NEAR EAST UNIVERSITY
INSTITUTE OF GRADUATE STUDIES
BANKING AND ACCOUNTING PROGRAM

THE ROLE OF USING INFORMATION TECHNOLOGY ON INCREASING THE EFFICIENCY OF MODERN MANAGERIAL ACCOUNTING METHODS IN INDUSTRIAL COMPANIES IN IRAQ

GORAN YOUNIS SHAKIR

MASTER'S THESIS

NICOSIA
2021

THE ROLE OF USING INFORMATION TECHNOLOGY ON INCREASING THE EFFICIENCY OF MODERN MANAGERIAL ACCOUNTING METHODS IN INDUSTRIAL COMPANIES IN IRAQ

GORAN YOUNIS SHAKIR

NEAR EAST UNIVERSITY INSTITUTE OF GRADUATE STUDIES
BANKING AND ACCOUNTING PROGRAM

MASTER'S THESIS

THESIS SUPERVISOR
ASSOC. PROF. DR. ALİYA IŞIKSAL

NICOSIA
2021

ACCEPTANCE/APPROVAL

We as the jury members certify the 'The role of using information technology on increasing the efficiency of modern managerial accounting methods In Industrial companies in Iraq' **prepared by GORAN YOUNIS SHAKIR** defended on 28/1/2021 has been found satisfactory for the award of degree of Master

JURY MEMBERS

Assoc. Prof. Dr. Aliya IŞIKSAL (Supervisor)
NEAR EAST UNIVERSITY
INSTITUTE OF GRADUATE STUDIES
FACULTY OF ECONOMİCS AND ADMİNİSTRATİVE SCİENCE AND DEPARTMENT OF BANKİNG AND ACCOUNTİNG

.....
Assist. Prof. Dr. Kemal Cek (Head of Jury)
NEAR EAST UNIVERSITY
INSTITUTE OF GRADUATE STUDIES
DEPARTMENT OF BUSINESS ADMINSTRATION

.....
Assist. Prof. Dr. Ahmad Samour
NEAR EAST UNIVERSITY
INSTITUTE OF GRADUATE STUDIES
DEPARTMENT OF ECONOMICS

.....
Prof. Dr. K. Hüsnü Can Başer
Institute of Graduate Studies
Director

DECLARATION

I **GORAN YOUNIS SHAKIR** , hereby declare that this thesis entitled '**The role of using information technology on increasing the efficiency of modern managerial accounting methods In Industrial companies in Iraq**' has been prepared myself under the guidance and supervision of '**Assoc. Prof. Dr. Aliya IŞIKSAL'** in partial fulfillment of the Near East University, Graduate School of Social Sciences regulations and does not to the best of my knowledge breach and 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 accesible from anywhere.
- My Thesis can only be accesible from Near East University.
- My Thesis cannot be accesible for two(2) years. If I do not apply for extention at the end of this period, the full extent of my Thesis will be accesible from anywhere.

Date: 28th January 2021

Signature

Name Surname: Goran Younis Shakir

DEDICATION

This study is dedicated to my father and mother who have been a strong pillar in my life. Deepest appreciation also goes to my brothers and sisters and my lovely wife who has proved to be a huge source of inspiration throughout the undertaking of this study.

ACKNOWLEDGEMENT

I would like to thank all those who in one way or another contributed to the completion of this thesis. First, I give thanks to God for the protection and ability to complete this task.

My special and heartily thanks to my supervisor, **Assoc. Prof. Dr. Aliya IŞIKSAL** for the continuous support and encouragement through the process of completing my thesis. Her efforts are highly appreciated. It is under her supervision that this work came into existence.

I am so grateful to my family who always helped me, encouraged and prayed for me during my research period.
An unimaginable token of appreciation goes to my wife

ABSTRACT

The role of using information technology on increasing the efficiency of modern managerial accounting methods In Industrial companies in Iraq

This study aimed to identify the role of using information technology to increase the efficiency of modern management accounting methods in industrial companies in Iraq, The study uses a combination of qualitative and quantitative methods to analysis data collected from Iraqi business enterprises, and to achieve this goal the descriptive analytical approach was followed to suit the nature of the study, as a scientific questionnaire was designed and distributed to the study community, which is the most important and largest companies By using the random sampling method, 100 questionnaires were distributed to a community to study and 84 questionnaires were retrieved The data were collected and entered into Statistical Package for Social Sciences (SPSS) version 25. A series of data analysis methods were applied to test the data and test the validity of the proposed hypothesis and the tested hypothesis resulted in the acceptance of the idea that using has a significant positive effect of increasing the efficiency of the activity-based costing method, just-in-time, continuous improvement, and target cost methods, Hypothesis suggesting that there is no positive statistical significance between the uses of information technology in increasing the efficiency of the total quality management method.

Keywords: information technology, modern managerial accounting methods, Industrial Company.

ÖZ

Irak'taki endüstriyel şirketlerde modern yönetim muhasebesi yöntemlerinin etkinliğini artırmada bilgi teknolojisi kullanmanın rolü

Bu çalışma, Irak'taki sanayi şirketlerinde modern yönetim muhasebesi yöntemlerinin etkinliğini artırmak için bilgi teknolojisini kullanmanın rolünü belirlemeyi amaçlamaktadır.Çalışma, Iraklı ticari işletmelerden toplanan verileri analiz etmek için nitel ve nicel yöntemlerin bir kombinasyonunu kullanmaktadır ve bu amaca ulaşmak için En önemli ve en büyük şirketler olan çalışma topluluğuna bilimsel bir anket tasarlanıp dağıtıldığından, çalışmanın niteliğine uygun olarak tanımlayıcı analitik yaklaşım izlendi. Rastgele örnekleme yöntemi kullanılarak bir topluluğa 100 anket dağıtıldı. çalışma ve 84 anket alındı Veriler toplandı ve Sosyal Bilimler İstatistik Paketi (SPSS) sürüm 25'e girildi. Verileri test etmek ve önerilen hipotezin geçerliliğini test etmek için bir dizi veri analiz yöntemi uygulandı ve test edilen hipotez sonuçlandı kullanımın önemli bir olumlu etkiye sahip olduğu fikrinin kabulü Faaliyet bazlı maliyetlendirme yöntemi, tam zamanında, sürekli iyileştirme ve hedef maliyet yöntemlerinin etkinliğini artıran hipotez, toplam kalite maliyetleme yönteminin etkinliğini artırmada bilgi teknolojisi kullanımları arasında pozitif bir istatistiksel önem olmadığını öne süren hipotez .

Anahtar Kelimeler: bilgi teknolojisi, modern yönetim muhasebesi yöntemleri, Endüstriyel Şirket.

TABLE OF CONTENTS

LIST OF TABLES

List of figures

ABBREVIATIONS

IT	Information Technology
ABC	Activity-Based Costing
TQM	Total Quality Management
JIT	Just In Time
CI	Continuous Improvement –Kaizen
TC	Target Cost
CIMA	Chartered Institute of Management Accounting
IFA	International Federation of Accountants
IMA	Institute of Management Accountants
SPSS	Statistical Package for Social Sciences

INTRODUCTION:

The industrial companies operating in Iraq suffer from many obstacles represented by the closure of the crossings, the blockade, the security situation inside Iraq, and the wars that Iraq witnessed, which led to an increased need for accurate information sources and scientific administrative tools that help the management in making production and investment decisions.

As managerial accounting provides many services to manage companies in a business environment, to contribute to the achievement of its goals, and these services are not limited to accounting methods only, but also include financial and economic concepts and statistical quantitative methods to help the tasks of management in achieving them, their goals

As managerial accounting contributes to providing the necessary assistance to managers to assist them in carrying out their duties in terms of planning, monitoring, evaluating the performance and making of various decisions, through the analytical and detailed information that is created through the daily process of the data resulting from the organization's practice of its activities. (Arora, 2009)

Management accounting has witnessed many stages of development as a result of many economic, political, legal, and social factors which can be classified into two basic stages:

1. **The traditional management accounting method stage**: which extended from the nineteenth century to the seventies The last century, and one of the prevailing features of a business environment at that stage, was that it was characterized by little production Diversity, having a long life cycle, with reliance on manual work in the production, which caused higher costs and more time and effort; Also, the requirements of the customers to obtain On goods and services that were also limited based on their basic needs, Which was clear and easy to

predict in the future Besides, the prevailing technology is stable, And that the markets were dominated by a local character with limited competition and competitors could predict trends, (Al-Hussein, 2001) Among the traditional management accounting methods are the actual costs method, the standard costs method, the deviation analysis, the planning budgets method, and the discounted cash flow method (Sabah, 2008).

2. **The stage of modern management accounting methods:** This stage was characterized by the emergence of many modern methods as a result of the rapid developments that occurred in the business environment, such as the spread of computer technologies, and the increase in competition between organizations, producing products or providing services of the highest quality and lowest cost (Abu Hadaf, 2013), In light of contemporary administrative trends, whose features began to appear since the end of the last century and their dimensions crystallized with the beginning of the current century, many approaches and administrative methods have appeared that have contributed to adding a new thought or approach to managing and developing current companies. Among these methods: total quality management method (TQM), target cost method (TC), continuous improvement (CI), just in time production (JIT), activity-based costing (ABC), In addition to other approaches and administrative methods that have been developed in the current period to confront the new global reality, and to deal with the problems and changes that have occurred; So that companies can improve their performance to support and maintain the achievement of their main objectives and increase their competitiveness.

Technology has become a basic requirement of the times and has become an interfere in most fields. Information technology is a major engine for the development of science and represents great support for various sciences and life activities.

And management accounting has great importance in providing the necessary information to assist departments in making decisions and planning, and controlling operational activities and estimates of costs and revenues related to the operation that assist in the process of preparing budgets Planning, development of management accounting data presentation tools is an important and necessary requirement,

Information technology has a great contribution to improving and raising the efficiency of the enterprises 'activities because they improve the quality of products and reduce the associated costs. Information technology also plays an effective role in assisting senior management in making effective decisions and drawing future plans and strategies for the organization (saraj, 2017)

Based on the above, it became clear to us that management accounting helps in the success and continuity of companies with different activities if it is used efficiently, and that there are many advantages of technology that helps managerial accounting and industrial companies.

Therefore, this study came to recognize the role of information technology in increasing the efficiency of modern management accounting methods which representing as following: total quality management method (TQM), target cost method (TC), continuous improvement (CI), just in time production (JIT), activity-based costing (ABC).

The problem of the study:

The problem of the study is how to use information technology as part of the accounting information system to activate and increase the efficiency of the modern management accounting method in the real life of industrial companies because previous studies revealed a gap between scientific development and Methods of managerial accounting and the continued dominance of traditional management accounting methods over modern management accounting methods.

the reality of their application in practical life In the industrial companies so this study came with the search for information technology, for its importance, role, and impact on modern managerial accounting methods.

Despite the multiplicity of previous studies that dealt with management accounting methods, most of them were done in a descriptive way to present the administrative-accounting methods applied in practice without trying to identify linking these methods with other variables to identify their impact and the extent of their impact. The impact of these variables on industrial companies in Iraq

The researcher believes that there is a necessary and urgent need to use information technology and apply it to modern managerial accounting methods in industrial companies in Iraq.

This study came to know the role of using information technology on increasing efficiency Modern management accounting methods represented by Continuous Improvement Method (CI), Total Quality Management Method (TQM), Activity-Based Costing Method (ABC), just in time (JIT), and target cost method (TC) in industrial companies in Iraq, Which, in turn, sheds light on the most comprehensive modern management accounting methods Its information and its importance in making decisions, and the need for its use and investment by companies And the effect of using information technology on the efficiency of these methods.

Importance of the study:

The importance of a study to know the extent of the role of information technology on the use of modern management accounting methods that there are general benefits for using information technology in that it increases the effectiveness, efficiency, and high quality of information needed by industrial companies and in addition to its ease of access, because information technology affects the improvement of the level of decision support For management accounting

And to make accountants, administrative accountants, managers, and workers in industrial companies in Iraq aware and understand the necessity of using information technology on the modern methods of administrative accounting.

And another important role of information technology in increasing the efficiency of modern management accounting methods in industrial companies in Iraq, which allows the possibility of providing industrial companies with observations and appropriate evaluation that will help them to perform their work in a business environment

Making the management of industrial companies shed light on the role of information technology on increasing efficiency methods Modern management accounting, which makes the performance, planning, and work of a company much easier by saving time, cost, and accuracy of the information, which in turn reflects positively on companies' control of costs.

Access to statistically significant results on the subject of information technology and its role in increasing the efficiency of modern management accounting methods in industrial companies, and the possibility of generalizing this to the rest of the sectors, which in turn helps other sectors in performing their work.

