USE ACCOUNTING INFORMATION SYSTEM AS STRATEGIC TOOL TO IMPROVE SMEs' PERFORMANCE IN IRAQ MANUFACTURING FIRMS

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Use accounting information system as strategic tool to improve SMEs' performance in Iraq manufacturing firms

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By

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I declare that this thesis entitled "Use accounting information system as strategic tool to improve SMEs' performance in Iraq manufacturing firms" is a result of my own research excepted as cited in the references. The thesis has not been accepted for any degree and is not concurrently submitted as a candidate of any other degree.

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ABSTRACT

These days organizations are operating and competing in an information age. Information systems (IS) are widely use by many organizations to automate existing operation and to improve performance activities efficiency, and most the researches shown that information system adoption did increase firms' performances and operations efficiency. Accounting information system (AIS) is one of an important component of modern information system. On the other hand, the growing importance of small and medium enterprises (SMEs) in the production sector is undeniable, whether among industrialized countries or developing countries. But there is very limited research has been prevailed by Iraq SME's to improve their performance through AIS. So the main aim of this thesis is to explore the determinants of influence accounting information system on SMEs among Iraq manufacturing firms. This study would add value by providing a significant contribution towards use of AIS practices among SMEs in Iraq manufacturing firms. The research method used was primary data collection technique. The sampling was done on 118 owners and managers at the Industrial Area of Baghdad. The findings of this study reflect the findings of previous studies that there is a positive relationship between use AIS and improve the performance. This shows that Iraqi SMEs can improve their performance through use AIS.

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LIST OF ABREVIATIONS

AIS: Accounting Information System

IS: Information System

IT: Information Technology

GDP: Gross domestic product

IQ: Information Quality

DQ: Data Quality

MA: Management Accounting

SME: Small and Medium enterprise

SMEs: Small and medium enterprises

MIS: Management Information System

CHAPTER ONE

INTRODUCTION

1.1 Introduction

These days organizations are operating and competing in an information age. Information has become a major resource of most organizations, economies, and also societies (Xu, 2003). Today information systems are widely use by many organizations to automate existing operation and to improve performance activities efficiency (Kharuddin, Ashhari & Nassir, 2010).

Accounting information system (AIS) is one of an important component of modern information system (IS). Developments in the areas of accounting, information technology (IT) and IS over the last decades of twentieth century have widened the range and roles of AIS (Mitchell, Reid & Smith, 2000).

Information age has changed the way in which traditional accounting systems work traditionally, accounting information system tended to mirror historically developed manual accounting processes. Therefore, traditional AIS were unable to adapt to change, to support critical business processes and models, and to satisfy users' information requirements, which are constantly changing over time. Modern AIS can generate several types of information including accounting and non-accounting information to help management manages short-term problems and integrates operational considerations within long-term strategic plans (Mitchell et al., 2000).

There is several electronically captured information that needs to be processed, stored, and distributed through IT-based accounting systems. Advanced IT has dramatically increased the ability and capability of PAI. At the same time, however, it has also introduced some issues that traditional accounting systems have not experienced.(Xu. Com. EC. 2003).

The growing importance of SMEs in the production sector is undeniable, whether among industrialized countries or developing countries, the SMEs represent 90% of the total enterprises in most economies of the world. It contributes about 46% of GDP, and job provider about 40% to 80% of the total employment. The same scenario happens in most Arab countries including Iraq (Daod. 2010).

Prior researches shown that information system adoption did increased firms' performances and operations efficiency. (Kharuddin, Ashhari & Nassir, 2010). Meanwhile practical experience has proved that the use of information technology and information systems could give positive impacts on organizational performance (Ismail, Abdullah & Tayib, 2003). In particular, Accounting Information Systems (AIS) maintain and produce the data Used by SMEs to plan, evaluate, and diagnose the dynamics of performance (Anthony, Reese & Herrenstein, 1994).

Generally information technology has affected many organization including accounting process. Prior traditional accounting system of manually entering and recording which usually on daily basis has becoming inefficient. Errors such as wrong data entry, inefficient tasks performance

and massive utilization of paper products have create many problems to firms. All these problems actually have led to the emergence of accounting information system. A system that is able to gather, analyze and produce reports more efficiently (Ismail, Abdullah & Tayib, 2003).

In summary, the above discussions highlight several important issues relating to accounting and information system from the perspective SMEs' performance. Below is the problem statement of this research.

1.2 Problem Statement

In the information age knowledge, the information able to create competitive advantage for firms, this new environment poses threats as well as new opportunities to accountants in their effort to improve firms' performance. Accounting is one of the most important component in business management and its renaissance is in line with technological changes and globalization. It is common that the main objective of firms is to maximize profit either in terms of increases in business productivity or by achieving rapid expansion in market domination. To achieve this goal, SMEs need to be responsive to the changes in the environments, in particular to the information technology revolution. Nowadays, information technology is a must in many organizations.

As I mentioned above that the SMEs in industrial sector in Iraq suffer from serious problems of survival, competition and development in a difficult environment, and promising at the same

time (Daod. 2010). One of the bigger problems faced by SMEs in Iraq is technical difficulties. This is mostly due to poor experience how to administer and information system (al-Rubaie, 2010). Prior researches have shown that information system adoption did increase firms' performances and operations efficiency especially in big organization (Kharuddin, Ashhari & Nassir, 2010). Generally literature on accounting in the AIS shows that several scholars have investigated the adoption of the system among large firms only (Premkumar, 2003). and very little knowledge is known about the evolution of computing in SMEs (Cragg & King, 1993). This study will focus on SMEs in Iraq where the companies are dependent on the accounting information systems in their work to evaluation of the effectiveness of sophisticated accounting information systems to meet the strategic goals and enhance their performance.

1.3 Research Questions

This study seeks to answer the following questions:

1. How important the adoptions of accounting information systems among SMEs as to meet the strategic goals and enhance performance?

2. How important and influential AIS on building Competitiveness of SMEs in industrial sector?

3. How important of adoption accounting information systems as to executive their strategic plan?

1.4 Research Objectives

Through this study, I try to achieve some of objectives, and the most important:

1. To identify the importance to adopt accounting information system as strategic tool to improve SMEs' performance;

2. To identify the importance of adoption AIS as to build Competitiveness of SMEs in industrial sector ;

3. To identify the importance and influence of accounting information systems in meeting the strategic plan of SMEs.

1.5 Significant of The Study

This study will be of very importance and it will contribute to the literature of accounting information in middle east and specially in Iraq because it improve and give adequate contribution to establish better organizational performance. AIS is believed capable to improve performance, information processing and prepare reports. Outcomes of this research contribute to the body of knowledge both in AIS, strategic planning, and performance, besides other areas. For example, it can help arouse the awareness of performance issues in the AIS field.

Thus, understanding how these factors affect organizations' AIS performance also may also be useful to practitioners. Focusing on those factors that are more critical than others should lead to efficiency and effectiveness of accounting information system's procedures. In brief, the results

from this research should help SMEs and big organizations' top management, accountants, and information technology managers obtain better understanding of accounting information system's performance issues.

1.6 Scope of The Study

This research project focuses on listed SMEs industrial sector in Iraq which adapting to the accounting information system as strategic tool to improve firms' performance. This study had determined the adoption of accounting information system as tool to improve firms' performance. Finally, with analysis the results of this study the SMEs should be able to fully understand the role of modern accounting information systems, and its implication on the firms' performance.

1.7 Limitations

This research is focused on SMEs in Iraq environment as a developing country. However, due to the limited time and information resources available about SMEs, this research may have come limitations.

1.8 Organization of The Study

The results of this study consists of five chapters organized as follows: Chapter one comprises the introduction, background of the study, problem statement, research question, research

objectives, research significances, scope of study, organization of the other chapters a and conclusion. The second chapter provides a review of the related literature about accounting information system as strategic tool to improve performance. The third chapter emphasizes the research methodology consisting of the theoretical framework and data collection. Chapter four explains the findings of the research study. Meanwhile final chapter discusses the conclusions and recommendations of the study.

1.9 Conclusion

Accounting information system needs to be identified and measured in SMEs, for that purpose of this chapter is to lay the foundation for the research by providing background information and introducing the research problem and research questions. The research approach and methodology contribute to both theory and practice of improve performance through accounting information systems.

CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

The previous chapter introduced the research problem about improve SMEs' performance through accounting information systems as strategic tool. In turn, the aim of this chapter is to review the literature concerning SMEs' performance, accounting information systems, and impact of accounting information systems as strategic tool that are relevant to the research problem.

