estimate it through comparing the results from the first, say 10 or 20 respondents to the last 10 or 20 respondents, because the landscape of this research data collection as Human resources departments were the party responsible for collecting the data and the researcher was faced with packages with filled surveys with no way to make a decision which specifies who was first or who was last in participating. Secondly, this research was carried out in a cross sectional format, this implies that the representation of the data analyzed is a one-time snap shot of the occurrences of the events investigated. Henceforth, a practitioner banker might notice different results as real life events could be different as a matter of timely changes (those might be weekly, monthly, or yearly) that can even be affected by forces beyond the scope of this research such: external factors like general economic forces, or internal factors like organizational shifting focus through renewed and revised organizational goals and targets. Thirdly, the studied research model that was theorized in this thesis, cannot lay the claim to be the most comprehensive view possible of accounting information systems impact on performance

Looking forward the researcher would like to recommend future studies to use this model as a stepping point by expand on the model's variables to have more of a holistic view. One suggestion is innovation as an outcome variable alongside performance, whereby, it is possible to integrate different innovation perspectives such as: product, process, speed or quality of innovation. Another suggestion is to explore different methods before ruling out training and education effect on performance. One possible strategy is to conduct a qualitative research to appreciate how training and education would have relation with organizational performance. Another proposal deals with data collection as future researchers are advised to collect data themselves to counter the non-response bias, while phasing out data collection over a number of waves through conducting a longitudinal study.

References

Abedifar, P., Ebrahim, S. M., Molyneux, P., & Tarazi, A. (2015). Islamic banking and finance: recent empirical literature and directions for future research. *Journal of Economic Surveys, 29*(4), 637-670.

Aiken, L. S., West, S. G., & Reno, R. R. (1991). *Multiple regression: Testing and interpreting interactions*: Sage.

Al-Mashari, M., Al-Mudimigh, A., & Zairi, M. (2003). Enterprise resource planning: A taxonomy of critical factors. *European Journal of Operational Research, 146*(2), 352-364.

Alewine, H. C., Allport, C. D., & Shen, W.-C. M. (2016). How measurement framing and accounting information system evaluation mode influence environmental performance judgments. *International Journal of Accounting Information Systems, 23*, 28-44.

Alshawi, S., Themistocleous, M., & Almadani, R. (2004). Integrating diverse ERP systems: a case study. *Journal of enterprise information management, 17*(6), 454-462.

AmericanAccountingAssociation. (2001). Journal of information systems. Retrieved 1/02/2018, 2018

Arnold, V., & Sutton, S. G. (2007). The impact of enterprise systems on business and audit practice and the implications for university accounting education. *International Journal of Enterprise Information Systems, 3*(4), 1.

Attaran, M. (2003). Information technology and business-process redesign. *Business Process Management Journal, 9*(4), 440-458.

Bagozzi, R. P., Yi, Y., & Phillips, L. W. (1991). Assessing construct validity in organizational research. *Administrative science quarterly*, 421-458.

Balogun, J., & Jenkins, M. (2003). Re-conceiving change management:: A knowledge-based perspective. *European Management Journal, 21*(2), 247-257.

Baskerville, R., Bunker, D., Olaisen, J., Pries-Heje, J., Larsen, T. J., & Swanson, E. B. (2014). *Diffusion and Innovation Theory: Past, Present, and Future Contributions to Academia and Practice.* Paper presented at the International Working Conference on Transfer and Diffusion of IT.

Bengson, J., & Moffett, M. A. (2011). *Knowing how: Essays on knowledge, mind, and action*: OUP USA.

Bingi, P., Sharma, M. K., & Godla, J. K. (1999). Critical issues affecting an ERP implementation. *IS Management, 16*(3), 7-14.

Bouwman, H., Van Den Hooff, B., & Van De Wijngaert, L. (2005). *Information and communication technology in organizations: adoption, implementation, use and effects*: Sage.

Bradford, M., & Florin, J. (2003). Examining the role of innovation diffusion factors on the implementation success of enterprise resource planning systems. *International Journal of Accounting Information Systems, 4*(3), 205-225.

Bradley, J. (2008). Management based critical success factors in the implementation of Enterprise Resource Planning systems. *International Journal of Accounting Information Systems, 9*(3), 175-200.