The objectives of the study:

Therefore, this study seeks to achieve the following objectives:

1. Knowing the role of information technology in industrial companies in Iraq in increasing the efficiency of modern management accounting methods, represented by: “Total Quality Management Method, Continuous Improvement Method. Just in time production method, the activity-based costing method, the specific target cost method
2. Recognizing the importance of using modern management accounting methods in business companies.
3. Identify the role and importance of information technology in developing the performance of business companies.

Conceptual framework of the study:

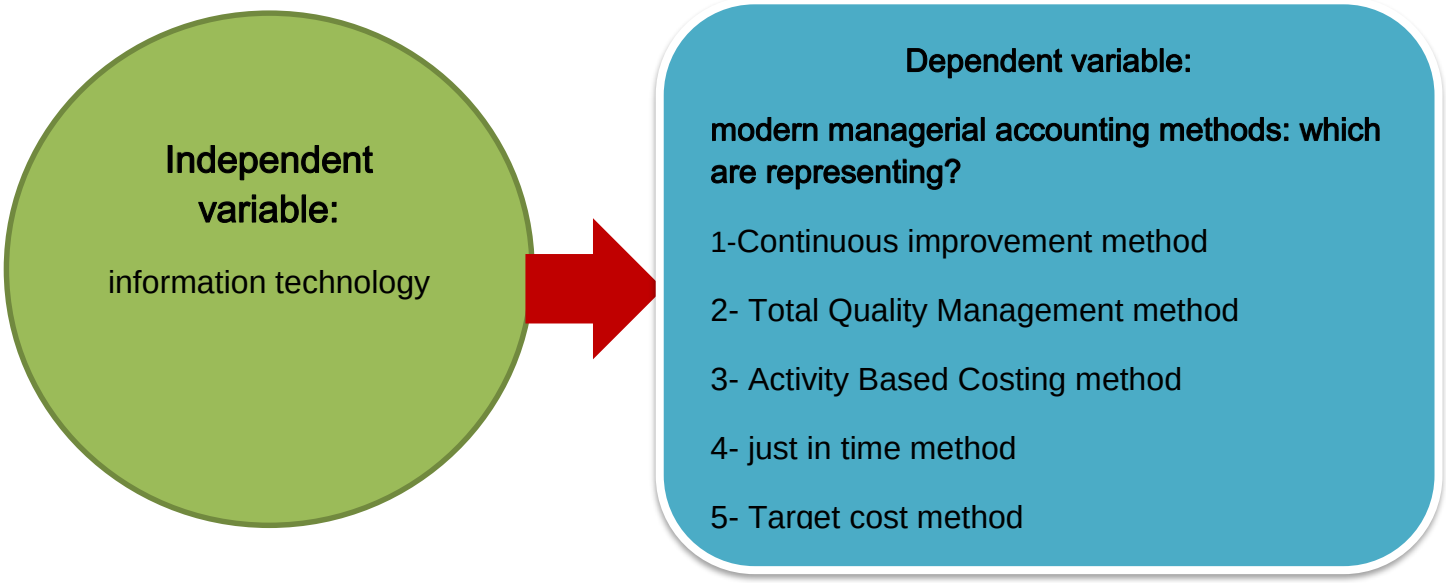


figure 1: **conceptual framework of the study**

Study hypothesis:

There is a statistically significant role between the uses of information technology in increasing the efficiency of modern management accounting methods in industrial companies, as this hypothesis has been devoted to the following hypotheses:

1. There is statistical significance between the uses of information technology in increasing the efficiency of the total quality management method.
2. There is statistical significance between the uses of information technology in increasing the efficiency of just in time method.
3. There is statistical significance between the uses of information technology in increasing the efficiency of the activity-based costing method.
4. There is statistical significance between the uses of information technology in increasing the efficiency of the continuous improvement method.
5. There is statistical significance between the uses of information technology in increasing the efficiency of the target cost method.

Research Question:

1. What is the role of the use of information technology in industrial companies on increasing the efficiency of the method of continuous improvement?
2. What is the role of using information technology in industrial companies on increasing the efficiency of the total quality management method?
3. What is the role of the use of information technology in industrial companies on increasing the efficiency of the cost-based approach to activities?
4. What is the role of the use of information technology in industrial companies on increasing the efficiency of just in time method?
5. What is the role of the use of information technology in industrial companies on increasing the efficiency of the target cost method?

CHAPTER ONE
LITERATURE REVIEW

1.1 Introduction

This chapter places focusing on reviewing detailed insights about the underlying study concepts together with the theoretical underpinnings the chapter also analyses related literature.

Information technology facilitates doing business through technology and software. It collects data, processes it, and submits it to management to make appropriate decisions Strategic and investment planning for the company.

The company decides on the most appropriate source of funding and tries to maintain or approach it from the so-called target financing structure; For Access to Intrinsic Value Maximization (Brigham, 2011)

Managerial accounting helps the management of the facility in solving existing problems, identifying potential expectations under the prevailing conditions, and working to control costs and reduce them to a minimum. The application of management accounting methods and tools aims to provide the required data and information for the administration to plan, control, evaluate performance and various management decision-making processes, so that: Leads to the best use of obtainable economic resources, through the application of various managerial accounting methods (ibrahim, 2008).

The role of management accounting can also be traced back to the use of management accounting to develop and evaluate strategies and formulate long-term plans in other words, organizational strategies are developed and evaluated using the information provided by the organizational managers. These strategies are market development, growth, survival, or sustainability (Zyznarska-Dworczak, 2018).

1.2 introductions to management accounting:

Administrative accounting plays an important and prominent role in the main functions of management, represented in planning, monitoring, performance evaluation, and decision-making. Therefore, management accounting uses several methods to provide decision-makers at various levels in the organizational structure of the economic unit with information and is appropriate for decision-making, whether routine or non-routine (Al-Daour, 2008).

and Hamad says with the many developments in the modern manufacturing environment and the drastic changes that resulted from it, the traditional management accounting information has become insufficient and unsuitable for companies, and the management accountant has to deal with new concepts, methods, standards, and tools (hamad, 2003).

This was confirmed by the International Federation of Manufacturing (CAM) in the two-stage study in each From the United States and Britain, which concluded that traditional management accounting cannot provide information that supports decision-making in the new manufacturing environment (Howell A. and S. Soucy, 1987).

Which created a perspective for the management accountant job, where recently it is seen that the manager is the consumer for the information provided by the management accountant, and therefore the accountant has to provide what he desires Director of information about the product or service, taking into account that this information is characterized with quality and quality, and that was in the right time. This led to viewing management accounting as a recipe for success for units in the opinion of the economic, anyway of the nature of its activity; (Waldron, 2007) believes that accounting methods Management provides decision-makers with what enables them to maintain a competitive advantage

There is no hesitation that managerial accounting plays a main role in the management of organizations in light of the rapid development as a result of the important changes that the modern business environment is witnessing, due to its positive repercussions on the efficient and effective performance of activities (Shenqar, 2009).

Management accounting worked to address these global developments in the economy and began to provide information and data that would assist in drawing up and developing future policies, Administrative accounting also helps, through its various

methods, to rationalize and improve the investment decision and administrative decision in its various aspects, and it has helped improve the quality of various decisions It also assisted in the effective planning, making and setting of appropriate and appropriate policies that would greatly assist in achieving the goals and ambitions of the company (Baraka, 2012).

From the above, it is clear that practicing management accounting methods appropriately is considered more suitable for companies looking to continue and survive, achieve competitive advantages, and increase market share, in markets characterized by constantly changing economic information.

1.3 Definition of modern management accounting:

Despite the multiplicity of definitions of managerial accounting, no agreed general description of accounting Management has been reached (scapens, 1991). The development of the concept of managerial accounting can be discovered through: Following up the change in the definition of management accounting formulated by some accounting bodies as follows:

1. Management Accountants Institute: which focuses in its definition of management accounting on the informational aspect provided by managerial accounting, while managerial accounting as defined in the year 1981 as: The process of classifying, measuring, collecting, analyzing, preparing, understanding and communicating the financial information used by management, for planning and evaluation and control the company, and confirm the suitable use of resources, and accountability for them. The Management Accountants Institute defined it in the year 2008 as: “The profession that includes participation in administrative decision-making, planning and evaluation of the presentation of administrative systems, and management with information to contribution it in building and implementing the company’s strategy (IMA, 2008). The change in definition highlights the development in the information role of the accountant the administrator through his transformation from a mere information collector to a decision-maker by making him a member of the company's strategic team.
2. The Chartered Institute of Management Accountant, (CIMA): In 1987 it provided a definition of management accounting It stated: “The provision of information obligatory by management for various purposes such as building policies

Planning, control, and evaluation of alternatives. (CIMA, 1987) While reformulating the definition of accounting in the year 2005, it was defined as: “Apply principles of managerial and financial accounting to create, protect and increase value for stakeholders in both for-profit and non-profit companies in the public and private sectors (CIMA, 2005). This highlights the development of management accounting to become the closest concern of top management with an emphasis on competency, strategic planning and value creation.

3. (IFACs): which defined management accounting in the year 1989 as: “The process of identify, measuring, compiling, analyzing, preparing, understanding and communicating the financial and operational information used by management for planning, evaluation and control within companies, and ensuring the use Optimization of resources and accountability for them. "Whereas in 1998 he defined it as: “That part of the administrative process that focuses on adding value to the company through obtaining resources and using them effectively.” A comparison between the two earlier definitions shows the evolution of the managerial accountant's role from the decision-making role to the planning and strategic role (IFAC, 1998) .
4. Hilton defined management accounting as "the process of identifying, measuring, analyzing, interpreting and communicating financial and non-financial information to achieve the organization's goals" (Hilton, 2008).
5. Al-Ramahi defined managerial accounting as "a branch of accounting specialized in identifying and measuring Collecting and analyzing data to arrive at financial and non-financial information that the management can use to use In the work of planning, control and decision-making (Al-Rumahi, 2009).
6. Administrative accounting is considered an integrated financial system, though it is concerned with the processes of collecting, tabulating, and summarizing the available information to benefit from it in setting and drawing future policies that enable related parties to benefit from it (Baraka, 2012).

The researcher believes that management accounting defined as “an information system that provides management with financial and non-financial information that enables the administration to achieve its goals through methods that help the

administration to measure the reality of its business, predict it and make better decisions.

1.4 The emergence and development of management accounting:

The term managerial accounting appeared in 1950 when the Anglo-American Council for Productivity Adequacy formed a team called the Management Accounting Team, and this team visited some industrial companies in the United States of America. For the accounting information in a way that helps the management to set policies and conduct the day-to-day operations of the organization, and also recommended that the cost accountant make a greater effort to identify management problems and technical operations in the company, and focus his efforts in providing information that leads to rationalizing the management policy And increase its decision-making ability (Al-Fadl, 2007).

Administrative accounting has gone through stages of development imposed by environmental conditions, and management accounting has responded to these developments because its data sources are accounting and economic that accepts quantitative analysis and behavioral interpretation. Mathematical and statistical methods and the electronic operation of the data give a huge possibility for managerial accounting.

The development of management accounting at present means the development of the quality and quality of information that the facility management needs at the present time to assist managers at various administrative levels within the organization in making decisions that fall within the areas of planning, organizing, directing, distributing resources, performance evaluation and control. Several factors have contributed to the recent development of management accounting (hars, 2004).

1- The intensity of competition between companies of different types and fields of work as a result of the market opening up to each other. The tremendous technological revolution in the fields of communications, electronics, and information technology, and rapidly
2- The desire of every company to achieve the optimum utilization of available resources in a way that contributes to achieving its goals and maximizing profits.

3- Attention to quality to satisfy the consumer as a result of the continuous and rapid change in consumer tastes. Many companies have adopted a comprehensive quality control system.
4- The administration's resort to using new administrative methods, and practices those are efficient and effective on the one hand and keep pace with the external environment and the conflicting variables therein on the other hand.

1.5 The stages of managerial accounting development:

The Financial Management and Managerial Accounting Committee was interested in those developments that occurred in the methods of management accounting, as it issued a research paper entitled (concepts management accounting) It includes presenting the development and change of management accounting in the form of four stages (IFAC, 1998).

1- The first phase (pre-1950): it focused on cost setting and financial control through the use of budgets and cost accounting methods.
2- The second phase (from 1950-1965): the focus changed from costing and financial control to Providing information for planning and administrative control purposes through the use of some methods such as accounting Responsibility and analyze of decisions
3- The third phase (from 1965-1985): the focus shifted to reducing the waste of resources used in the facility through the use of process analysis and cost management methods
4- The fourth phase (from 1985 - until now): in which the interest in management accounting moved to Generating or creating value over the efficient use of resources by using methods that rely on examining factors that add value to the customer and stakeholders in the company

1.6 Objectives of management accounting:

Management accounting contributes to improving the quality of administrative decisions through the appropriate information that it provides, as management accounting drives to achieve the following objectives:

1- Providing the necessary information that the project manager needs to take various administrative decisions and carry out planning and future policy-making processes.