2.2 Information System and Accounting Information System

Information system generally is the methods that possess established record. It could collect, analyze, calculate, classify, record and report the transactions and other events which could affect firm. The collection, processing, storage of data, and reporting information which is used to achieve firm's goals, (Milad. 2011) described information system as:

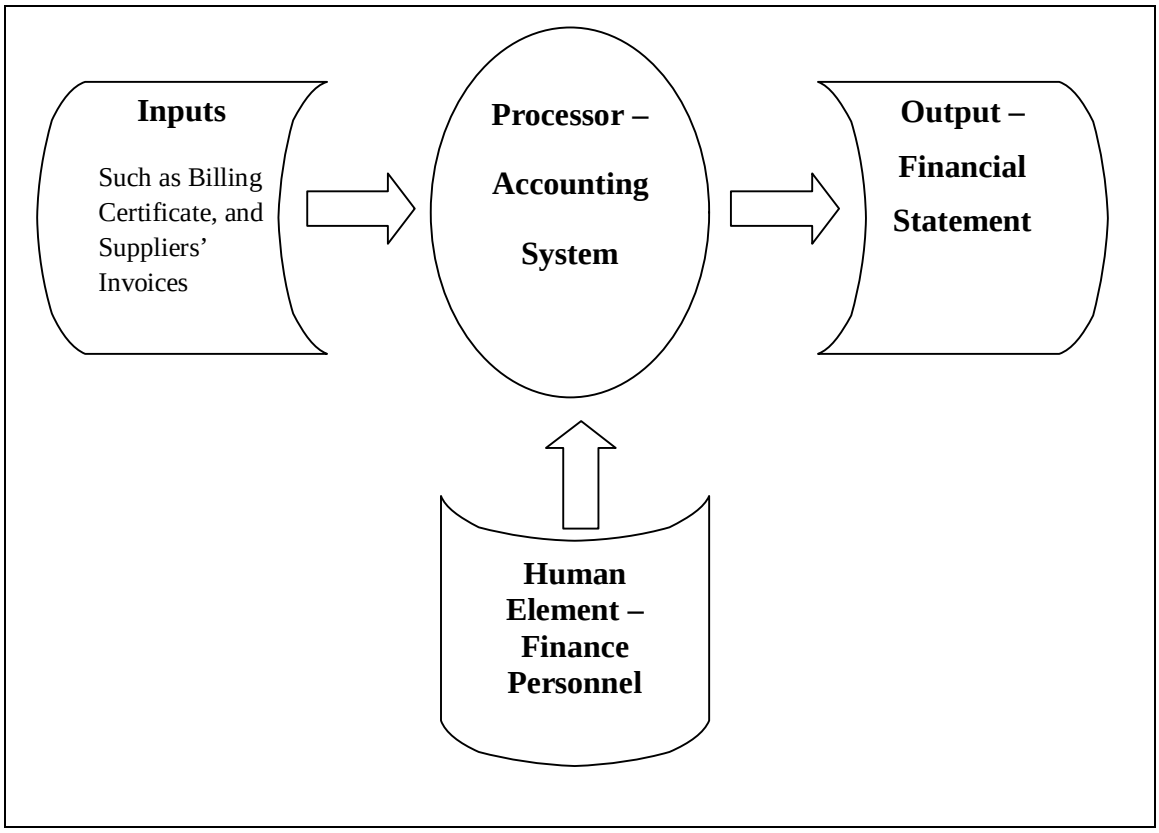
1. Input, record and collect all the transaction and data relating to the company;

2. Data processing, data are the facts that are gathered and processed by the information system, most organizations process data by using computers;
3. Data storage, all the processed data in the system must store and used when needed;
4. Data control of the information system should provide correct information to users and at the same time information system should also reduce the error in the information;

5. Output, provides meaningful and vital information produced by the information system to information users.

According to Sori (2009), accounting information system (AIS) is one of the key parts of information systems (IS), and it is vital to all organizations. Every firm either profit or non profit-oriented needs to maintain and develops the accounting information systems (AISs). To better understand AIS, the three words AIS came from, accounting, information, and system would be elaborate separately, Firstly on the accounting could be divided into three components; it is name information system, language of business, and source of financial information. Secondly, information is a data processing that provides a basis for making decisions, and taking action. Finally is, system which is an integrated entity between AIS and knowledge management. Wilkinson said that effective AIS perform several functions such as data collection, data maintenance, data management, which also include security, and information generation.

Figure 2.1: summarized AIS process



The figure adopt from (Sori, 2009)

The role played by accounting functions has been grown with the the development of AIS. Automated AIS used by firms expedite the process to generate financial statement and reduce the human errors. More specific, the major role of AIS is to assign quantitative value of the past, present and future economics events (Sori, 2009).

AIS also provide information on both actual and budget data which would helps firm to establish, plan, and control operation. Good management of resources and better control of expenditure, budgeting and forecasting enhance the well being of firm (Kharuddin, Ashhari & Nassir, 2010).

The AIS is certainly played an important role that contributes to firm's value added by providing internally generated input i.e. financial statements, such into should help firm made better strategic plan.

2.3 The Importance of Small and Medium Enterprises

Firms that trades today faces industrialization oriented, specifically there is a shift from the adoption and promotion of large-scale industries and firms to small-scale industries and firms.

There is no general definition for SMEs. This is due to the adoption of a certain standard of definition in terms of both number of workers or invested capital or technical development. SMEs according to Development Committee of America refers to firm that own by one person or several people, and the geographical market coverage is small, and in general, the size of the enterprise is small relative to the industry in which its operate. In Iraq the definition according to Central Bureau of Statistic as "companies in which it operates have one to nine employees and the value of machinery and equipment in less than a hundred thousand dinars, meanwhile the medium-sized companies are" companies in which it operates have ten to twenty nine employees

and the value of machinery and equipment worth more than one hundred thousand dinars (Hassan, 2006).

There is no general definition of SMEs, but there is a set of attributes that can distinguish them from the rest of the industry, which can be summarized as follows (Premkumar, 2003):

1. Most of its activities are individual in nature such as in the field of management, planning and marketing, especially small ones, and in many cases are familiar in terms of management and employees.
2. Limited Invested Capital.
3. Simplicity of the organizational structure where the direct management by the project owner as well as planning and management of production, marketing and financial operations.
4. SMEs have as high ability to adjust according to market conditions both in terms of quantity or quality of production, which means the ability to face difficulties in times of economic crises and recessions.

From economic point of view, SMEs is an essential sector of all countries' economies as its represent 90% of the total enterprises in most economies of the world and contribute about 46% of GDP, supplies 40% and 80% of the total employment besides and occupies a unique place in economic and social development, The role of SMEs, could be described as:

1. Support economic growth and prosperity and revitalization of the economic wheel, also SMEs has ability to continue to difficult work conditions.
2. Provide employment opportunities and promote a policy to combat unemployment, as it used labor-intensive production methods would lead to the raise of employment rates for the workforce.
3. Reduce of chronic poverty and expansion lead to better distribution of income. because of Its need to investment possibilities modest allow a large number of members of the community to enter those enterprise.
4. Attract foreign investment due to availability of its resources and enhance the competitiveness of human resources and technical.

According to Al-Rubaie (2010), one of the bigger problems that facing SMEs in Iraq is technical difficulty which is due to poor experience of the business owners at both administrative and information system.

Given the economic importance and their intrinsic community value, the role of SMEs in all developed countries and developing countries, despite all these challenges the SMEs can benefit disproportionately from the opportunities offered by information technologies. For example the internet can make size irrelevant, as it can help enterprise to extend their geographical reach and secure new customers in ways formerly restricted to much larger companies, This means that both governments and the business community must remain attentive to the developments in the

electronic marketplace and IS in order to prevent or remove barriers to enable SME to participate and improve performance (Cragg & King, 1993).

2.4 Factors That Effect on Adoption of AIS in SMEs in Manufacturing Firms

Many studies have highlighted the need to develop a fit between firms' strategy and information technology (IT) strategy to improve their performance. Many firms struggle to achieve alignment and, to date there has been several studies of alignment and in particular the factors that influence the alignment in SMEs. Reviews of accounting and information systems literature showed that many studies have examined the alignment (Ismail & King, 2007). This issue is very important because results from previous studies suggest that many firms struggle to achieve alignment (Moody, 2003). In particular, it focused on the alignment between the AIS requirements and the capacity of accounting systems to generate the information, in the specific context of SMEs. This paragraph focused on AIS alignment because AIS is an important component of modern information systems within SMEs, flowing the factor that impact on adoption AIS in SMEs (Ismail & King, 2007):

1. Sophisticated IT**;** firms that adopt more sophisticated IT will have higher ability to have better AIS than those firms which less sophisticated IT. Adoption of advanced IT could leads to more available and quick retrieval of information. SMEs with extensive resources may another gain a competitive edge i.e. IT in support of or to strengthen their performance.
2. Manager Knowledge: SMEs with managers having high levels of IT and accounting knowledge will have a higher ability to implement AIS than those SMEs that with

managers having low levels of IT and accounting knowledge. Most often, managers of the small or medium firms are the only persons who fully understand the objectives and directions of the firm. Therefore, managers who are aware of new technologies would be able to choose the better software for their firms. In the context of AIS, managers with both information technology and accounting knowledge are in a better situation than those without such knowledge, because they can understand their firm's AIS requirements and then use their IT knowledge to determine the IT deployment that matches the firm's information needs. Therefore, it is expected that in firms wherein the manager possesses sufficient IT and accounting knowledge, there will be a higher degree of AIS implement and benefit (Jarvenpaa & Ives 1991).