Brown, C. V., & Vessey, I. (2003). Managing the next wave of enterprise systems: leveraging lessons from ERP. *MIS Quarterly Executive, 2*(1), 65-77.

Brown, D. A., Booth, P., & Giacobbe, F. (2004). Technological and organizational influences on the adoption of activity-based costing in Australia. *Accounting & Finance, 44*(3), 329-356.

Browne, M. W., & Cudeck, R. (1993). Alternative ways of assessing model fit. *Sage focus editions, 154*, 136-136.

Bryman, A., & Bell, E. (2015). *Business research methods*: Oxford University Press, USA.

Bueno, S., & Salmeron, J. L. (2008). TAM-based success modeling in ERP. *Interacting with Computers, 20*(6), 515-523.

Cavaye, A. L. (1996). Case study research: a multi-faceted research approach for IS. *Information Systems Journal, 6*(3), 227-242.

Chapman, C. S., & Kihn, L.-A. (2009). Information system integration, enabling control and performance. *Accounting, Organizations and Society, 34*(2), 151-169.

Chenhall, R. H. (2005). Integrative strategic performance measurement systems, strategic alignment of manufacturing, learning and strategic outcomes: an exploratory study. *Accounting, Organizations and Society, 30*(5), 395-422.

Chenhall, R. H., & Moers, F. (2015). The role of innovation in the evolution of management accounting and its integration into management control. *Accounting, Organizations and Society, 47*, 1-13.

Choe, J.-M. (1996). The relationships among performance of accounting information systems, influence factors, and evolution level of information systems. *Journal of Management Information Systems, 12*(4), 215-239.

Cole, D. A. (1987). Utility of confirmatory factor analysis in test validation research. *Journal of Consulting and Clinical Psychology, 55*(4), 584.

Conner, K. R. (1991). A historical comparison of resource-based theory and five schools of thought within industrial organization economics: do we have a new theory of the firm? *Journal of Management, 17*(1), 121-154.

Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*: Sage publications.

Crotty, M. (1998). *The foundations of social research: Meaning and perspective in the research process*: Sage.

Dechow, N., & Mouritsen, J. (2005). Enterprise resource planning systems, management control and the quest for integration. *Accounting, Organizations and Society, 30*(7-8), 691-733.

Dezdar, S., & Ainin, S. (2011). The influence of organizational factors on successful ERP implementation. *Management Decision, 49*(6), 911-926.

Dubé, L., & Paré, G. (2003). Rigor in information systems positivist case research: current practices, trends, and recommendations. *Mis Quarterly*, 597-636.

Dunn, C. L., & Grabski, S. V. (2000). Perceived semantic expressiveness of accounting systems and task accuracy effects. *International Journal of Accounting Information Systems, 1*(2), 79-87.

Easterby-Smith, M., Thorpe, R., & Lowe, A. (2002). Management research methods. *London: Sage Publications Examinership-Friel Stafford, Available from www. liquidation. ie*.

Efendi, J., Mulig, E. V., & Smith, L. M. (2006). Information technology and systems research published in major accounting academic and professional journals. *Journal of Emerging Technologies in Accounting, 3*(1), 117-128.

Ferreira, A., Moulang, C., & Hendro, B. (2010). Environmental management accounting and innovation: an exploratory analysis. *Accounting, Auditing & Accountability Journal, 23*(7), 920-948.

Firth, M. (1996). The diffusion of managerial accounting procedures in the People's Republic of China and the influence of foreign partnered joint ventures. *Accounting, Organizations and Society, 21*(7-8), 629-654.

Flick, U. (2015). *Introducing research methodology: A beginner's guide to doing a research project*: Sage.

Gantman, S., & Fedorowicz, J. (2016). Communication and control in outsourced IS development projects: mapping to COBIT domains. *International Journal of Accounting Information Systems, 21*, 63-83.

Goddard, W., & Melville, S. (2004). *Research methodology: An introduction*: Juta and Company Ltd.

Goodhue, D. L., & Thompson, R. L. (1995). Task-technology fit and individual performance. *Mis Quarterly*, 213-236.

Gordon, L. A., & Narayanan, V. K. (1984). Management accounting systems, perceived environmental uncertainty and organization structure: an empirical investigation. *Accounting, Organizations and Society, 9*(1), 33-47.