2- Assist managers in directing and controlling the company's operations.
3- Evaluate performance and ensure the efficiency of workers in achieving goals at lowest possible cost
4- Evaluating the firm's competitive position and working with the rest of the management team to ensure the continuity of the company's competitive advantage in the long run.
5- Measuring the performance of responsibility centers.
6- Contributing to making investment decisions and planning the necessary funds and controlling them to ensure the achievement of appropriate profits.
7- Work to motivate managers and employees in a way that serves the achievement of the company's objectives, through financial analysis of deviations and their evaluation and the extent of accuracy in the delivery of information at the cost and appropriate time to its users (hars, 2004).

1.7 Features of management accounting:

As for the features of management accounting:

- Management accounting is directed at serving internal parties, as it focuses on preparing reports for internal users (management).
- The spirit of management accounting is measurement and communication, as measurement contains the measurement of future values. In addition to the actual values, the measurement is financial and non-financial, while the information is communicated to the management within the company
- The goal of managerial accounting is to assist as the tool in practicing its several functions of planning and making decisions (HabibAllah, 2015).

1.8 The stage of the need for modern managerial accounting methods:

After Second World war, a lot of deficiencies appeared in the information provided by traditional cost systems, as a consequence of successive changes in the environment surrounding industrial facilities, the most prominent of which was the emergence of the new world order, whose most important features are the following set of dimensions : (Joudeh, 2001).

1- Shifting from limited and simple technology to high and complex technology.
2- The control of information on various areas of life

3- The globalization of the economy, as the world has become a small village in which distances converge and cultures merge, and from which the influence of geographical and political borders and restrictions diminish
4- Globalization of trade, as freedom of trade, has become a slogan that everyone adopts and strives to achieve.
5- Global competition, which will be imposed on the current production systems and those that are, expected, created in the future.
6- Global investment opportunities, which led to the emergence of multinational companies
7- The development of communication systems, and the transmission and circulation of information, from local and global information networks.
8- The increasing importance of the consumer and the dominance of the philosophy of marketing orientation as a basis for production.
9- The emergence of international quality standards and systems known as the "ISO" series of international standards for quality assurance systems.

These systems have influenced the concepts and procedures of cost accounting and management accounting in the following aspects: (Abdulrahman, 2004).

- Low direct labor cost.
- Increased labor and indirect costs.
- The absence of a direct relationship between the volume of production and the human labor component, which led to a low percentage of variable costs, which is almost limited to the material component.
- Automatically increasing the cost of equipment, and then increasing the fixed cost.
- Increasing quality levels, as a result of relying on mechanical elements without human intervention, and thus the need for measures and indicators to control quality.
- Low stock levels, as a result of scheduling and automatic handling of raw materials and production in progress.
- The continuous support for improving and developing quality requires a set of measures and indicators that measure quality so that they have the same importance and status as financial measures.

In light of these contemporary administrative trends, whose features began to appear since the end of the latest century at the start of the current century, many of the approaches and administrative styles that contributed to the emergence of in adding a new idea or approach to managing and developing existing companies, among these methods are the following Target cost entry method and Activities- based costing method and The total quality management method and Just in time method and Continuous improvement method

1.9 Modern managerial accounting method

Here researcher focused on five modern managerial accounting methods which represented as following:

1- Target cost entry method
2- Activities-based costing method
3- total quality management method
4- Just in time method
5- Continuous improvement method

1.9.1 Target cost entry:

During the Second World War, a simple American idea called value engineering appeared, and the value engineering method appeared in the American Electric General Company as an organized engineering approach or method that seeks to produce the product in light of a shortage of production elements from raw materials and intermediate products. Practical trials have resulted in the possibility of producing highly effective products then a method was developed to lead to the production of a product with maximum competence and effectiveness while decreasing the cost of manufacture to the lowest level.

Japanese industries took the American idea of value engineering and transferred it to Japanese companies with the so-called dynamic cost reduction, and the production planning system in the sixties of the last century, creating a new approach to cost management known as the Cost Target. Japanese industrial firms have expanded the basic concepts of value engineering into a targeted costing process, which aims to produce an efficient and effective product with cost reduction and profit planning (Mansour, 2008). Today, more than 80% of manufacturing in Japan, such as cars,

electronics, consumer supplies, mechanical tools, and dyeing, use the target cost, and, naturally, the greatest practitioners of the target cost are the leading Japanese companies such as Toyota, Nissan, Sony, and many others, and so Japan was among the first Whoever uses the target cost approach, because of its advantages in producing a product with the highest efficiency and effectiveness while decreasing the cost of production to the lowest level (Boer, 1999).

1.9.1.1The target cost concept:

Most definitions of target cost classify what occurs in competitive environment markets, in which cost decrease is a necessary condition and component for profitability

(Atkinson A., 2004) Considers the concept of target costing as a method that reduces costs in the initial stages of the product life cycle. The investigation and development period and the design period is one of the methods that are strongly relied upon in cost management through product life cycle costs.

(Horngren C., 2012) Describes the target cost as a long-term estimate of the unit cost of the product or service that supports the institution, to achieve the target operating income for the unit when selling at the target price, which is determined by subtracting the target operating income for the unit from the target price.

Clifton defined Target costing as “a controlled process of recognizing and achieving the full cost at which a proposed product must be produced with specific purposes, presentation, and quality to achieve the desired profitability at the predictable marketing price of the product over a specified period in the future (Clifton, 2004).

While (Bahar, 2012) defined it as: “An activity that aims to reduce the life cycle of new products, while not forgetting the quality and client requirements, by investigative all possible thoughts to reduce costs related to planning, research and development, and design related to the product.

A researcher considers that the target cost can be defined as: “One of the methods of strategic management accounting for the company that focuses on the strategy of price excellence for the product by reaching a cost that matches the competitive price, while ensuring quality to obtain customer satisfaction.”

1.9.1.2 Characteristics of the target cost:

The target cost approach is considered a modern cost management approach and it includes a set of characteristics, the most important of which are: (Kwah, 2004).

1. The target cost is applied in the improvement and design stage, as it differs from the traditional cost management methods that are practical in the production phase.
2. Target costing is a method of reducing costs and not a management method of controlling costs
3. Target costing processes and procedures have several basic techniques used because the primary goals of target costing include design and development techniques
4. To achieve the target cost, cooperation between different departments is required

1.9.1.3 Objectives of the target cost:

The most important target cost objectives can be summarized in the following: (Al-Mutarna, 2008).

1. Determining the marketing price that achieves the market share for the enterprise.
2. Determine the profit margin that the company seeks before putting the product on the market.
3. Producing products with competitive quality that meet customer needs.
4. Achieve long-term management goals through profits and competition.
5. Reducing product costs to the extent that guarantees to achieve the target profit and the desired price.
6. Monitoring the product life cycle in the inception to sale and after-sales services.

1.9.1.4 Principles of target cost:

The target cost approach includes seven basic principles: (Hilton R. W., 2003).

1. Price-to-cost leadership: In order to get the target cost at which the product must be manufactured, we must first determine the price at which the product can be sold, and subtract the target profit from this price.

2. Focus on the client: The administration should know the customers' preferences, reactions, and the price that suits them.
3. Emphasis on product design: The most important component of target cost is design engineering, where engineers must design the product in a way that able to be produced within the target cost range.
4. Focus on the design process: In order to create the product highest possible efficiency, this means examining all aspects of the production process. All these aspects must be designed according to the target cost of the product
5. Cross-functional teams: Industrial the product within target cost limits requires the use of a diverse team of disciplines, and from different departments of the company, such as specialists in marketing and sales research, design engineering, production engineering, production scheduling, processing, material handling and cost management
6. Cost life cycle: When determining the target cost, analysts must pay attention to the importance of taking into account all costs related to the manufactured goods life cycle, as the traditional accounting system focuses on costs during the production stage only, and does not pay sufficient attention to the rest of the costs related to the product.
7. Orientation of the value chain: Efforts have been made to eliminate costs that do not add value to reduce the planned cost because occasionally, the planned cost may exceed the target cost.

1.9.1.5 Target cost advantages:

The main advantages of target cost estimation are:

- It enhances the top-down obligation to process and product improvement to reach some competitive advantages.
- It assistances in creating market-driven administration for the enterprise to design and manufacture products that meet the price required for market achievement.
- The administration control system is used to support and enhance manufacturing strategies, and to identify market chances that can be renewed into real savings to reach the best value for money instead of just reaching the lowest cost.

- Ensures products better match the needs of their customers.
- Balances feature costs and customer willingness to pay for them.
- Reduces the product improvement cycle.
- It reduces manufacture costs significantly.
- Increase teamwork among all internal organizations associated with conception, marketing, planning, development, industrial, selling, distribution, and installation.
- To design the right product, it engages customers and suppliers and integrates the entire supply chain more effectively (archna, 2020).

1.9.1.6 Requirements for successful implementation of the target cost:

(Gagne M. and R. Discenza, 1995) Believes that companies with certain characteristics can reap the most benefits from applying the target cost approach and from these characteristics

- Companies whose product life is diverse.
- Companies that depend on automated equipment and computers for their industries and services.
- Companies that have good experience with products with a short life cycle.
- To rely on development systems to reduce costs, both during the development and design phase, as well as during the life cycle of the product.
- That it also relies on some administrative tools and systems such as the immediate production policy, as well as Total Quality Control, and Value Engineering.

In addition to following the continuous improvement of services, while maintaining the quality of the product and service, relying on computerized programs to process data, and obtaining information in the required time and speed, all of this is a requirement for success in applying the target cost.

1.9.2 Activities based costing system:

The activity costs system is considered a major and new development in the field of cost accounting, as interest in it appeared in the last two decades, as this system aims to distribute the costs of the company's economic resources to its activities, including on the products or services it provides. (Al-Rajabi, 2010)

The International Confederation of Industry Companies (1-CAM) defines the ABC system as an approach that measures the cost of performing actions, resources, and cost objectives, in that it distributes the cost of resources to activities, distributes the cost of activities to cost objects, depending on their use, and distinguishes causal relationships between activities. The cost drivers are the products or services (Rebischke, 2005).

James also defines an activity costing system as a way of measuring costs, their purposes, and the presentation of activities where costs are allocated to activities based on their use of cost sources, and then costs are allocated to their purposes based on the amount of their use of activities (james, 2006).

CIMA, the Chartered Institute of Management Accountants, describes activities based on costing as a method to estimating and controlling the costs of activities that include tracking resource consumption and the cost of final outputs. Resources are allocated to activities and activities to cost objects based on consumption estimates. The latter uses cost drivers to associate activity costs with output (Edwards, 2008).

The activity-based costing system able to be defined as: “as a system that loads each activity of the company with its costs, to enable management to define the chain of costs that the product is going through and that is the possibility of planning to reduce costs, and thus better product pricing and stronger competition.

1.9.2.1 The stages of implementing the activity-based costing system:

There are four basic phases to implementing the activity-based costing system, and these are listed by (Cooper, 1998) as follows:

1. Determine the main activities in the company.
2. Determine the drivers cost reasons that significantly affect the cost of the activity and directly determine how the activity requests the cost
3. Create a cost base for each activity, and track costs by activities according to the capacity of activities that consume those costs
4. Cost allocation to products: This is based on the causal relationship between cost, activity, and products

1.9.2.2 Reasons for switching to an activity-based costing system:

Maybe one of the main factors that encouraged the change towards the ABC system is (Al-Daour J. , 2004).

1. Manufacturing development and the use of technology, which led to the organization of the production cycle based on arranged logical phases and not according to the processing and organization of individuals
2. The increase in indirect manufacturing costs and the sharp decrease in the cost of direct wages, as a consequence of the multiplicity of products that required the appearance of new production jobs, such as re-engineering production processes, investigation and development, as well as continuous training, which in turn led to a rise in indirect costs of more than (50%) of the total cost, while direct wages decreased by (5-10%)
3. The appearance of strong competition, whether in the local market or at the level of global markets, imposed on companies the need to work to reduce the cost through the multiplicity and diversity of products and the search for new markets for their products while keeping complete quality
4. Cost accounting is no longer maintained for product stock pricing, but new objectives have emerged by supporting management decisions

1.9.2.3 Factors for the success of implementing an activity-based costing system:

(Al-Daour j. , 2008)

- Supporting high-ranking management
- Combination with other competitive strategies such as Total Quality Management and Timing
- Performance evaluation
- Providing appropriate training for ABC system designers, implementers, and users
- Determining the technical features in the system such as the type of programs that are suitable for the development of the systems on their own

1.9.2.4 Advantages of using an activity-based costing system:

The use of an activity-based costing system has several advantages, including (Dergham, 2007).