3. Manager Commitment**:** In relation to knowledge, there is positive relationship between SMEs with managers having high levels of commitment and AIS alignment. Manager's commitment plays a vital role in the effectiveness of information system implementation in SMEs. Due to their dominant roles, managers can bring and improve IT and its with the firm's objectives and strategies. Manager commitment in the form of participation in computerization projects would also encourage users to develop positive attitudes towards IT that lead to increase the ability to use (Jarvenpaa & Ives 1991).
4. Firm Size: according to Kharuddin et al (2010), firm size also recognized as one of the important factors that influence IT sophistication. Larger firms are more likely to make extensive use of IT. Computerization projects are also less likely to succeed in small firms, when compared to large firm, due to of their limited resources and lack of information systems structure. And most small firms don't have funds to invest in IT, and

don't have the support to help them to choose the right technology. Therefore, it is expected that larger firms are more likely to achieve higher degrees of AIS alignment.

5. SMEs and experience: Most of SMEs are have a lacked of in accounting and IT experts. This is due to a low of awareness and understanding on the importance and role of accounting information and also the capability of IT to generate the information. It inhibits SMEs from adopting strategic accounting information and technologies. Hence, the existence of accounting staff may assist SME managers to understand the importance of accounting information in monitoring their financial, and non-financial performance, whilst IT staffs may help them in identifying the right technology to generate the required information. External expertise can play important role to computerization projects of SMEs such as vendors, consultants and government assistance could accelerate the adoption of IT among SMEs. Besides that, accounting firms have also been seen as a potential source of advice for SMEs on the use of accounting information systems.

2.5 Data Quality within AIS and Performance

Today's firms are operating and competing in an information age. Information now becomes a key resource of most firms. Information Quality (IQ) issues have become very important for firms that want to better perform, obtain competitive advantage, or to survive in contemporary business environment. Inaccurate and incomplete data often adversely affect the competitive success of an organization (Redman, 1992). Indeed, lack of quality information can have significant impact on SMEs.

Data quality (DQ) has described from most researchers from the perspective of accuracy. Researchers and practitioners indicate that data quality should be defined beyond accuracy. General data quality is ‘data that is fit for use by data users and (Huang, Lee & Wang, 1999) described data quality dimensions as:

1. Accuracy**:** happening when the recorded value is in conformity with the actual value.
2. Timeliness: happening when the recorded value is represents the present value, and the users able to get it immediately.
3. Completeness: happen when all values for a certain variable are recorded and represent all transactions.
4. Consistency: happening when data values representation is the same in all cases.

Providing and assuring DQ is one of important and major objective of accounting information systems. In accounting where internal control systems require maximum reliability with minimum cost, the major data quality dimension used is accuracy defined in terms of the frequency, size, and distribution of errors in data. In assessing the value of AIS researchers have also identified relevance and timeliness as desirable attributes (Wang, Storey & Firth, 1995).

On the other hand, Assuring the quality, speed, and reasonable cost of information has become a priority for decision makers and their organizations, accountants can add significant value by improving the quality of their organizations' information and helping to reduce associated costs. Stated that companies that have reengineered their production processes have identified four dimensions of quality: relevance, reliability, timeliness, and cost. To be successful, a company

must deliver a product that satisfies customer needs (relevance) and is free of manufacturing defects (reliable) (Wang, Storey & Firth, 1995) (Clikeman, 1999).

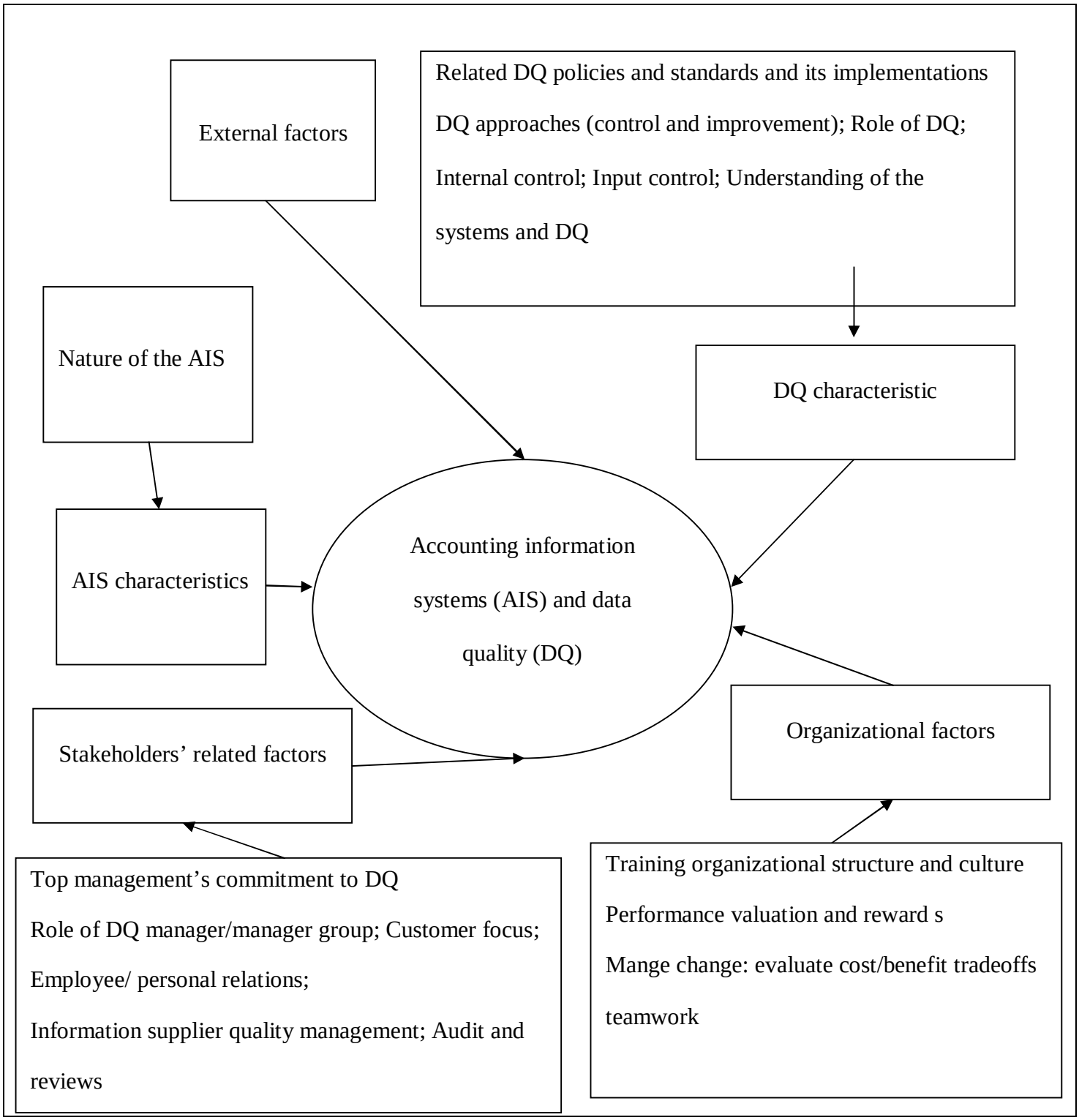
According to Birkett (1986) The management accountants (MA) within AIS were viewed as involving the design and operation of financial advisory and information systems (IS) in organizational settings Three factors influence quality of MA as follow:

1. Compliance: Stressed on the design of systems concerned with technical compliance with external regulations, and reporting requirement.
2. Competitive support: represent the provision of financial services to the managements in order to enhance the SMEs' competitiveness. The accounting function is seen as one of producing financial services, that add value, and the management team is seen as beneficiaries of those services.
3. Control: it is the systems to support resource management team and control including standard costing and variance analysis, budgeting, responsibility accounting, and accounting performance measures.