Grabski, S. V., Leech, S. A., & Schmidt, P. J. (2011). A review of ERP research: A future agenda for accounting information systems. *Journal of Information Systems, 25*(1), 37-78.

Granlund, M., & Lukka, K. (1998). It's a small world of management accounting practices. *Journal of management accounting research, 10*, 153.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7 ed.).

Halabi, A. K., Barrett, R., & Dyt, R. (2010). Understanding financial information used to assess small firm performance: An Australian qualitative study. *Qualitative Research in Accounting & Management, 7*(2), 163-179.

Hitt, L. M., Wu, D., & Zhou, X. (2002). Investment in enterprise resource planning: Business impact and productivity measures. *Journal of Management Information Systems, 19*(1), 71-98.

Holtzman, Y. (2004). The transformation of the accounting profession in the United States: From information processing to strategic business advising. *Journal of Management Development, 23*(10), 949-961.

Hopper, L. M., Lambeth, S. P., Schapiro, S. J., & Whiten, A. (2008). Observational learning in chimpanzees and children studied through 'ghost'conditions. *Proceedings of the Royal Society of London B: Biological Sciences, 275*(1636), 835-840.

Hopwood, A. G. (1989). Behavioral accounting in retrospect and prospect. *Behavioral Research in Accounting, 1*(1), 1-22.

Huber, G. P. (1990). A Theory Of The Effects Of Advanced Information Technologie. *Academy of Management. The Academy of Management Review, 15*(1), 47.

Hunton, J. E. (2002). Blending information and communication technology with accounting research. *Accounting Horizons, 16*(1), 55-67.

Hyvönen, T. (2003). Management accounting and information systems: ERP versus BoB. *European Accounting Review, 12*(1), 155-173.

Ip, W., Lai, C., & Lau, C. (2004). A web-based training model of enterprise resources planning for the manufacturing industry. *International Journal of Engineering Education, 20*(5), 733-741.

Islam, K., CH, A. R., Bilal, A. R., & Ilyas, M. (2017). Accounting Information Systems: Traditions and Future Directions (By Using AIS in Traditional Organizations). *The Journal of Internet Banking and Commerce, 22*(2), 1-13.

Ismail, N. A., & King, M. (2014). Factors influencing the alignment of accounting information systems in small and medium sized Malaysian manufacturing firms. *Journal of Information Systems and Small Business, 1*(1-2), 1-20.

Ittner, C. D., & Larcker, D. F. (2001). Assessing empirical research in managerial accounting: a value-based management perspective. *Journal of accounting and economics, 32*(1-3), 349-410.

Jørgensen, B., & Messner, M. (2009). Management control in new product development: The dynamics of managing flexibility and efficiency. *Journal of management accounting research, 21*(1), 99-124.

Kaiser, H. F. (1974). An index of factorial simplicity. *Psychometrika, 39*(1), 31-36.

Kallunki, J.-P., Laitinen, E. K., & Silvola, H. (2011). Impact of enterprise resource planning systems on management control systems and firm performance. *International Journal of Accounting Information Systems, 12*(1), 20-39.

Kanellou, A., & Spathis, C. (2013). Accounting benefits and satisfaction in an ERP environment. *International Journal of Accounting Information Systems, 14*(3), 209-234.

Kang, D., & Santhanam, R. (2003). A longitudinal field study of training practices in a collaborative application environment. *Journal of Management Information Systems, 20*(3), 257-281.

Kim, J. (2011). Developing an instrument to measure social presence in distance higher education. *British Journal of Educational Technology, 42*(5), 763-777.

Küng, P., & Hagen, C. (2007). The fruits of Business Process Management: an experience report from a Swiss bank. *Business Process Management Journal, 13*(4), 477-487.

Lee, J., Siau, K., & Hong, S. (2003). Enterprise Integration with ERP and EAI. *Communications of the ACM, 46*(2), 54-60.

Lee, J. C., & Myers, M. D. (2004). Dominant actors, political agendas, and strategic shifts over time: a critical ethnography of an enterprise systems implementation. *The Journal of Strategic Information Systems, 13*(4), 355-374.

Lee, L., Petter, S., Fayard, D., & Robinson, S. (2011). On the use of partial least squares path modeling in accounting research. *International Journal of Accounting Information Systems, 12*(4), 305-328.