1- Finding accurate product costs, meaning that the costs of the products that we obtain using the activity-based costing system are more accurate than the costs of the products that we obtain from the traditional system.
2- Improvement in controlling indirect costs. This would improve the determination of responsibility for those costs and thus increase the effectiveness of control over it
3- Make better management decisions because the cost is determined more accurately, especially pricing decisions
4- Effective use of the corresponding principle by not assigning the costs of research and growth that relate to the following financial periods to the costs of the present period.
5- activities based costs by reducing the time and effort required to implement the activity its helps to reduce costs.
6- The costing system based on the activities make available a set of non-financial presentation measures through indicators to measure the causes of cost, such as measuring cost, time, and quality
7- The activity-based costing system effectively impacts pricing decisions by accurately determining product costing
8- Rise the positive view of the role of accountants in production administration and the areas of decision-making
9- Assist in preparing planning budgets based on activities.

1.9.2.5 Disadvantages of using an activity-based costing system:

According to (Dergham, 2007) there are several disadvantages of the activity-based costing system

- High costs related to obtaining cost data for different activities
- The use of an activity-based costing system does not eliminate the problem of random distribution of indirect costs.
- More difficult to apply compared to the traditional system

- Combining homogeneous businesses in one activity and using one cost operator would contradict the ability of the cost operator to accurately track economic resources.
- The cost of unused surplus energy is not charged to specific products or services but is treated as a period cost
- The activity-based costing system excludes the kinds of costs associated with specific products because they cannot be allocated to products or services such as product research and development costs.
- The costing system based on activities still uses some of the judgment foundations that depend on the size in allocating some costs to departments, products, or services, such as building costs such as rent, insurance, and others.

1.9.3 Total quality management:

One of the important matters that industry has focused on in the past two decades is "quality". Additional subjects are cost and delivery. Quality is extensively regarded as a necessary component of business success in today's competitive market. Quality mentions meeting the requirements and expectations of customers. It is important to know that quality is about more than just a properly effective product, as quality mentions certain standards and the ways and means by which these standards are reached, kept, and improved. Quality is not just about products and services. It is a congenital component of any part of doing things with a high degree of excellence. For example, business achievement depends on the quality of decision-making.

Ravi defined total quality management is a management method for an organization, focused on quality, which relies on the sharing of all its participants and aims to achieve long-term success through client satisfaction. It benefits all members of the organization and society (Ravi. Raj Labh, 2017).

Where (Alwan, 2005) believes that the concept of total quality management includes a philosophy of an integrated intellectual approach that depends on satisfying consumers, as the most important goals that the company seeks in the long term, through Responsibility is a collective between management and employees for continuous improvement of all activities, and at the level of The company as a whole. It is a management approach that requires the full commitment of senior management,

as the focus is on the quality of performance in all aspects and various specializations in the company.

(Weygandt J., 2012) Defined Total Quality Management: as systems that seek to reduce Defects of finished products to reach a level without defects in the final output, whether it is a product and improving all dimensions of service and this is what Crosby called the term ((Defect Zero)) components in the product's value chain, intending to satisfy the customer and win new customers.

A researcher believes total quality management is an administrative philosophy through which the management seeks to exploit all its existing material, human and information resources with great efficiency, in a complete coordination of all its components, and with the participation of all in implementing its strategy, to achieve continuous and renewed customer satisfaction, and to acquire new customers.

1.9.3.1 Principles of Total Quality Management:

1. Customer requests - (both internal and external) should be fulfilled first time & Every-time
2. Everyone should participate
3. Systematic two-way communication should be promoted
4. Determining training needs and providing them for workers
5. Senior management requirement is a must
6. Every single job should add value
7. Remove waste and decrease total cost
8. Improving creativity
9. Emphasis on teamwork (Ravi. Raj Labh, 2017)

1.9.3.2 Elements of Total Quality Management:

The elements of a comprehensive quality management system are represented as follows (Abu Hashish, 2012).

- **Focus on customers:** where the desires and demands of the customers represent the main motivation that drives and directs all the organization's systems, taking into account that those desires are renewed and developed, and they need to be tracked, observed and met, and that this has a positive relationship with profitability.

- **Achieving excellence:** where quality is one of the most important elements of achieving excellence for an organization.
- **Continuous improvement:** by reducing the activities that do not add value to the product or service, and replacing them with activities that increase the value for them.
- **Attempt to prevent operation errors:** This means trying to reach a high level of comprehensive quality without any defects.
- **Teamwork:** in cooperation between all officials as well as those working in various activities and coordination between all administrative levels

1.9.3.3 Objectives of Total Quality Management:

(Al-Saqqaf, 2005) considers that the main goal of implementing a complete quality management program in business enterprises is: (developing the quality of products and services with a decrease in costs and reducing period and wasted effort to increase the service provided to customers and achievement their satisfaction) and this goal of quality includes the third Important main benefits are:

1- Reducing costs**:** Quality requires correctly doing the correct things within the first time, and this means decreasing damaged products or re-processing them, and then reducing costs.
2- Decreasing the time required to complete the tasks for the client: the ways that were set at the beginning of the company to accomplish Services to the customer-focused on achieving and monitoring objectives, and as a result, these procedures were implemented. It is long and inflexible in many cases, which negatively affected the client
3- Achieving quality: by rising products and services that are wanted by the customers. Lack of attention to quality leads to an increase in the time performance and completion of tasks, an increase in monitoring work, and then an increase in the complaints of the beneficiaries of these services

1.9.3.4 Benefits of Total Quality Management:

There are tangible and intangible benefits of total quality management (Ravi. Raj Labh, 2017).

Tangible benefits	Intangible benefits
• Improving product quality • Improving productivity • Lower costs of quality • Increase the market and customers • Increase profitability • Reducing employee complaints	• Improving employee participation • Improving teamwork • Improving business relationships • Improving client satisfaction • Better communication • Enhancing career interest • Enhancing problem-solving ability • A better image of the company

Table 1: Benefits of Total Quality Management

1.9.3.5 Stages of implementing total quality management:

After conducting an overview of the company and getting acquainted with its organizational structure, the process of implementing TQM goes through five successive stages as follows (Jablonski, 1991).

1- **Preparation:** It is a phase of preparation and preparation for the implementation of Total Quality Management, determining the extent of the need to implement this system and determining the goals and resources required for its implementation, and in which the objectives and terms that must be met are determined.
2- **Planning:** in which detailed plans are drawn up, approved, and the necessary resources provided.
3- **Appraisal and evaluation:** evaluating the company's ability to apply total quality, the purpose of its application, the extent to which employees accept it, and the results of its application to customers.
4- **Implementation:** in which implementers are selected and trained.
5- **Exchange and diffusion of experiences:** in it, the experiences and successes achieved are invested.

Jablonski (1991) emphasized the need for these stages to be preceded by the identification of the current organizational structure of the company, and for these stages to be carried out according to a timetable that specifies the start and end date

of each phase, and the following figure shows the stages of the application of total quality as seen (Jablonski).

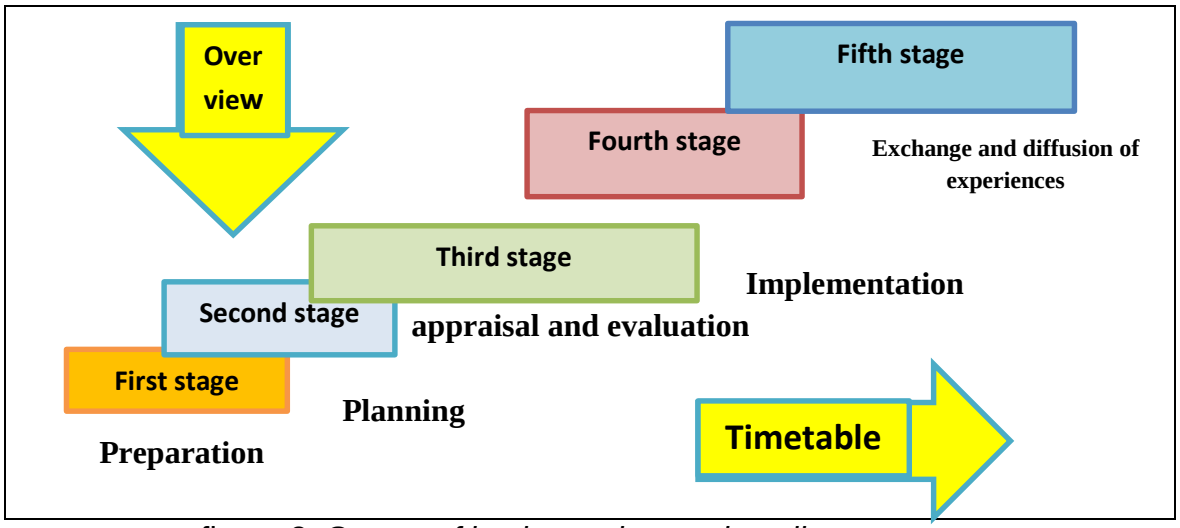


figure 2: *Stages of implementing total quality management*

1.9.4 Just in time production system:

Due to the technological developments that accompanied the productivity process, and the increase in competition in the markets, customers' expectations of obtaining high-quality products at low costs increased, which imposed on companies the need to reduce the cost of their products, improve their quality, and increase the efficiency of the performance of their customers, satisfy them and, naturally, manufacturers have to expect The future request for their products, to facilitate the production process easily to meet this request on the one hand, and to employ workers with high efficiency, on the other hand, to decrease production costs to obtain the maximum possible incomes (Garison R., 2012).

According to (Jumaa, 2011) the just in time production system is: one of the modern production systems that aims to implement a production system without stock, which leads to reducing the stock of raw materials, production in operation, and complete production to a minimum or eliminating the stock completely

As for (Jamal, 2005) they defined the production system on time as: “That system In which every part of the product is produced by one of the operating cells on the production line at the same moment when the next cell is needed and ready to receive it.

According to a researcher, the timely production system can be defined as “a method that reduces inventory costs and risks to a minimum, by producing goods upon request, and selling them at the same moment.”

1.9.4.1 Characteristics of just in time:

The on-time production system has several characteristics, including (Sheikh, 2000):

- Deleting all activities that do not add any value to the good or service.
- Focus on a high level of quality.
- Focus on continuous development.
- Simplify activities and processes; to identify the sources of waste and loss and remove them.
- Increase the sense of responsibility among workers.
- Maintaining a certain level of production.

1.9.4.2 Advantages of the just in time System:

The timed production system focuses on controlling total industrial costs, and its implementation leads to a significant reduction in industrial costs, including (Jamal, 2005).

- Reducing the size of the stock and the amount of money invested in it
- Reducing transportation and inventory treatment costs.
- Reducing equipment setup costs, leading to a decrease in the total cost of production.
- A decrease in the number of damaged and lost units based on the application of the comprehensive quality management system.
- Increased sales income as a consequence of faster response to clients.

Under a timely production system, everyone contributes to production to achieve the factory's goals that reflect the results of reducing industrial costs and increasing profitability. Also, the implementation of the production system on time effectively contributes to the economic savings that the traditional systems cannot achieve.

1.9.4.3 The objectives of just in time production system:

As this system seeks to achieve many goals, but there are major goals that managers seek to achieve from using this method, which are summarized as follows (Al-Hussein, 2001):

- Eliminate surplus production, as production is on demand.
- Eliminate wait time, initialize and restart time.
- To eliminate defective production.
- Reducing inventory to a minimum level (to zero).
- Focusing on productive processes only and minimizing unnecessary movements.

1.9.5 Continuous Improvement-Kaizen:

The continuous improvement approach is considered as a performance development goal that seeks to maximize the consumer benefit by working to reduce the cost, so it is mainly related to the operational aspects of the enterprise within the concept of the continuous improvement approach. Therefore, the concepts of continuous improvement mentioned in the accounting literature have varied (Zomlot, 2013).

The continuous improvement method is defined as “the persistent pursuit of improving performance, improving quality and decreasing costs to a minimum to meet consumers’ desires, satisfy their ambitions, and achieve a competitive advantage for the organization and thus increase its market share (Izzat, 2010).

"Kaizen" mentions to a Japanese term for "improvement" or "change for the better." Kaizen is defined as a continuous effort by each employee (from the CEO to the field staff) to confirm that all procedures and systems are optimized in a specific organization (Prachi Juneja, 2020).

The continuous improvement method can be defined as “a method based on consumer satisfaction with the quality of the product and on reducing production costs to a minimum in a way that does not affect the quality of the product and improves the competitive advantage of the company.”

1.9.5.1 Continuous improvement objectives:

The main goal of continuous improvement technology is to reach full mastery, through continuous improvement in production processes, which needs great efforts to reach

this goal, because by achieving it a strategic goal is achieved, which is to achieve a competitive advantage by reducing costs, improving quality and satisfying a customer. The goal of continuous improvement is a moving goal through

1- Satisfying customer needs is a moving goal by continually improving specifications according to customer needs.