AIS should be treated as both: product and services the researchers draw distinctions between product quality and service quality of information. Product quality involves product features that include tangible measures of information quality, like accuracy, completeness, freedom from errors, and omission. Service quality includes dimensions related to the service delivery process, and intangible measures like ease of manipulation, in addition to security, and added value of the information to consumers (Kahn, Strong & Wang, 2002).

It is necessary to highlight on critical success factors for data quality in accounting information system. To make picture clear or about role and factors that influence AIS in DQ, there are several categories of factors have the potential to influence DQ in AIS, these are, AIS characteristics, DQ characteristics, stakeholders 'related factors', also organizational factors, and external factors. This Figure shows the factors that influence DQ of AIS (Xu EL 2003):

Figure 2.2: factors that influence DQ of AIS



Factors that influencing DQ in AIS (Xu EL 2003)

According to the relationships of impact of those factors, which organized in Figure 2-2 include five constructs at three levels. The first level is the external environment factors that consists of external factors, the second level is the organizational environment which consists of organizational factors, and the third level is the AIS, which has AIS characteristics and DQ characteristics. Stakeholders of AIS could come from within the AIS outside the AIS, or within the firm and outside the firm. The external factors have been identified as factors outside the firm swhich the firms has little or no control over them not like firm level (Xu EL 2003).

AIS provide information on both actual and budget data of the firm that helps firm's management to improve plan, control business operation, and to compare the performance to determine the imbalance between actual performances and planned. Better management of resources and good control of cost, budgeting and forecasting enhance the well being of SMEs to continually generated profits. AIS play a crucial role that contributes to SMEs' value added by providing internally generated inputs such as from financial statements. Viable strategic plan could be developed through inputs based on history of firm, the current assets and capabilities of the firm, and the trends in operations of the firm (Sori, 2009).

2.6 The Relationship Between AIS, Strategy, and Performance

Information system capability refers to firm ability to mobilize and deploy information system resources in combination or coexistent with other firm resources and capabilities. With such, firms that continually pursue AIS innovation are more likely to create and capitalize on unique AIS capabilities that may potentially allow these firms to obtain competitive advantage. In

contrast, firms that follow the established best practices, limit their capability to create the better knowledge needed to be responsive to the imperatives that dictated by the environment. If so, through a safe and stable approach, the AIS conservative essentially cedes the opportunity to derive competitive advantage through AIS because their chances of building something new are unlikely (Beke, 2010).

AIS represent the key part of MIS, from this definition the accounting information system strategy suggests AIS is part of a corporate strategy, said that 87 percent of business leaders believe that IS is critical to success of firms (Worthen, 2007).

Strategy is one of the major components that contribute towards growth among SMEs, firms need resourceful information to effectively implement their strategy, several studies mentioned that accounting reports were the important source of information for the management of SMEs, As a prime source of information, effective AIS especially computerized AIS is crucial to generate relevant information to help firms manage to do their work (Ismail & zin, 2009).

Recently several researchers have asserted that AIS play a proactive role in the strategy management. The AIS can play an active role in strategy management by maintaining the dynamic alignment of strategies, ensuring that they remain effective over time and integrating the strategies throughout the firm into tactical plans (Gil, 2004).

Firms that compete in highly competitive environment need more accounting information, to scan the environment and face the market demands (Beke, 2010).

According to (Sciut, 2005), that to manage decentralization, such as prospector strategy, managers would require sophisticated AIS information optimize the decision making, with Sophistication accounting information system the Workers may also be better informed to make decisions and can act quicker in decision-making and that would lead to improve performance.

Within SMEs, accounting information is very important as it can help the firms better manage their short-term problems like, expenditure and cash flow, by providing information to support control and monitoring. Accounting information is useful for firms operating in competitive environment as it can help them integrate operational initiatives within long-term strategic plans.

2.7 Organizational Performance

Comprises the actual output of an organization as measured against organization's intended outputs, the key purpose behind performance measurement is to improve performance. Measures that are directly and in directly connected to improving performance of companies are measures as to achieve that ultimate goal (Behn, 2003). (Phusavat & Anussornnitisarn, 2009) And the purpose of improving company performance is to ensure that the company designs processes well and systematically monitors, analyzes, and improves performance. It involves measuring the activates of important services and processes, and, when indicated, identifying changes that enhance the better company's performance (Wilson & Hoehn, 2003).

According to William, and Hoehn (2003) that performance measurement must be done with four emphasization:

1. Measure the right things: must measure all activities that directly add to a firm or organization's productivity.
2. Clearly communicate what will be measured: measures that are ill defined or that are not communicated will not be used
3. Use consistent measures the measures used should be applied consistently to all units and activities of the firm or organization; weak or failure to do that would result to loss of support
4. The measurement data must be exploited in better a constructive way.

There are two general types of organizational performance models: first one is self-assessment techniques and second one is enables manager to define the measures to manage and improve the performance.

According to William & Hoehn (2003), Phusavat & Anussornnitisarn (2009), The measured organizational performance can be by seven categories:

1. Effectiveness: indicate the degree to which a firm's performance accomplishes what it should accomplish.
2. Efficiency: indicate the degree to which the firm's performance utilized the correct things.

3. Quality: indicate of the degree to which a firm's performance conforms to requirements, and expectations
4. Profitability: indicate the relationship between total revenues and total costs.
5. Quality of Work Life, indicate the way participants in firm's performance respond to socio-technical aspects of that performance.
6. Innovation, indicate on how well the firm does at coming up with new, more than better functional of both products and services.
7. Productivity, indicator of the relationship between the outputs generated from a performance and the inputs provided to create these outputs.

2.8 Conclusion

Accounting information system (AIS) can be play in an organization a vital role by provide information that is necessity and protecting information and in same time protecting the entire assets of the organization. The following chapter focuses on the research framework, methodology, empirical models, hypothesis analyses that are used in this study.

CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discusses the methodologies that are used to achieve the study objectives and to test the hypotheses of this study. However, all the features and the tools that need to be utilized in this study have been identified to investigate the level of factors affect the AIS adoption in SMEs in Iraq. The questionnaire was distributed on the relevant parties in the SMEs that adopted AIS. The discussions includes research framework, research hypothesis, measurements of the variables, sampling and statistical techniques that were used to analyze the data a finally ended with a conclusion.

3.2 Research Framework

Current accounting researches are based extensive economic model of agency theory, which made managers as agent and the investors as principal. This theory has also been implicitly adopted in the regulation of accountancy, which focuses on the needs of a diverse group of investors "principal" who entrust their wealth to the control of managers "agent" (Bricker & chandar, 1998).

Prior researches have shown that information system adoption did increase firms' performances and operations efficiency (Kharuddin, Ashhari, Nassir. 2010), Information that comes out as a

consequence of the AIS implementation creates the value of the organizations, through information that comprise of accuracy, completeness, timeliness, conciseness, relevance, consistency, and cost of information (Gullkvist, Polytechnic, 2003). Based on the literature review, all these factors affect firm's performance. Figure 3.1 below shows the theoretical framework model.