Lee, Z., & Lee, J. (2000). An ERP implementation case study from a knowledge transfer perspective. *Journal of Information technology, 15*(4), 281-288.

Lowe, A. (2004). Postsocial relations: Toward a performative view of accounting knowledge. *Accounting, Auditing & Accountability Journal, 17*(4), 604-628.

Lukka, K. (2010). The roles and effects of paradigms in accounting research. *Management Accounting Research, 21*(2), 110-115.

Madnick, S. E. (1995). Integration technology: the reinvention of the linkage between information systems and computer science. *Decision Support Systems, 13*(3-4), 373-380.

Mahama, H., & Cheng, M. M. (2012). The effect of managers' enabling perceptions on costing system use, psychological empowerment, and task performance. *Behavioral Research in Accounting, 25*(1), 89-114.

Maiga, A. S., Nilsson, A., & Jacobs, F. A. (2014). Assessing the interaction effect of cost control systems and information technology integration on manufacturing plant financial performance. *The British Accounting Review, 46*(1), 77-90.

Malikov, E., Kumbhakar, S. C., & Tsionas, M. G. (2016). A Cost System Approach to the Stochastic Directional Technology Distance Function with Undesirable Outputs: The Case of us Banks in 2001–2010. *Journal of Applied Econometrics, 31*(7), 1407-1429. doi: 10.1002/jae.2491

Malone, T. W., Yates, J., & Benjamin, R. I. (1987). Electronic markets and electronic hierarchies. *Communications of the ACM, 30*(6), 484-497.

Markus, M. L., Axline, S., Petrie, D., & Tanis, S. C. (2000). Learning from adopters' experiences with ERP: problems encountered and success achieved. *Journal of Information technology, 15*(4), 245-265.

Mauldin, E. G., & Ruchala, L. V. (1999). Towards a meta-theory of accounting information systems. *Accounting, Organizations and Society, 24*(4), 317-331.

Modell, S. (2010). Bridging the paradigm divide in management accounting research: The role of mixed methods approaches. *Management Accounting Research, 21*(2), 124-129.

Mohammady Garfamy, R. (2006). A data envelopment analysis approach based on total cost of ownership for supplier selection. *Journal of enterprise information management, 19*(6), 662-678.

Mudie, M. W., & Schafer, D. J. (1985). An information technology architecture for change. *IBM Systems Journal, 24*(3.4), 307-315.

Mulaik, S. A., James, L. R., Van Alstine, J., Bennett, N., Lind, S., & Stilwell, C. D. (1989). Evaluation of goodness-of-fit indices for structural equation models. *Psychological Bulletin, 105*(3), 430.

Nah, F. F.-H., & Delgado, S. (2006). Critical success factors for enterprise resource planning implementation and upgrade. *Journal of Computer Information Systems, 46*(5), 99-113.

Netemeyer, R. G., Bearden, W. O., & Sharma, S. (2003). *Scaling procedures: Issues and applications*: Sage Publications.

Ngai, E. W., Law, C. C., & Wat, F. K. (2008). Examining the critical success factors in the adoption of enterprise resource planning. *Computers in industry, 59*(6), 548-564.

Nicolaou, A. I. (2000). A contingency model of perceived effectiveness in accounting information systems: Organizational coordination and control effects. *International Journal of Accounting Information Systems, 1*(2), 91-105.

Nunnally, J. C., & Bernstein, I. H. (1978). Psychometric theory.

Perrewé, P. L., Hochwarter, W. A., Rossi, A. M., Wallace, A., Maignan, I., Castro, S. L., . . . Tang, M. (2002). Are work stress relationships universal? A nine-region examination of role stressors, general self-efficacy, and burnout. *Journal of International Management, 8*(2), 163-187.

Prasad, A., & Green, P. (2015). Organizational competencies and dynamic accounting information system capability: impact on AIS processes and firm performance. *Journal of Information Systems, 29*(3), 123-149.

Premkumar, G., Ramamurthy, K., & Nilakanta, S. (1994). Implementation of electronic data interchange: an innovation diffusion perspective. *Journal of Management Information Systems, 11*(2), 157-186.