2- Continuously reducing costs to keep its competitive advantage, which is also a moving goal through Adopting a defect-free production policy

(Turney P. and B. Anderson, (1992),) Believe that continuous improvement aims to achieve excellence in the following areas

- Excellence in manufacturing: This can be achieved by reducing stock levels, increasing the quality level, and reducing delivery times, or responding quickly to consumer demands.
- Excellence in design: This can be achieved through simplification of product design and the possibility of improving production flow precisely and with minimal disruptions and without excessive use of resources.
- Excellence in Marketing: This can be achieved through a good understanding of consumer needs and meeting those needs effectively and on time.

As (Brimson.j, 1991) explained, several goals for continuous improvement are:

- Remove the activities that do not add value.
- Improving activities that add value.
- Quality improvement.
- Simplify activities.

On the other hand (Al-Jabali, 1994) indicated some continuous improvement objectives, such as:

- To try to reduce the cost to the lowest possible level.
- Work to reach the highest degree of quality.
- Maintaining the continuous flow of production to ensure its timely completion.

- Reducing inventory to the minimum possible and trying to reach production status on time.

1.9.5.2 Benefits of Continuous Improvement:

Continuous improvement means that your commercial is all the time improving (Devra., 2019).

Efficiency: In order to implement systems to get more work done in less time which requires continuous improvement of work leading to continuous improvement in efficiency, you save money on labor and increase client satisfaction by manufacturing high quality product.

Engagement: Staffs who work in an environment in which they are estimated to make continuous improvements care more about their work than staffs who are expected to just show up and get the work done. Concerned staffs are satisfied staffs who stay with your firm for the longest time and put the extra effort into client satisfaction and problem-solving.

Client satisfaction: In order to be able to better meet customer needs, your products and services must be continuously improved. Your offerings will have smaller amount defects because your employees will devote time and effort to solving problems. These efforts will be in part in response to client feedback, and their application will improve the client experience.

Effective systems: To build good quality, the tools your company needs, continuous improvement is part of the quality management efforts. Your business will put in place systems to continuously evaluate and update its processes.

1.10 Introduction to Information technology:

The world today is experiencing an accelerating electronic technological revolution and in a continuous regeneration, as information technology and electronic technologies are considered an significant resource that is no less important than human and physical resources, as the interest in information technology and the extent to which it keeps pace with technological development has become a competitive benefit for companies that make optimal use of the technology factor to achieve their goals, mission, and vision (Mahmoud, 2016).

Growths, which have occurred particularly in science and technology over the past century, are continuing at a growing rate today. These changes have greatly affected and continue to not only have an impact on the entire life but also the science of business and management. All these developments and advancements create a more competitive environment for the business world. In this ever-increasing competition environment, managerial accounting has been affected by technological growths in several respects, whether directly or indirectly. Initial changes include changing financial structures as a result of the influence of development techniques of production systems and thus changing financial systems. Especially since the changes that have occurred in information technology (IT) during the past twenty years have significantly reduced the costs of gathering and processing information (Saban & Efeoglu, (2012).).

Information technology has a great role in achieving the organization's goals and supporting its competitive strategies, which made them depend on it and made it an indispensable resource even if there is an efficient human resource (Mithqal Hammoud, 2011).

Information technology plays an important role in bringing about fundamental changes in the processes themselves, which made them a major part of these processes, in addition to enabling small enterprises to open communication channels with all the parties that deal with them, and gave them sufficient flexibility to adapt to the developments that occur, both in the operations themselves. Or on the external environment, in addition to reducing costs by controlling inventory and orders, and organizing transport and shipping operations. And all this depends on the ability of the organization to employ the appropriate information technology for it and its operations in proportion to the surrounding environment. (Shamri, 2013)

Whereas the large size of companies, the large volume of their data, and the tremendous technological advancement, especially in the world of automated accounts, made the use of computers in business companies an inevitable necessity that cannot be ignored in an age in which information has become one of the most important commodities, due to its tremendous ability to provide information with high speed and high accuracy. (Abu Ataiwi,2012)

1.10.1 The concept of information technology:

Information technology with its advanced implements is of great position nothing has affected human life since the Manufacturing Revolution just as information technology has affected it, which has become essential in the lives of peoples, organizations, and countries. What the world is witnessing in terms of rapid technological transformation and the successive growths in the field of devices Computer, software, communications equipment and their means, and this vast amount of information that raises and is transmitted Easily (Wen Lin, 2011).

should be noted that there is no exact definition of the term information technology practically and scientifically at the worldwide or local levels, due to the multiplicity of environments and businesses created by information technology. Although it relies on computers in all its stages, some believe that its use is the use of computer technology (Jumaa, 2011).

1.10.1.1The most important definitions related to information technology:

- Design, implement, support, or manage computer-based information systems, especially in the field of Application of software and physical computer equipment, data processing and software packages, and communications And networks of all kinds , .or its A group of technologies that contain means, equipment, devices, and tools that can be handled with experience and skill to obtain solutions in the field of information and knowledge production (Al-Tai, 2010).

- It was also defined as “those devices, equipment, methods, and means that a person used and could use in the future in obtaining audio, video, and digital information, as well as processing that information in terms of recording, organizing, arranging, storing, possessing, retrieving, displaying, reproducing, broadcasting and communicating it on time to its applicants It includes storage and recovery technology and communication technology (Jassim, 2008).

- Information technology is also defined as a term that includes all aspects of managing and processing information using a computer, including the hardware and software required to access it (Fawzi, 1999).

- They are the actions, procedures, and methods that the organization members carry out to convert inputs into outputs using machines Technical tools (Enaam, 2007).

- Marwa defines information technology as a set of tools, equipment, procedures and processes that are used to collect and store practical information. There are some examples: coding, storage, analysis, programming, retrieval, data transformation, and systems monitoring. Information technology also includes: multimedia and communication, office automation (Marwa, 2020).

- Dave considered information technology as a tool through which information is kept and processed within the system, in addition to including everything related to computers, programs, communications, networks, databases, wireless and websites. (dave, 2017).

Based on the previous definitions, the researcher sees from the above that information technology is: computer-based technology and other advanced means of processing data, which are obtained to achieve speed in processing, storing and retrieving, transforming it into information, and sending it to users for timely decision-making.

1.10.2 The importance of information technology

The importance of information technology People in various business companies and organizations always strive to work in a shorter time, better efficiency and productivity, which makes information technology an important and needed means to reach their objectives and develop their business day by day, as the need has become urgent to do a lot of tasks at a time. Short to meet the requirements of global and local markets in terms of services and goods. In the following, the importance of information technology will be reviewed in detail:

1. Providing a set of tools, processes, and methodologies that assist the business process and achieve the objectives of the enterprise such as programming, storage, coding, data transfer, recovery, systems analysis, design and control, as well as related equipment used to collect, process and provide information and this is the content of the importance of information technology.

2. Protection of various valuable records in enterprises and Electronic storage.

3. It helps to make the right decision about institutions because it provides the necessary and important information and communication for decision-makers.
4. Protecting electronic information from hacking or removing it during a technological disaster.
5. Decreasing employee workloads, ease of tracking projects, and checking financial data.
6. Control over the permission to access information and data stored in the databases, and the permission to amend, transfer, and delete them.
7. Remote access to the electronic network of the company or organization, so that workers can work from home or anywhere else.
8. Facilitating communication between workers and the business world fast and effectively through e-mail, video conferences, and internal chat rooms, without necessarily having to communicate personally and here the importance of information technology is evident in saving time and shortening distances.
9. It is beneficial to integrate information technology into our business. Information technology makes electronic storage systems to protect the valuable records of our company (Niya, 2019).
10. The dependence of different businesses in the information age on information technology.
11. The contribution of information technology to the increase in services and products.
12. The effect of information technology on the success of various activities and professions.
13. Increased need for information (Carlin, 2014).

1.10.3 The motives behind the spread of information technology:

Jassim puts a set of motives behind the tremendous spread of information technology applications in organizations, whether productive or service, which can be summarized as follows:

1- Increasing productivity: productivity means the productivity of material and natural human resources, examples of which are:

- Increasing the productivity of factory workers: Information technologies have proven a great ability to reduce production and service costs by reducing labor and saving raw materials.

- Increasing the productivity of office workers: - To increase the effectiveness of communication between office employees and between management centers and branches, as well as the speed of document production and exchange.

2- Improving services: Technology has played a fundamental role in improving existing services and creating new services that were not available before, and in many areas, the most prominent of which are banking services, transportation, communications ... and others.

3- Controlling complexity: All the data have proven that information technology is the best and safer weapon that mankind defines in the face of the phenomenon of extreme complexity, which is afflicting all aspects of modern life, and information technology has provided practical means to besiege the phenomenon of complexity, including Simulation models, systems analysis methods, and data, and information technology has become a catalyst and effective factor in solving many problems in the administrative environment.

4- Flexibility: Flexibility is the other side of the coin in terms of the phenomenon of complexity and speed of change, during this huge amount of phenomena that are difficult to predict, the factor of elasticity is considered a fundamental factor to ensure the speed of adaptation of systems and their response to the many variables and demands (Jasim, 2005).

1.10.4 Information technology benefits for managers and departments:

It is known that many people in this generation are those who do not master the foreign language and the use and investment of information and because of the importance of information technology, the benefits of technology for managers and departments will be recognized including (Al-Agha, 2006).

1- Developing the skills of managers, employees, and investors for technology.

2 - Reducing the size of the administrative apparatus and reducing costs.

3- Expanding and combing the communication network and devising new methods.

4 - Adapting to the changes as a result of the speed of science.

5- Sorting new and advanced styles of management.

1.10.5 Elements of using information technology:

Information technology elements can be identified as follows

1 - Accuracy of the used information: It expresses the ratio of correct information to the total amount of information that is produced during a specific time, and it also means the image it reflects The information is about reality, if the information is inaccurate, it misleads the decision-maker and does not help him in a process Decision making The degree of accuracy required in the information varies according to the time range expressed by this information. If the information is future predictions, the degree of accuracy decreases the further away it is addressed, and vice versa.

2-Suitability of software used: Computers are an essential part of our contemporary era and cannot be dispensed with or ignored The companies 'dependence on computer systems and software in performing their business has become a big matter, especially since these systems have become effective indicators in achieving many benefits that organizations should achieve due to the accuracy, speed and efficiency of these systems. For organizations to do their work in the best way, it is necessary to take into account their choice of programs that suit the requirements of work, and they must also when choosing programs at work take into account the following: The capabilities of workers to deal with these programs

3- Users' knowledge of computer systems and software: The knowledge of workers in facilities with modern information technology and communication methods is an important and necessary requirement for their ability to face the obstacles that the facility may pass, so it is required for users and workers in the facilities to have the following:

- Learn about modern technological methods and resources of communication.

- That the user can deal with modern technological methods.
- The pursuit of self-development and continuous technological development.

The knowledge of the beneficiaries and workers in the facilities of information and communication technology is of great importance It is useful for them and helps them in several things, including:

- Ease of exchanging information between company workers.
- Speed and accuracy in completing the tasks and jobs assigned to them.
- Giving them the ability to practice in the use of modern information technology resources (Krishan, 2013).

1.10.6 Information technology infrastructure:

Information technology infrastructure is defined as the basic foundation for the Information technology portfolio (including technical and human assets), which is shared across the company in the form of reliable services, It is usually coordinated by the Information Services Group (Marianne Broadbent, 1999).

The Information technology infrastructure is the backbone of any organization; it must be carefully planned, operated, and maintained to ensure the effective functioning of the organization. (www.rmg-sa.com)

The information technology infrastructure consists of the following

1. Data: It is the first basis for building the concept, without which the other foundations cannot be launched.

2. Hardware: It is a tool for processing and storing data.

3. Software: through which data can be controlled, controlled, and math operations performed and obtaining the required results and solving problems as needed and as required.

4. Communications: it results from the development of infrastructure components and is more like a medium.

5. Transportation: as it helps in the distribution and dissemination of data and its results.

6. Networks: It is the result of the development of telecommunications.

7. The Internet: It is the latest component of the IT infrastructure (Dalahma, 2008).

1.10.7 Information technology risks:

Information technology risk is specifically defined as “anything that results in an error or defect in a technology the information leads to a negative impact on the business of the organization. Came the definition of the Association for Review and Control Systems Information systems risk (ISACA) information is consistent with what I previously identified as The possibility of an action or event that has a bad effect on the organization and private information systems It means the possibility of abusing weaknesses in the asset or group of assets, causing losses Or damage to assets (Mustafa, 2011).

Of the many risks around the use of information technology in organizations classified in this framework:

1. Human errors: These errors may result in the process of preparation, design, and communication channels And computers that will work on implementing accounting information systems or from programming or operations Systems testing and testing, or when data is entered, processed, or retrieved, and these errors are formed A high percentage of problems or causes related to the security of computerized accounting information in Enterprise.

2. Computer crimes: The source of these crimes may be from persons inside the facility or from outside, they penetrate accounting information systems using computers or through various communication networks (Dalahma, 2008).