Figure 3.1: theoretical framework model

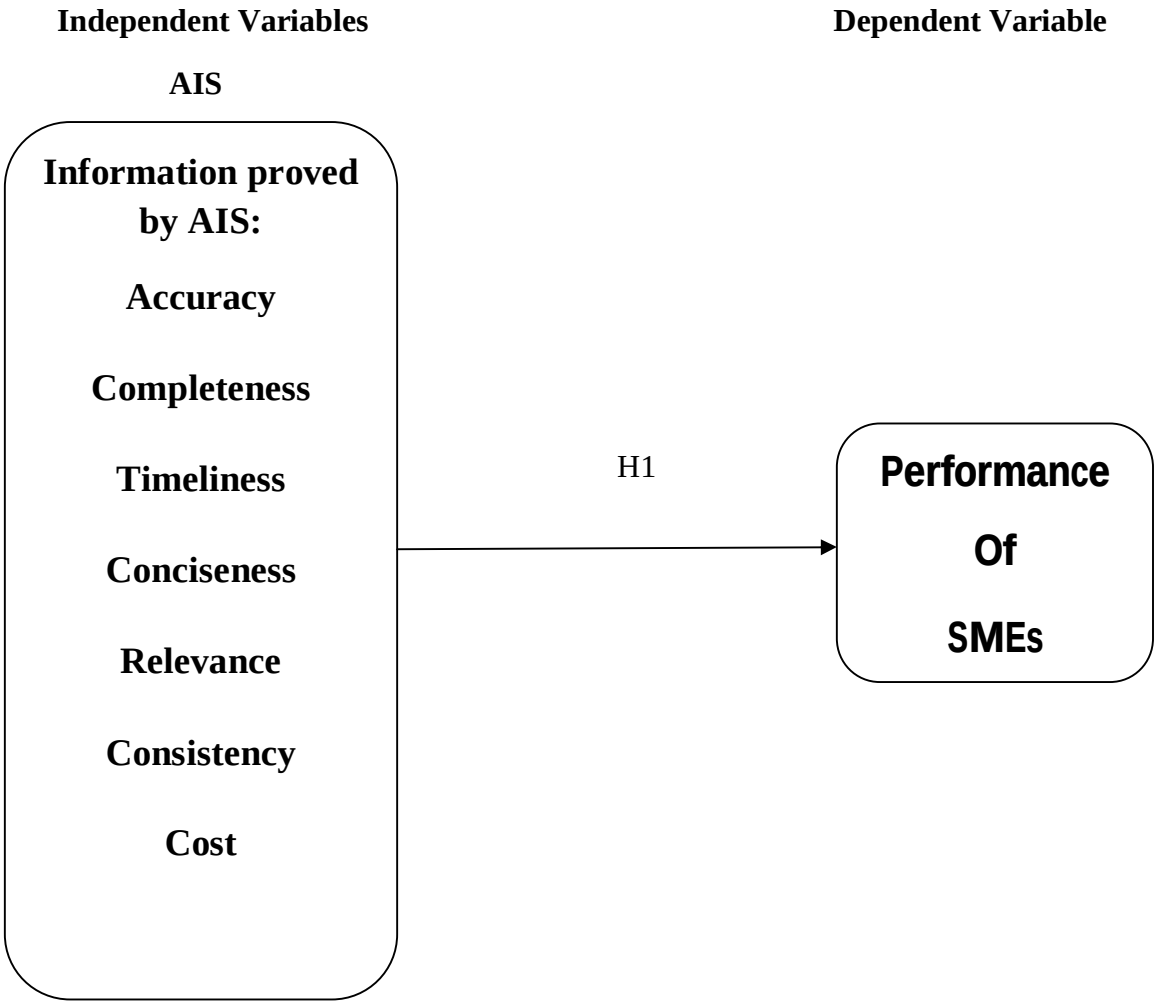


Figure 3.1: Conceptual Framework

3.3 Research Hypothesis

This section discusses the hypotheses that are developed in this study. The hypotheses are developed based on the framework as illustrated in Figure (3-1).

H1: there is a positive relationship between organizational performance and AIS's information quality

H1a: Accuracy, There is positive relationship between accuracy of AIS's information and organizational performance;

H1b: Completeness, there is positive relationship between Completeness of AIS's information and organizational performance;

H1c: Timeliness, there is positively relationship between timeliness of AIS's information and organizational performance;

H1d: Conciseness, there is positive relationship between Conciseness characteristic of AIS's information and organizational performance;

H1e: Relevance, there is positive relationship between Relevance characteristic of AIS's information and organizational performance;

H1f: Consistency, there is positively relationship between relevance characteristic of AIS's information and organizational performance;

H1g: Cost, there is positively relationship between Cost of AIS's information and organizational performance.

3.4 Research Design

This study aims to investigated the exploring influence of adoption AIS as strategic tool to improve the performance of SMEs on the aspects of Accuracy, Completeness, Timeliness, Conciseness, Relevance, Consistency, and Cost in Iraq. To undertake this type of quantitative research, this study used the questionnaire for the data collection, and mail questionnaire, was designed and distributed to selected sample. The questionnaire allows the researcher to identify whether there are relationships among the various variables against performance.

3.5 Sampling and Data Collection

3.5.1 Population and Sample

Population of this study was SME, firms in industrial area that practicing AIS in Iraq. The managers, and owners and managers were selected from industrial areas. The total number of questionnaire was distributed to 118 owners and managers at the Industrial Area of Baghdad. The total population size was 180.

3.5.2 Sampling Technique

The technique which has been used in this study is the random sampling technique because the sample can represent all firms in the whole Baghdad industrial area.

3.5.3 Data Collection

The respondents were asked to respond to the questionnaire that based on their experiences in manage the SMEs activities. The respondents are given guarantees of anonymity with to data regarding the collected and used only for academic research purposes. The data were analyzed statistical Package for the Social Sciences (SPSS) 17.0.

3.5.4 Unit of Analysis

The respondent and unit of analysis are managers/owners of SMEs, and other relevant staff who involve in exchange of information or accounts of SMEs.

3.5.5 Research Instrument

Questionnaire is designed and will be distributed to the sample of the research the questionnaire contains three main parts. In the first part, the questionnaire contains questions addressing the main companies' characteristics and respondents' profile. The second part, the respondents were asked to answer seven questions related to data quality to evaluations of AIS using an interval scale rated from 1 from strongly disagrees to 5 strongly agree. The third part, the respondents were asked to answer seven questions related to evaluations the performance using an interval scale rated from 1 from strongly disagrees to 5 strongly agree

3.6 Method of Data Analysis

3.6.1 Reliability Analysis

According to Jerome and Miller (1986), Reliability is indicates the extent to which the measure is error-free and hence offers consistent measurement across time and in same time across the various items in the instrument. Therefore, test of reliability of this research is important in order to have accurate results.

3.6.2 Descriptive Analysis

This analysis is includes the mean and standard deviation for both the variables the independent variable and dependent variable. The purpose of descriptive analysis is intends to full understand all characteristics of each construct, It is utilized to illustrate means value, and standard deviation of each study construct. This will help to identify areas in which AIS practices.

3.6.3 Correlation Analysis

Correlation measures the association and relationship between two variables will be Analysis. The correlation is usually restricted to simple models of variables. It uses to measure the linear relationship between multiple independent variables and dependent variables. The aim of correlation analyzes is direction and signification of the relations between the variables that being measured on interval and ratio data, and all hypotheses were analyze using person correlation and regression.

3.7 Conclusion

In summary, this chapter was design to efficiently conduct this research and help to understand the variables, and the Hypotheses were tested using the analyses discussed above. Those hypotheses with highest significant relationship will be accepted and those hypotheses not significant will be rejected. The statistical software SPSS version 17.00 used to ensure the relevant issues is examined in a comprehensive manner. Statistical tools and methods will use where appropriate for analyzing the relationship among the variables and the model. Multivariate statistical analysis will perform for the data analysis for this study

CHAPTER FOUR

DATA ANALYSIS AND RESEARCH FINDINGS

4.1 Introduction

This chapter presents the results of data analysis that obtained from questionnaires collected from respondent. The purpose of this research to study the relationship between the adoption of accounting information system as independent variables and improving performance as dependent variables.

The statistical analysis of Pearson correlation was used as to identify the relationship between independent variable and dependent variable. Additionally, the reliability test used. Overall, the chapter divided into six parts which includes; overview of data collection, profile of respondents, goodness of measure, descriptive analysis, and conclusion.

4.2 Overview of Collected Data

A total of 118 sets of questionnaires were distributed to respondents. 71 set of questionnaires were returned back to researcher and found useable. The table below shows the responses rate:

Table 4.1: Responses Rate

	Total	**Percentage (%)**
Questionnaires distributed	118	100%
Collected questionnaires	79	67%
Usable questionnaires	71	60%
Discarded questionnaires	8	7%
Uncollected questionnaires	39	33%

4.3 Respondents' Profile

The survey demonstrated the details concerning demographic characteristics as shown in Tables below:

Table 4.2: Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	9	12.7	12.7	12.7
Male	62	87.3	87.3	100.0
Total	71	100.0	100.0	

The table above indicate that 87.3% of the respondents are male with the remaining are females 12.7%.

Table 4.3: Work Experience

	Frequency	Percent	Valid Percent	Cumulative Percent
Half year	7	9.9	9.9	9.9
1-2 years	13	18.3	18.3	28.2
3-5 years	14	19.7	19.7	47.9
More than 5 years	37	52.1	52.1	100.0
Total	71	100.0	100.0	

About work. Most of them are have more than 5 years experience or 52.1%, 3-5 years or 19.7% of the respondents, thereafter 1-2 years work experience a rate of 18.3%, and the Half year if experience were 9.9%.

Table 4.4: Job Title

	Frequency	Percent	Valid Percent	Cumulative Percent
Owner	52	73.2	73.2	73.2
Manager	19	26.8	26.8	100.0
Total	71	100.0	100.0	

In terms of job title majority of the respondents were owner and they represent 73.2% as the rest are 26.8% of the managers.

Table 4.5: Type of AIS

	Frequency	Percent	Valid Percent	Cumulative Percent
Manual	50	70.4	70.4	70.4
Computerized	21	29.6	29.6	100.0
Total	71	100.0	100.0	

The questionnaires show that more than 70% of firms using manual accounting information system, and 29.6% using the computerized accounting information system.