Quattrone, P., & Hopper, T. (2005). A ‘time–space odyssey’: management control systems in two multinational organisations. *Accounting, Organizations and Society, 30*(7-8), 735-764.

Ram, J., Corkindale, D., & Wu, M.-L. (2013). Implementation critical success factors (CSFs) for ERP: Do they contribute to implementation success and post-implementation performance? *International Journal of Production Economics, 144*(1), 157-174.

Rotchanakitumnuai, S., & Speece, M. (2003). Barriers to Internet banking adoption: a qualitative study among corporate customers in Thailand. *International Journal of Bank Marketing, 21*(6/7), 312-323.

Sabherwal, R., & King, W. R. (1991). Towards a theory of strategic use of information resources: an inductive approach. *Information & Management, 20*(3), 191-212.

Sadagopan, S. (2003). Enterprise resource planning. *Encyclopedia of Information Systems, 2*, 169-184.

Sajady, H., Dastgir, M., & Nejad, H. H. (2012). Evaluation of the effectiveness of accounting information systems. *International Journal of Information Science and Management (IJISM), 6*(2), 49-59.

Salehi, M., Rostami, V., & Mogadam, A. (2010). Usefulness of accounting information system in emerging economy: Empirical evidence of Iran. *International Journal of Economics and Finance, 2*(2), 186.

Saunders, M. N., & Lewis, P. (2012). *Doing research in business & management: An essential guide to planning your project*: Pearson.

Shang, S., & Seddon, P. B. (2007). Managing process deficiencies with enterprise systems. *Business Process Management Journal, 13*(3), 405-416.

Shields, M. D. (1997). Research in management accounting by North Americans in the 1990s. *Journal of management accounting research, 9*, 3.

Silverman, D. (2013). *Doing qualitative research: A practical handbook*: SAGE Publications Limited.

Simkin, M. G., Norman, C. S., & Rose, J. M. (2014). *Core concepts of accounting information systems*: John Wiley & Sons.

Snieder, R., & Larner, K. (2009). *The art of being a scientist: A guide for graduate students and their mentors*: Cambridge University Press.

Somers, T. M., & Nelson, K. G. (2003). The impact of strategy and integration mechanisms on enterprise system value: Empirical evidence from manufacturing firms. *European Journal of Operational Research, 146*(2), 315-338.

Somers, T. M., & Nelson, K. G. (2004). A taxonomy of players and activities across the ERP project life cycle. *Information & Management, 41*(3), 257-278.

Soudani, S. N. (2012). The usefulness of an accounting information system for effective organizational performance. *International Journal of Economics and Finance, 4*(5), 136.

Srinivasan, K., Kekre, S., & Mukhopadhyay, T. (1994). Impact of electronic data interchange technology on JIT shipments. *Management Science, 40*(10), 1291-1304.

Stefanou, C. J. (2006). The complexity and the research area of AIS. *Journal of enterprise information management, 19*(1), 9-12.

Sun, J. (2005). Assessing goodness of fit in confirmatory factor analysis. *Measurement and Evaluation in Counseling and Development, 37*(4), 240-256.

Sutton, S. G. (2006). Extended-enterprise systems' impact on enterprise risk management. *Journal of enterprise information management, 19*(1), 97-114.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*: Allyn & Bacon/Pearson Education.

Taipaleenmäki, J., & Ikäheimo, S. (2013). On the convergence of management accounting and financial accounting–the role of information technology in accounting change. *International Journal of Accounting Information Systems, 14*(4), 321-348.

Tallon, P. P. (2008). Inside the adaptive enterprise: an information technology capabilities perspective on business process agility. *Information technology and management, 9*(1), 21-36.

Trigo, A., Belfo, F., & Estébanez, R. P. (2014). Accounting information systems: The challenge of the real-time reporting. *Procedia Technology, 16*, 118-127.

Umble, E. J., Haft, R. R., & Umble, M. M. (2003). Enterprise resource planning: Implementation procedures and critical success factors. *European Journal of Operational Research, 146*(2), 241-257.

Urquía Grande, E., Pérez Estébanez, R., & Muñoz Colomina, C. (2011). The impact of Accounting Information Systems (AIS) on performance measures: empirical evidence in Spanish SMEs.

Van der Stede, W. A., Young, S. M., & Chen, C. X. (2005). Assessing the quality of evidence in empirical management accounting research: The case of survey studies. *Accounting, Organizations and Society, 30*(7-8), 655-684.