1.11 Previous studies

A study by (Saban & Efeoglu, (2012).) Was conducted to determine the impact of information technology on management accounting and management accountants in iron and steel companies operating in Turkey. The study examines the technological developments that led to changes in management accounting and the extent of these changes. The study community consisted of (27) iron and steel companies operating in Turkey, and the sample consisted of 15 companies. The study concluded that management accounting has been affected by technological developments in many aspects, whether directly or indirectly, and information technology has enabled

management accountants to acquire new skills and change their roles at work The study recommended the necessity of following up on the developments that take place in technology in the coming years and their impact on management accounting. It also recommended that accountants use technology more and more effectively

study by (Waweru, 2013) aimed to examine the effect of the following conditional factors: “(competition, technological advancement, size and type of company) on changing the management accounting systems of four retail selling companies listed on the Johannesburg Stock Exchange in South Africa. The study depends on designing a questionnaire that was spread to the financial managers of these companies, in addition to interviewing with them. The study concluded that there are important changes in the management accounting systems of the four retail companies. These changes included the increasing use of contemporary management accounting practices, specifically the activity-based cost systems. This study also found that increased competition and technological changes are the main factors that affect the change in managerial accounting in the participating companies. The study recommended the need to follow up on changes in environmental factors, especially the advancement of technology, which could have a major impact on managerial accounting

A study by (Abu Yusef, 2016) purposes to identify the effect of modern management accounting methods on increasing investor confidence in public shareholding companies listed on the Palestine Stock Exchange. The study depend on the descriptive and analytical approach, and the published financial data of these companies for the financial period for the year (2015) was used in addition to the field study approach using the questionnaire as the main tool to collect the basic data for the study, as the study population consists of data that responded to the financial statements of 49 companies and 41 companies Responded One of the most important results of the study is the presence of medium-level awareness among senior management and decision-makers in public joint-stock companies listed on the Palestine Stock Exchange regarding the application of modern managerial accounting methods Among the most important recommendations of the study is the need to develop awareness among managers of joint-stock companies, accountants, and heads of departments on the importance of modern managerial accounting methods and their role in growing profitability, which leads to increased investor confidence.

study by (Al-Da'our, 2013) aims to measure the extent of the impact of using modern methods of managerial accounting on Raise the credit efficiency of public joint-stock companies listed on the Palestine Stock Exchange, by measuring the degree of the practice of public shareholding companies listed on the Palestine Exchange. For modern management accounting methods, by preparing a survey list that was distributed to companies The public shareholding listed on the Palestine Stock Exchange, and the number of responding companies reached (41) companies. With a response rate of (42.85%), while the degree of credit efficiency is extracted from the financial statements Published for those companies and private financial year (2011) the results of the study were sufficient for the application of public shareholding companies listed on the Stock Exchange the range of management accounting methods ranges between (60-70%). The results also showed a statistically significant relationship between the use of public shareholding companies listed on the Palestine Stock Exchange For modern management accounting methods and the degree of efficiency in companies

study by (Sumkaew N., 2012) aims to identify the justifications for practicing traditional and modern managerial accounting methods in enterprises listed on the Thailand Stock Exchange for the year 2012 using a field survey of 465 companies. The initial results of this study presented that companies' confidence in traditional managerial accounting methods has not changed from the time when the financial crisis in 1997, and managers in these companies still gain their knowledge through practicing traditional managerial accounting methods and avoiding practicing modern managerial accounting methods because of: Lack of knowledge on the one hand, and their followers are central management, and they try to avoid modern methods of uncertainty about their results. This study suggested conducting comparative studies between the uses of modern methods of management accounting with companies in countries of different cultures.

A study by (Abdin, 2015) aimed to use achievement accounting as an entry point to develop the cost system in light of recent trends in managerial accounting. The study relied on the descriptive-analytical approach, and a questionnaire was designed to survey the opinions of the sample members, where 60 samples were searched Among the most important results of the study is that the management of Palestinian industrial companies is working to achieve them, which is the integration of the cost system and

achievement accounting to improve the system, reduce costs more seriously, and provide sufficient and appropriate information for planning, monitoring and performance evaluation purposes. Some difficulties and obstacles limit the development of the cost system in Palestinian industrial companies in response to modern administrative purposes. The higher management does not know the entrances to the new developments and is not in line with technological variables for developing the cost system and its importance and does not want to bear the costs of its development. One of the most important recommendations of the study is the need to work on the necessity to develop the cost system applied in Palestinian industrial companies and update it to keep pace with modern technological developments and accelerate the development of the manufacturing environment. Regionally and internationally,

a study by (Khalil, 2012) aims to introduce the target cost method as a modern costing of the management method and its applicability and build a proposed model for the application of this method The use of the case study method, where the study was applied to a company in the Middle East that made medicines and cosmetics with limited public participation in the Gaza Strip. One of the most important findings of the study is that the target cost method plays an important role in limiting an effective competitive environment. It helps to identify the products that have a real cost higher than the target cost, which enables the company to review the costs of those products and then work on the actual reduction to reach the target cost It also helps greatly in the success of the new product development process One of the most important recommendations of the study is the necessity for Palestinian industrial companies to unify their energies to keep pace with global developments and to compete with foreign products, whether in terms of quality or price, by re-evaluating the management methods currently applied try to use the modern management accounting method more to facilitate the work

study by (Ding, 2013) aims to highlight the development of managerial accounting in the paper manufacturing enterprise in Scotland in the United Kingdom over more than one hundred and fifty years to identify the factors affecting the development of managerial accounting systems in that company. And a comprehensive review of the facts gathered about the problem, the results of the study indicate that: The following conditional factors: (technology and decentralized structures transformation, competition, and academic qualification strategy) are impacting the development of

management accounting systems for those companies, and thus they illustrate developments in the company's managerial accounting systems. Among the most important recommendations of the study is the need to work on developing awareness, desire, and ability to use modern management methods and their applications, and work to increase the awareness of officials in the corporate industry and to walk with technological developments that occur in a business environment, and to the importance of the role of modern management accounting. In providing them with the appropriate information to plan and evaluate the performance of a company

A study by (Abu Hadaf, 2013) aims to shed light on the extent to which industrial companies listed on the stock exchange have benefited from management accounting methods in various administrative fields and to know which of the institutions is the most common method between modern or traditional methods, and the study relied on the descriptive-analytical approach. The purpose, and distributed to the heads and managers of the financial affairs sector accounts and costs, financial managers, and administrative accountants in the manufacturing companies listed on the stock exchange. In Palestine, the response rate was (8.93%), and statistical methods were used to analyze the responses of the respondents, and among the most important results of the study: that the industrial companies listed on the Palestine Stock Exchange use management accounting methods in various areas of planning, control, performance evaluation and decision-making to a large extent using traditional methods. In management accounting by industrial companies listed on the Palestine Stock Exchange at a high rate, while the percentage of using modern methods in managerial accounting is medium. The study also showed the use of modern manufacturing technology to cope with a business environment and increase competitiveness The study concluded with a set of recommendations, the most important of which are: That the management of companies listed on the Palestine Stock Exchange work to develop practices and methods of managerial accounting as a whole, in line with modern management philosophies and competitiveness in the business environment because of this positive impact on improving the company's financial performance. In addition to the necessity to take into account the conditional factors affecting the development of management accounting methods in the industrial companies listed on the Palestine Stock Exchange and to use information technology.

A study by (Judah, 2011) aims to identify the extent to which management accounting methods are used in industrial companies in Jordan, and to know which of these methods are the most common and where they are used, the study relied on preparing a questionnaire to achieve the objectives of the study, and it was distributed to (81) Jordanian industrial companies and correct responses were received on the statistical analysis. From (57) companies the study concluded that the majority of industrial companies in Jordan focus on using traditional managerial accounting methods. The most common field for using accounting management methods in industrial companies in Jordan was the goal of planning, followed by control and administrative decision-making. The study also recommended the need for companies to pay attention to the use of management accounting methods, especially modern methods, and to work to increase the awareness of corporate officials of the importance of the role that modern management accounting plays and the development of managerial accounting departments. And attention to training and continuing education and the use of information technology to raise the efficiency of management accountants and director of departments in a company

A study by (Adler, 2000)was conducted on 165 industrial companies in New Zealand to assess the extent to which these companies adopt advanced management accounting tools and methods compared to traditional methods. The study found that the majority of companies use many modern methods while not abandoning the traditional management accounting methods. The study also found that the most important obstacles to adopting modern methods are due to specific determinants of the human resources of these companies

Study by (Mansour M. M., 2011) the researcher conducted an analytical study of modern managerial accounting methods to meet the features of the changing competitive environment and identified development needs in management accounting methods to suit the requirements of strategic planning and achieve the company's leadership in the product market. And the characteristics of the environmental, economic, and social variables surrounding the company, as well The researcher recommended working on activating the role of modern methods of management accounting as an information system in achieving the company's competitiveness strategy, and the necessity for Egyptian companies to apply modern managerial

accounting to enable them to achieve competitiveness in light of the implementation of global economic agreements and to achieve cost leadership in the Product market.

study by (Taha, 2010) was conducted to identify the extent of application of management accounting methods in industrial companies in the Arab Republic of Egypt, to find out which of these methods are more common, are they modern or traditional methods, and the study aimed to determine what conditions and factors may affect the application of those methods, Is it the type of industry or the technology used in the company, and the extent of the impact of applying modern methods of management accounting on the financial performance of these industrial companies. The study relied on a questionnaire. Design to achieve the goal the study was distributed to (200) industrial companies in Egypt. The most important finding of the study is that traditional management accounting methods are more used than modern methods The study also showed that there is a statistically significant relationship between (technology used in the industrial company, the type of industry) and the application of management accounting methods, and that there is an impact on the financial performance of industrial companies in Egypt that have modern methods applied in management accounting.

study by (Sabah, 2008) aimed to identify the reality of applying traditional and modern managerial accounting methods in manufacturing companies in the Gaza Strip And identifying the methods most applied to these companies, as well as identifying the difficulties and obstacles that companies face when applying these methods. The study depends on the descriptive and analytical approach, as the study designed a questionnaire distributed to the study population consisting of industrial companies operating in the Gaza Strip The study concluded that traditional managerial accounting methods are applied in manufacturing companies in varying proportions, and the most applied method is the actual cost method, followed by the break-even analysis method, and the least used is the transfer pricing method. The same applies to modern management accounting methods, as they use the most comprehensive quality management method However, some companies face some difficulties and obstacles in an average rate when applying different management accounting methods. The study recommended developing awareness among industrial company managers of the importance of management accounting methods and their role in providing appropriate information for decision-making and contributing to the planning and control

process and working on applying different management accounting methods more broadly in manufacturing companies.

study by (Al-Jhelab, 2007) was conducted to identify the activity-based costing system in all its dimensions, to identify its concept, characteristics, and features, and to compare it with the traditional system costing system, and the main objective of this study is to research the possibility of using the activity-based costing method in organizations Then researching the possibility and feasibility of preparing the budget in the Islamic University according to Activity-based on Costing. The study relied on the analytical method; the study concluded that the current method used for preparing the budget of the Islamic University lacks the scientific method. The study recommended the adoption of the activity-based costing method as a basis for preparing the budget of the Islamic University

A study by (Wadongo, 2014) was conducted to suggest a theoretical framework that shows how the following conditional factors affect: First, organizational factors, which include: size, organizational structure, strategy, and technology, and secondly, external factors, including competition and environmental uncertainty around the use of management accounting systems and non-targeted organizations to profit to achieve the aim of the study, a field study was conducted on non-governmental organizations and a questionnaire was designed to be distributed to non-governmental organizations. Among the results of the study is the existence of a positive relationship between strategy, technology, competition, and uncertainty in environmental management and the use of management accounting systems in non-governmental organizations, meaning that the conditional organizational and external variables affect the design and implementation of management accounting systems within those organizations. One of the most important recommendations indicated by the study is the necessity of making use of conditional variables to make management accounting systems in organizations more effective, especially using information technology to increase the effectiveness of managerial accounting inside an organization.

CHAPTER TWO

RESEARCH METHODOLOGY

2.1 Research approach

The study uses a combination of qualitative and quantitative methods to analysis data collected from Iraqi business enterprises. The qualitative methods applied were based on primary data collected using questionnaires. The data was collected and entered into Statistical Package for Social Sciences (SPSS) version 25. A series of data analysis methods were applied to test the data and test the validity of the proposed hypothesis. Discussions of findings and strategic recommendations are based on the established research findings. As a result, this chapter focuses on the population and sampling methods, the development of the research instrument, the applied data analysis methods validity and reliability tests, and ethical considerations.