Table 4.6: total number employees

	Frequency	Percent	Valid Percent	Cumulative Percent
1-9 employees	33	46.5	46.5	46.5
10=19 employees	30	42.3	42.3	88.7
20-29 employees	8	11.3	11.3	100.0
Total	71	100.0	100.0	

Small firms represent 46.5 of total of 71 firm or the medium firms represent 53.5%.

4.4 Analysis

This section will debate the results of the statistical analysis for questions that are relate to independent variable and dependent variable of the questionnaire, including reliability test, validity test, descriptive statistics, correlation, correlation regression analysis.

4.4.1 Reliability Analysis

Reliability is indicator of the degree to which measures are free from any error and therefore yield consistent results (George & Mallery, 2003). The closer the reliability coefficient gets to 1.0, the better it is, and the values that are over .80 are considered as good. The value that is in the .70 is considered as acceptable and the reliability value that is less than .60 is considered as poor value (Sekaran, 2003).

As shown in table 4.7 below, alpha value for independent variable is 0.623 according to Sekaran (200) considered as accepted value. And dependent variable is 0.718 according to same source is considered as accepted value.

Table 4.7: Reliability Analysis

Variables	No. of Items	Cronbach'sAlpha
SMEs Performance	7	.718
Adoption of AIS	7	.623

4.4.2 Descriptive Analysis

This analysis is includes the mean and standard deviation for both the variables the independent variable and dependent variable attained. As shown in Table 4.8 below:

Table 4.8: Descriptive Statistics

variables	N	Minimum	Maximum	Mean	Std. Deviation
SMEs performance	71	3.43	4.86	4.33	.39
Adoption AIS	71	3.29	4.86	4.3	.38

All variables are evaluated based on a 5-point scale, the results show that the mean on SMEs performance (4.33), while mean for adoption accounting information system (4.3).

According to Sekaran (2003), the mean is a measure of central tendency that offers a general picture of the data without unnecessarily inundating one with each of the data set. In addition, the standard deviation is another measure of dispersion for interval and ratio scale data, offers an index of the spread of a distribution or the variability in the data. The standard deviation, in conjunction with the mean, is a very useful tool because of the flowing statistical rules, in a normal distribution:

1. All observations practically are fall within three standard deviations of the mean
2. More than 90% of all the observations are within two standard deviations of the mean or the average
3. More than 1/2 of the observations are within one standard deviation of the mean or the average.

The above table shows the standard deviation for SMEs is 0.39, and standard deviation for the independent variables adoption of accounting information system 0.38.

4.4.3 Correlation Analysis

To examine the relationship among the independent variables and dependent variable, the researches that include several variables. Researcher often would like to know how is the relationship between variable and another variable.. Pearson's correlation analysis to provide this information, which it will indicate the strength, significance, and direction of the bivariate relationships of all the variables in the research (Sekaran. 2003).

Theoretically, there could be a perfect and strong positive correlation between two variables, which is the relationship represented by +1.0, or a perfect and strong negative correlation which would -1.0. While correlation could range between +1.0 and -1.0, the study should identify any correlation found between two variables is significant or not.

“As for the information, a significance of p=0.05 is the generally accepted conventional level in social sciences research. This indicates that 95 times out of 100, the researcher can be sure that there is a true or significant correlation between the two variables, and there is only a 5% chance that the relationship does not truly exist (Suan, 2009).”

The results of correlation analysis between independent variable and dependent variables are exhibited in Table 4.9 below. The result from correlation analysis is then compared against the hypotheses developed in this research.

Table 4.9: Descriptive Statistics

	Mean	Std. Deviation	N
IV	4.2998	.37576	71
MC1	4.3300	.38906	71

Table 4.10: Correlations

		IV	MC1
IV	Pearson Correlation	1	.843**
	Sig. (1-tailed)		.000
DV	Pearson Correlation	.843**	1
	Sig. (1-tailed)	.000	

**. Correlation is significant at the 0.01 level (1-tailed).

a. Listwise N=71

H1: there is a positive relationship between organizational performance and AIS's information quality.

The relationship between adoptions AIS is tested against SMEs' performance. The results indicate that there is a significant relationship between the independent variable and dependent variable ($r=.843$, $n=71$, $p<.01$). The relationship between the variables is significant with strong relationship. Hypothesis 1 is accepted.

Table 4.11: Inter Correlation among the Factors

		Performance	Accuracy	Completeness	Timeliness	Conciseness	Relevance	Consistency	Cost
Performance	Pearson Correlation					.			
	Sig. (1-tailed)								
	N								
Accuracy	Pearson Correlation	.290**							
	Sig. (1-tailed)	.007							
	N	71							
Completeness	Pearson Correlation	.449**	.149						
	Sig. (1-tailed)	.000	.108						
	N	71	71						
Timeliness	Pearson Correlation	.446**	.246*	.096					
	Sig. (1-tailed)	.000	.019	.213					
	N	71	71	71					
Conciseness	Pearson Correlation	.326**	.065	.330**	.020				
	Sig. (1-tailed)	.003	.296	.002	.435				
	N	71	71	71	71				
Relevance	Pearson Correlation	.403**	.163	.106	.187	-.074			
	Sig. (1-tailed)	.000	.087	.189	.059	.269			
	N	71	71	71	71	71			
Consistency	Pearson Correlation	.723**	.178	.276**	.237*	.301**	.079		
	Sig. (1-tailed)	.000	.068	.010	.023	.005	.257		
	N	71	71	71	71	71	71		
Cost	Pearson Correlation	.596**	.242*	.313**	.190	.272*	.324**	.299**	
	Sig. (1-tailed)	.000	.021	.004	.056	.011	.003	.006	
	N	71	71	71	71	71	71	71	

**. Correlation is significant at the 0.01 level (1-tailed).

*. Correlation is significant at the 0.05 level (1-tailed).

H1*a*: Accuracy, There is positively relationship between Accuracy characteristic of AIS's information and Accuracy of SMEs' performance.

The relationship between accuracy characteristic of AIS's information is tested against SMEs' performance. The results indicated significant small correlation relationship between the two ($r=.290$, $n=71$, $p<.01$). The relationship indicated significant with moderate relationship. Hypothesis 1a is accepted.

H1b: Completeness, There is positively relationship between Completeness characteristic of AIS's information and SMEs' performance.

The relationship between completeness characteristic of AIS's information against SMEs' performance is investigated. The results indicated a significant correlation relationship ($r=.449$, $n=71$, $p<.01$). Hypothesis 1b is accepted.

H1c: Timeliness, There is positively relationship between Timeliness characteristic of AIS's information and speed of SMEs' performance.

The relationship between timeliness characteristic of AIS's information against SMEs' performance is investigated. The results indicated significant correlation relationship ($r=.446$, $n=71$, $p<.01$). Hypothesis 1c is accepted.

H1d: Conciseness, There is positively relationship between conciseness characteristic of AIS's information and SMEs' performance.

The relationship between conciseness characteristic of AIS's information against SMEs' performance is investigated. The results indicated significant correlation relationship ($r=.326$, $n=71$, $p<.01$). Hypothesis 1d is accepted.

H1e: Relevance, There is positively relationship between relevance characteristic of AIS's information and SMEs' performance.

The relationship between Relevance characteristic of AIS's information against SMEs' performance is investigated. The results indicated significant correlation relationship ($r=.403$, $n=71$, $p<.01$). Hypothesis 1e is accepted.

H1f: Consistency, There is positively relationship between relevance characteristic of AIS's information and organizational performance.

The relationship between Consistency characteristic of AIS's information against SMEs' performance is investigated. The results indicated significant correlation relationship ($r=.723$, $n=71$, $p<.01$). Hypothesis 1f is accepted.

H1g: Cost, There is positively relationship between cost characteristic of AIS's information and cost of organization performance.

The relationship between cost characteristic of AIS's information against SMEs' performance is investigated. The results indicated significant correlation relationship ($r=.596$, $n=71$, $p<.01$). Hypothesis 1g is accepted.

4.4.4 Regression Analysis

A regression analysis is run in SPSS 17 to determine the extent at each of the variables predicts the organizational performance. From the findings in the linear correlation analysis, it is discovered that information quality is correlated with organizational performance. The result of the regression analysis tries to explain the order of the predictive tendency of the variables involved. Table 4.12 below shows the result of the linear regression analysis. The variables involved in the regression analysis are ranked according to the beta value of the standardized coefficients at an acceptable level of significance

Table 4.12: Results of regression analysis

Variable	Beta Standardization	Sig
Information Quality	.843	.000
F value	169.782	
R	.843	
R Square	.711	
Adjusted R Square	.707	

The R-square value identifies the portion of the variance accounted for by the independent variable that is approximately 711% of the variance in the organizational performance. This value indicates that independent variable explained organizational performance by 711%. It means that there are more other factors which not be considered.