Van der Stede, W. A., Young, S. M., & Chen, C. X. (2006). Doing management accounting survey research. *Handbooks of management accounting research, 1*, 445-478.

Venkatesh, V., Brown, S. A., & Bala, H. (2013). Bridging the qualitative-quantitative divide: Guidelines for conducting mixed methods research in information systems. *Mis Quarterly, 37*(1).

Wiles, R., Crow, G., & Pain, H. (2011). Innovation in qualitative research methods: A narrative review. *Qualitative research, 11*(5), 587-604.

Wilkin, C. L., & Chenhall, R. H. (2010). A review of IT governance: A taxonomy to inform accounting information systems. *Journal of Information Systems, 24*(2), 107-146.

Williams, B. C. (1992). Auditing and recent Developments in IT. *Managerial Auditing Journal, 7*(5).

Wyse, J. E., & Higgins, C. A. (1993). MIS integration: a framework for management. *Journal of Systems Management, 44*(2), 32.

Zalaghi, H., & Khazaei, M. (2016). The Role of Deductive and Inductive Reasoning in Accounting Research and Standard Setting. *Asian Journal of Finance & Accounting, 8*(1), 23-37.

Zhang, Z., Lee, M. K., Huang, P., Zhang, L., & Huang, X. (2005). A framework of ERP systems implementation success in China: An empirical study. *International Journal of Production Economics, 98*(1), 56-80.

TABLE APPENDIX: SURVEY QUESTIONNAIRE

The role of accounting information systems implementation and integration on organizational performance.

Dear Sir/ Madam:

The survey in your hands looks at how Accounting information systems implementation and integration in your banking institution is appreciated. The researcher appreciate your participation as this study would not be possible without your valuable contributions. The author hereby declares that all information collected from this survey will be kept confidential and will not be shared with your employer or any other party, and shall be only used for the purpose completing the researcher's master's thesis in finance.

In this survey there are no right or wrong answers, the questions are aimed at understanding your own personal opinion and experience regarding the status of accounting information systems within the bank you are currently working at.

This survey will take about 10 minutes to finish, and I would like to thank you in advance for investing that amount of time to participate in this study

Thaer khasawneh

MSc in finance student

Near East Univerity

Lefkosha/ TRNCEmail : Thaer.khasawneh11@gmail.com

Questionnaire survey

Gender:

- Male
- female

Marital Status:

- Single
- Married

Age:

- Under18
- 18-30
- 31-40
- 41-50
- 51-60
- Over 60

Education Level:

- Bachelors& above

- o Msc
- o phD

Monthly Income:

- o Under 500
- o 500 to 999
- o 1,000 to 1,499
- o 1,500 to 2,000
- o Above 2,000

I would like to describe the Accounting information systems implementation status in the bank I work at as follows:

•implementation was completed on time

- o not at all
- o to some extent
- o to moderate extent
- o to large extent
- o to very large extent

- o

•implementation was completed within budget
- o not at all
- o to some extent
- o to moderate extent
- o to large extent
- o to very large extent

•implementation was completed as expected
- o not at all
- o to some extent
- o to moderate extent
- o to large extent
- o to very large extent

•users are satisfied with the implemented system
- o not at all
- o to some extent
- o to moderate extent
- o to large extent
- o to very large extent

I would like to describe the Accounting information systems integration status in the bank I work at as follows:

• Accounting information systems are

functionally linked with other

management information/legacy systems

within the organization

o not at all

o to some extent

o to moderate extent

o to large extent

o to very large extent

• Accounting information systems are

linked with information systems of

partner organizations or clients.

o not at all

o to some extent

o to moderate extent

o to large extent

o to very large extent

The same information is stored in

separate systems for different

---

application areas (R).

o not at all

o to some extent

o to moderate extent

o to large extent

o to very large extent

- Communication networks for accounting information systems have been designed to support and adapt to the bank's business technology needs (e.g. smartphones apps, onlinebanking)

o not at all

o to some extent

o to moderate extent

o to large extent

o to very large extent

I would like to describe the Training and education efforts related to accounting information systems in my bank as follows:

•Was of adequate length and detail

- o not at all
- o to some extent
- o to moderate extent
- o to large extent
- **o** to very large extent