2.2 Population and sampling methods

Iraqi business enterprises were of major concern in this study as a result, the study focuses on how industrial companies use and benefit from information technology. Such is in regards to modern managerial accounting methods. The number of manufacturing companies in Iraq exceeds 1000. However, the actual numbers of employees employed in these industries are not known with precision. Furthermore, with the effects of the COVID 19 pandemic, restrictions are observable regarding the distribution of questionnaires. Hence, a purposive sample of 100 questionnaires was distributed to manufacturing companies in Iraq.

2.3 Research instrument

The research instruments were developed using ideas established from a study by Saraj (2017). This is because such a study provides detailed information and an empirical basis of the role of using information technology on increasing the efficiency

of modern managerial accounting methods. However, improvements were made to the questionnaire to ensure that it validly and reliably addresses the established research questions.

A questionnaire was prepared on "The role of using information technology on increasing the efficiency of modern managerial accounting method in the industrial companies in Iraq ", as it consists of three sections: The first section: It is about the personal information (demographic details) of the respondents (age, education level, years of experience, job title) of the industrial companies in Iraq. Section two offers a platform upon which information related to the industrial companies can be obtained (The period of the company's activity, legal form of the company, industry sector to which the company belongs)

The third section: provides detailed information regarding the use of information technology has a role in improving the increasing efficiency and It consists of the axis of study, and it consists of 36 paragraphs, divided into 6 axes:

- The first axis: the use of information technology has a role in improving the increasing efficiency on the total quality management method: It consists of (7) paragraphs.
- The second axis: the use of information technology has a role in improving increasing efficiency on the production method on time: It consists of (6) paragraphs.
- The third axis: the use of information technology has a role in improving increasing efficiency on the activity-based costing method: It consists of (7) paragraphs.
- The fourth axis: the use of information technology has a role in improving increasing efficiency on the target cost method: It consists of (5) paragraphs.
- The fifth axis: the use of information technology has a role in improving increasing efficiency on the continuous improvement method: It consists of (4) paragraphs.
- The sixth axis: the use of information technology in industrial companies: It consists of (7) paragraphs.

All the variables were measured using a Likert scale of 1 to 5. That is, strongly agree, agree, not applicable, disagree, and strongly disagree.

2.4 Data analysis methods

Data analysis tests provided in this study include a combination of descriptive statistical methods to determine the magnitude and variation or responsiveness of the variables. Correlation coefficient tests were applied to explore how the information technology and managerial accounting aspects are correlated with each other. Such was accomplished using the Pearson Correlation Coefficient test. Further tests in the form of independent t-tests were used to test the proposed null hypotheses. The following hypotheses were established from the reviewed empirical examinations made in the first chapter;

H1: There is positive statistical significance between the uses of information technology in increasing the efficiency of the total quality management method.

H2: There is positive statistical significance between the uses of information technology in increasing the efficiency of just in time method.

H3: There is positive statistical significance between the uses of information technology in increasing the efficiency of the activity-based costing method.

H4: There is positive statistical significance between the uses of information technology in increasing the efficiency of the continuous improvement method.

H5: There is positive statistical significance between the uses of information technology in increasing the efficiency of the target cost method.

2.5 Validity and reliability tests

Facial validity tests were conducted to determine if the questionnaire is easy to understand. Recommendations were given by the study supervisor and changes were subsequently made to the questionnaire. Such is important for ensuring that the questionnaire reliably and validly answers the established research questions. Furthermore, Cronbach's alpha tests were also used to assess the internal consistency of the information technology and managerial accounting aspects. That is, to examine how reliably the variables explain the role of using information technology on increasing the efficiency of modern managerial accounting methods.

2.6 Ethical considerations

The initial ethical approach used in this study involved the submission of an application form to the responsible institution's ethical committee. This was to determine the study's extent to ethically abide by good ethical standards. The study was prepared whilst ensuring that all the relevant empirical sources used were duly acknowledged. Since the study is for fulfilling the requirements of a master's degree; the findings of this study were strictly for academic purposes and were not public without the participants' consent.

CHAPTER THREE
DATA ANALYSIS

3.1 Introduction

The findings of this study are based on the data that was collected from 84 participants. This chapter aims at analyzing the collected data to test the validity of the established hypotheses and answered the formulated research questions.

3.2 Demographic examinations of the employees

The analysis of 84 respondents reveals that 35.71% of the employees were aged between 26 to 30 years followed by 25% who were in between the age group of 20 to 25 years. 20.24% were between 31-35 years, 13.10% were in between 36-45 years and 7.14% were more than 45 years.

The highest qualified employees had BSc degrees and amounted to 70.24% of the total number of industrial employees who took part in this study. No employee has a qualification that is below a diploma level. diploma and Master's and Ph.D. degree holders accounted for 14.29% and 13.10% and 2.38% of the total number of industrial employees respectively.

Regarding the years of experience, 33.33% of the employees have an experience level of 4 to 6 years. 26.19% had 7 to 10 years, 21.43% had 1 to 3 years, 14.29% had less than 1 year and 4.76% had more than 10 years of experience (see Table 3.1).

Table 3 1: Demographic details of the employees

Variable	Description	Frequency	Percentage
Age	20-25 years	21	25.00%
	26-30 years	30	35.71%
	31-35 years	17	20.24%
	36-45 years	11	13.10%
	More than 45 years	6	7.14%
	Total	**84**	**100%**
Education level	Below diploma	0	0.00%
	Diploma	12	14.29%
	BSc	59	70.24%
	MSc	11	13.10%
	PhD	2	2.38%
	Others	0	0.00%
	Total	**84**	**100%**
Years of experience	less than one year	12	14.29%
	1-3 years	18	21.43%
	4-6 years	28	33.33%
	7—10 years	22	26.19%
	More than 10 years	4	4.76%
	Total	**84**	**100%**

The 84 employees were composed of 11 accounting Managers, 4 department heads, 59 accountants, and 10 administrative personnel (see Figure 3.1).

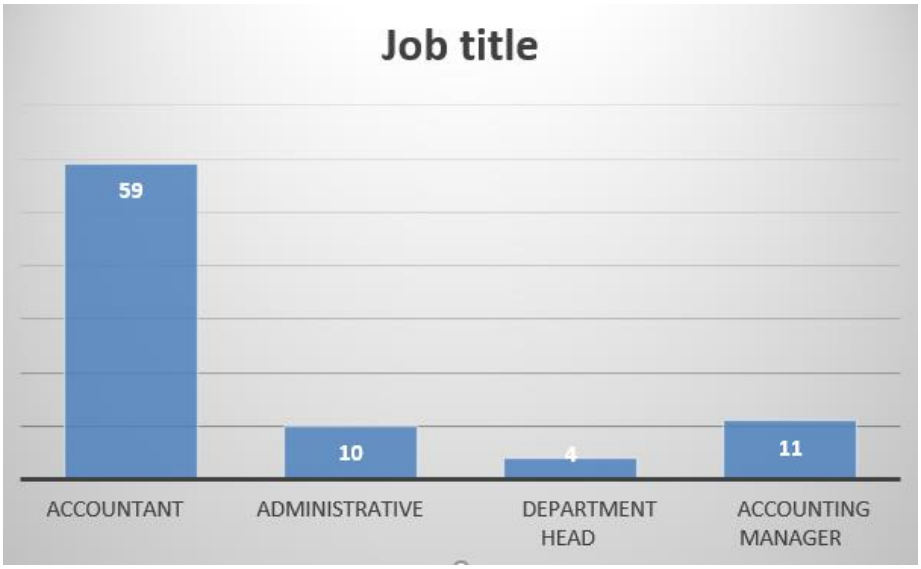


figure 3. 1: Job titles of the employees

3.3 Details of the industrial companies' employees

Insights provided by the analysed findings show that 43% of the industrial companies have been in existence for 6 to 10 years followed by 26% were have been operational

for 11 to 15 years. 18% of the companies have been operational for more than 15 years while 13% of the companies have been existence for 1 to 5 years (see Figure 3.2).

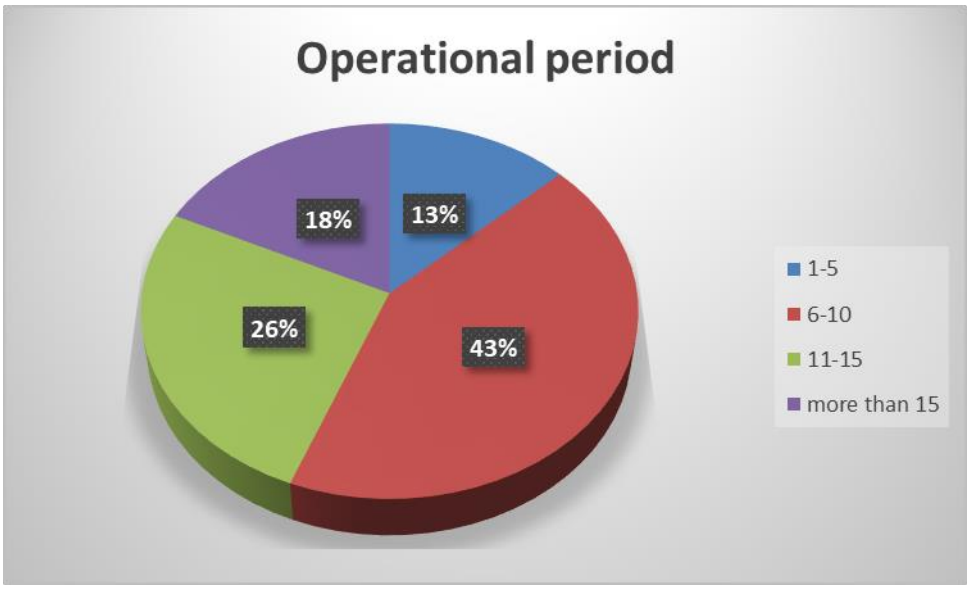


figure 3. 2: Details of the industrial companies' employees

Regarding the nature of business, the industrial companies were operating in, 34 businesses operated as sole proprietorships, 42 in the form of partnerships, and 8 as corporations.

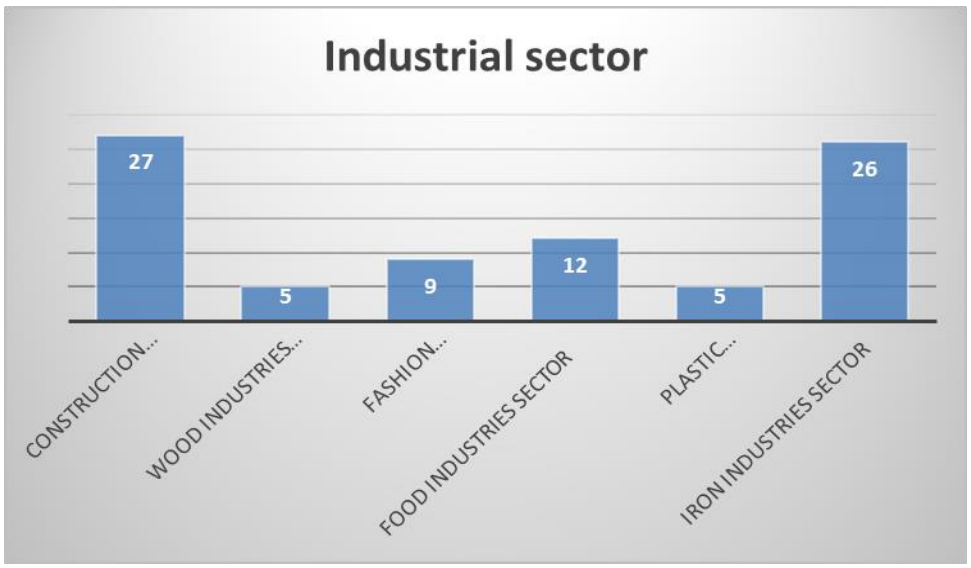


figure 3. 3: Industrial sector of the companies

27 companies operating in the construction industry, 5 wood industry, 9 fashion industry, 12 food industry, 5 plastic industry, and 26 iron industry (see Figure 3.3).

3.4 Qualitative analysis of the modern managerial accounting method

3.4.1 Qualitative analysis of continuous improvements

There were relatively adverse sentiments about the use of the continuous improvements method by the industrial companies. This is because absolute values indicate that the combined numbers of employees who disagreed and strongly disagreed with these views were greater than the cumulative number of employees who agreed and strongly agreed. However, 10 and 18 employees strongly agreed and agreed that Information technology contributes to achieving a competitive advantage by improving quality and customer satisfaction.

Table 3 2: **Qualitative analysis of continuous improvements**

The continuous improvement method	SA	A	NA	D	SD
The use of information technology helps the company to conduct continuous inspections and control over products to ensure quality	3	5	24	47	5
The use of information technology helps an industrial company to continuously adjust in Production processes tailored to consumer needs	5	4	41	25	9
Information technology contributes to achieving a competitive advantage by improving quality and customer satisfaction.	10	18	29	24	3
The use of information technology reduces costs continuously To maintain its competitive advantage by adopting a production policy Free from defects and damage.	11	15	27	29	2

3.4.2 Qualitative analysis of the target costing method

Qualitative examinations were also made to analyze the employee's views regarding the target costing method. Different observations were made as opposed to the employees' perceptions of the continuous improvements method.