The Adjusted R Square is considered a better population estimate and is useful when comparing the R Square values between models with different number of independent variables. The value of Adjusted R Square obtained is 0.707, illustrate that 707% changes of dependent variable which is the organizational performance can be explained by the independent variable which is information quality. The other 293% are explaining by other variables.

The results also shown that information quality independents variable is significantly correlated to organizational performance with coefficient alpha <.01.

The beta (β) value for information quality (β =.843) explains the significance of the independent variable to organizational performance.

Besides that, the model summary also show the F change value of 169.782 is significant at <0.001 levels.

Moreover, a multiple regression for quality dimensions of AIS's information organizational performance. Findings show that seven items of information quality (accuracy, completeness, timeliness, relevance, currency, consistency, and cost) are correlated with organizational performance. The results also shown that information accuracy, completeness, timeliness, conciseness, relevance, currency, consistency, and easy to understand information independents items are significantly correlated to organizational performance.

4.5 Conclusion

From the above findings, correlation analysis concludes that the independents via all seven factors are significantly related to SMEs Performance. Among all factors independent variables, Consistency of information is having the most influence on the performance.

CHAPTER FIVE

DISCUSSIONS, RECOMMENDATION AND CONCLUSION

5.1 Introduction

This chapter highlights results of this study as well as given some recommendations about the research problem and accounting information system for future research, and conclusion. So this chapter includes the discussion, recommendations and conclusion.

5.2 Results Discussion

The main objectives of this thesis were to investigate the relationship between use AIS as strategic tool on SMEs' performance. The results suggest that there is positive relationship between AIS and performance, Information systems are widely use by many organizations to automate existing operation and to improve performance activities efficiency (Kharuddin, Ashhari & Nassir, 2010). Modern AIS can generate several types of information including accounting and non-accounting information to help management manages short-term problems and integrates operational considerations within long-term strategic plans (Mitchell et al., 2000). Prior researches shown that information system adoption did increased firms' performances and operations efficiency (Kharuddin et al., 2010).

Based on the demographic analysis of 71 respondents, the multi-items measures were subjected to a series of reliability checks. The items of use AIS and improve firm performance are valid

and reliable, each variable was subjected to an analysis of Cronbach's alpha are confident reliable for dependent variable is 0.718 and for independent variable is 0.623 as recommended. Thus, measures the use AIS adoption items were appeared reliable as well as valid, and internally consistent. The objective of this research were to determine whether there was a relationship between the Independent variables namely AIS adoption with the dependents variable – organizational performance in Iraq manufacturing SMEs. The study found out that use AIS can influences and improve SMEs' performance. Meanwhile practical experience has proved that the use of information technology and information systems could give positive impacts on organizational performance (Ismail, Abdullah & Tayib, 2003). In particular, Accounting Information Systems (AIS) maintain and produce the data used by SMEs to plan, evaluate, and diagnose the dynamics of performance (Anthony, Reese & Herrenstein, 1994).

This research success to answer all the research questions, reached to achieve the research SMEs objective. The stressed hypothesizes of the exploration of AIS technology acceptance among firms in Iraq, and the finding of this study is reflect the suggests of previous studies about role and important of use AIS to improve SMEs' performance.

5.3 Managerial Implications of AIS

The result of correlation, and regression analysis in assessing the variables or the empirical relationship between use AIS and SMEs' performance were positively significant as hypothesized. And use AIS is effective in SMEs areas and activities with its technology strategy improvement and encourage the competitiveness, through provide information on both actual

and budget data which would helps firm to establish, plan, and control operation. Good management of resources and better control of expenditure, budgeting and forecasting enhance the well being of SMEs. The AIS is certainly played an important role that contributes to SMEs' value added by providing internally generated input i.e. financial statements, such into should help firm made better strategic plan.

Define accounting information systems as systems that operate functions of data gathering, processing, categorizing and reporting financial events with the aim of providing relevant information for the purpose of score keeping, attention directing and decision-making. Accounting information systems provide primary data for decision-making. Information technology has caused many changes in reporting information. Thus, the characteristics of information currently prepared can help decision-makers seek more alternatives to the solution of the problem in hand. Accessibility to information related to the main transactions of an organization leads to a categorized detailed information which facilitates decision making in any difficult situation.

And Automated AIS used by firms expedite the process to generate financial statement and reduce the human errors. More specific, the major role of AIS is to assign quantitative value of the past, present and future economics events. For that and other AIS are important parts of the fabric of organizational life and need to be evaluated in their wider managerial, organizational and environmental context.

5.4 Recommendations and Future Suggestions

This research confirmed the relationship between use AIS and better SMEs' performance. Also AIS contribute was positively related to SMEs' performance. This research also supports the conceptual of use AIS to improvement the SMEs' performance in their products and services, and AIS is one of the key parts of information systems, and it is vital to all organizations.

But this research had provided only a small portion of idea regarding role of AIS in organizational performance and role of SMEs in the context in Iraq manufacturing SMEs. It would be very beneficial for future studies and researchers to consider the following modest suggestions:

1. The need to conduct the similar studies in other sector of Iraq SME's, that mean Expand the study into non-manufacturing SMEs to enhance the consistency of results.
2. Include other factors and variables to measure SMEs' performance to increase the accuracy of understanding the drivers and variables that could impact the SMEs' performance.
3. Other issue that should be considered by future studies is the population and sample size. Current study has its limitation due to small sample size. It will be beneficial if size of sample be bigger than what has been used in this study.

5.5 Conclusion

The growing importance of SMEs in the production sector is undeniable, whether among industrialized countries or developing countries, the SMEs represent 90% of the total enterprises in most economies of the world. It contributes about 46% of GDP, and job provider about 40% to 80% of the total employment.

Prior researches shown that information system adoption did increased firms' performances and operations efficiency and Thereby continuing and the development (Kharuddin, et al. 2010). And Information systems (IS) are widely use by many organizations to automate existing operation and to improve performance activities efficiency, and most the researches shown that information system adoption did increased firms' performances and operations efficiency Kharuddin, Ashhari & nassir, 2010). So this study has highlighted on role of information system to improve performance of these firms.

This study found out that AIS adoption can influences and improve SMEs' performance. And the information can help the SMEs owners/managers in Iraq to give them knowledge about the factors that could improve their current performance, and the information could help the SMEs create new competitive advantage. Also the results reveal that increasing AIS capacity is associated with improved SMEs' performance. This study has provided supportive evidences for implementation of AIS in Iraq manufacturing firms.

The three objectives in this research have been achieved whereby the results had shown the use accounting information system (AIS) will lead to improve small and medium enterprises' (SMEs) performance in Iraq manufacturing. And these results are support and reflect all previous results.

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APPENDIX 1

Questionnaire

Use Accounting Information System as Strategic Tool to Improve Small and Medium Enterprises Performance in Iraq

Dear Sir/madam

This research is undertaken to investigate use of accounting information system as strategic tool for the advancement of small and medium enterprises (SMEs) performance in Iraq, and presenting this research as a part fulfillment of the requirement for a postgraduate degree from Universiti Utara Malaysia. For that this research can be made possible only through your cooperation. There is no right or wrong answers to the questions, all you need to do is to indicate the appropriate response which reflects your view based on your experience in firms.

All the information provided by you will be treated as confidential, and will used for the sole purpose of this research.

Thank you for your cooperation

Sincerely

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Section A

Individual Information: Please make (√) on your answer:

1. **Gander**

□ Male □ female

2. **Age**

□ 23-29 □ 30-39 □ 40-49 □ More than 50 years

3. **Your work experience**

□ Half year □ 1-2 years □ 3-5 years □ More than 5 years

4. **Monthly your salary**

□ 600-800$ □ 900-1000$ □ 1100-1300$ □ More than 1300$

5. **What is the type of AIS in your firm?**

□ Manual □ Computerized

Section B

Adoption of AIS: This section asks questions about quality of information provided by AIS.

Below are information characteristics for Accounting Information Systems (AIS). Please indicate to what extend the following factors contributing to the quality of AIS in your company. And circle the number corresponding to you level of agreement with each statement below. The number range 1 from strongly disagrees and 3 neutral to 5 strongly agree;

1) **Accuracy** **1 2 3 4 5**
   Relates to the information corresponds to the reality and neutrality that mean information relevant to events are present

2) **Completeness** **1 2 3 4 5**
   Provide all information that the internal and external users needs, that mean information relevant to all events

3) **Timeliness** **1 2 3 4 5**
   It refers to, information that represent in the real-time and current status.