•Substantially improved the level of users understanding

- o not at all
- o to some extent
- o to moderate extent
- o to large extent
- o to very large extent

•Gave users confidence in the new system

- o not at all
- o to some extent
- o to moderate extent
- o to large extent
- o to very large extent

•Was handled by knowledgeable and competent trainers

- o not at all
- o to some extent

- o to moderate extent
- o to large extent
- o to very large extent

I would like to describe the Organizational performance status in the bank I work at as follows:

•My bank exhibited improved service delivery cycle time

- o Worst in the industry
- o Worse than industry
- o Equal to the industry
- o Better than industry
- o Best in the industry

• my bank does seek to Acquire precise knowledge of customer buying patterns

- o Worst in the industry
- o Worse than industry
- o Equal to the industry
- o Better than industry
- o Best in the industry

• my bank shows achieves increased sales of existing products

- o Worst in the industry
- o Worse than industry

- Equal to the industry
- Better than industry
- Best in the industry

o

•my bank does seek to Establish strong

and continuous relationship with

customers

- Worst in the industry
- Worse than industry
- Equal to the industry
- Better than industry
- Best in the industry

ETHICS COMMITEE APPROVAL

YAKIN DOĞU ÜNİVERSİTESİ

BİLİMSEL ARAŞTIRMALAR ETİK KURULU

11.07.2018

Sayın Thaer Alı Khasawneh

Bilimsel Araştırmalar Etik Kurulu'na yapmış olduğunuz YDÜ/SB/2018/200 proje numaralı ve **"Accounting İnformation Systems İmpact On Jordanian Banks Performance: The Moderating Role Of Training And Education"** başlıklı proje önerisi kurulumuzca değerlendirilmiş olup, etik olarak uygun bulunmuştur. Bu yazı ile birlikte, başvuru formunuzda belirttiğiniz bilgilerin dışına çıkmamak suretiyle araştırmaya başlayabilirsiniz.

Doçent Doktor Direnç Kanol

Bilimsel Araştırmalar Etik Kurulu Raportörü

Direnc Kanol

Not: Eğer bir kuruma resmi bir kabul yazısı sunmak istiyorsanız, Yakın Doğu Üniversitesi Bilimsel Araştırmalar Etik Kurulu'na bu yazı ile başvurup, kurulun başkanının imzasını taşıyan resmi bir yazı temin edebilirsiniz.

YAKIN DOĞU ÜNİVERSİTESİ

BİLİMSEL ARAŞTIRMALAR ETİK KURULU

11.07.2018

Dear Thaer Alı Khasawneh

Your application titled **"Accounting information systems impact on Jordanian banks performance: the moderating role of training and education"** with the application number YDÜ/SB/2018/200 has been evaluated by the Scientific Research Ethics Committee and granted approval. You can start your research on the condition that you will abide by the information provided in your application form.

Assoc. Prof. Dr. Direnç Kanol

Rapporteur of the Scientific Research Ethics Committee

Direnc Kanol

Note: If you need to provide an official letter to an institution with the signature of the Head of NEU Scientific Research Ethics Committee, please apply to the secretariat of the ethics committee by showing this document.

SIMILARITY

all chapter_Master student

ORIGINALITY REPORT

17%	12%	14%	%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	aaahq.org Internet Source	2%
2	www.researchgate.net Internet Source	1%
3	Jiwat Ram, David Corkindale, Ming-Lu Wu. "Implementation critical success factors (CSFs) for ERP: Do they contribute to implementation success and post-implementation performance?", International Journal of Production Economics, 2013 Publication	1%

4 Ganesh D. Bhatt, Marvin D. Troutt. "Examining the relationship between business process improvement initiatives, information systems integration and customer focus: an empirical study", Business Process Management Journal, 2005
Publication
1%

---

5 www.sciencedirect.com
Internet Source
1%

---

6 news.tmcnet.com
Internet Source
1%

---

7 Adam S. Maiga, Anders Nilsson, Fred A. Jacobs. "Assessing the interaction effect of cost control systems and information technology integration on manufacturing plant financial performance", The British Accounting Review, 2014
Publication
1%

---

8 Sonia Gantman, Jane Fedorowicz. "Communication and control in outsourced IS
1%