4) **Concise** **1 2 3 4 5**
   Refers to whether the all information provided is free of asymmetry which may lead to ambiguity.

5) **Relevance** **1 2 3 4 5**
   This means whether the information is able to make change in decision makers.

6) **Consistency** **1 2 3 4 5**
   Refers to if there is an absence of conflict between two or more datasets.

7) **Cost** **1 2 3 4 5**

   Obtain on the information required at lower cost.

Section C

Organizational Performance

This section asks questions about Organizational performance indicators in general, please indicate to what extent each indicator reflects your organizational performance, The number range 1 from strongly disagree and 3 neutral to 5 strongly agree;

1) **Effectiveness** **1 2 3 4 5**
   The indicator of the degree to which a firm's performance accomplishes what it should accomplish.

2) **Efficiency** **1 2 3 4 5**
   The indicator of the degree to which the firm's performance utilized the correct things;

3) **Quality** **1 2 3 4 5**
   The indicator of the degree to which a firm's performance conforms to requirements, and expectations.

4) **Profitability** **1 2 3 4 5**
   The indicator of the relationship between total revenues and total costs

5) **Quality of Work Life** **1 2 3 4 5**
   The indicator of the way participants in firm's performance respond to socio-technical aspects of that performance.

6) **Innovation** **1 2 3 4 5**
   indicator of How well the firm does at coming up with new, more than better functional of both products and services.

7) **Productivity** **1 2 3 4 5**
   Indicator of the relationship between the outputs generated from a performance and the inputs provided to create these outputs.

APPENDIX 2

Respondents' Profile

Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Female	9	12.7	12.7	12.7
Male	62	87.3	87.3	100.0
Total	71	100.0	100.0	

Work Experience

	Frequency	Percent	Valid Percent	Cumulative Percent
Half year	7	9.9	9.9	9.9
1-2 years	13	18.3	18.3	28.2
3-5 years	14	19.7	19.7	47.9
More than 5 years	37	52.1	52.1	100.0
Total	71	100.0	100.0	

Job Title

	Frequency	Percent	Valid Percent	Cumulative Percent
Owner	52	73.2	73.2	73.2
Manager	19	26.8	26.8	100.0
Total	71	100.0	100.0	

Type of AIS

	Frequency	Percent	Valid Percent	Cumulative Percent
Manual	50	70.4	70.4	70.4
Computerized	21	29.6	29.6	100.0
Total	71	100.0	100.0	

Total number employees

	Frequency	Percent	Valid Percent	Cumulative Percent
1-9 employees	33	46.5	46.5	46.5
10=19 employees	30	42.3	42.3	88.7
20-29 employees	8	11.3	11.3	100.0
Total	71	100.0	100.0	

Reliability Analysis

Scale: Use AIS

Case Processing Summary

		N	%
Cases	Valid	71	84.5
	Excluded[a]	13	15.5
	Total	84	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.623	7

Item Statistics

	Mean	Std. Deviation	N
B1	4.30	.641	71
B2	4.51	.652	71
B3	4.23	.659	71
B4	4.34	.653	71
B5	4.18	.703	71
B6	4.24	.746	71
B7	4.31	.689	71

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
B1	25.80	5.589	.303	.597
B2	25.59	5.359	.376	.574
B3	25.87	5.598	.284	.602
B4	25.76	5.670	.264	.608
B5	25.92	5.678	.222	.624
B6	25.86	5.008	.406	.561
B7	25.79	4.912	.502	.529

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
30.10	6.919	2.630	7

Scale: Organizational Performance

Case Processing Summary

		N	%
Cases	Valid	71	84.5
	Excluded[a]	13	15.5
	Total	84	100.0

a. Listwise deletion based on all variables in the procedure.

Reliability Statistics

Cronbach's Alpha	N of Items
.718	7

Item Statistics

	Mean	Std. Deviation	N
C1	4.37	.591	71
C2	4.27	.632	71
C3	4.24	.686	71
C4	4.35	.657	71
C5	4.37	.567	71
C6	4.27	.632	71
C7	4.45	.693	71

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
C1	25.94	5.825	.435	.685
C2	26.04	5.841	.386	.696
C3	26.07	5.581	.421	.688
C4	25.96	5.727	.400	.693
C5	25.94	5.940	.419	.689
C6	26.04	5.812	.396	.694
C7	25.86	5.208	.547	.654

Scale Statistics

Mean	Variance	Std. Deviation	N of Items
30.31	7.417	2.723	7

Descriptive Analysis

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
DV	71	3.43	4.86	4.3300	.38906
IV	71	3.29	4.86	4.2998	.37576
Valid N (listwise)	71				

Correlation Analysis

Descriptive Statistics

	Mean	Std. Deviation	N
IV	4.2998	.37576	71
DV	4.3300	.38906	71

Correlations

		IV	MC1
IV	Pearson Correlation	1	.843**
	Sig. (1-tailed)		.000
DV	Pearson Correlation	.843**	1
	Sig. (1-tailed)	.000	

**. Correlation is significant at the 0.01 level (1-tailed).

a. Listwise N=71

Descriptive Statistics

	Mean	Std. Deviation	N
DV	4.3300	.38906	71
B1	4.30	.641	71
B2	4.51	.652	71
B3	4.23	.659	71
B4	4.34	.653	71
B5	4.18	.703	71
B6	4.24	.746	71
B7	4.31	.689	71

Correlations

		MC	B1	B2	B3	B4	B5	B6	B7
DV	Pearson Correlation	1	.290**	.449**	.446**	.326**	.403**	.723**	.596**
	Sig. (1-tailed)		.007	.000	.000	.003	.000	.000	.000
	N	71	71	71	71	71	71	71	71
B1	Pearson Correlation	.290**	1	.149	.246*	.065	.163	.178	.242*
	Sig. (1-tailed)	.007		.108	.019	.296	.087	.068	.021
	N	71	71	71	71	71	71	71	71
B2	Pearson Correlation	.449**	.149	1	.096	.330**	.106	.276**	.313**
	Sig. (1-tailed)	.000	.108		.213	.002	.189	.010	.004
	N	71	71	71	71	71	71	71	71
B3	Pearson Correlation	.446**	.246*	.096	1	.020	.187	.237*	.190
	Sig. (1-tailed)	.000	.019	.213		.435	.059	.023	.056
	N	71	71	71	71	71	71	71	71
B4	Pearson Correlation	.326**	.065	.330**	.020	1	-.074	.301**	.272*
	Sig. (1-tailed)	.003	.296	.002	.435		.269	.005	.011
	N	71	71	71	71	71	71	71	71
B5	Pearson Correlation	.403**	.163	.106	.187	-.074	1	.079	.324**
	Sig. (1-tailed)	.000	.087	.189	.059	.269		.257	.003
	N	71	71	71	71	71	71	71	71
B6	Pearson Correlation	.723**	.178	.276**	.237*	.301**	.079	1	.299**
	Sig. (1-tailed)	.000	.068	.010	.023	.005	.257		.006
	N	71	71	71	71	71	71	71	71
B7	Pearson Correlation	.596**	.242*	.313**	.190	.272*	.324**	.299**	1
	Sig. (1-tailed)	.000	.021	.004	.056	.011	.003	.006	
	N	71	71	71	71	71	71	71	71

**. Correlation is significant at the 0.01 level (1-tailed).

*. Correlation is significant at the 0.05 level (1-tailed).

Regression Analysis

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.843[a]	.711	.707	.21065	.711	169.782	1	69	.000

a. Predictors: (Constant), IV

ANOVA

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.534	1	7.534	169.782	.000[a]
	Residual	3.062	69	.044		
	Total	10.596	70			

a. Predictors: (Constant), IV

b. Dependent Variable: DV

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.576	.289		1.992	.050
	IV	.873	.067	.843	13.030	.000

a. Dependent Variable: MC1

APPENDIX 3

Table for determining sample size from a given population

N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	246
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	351
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	181	1200	291	6000	361
45	40	180	118	400	196	1300	297	7000	364
50	44	190	123	420	201	1400	302	8000	367
55	48	200	127	440	205	1500	306	9000	368
60	52	210	132	460	210	1600	310	10000	373
65	56	220	136	480	214	1700	313	15000	375
70	59	230	140	500	217	1800	317	20000	377
75	63	240	144	550	225	1900	320	30000	379
80	66	250	148	600	234	2000	322	40000	380
85	70	260	152	650	242	2200	327	50000	381
90	73	270	155	700	248	2400	331	75000	382
95	76	270	159	750	256	2600	335	100000	384

Note: "N" is population size
"S" is sample size.

Krejcie, Robert V., Morgan, Daryle W., "Determining Sample Size for Research Activities",

Educational and Psychological Measurement, 1970.