Table 3 3: Qualitative analysis of the target costing method

Target costing method	SA	A	NA	D	SD
The use of information technology helps the company to reduce product costs early in production	25	39	15	3	2
The use of information technology helps the company to determine the profit margin of the product before production	43	32	9	0	0
Information technology helps create a competitive future for the organization by focusing on market-oriented management.	14	63	7	0	0
The use of electronic technologies reduces the cost of the product to a minimum, in order to ensure achieving the target profit for the requested price.	9	48	17	9	1

The use of information technology ensures that the quality of products is competitive and meets customers' needs.	61	21	2	0	0

This is high cumulative numbers were in support of the established views specifically as to strongly agreed and agreed to them. For instance, the numbers of employees who strongly agreed and agreed that Information technology helps create a competitive future for the organization by focusing on market-oriented management are 14 and 63 respectively. A fewer number of employees strongly disagreed and disagreed to all the target costing variable aspect. For instance, no employees strongly disagreed and disagreed to the idea that the use of information technology helps the company to determine the profit margin of the product before production (see Table 3.3).

3.4.3 Qualitative analysis of activity-based costing method

Similar observations were also made regarding the employee's perceptions of the activity-based costing method. This is because high cumulative numbers were in support of the importance of ABC in industrial companies. For instance, 28 employees strongly agreed and 49 employees agreed that information technology actively contributes to pricing decisions by accurately determining product cost.

Table 3 4:Qualitative analysis of activity-based costing method

activity-based costing method	SA	A	NA	D	SD
We can find the cost drivers for each activity or for a homogeneous group of activities using Information technology.	26	41	15	2	0
The information technology is working to improve the control Indirect costs and reduce them.	30	42	12	0	0
Information technology helps to provide a set of non-financial performance measures through indicators for measuring the causes of cost and helps in preparing planning budgets on the basis of activities.	14	62	8	0	0
Information technology helps in identifying the activities that consume resources and determining the costs of these activities and any activities that have large costs	9	55	18	1	1
Information technology actively contributes to pricing decisions by accurately determining product cost	28	49	7	0	0
Information technology determines the cost pools and allocates the costs of activities. Each major activity is allocated a cost base that accumulates the cost of this activity.	15	58	8	3	0
The use of application programs helps to reduce costs by reducing the time and effort required to carry out the activity	19	60	5	0	0

3.4.4 Qualitative analysis of the just in time method

Relatively mixed opinions were observed regarding the employees' perceptions of using the just in time method. This is because of variations in cumulative numbers of employees either in support or in disagreement of its importance to industrial

companies. For instance, 5 employees strongly agreed and 11 employees agreed that electronic technologies help reduce wait times and reduce initialization and restart times. This is less than the cumulative numbers of 25 employees who strongly disagreed and 18 employees who disagreed. Contrasting remarks can be noted 14 employees strongly agreed and 10 employees agreed that information technology contributes to maintaining a certain level of production. This is less than the cumulative numbers of 5 employees who strongly disagreed and 15 employees who disagreed.

Table 3 5: Qualitative analysis of the just in time method

Just in time method	SA	A	NA	D	SD
Electronic technologies help reduce wait times and reduce initialization and restart times.	5	11	25	25	18
Information technology helps to reduce defective production to a minimum	12	20	30	14	8
Information technology is working to keep inventory to a minimum	9	10	33	17	15
Information technology contributes to maintaining a certain level of production	14	10	40	5	15
The use of application programs leads to the reduction of surplus production, by determining the production necessary to keep pace with demand and reduce unnecessary production	8	18	32	15	11
The use of information technology leads to a focus on productive processes only, minimizing unnecessary movements and producing large quantities	4	20	15	24	21
Electronic technologies help reduce wait times and reduce initialization and restart times.	5	11	25	25	18

3.4.5 Qualitative analysis of total quality management method

The findings shown in table 3.6 show that the employees indicated to a large extent that total quality management elements are important for improving organizational efficiency. For instance, cumulative totals of 78, 74, and 73 agreed that the application of information technology helps the organization achieve its goals in growth Continuity, development and optimization of resources; application software is used to enhance the competitive position of industrial companies by paying attention to providing high-quality goods and products; and The use of information technology helps to better implement the total quality system respectively.

Table 3 6: Qualitative analysis of total quality management method

total quality management method	SA	A	NA	D	SD
Is it possible to reach a high level of total quality management without any defects by using information technology in an attempt to prevent operational errors?	28	48	3	2	3
The application of information technology helps the organization achieve its goals in growth Continuity, development and optimization of resources.	35	33	12	3	1
The use of information technology leads to interest in the flow of processes and the solution Continuous problems to improve the quality of products.	40	33	9	1	1
Application software is used to enhance the competitive position of industrial companies by paying attention to providing high-quality goods and products.	50	24	10	0	0
Information technology contributes to achieving excellence for the organization.	18	64	1	1	0
The use of information technology helps to better implement the total quality system.	44	29	8	3	0
Activities that do not add value to a product or service can be reduced by using information technology and replaced by activities that add value to the products.	25	55	4	0	0

3.5 Descriptive analysis of information technology variables

Mean and standard deviation were used to provide a descriptive analysis of information technology and the resulted are presented in Table 3.6. All the information technology variable elements had high mean values exceeding 2 and this possibly entails that the employees agreed to the influence of information technology on their business activities. However, a high mean value of 2.964 is associated with the idea that ‘the company uses electronic technologies in all parts of the company’. This suggests that the production activities in these industries are technically oriented and little focus is placed on the importance of human resources. Notable observations also relate to another high mean value of 2.798 is related to the variable element ‘the company is working to continuously follow up the modern technological systems to keep pace technological development to facilitate the work’. This possibly shows that the industrial companies placed a huge focus on innovating their business activities.

Table 3 7: Information technology variables elements

	N	Mean	Std. Dev
The company uses electronic and digital technologies to store and process data	84	2.441	1.196
The company uses electronic technologies in all parts of the company	84	2.964	1.217
The company uses information technology to analyze various data across all departments	84	2.381	1.097
The company is working to continuously follow up the modern technological systems to keep pace Technological development to facilitate the work	84	2.798	1.190
The company uses information technology to facilitate the exchange of information between different departments	84	2.369	.941
The company uses a modern communication system such as the Internet, social media and others to facilitate or quickly implement a daily work	84	2.643	1.534
The company works to provide personal computers to employees with all technology tools to facilitate work	84	2.607	.970

The use of information technology by industrial companies was regarded as the least role in which information technology was used. This is evidenced by the lowest mean value of 2.441 suggesting that 'the company uses electronic and digital technologies to store and process data'. On the other hand, high variations were observed to be related to the idea that 'the company uses electronic technologies in all parts of the company' as noted by a standard deviation of 1.217. Such implies that improvements in information technology have huge potential effects on the industrial companies' ability to innovate their entire business operations. Using information technology to facilitate the exchange of information between different departments had the lowest variations and responsive effects on the industrial companies as noted by a standard deviation of 0.941.

3.6 Correlation coefficient tests

Pearson correlation coefficient test was applied to examine how information technology is correlated with modern management accounting methods. Overall correlation coefficient results show that all the variables were positively and significantly correlated with each other at 0.01 level. This implies that improving the use of any modern managerial accounting method results in an improvement in the use of the other modern managerial accounting methods.

Table 3 8: **Correlation coefficient tests**

Correlations

		IT	TQM	JIT	CIMP	ABC	TC
IT	Pearson Correlation	**1**					
	Sig. (2-tailed)						
	N	84					
TQM	Pearson Correlation	.968**	**1**				
	Sig. (2-tailed)	.000					
	N	84	84				
JIT	Pearson Correlation	.958**	.924**	**1**			
	Sig. (2-tailed)	.000	.000				
	N	84	84	84			
CIMP	Pearson Correlation	.922**	.895**	.959**	**1**		
	Sig. (2-tailed)	.000	.000	.000			
	N	84	84	84	84		
ABC	Pearson Correlation	.936**	.950**	.946**	.924**	**1**	
	Sig. (2-tailed)	.000	.000	.000	.000		
	N	84	84	84	84	84	
TC	Pearson Correlation	.960**	.959**	.936**	.900**	.951**	**1**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	
	N	84	84	84	84	84	84

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

The results also show that improvements in information technology were associated with relatively similar improvements in modern management accounting methods. A high positive and significant positive correlation of 0.968 was observed to be related to the association between information technology and total quality management. Such implies that improvements in information technology were associated with relatively similar improvements in total quality management methods used by the industrial companies.

3.7 Reliability tests

Cronbach's alpha was applied to test the internal consistency of the model variables. Variables with an internal consistency exceeding 0.70 are considered as reliable and those above 0.90 as highly reliable (Riege, 2013). The results shown in Table 3.8 show that all the variables had high internal consistencies above 0.90. Hence, the variables are highly reliable to use to provide explanations about the role of using information technology on increasing the efficiency of modern managerial accounting methods.

Table 3 9: **Reliability tests**

	Cronbach's Alpha if Item Deleted
Information technology	0.965
Total quality management	0.969
Just in time	0.969
Continuous improvement	0.965
Activity Based Costing	0.972
Target costing method	0.969

3.8 Hypothesis tests

Independent t-tests were used to test the validity of the established hypothesis and the results are presented in Table 3.9. It was rejected that there is statistical significance between the uses of information technology in increasing the efficiency of the total quality management method ($p>0.05$). A probability value of 0.003 resulted in the rejection of the null hypothesis asserting that there is no statistical significance between the uses of information technology in increasing the efficiency of the just-in-time production method ($p<0.05$) also null Hypotheses 3, 4, and 5 were rejected because their p-values were less than 0.05 (0.002, 0.014, and 0.005).

Table 3 10: Hypothesis tests

Hyp	Hypothesis	Value	Decision
1	There is positive statistical significance between the uses of information technology in increasing the efficiency of the total quality management method.	0.091	Reject
2	There is positive statistical significance between the uses of information technology in increasing the efficiency of the just-in-time production method.	0.003	Accept
3	There is positive statistical significance between the uses of information technology in increasing the efficiency of the continuous improvement method.	0.002	Accept
4	There is positive statistical significance between the uses of information technology in increasing the efficiency of the activity-based costing method.	0.014	Accept
5	There is positive statistical significance between the uses of information technology in increasing the efficiency of the target cost method.	0.005	Accept

it means the alternative hypothesis chosen entails that information technology had significant positive effects on continuous improvement, activity-based costing, and target cost methods, and also just in time production.

CHAPTER FOUR

CONCLUSIONS, RECOMMENDATIONS AND SUGGESTIONS FOR FUTURE STUDIES

4.1 Conclusions

The main aim of this study was to examine the role of using information technology on increasing the efficiency of modern managerial accounting methods. Such follows problems revealing that there are issues about use information technology to increase the efficiency of modern management accounting methods. These issues are highly prevalent among industrial companies because previous studies revealed a gap between scientific development and the continued dominance of traditional management accounting methods over modern management accounting methods.

Initial findings revealed that industrial employees have adverse sentiments regarding using of the continuous improvements method by the industrial companies. Possibly because using information technology does not always contribute to achieving a competitive advantage by improving quality and customer satisfaction. Hence, other information technology approaches which are quality centered are needed to deal with competitive advantage and customer satisfaction issues.

The findings are in support of ideas established by other studies suggesting that using information technology helps the company to reduce product costs early in production (Abu Yusef, 2016). Such is important for creating a competitive future for the organization by focusing on market-oriented management. Similar observations were also made by Waweru (2013) suggesting that using information technology helps the company to determine the profit margin of the product before production. These are important aspects of the target costing method and hence it implies that target costing

enhances not only the efficiency but also the performance of industrial companies. This is because using electronic technologies reduces the cost of the product to a minimum thereby ensuring that the target profit for the requested price is achieved. The use of information technology ensures that the quality of products is competitive and meets customers' needs.

Correlation examinations showed that using information technology reinforces the effectiveness of modern managerial accounting methods. Such is because of improvements in the recording and processing of financial information. Hence, the conducting target costing methods will reliably offer accurate information depicting the actual performance of the industrial companies. In addition, an improvement in each of the modern management accounting methods enhances the efficiency and effectiveness of other modern management accounting methods. Such is relatively true and in support of previous studies (Abdin, 2015; Saban & Efeoglu, 2012).

Meanwhile, the tested hypothesis resulted in the acceptance of the idea that using has a significant positive effect of increasing the efficiency of the activity-based costing method. Such is supported by related studies which show that ABC makes it possible to find the cost drivers for each activity or a homogeneous group of activities using Information technology (Al-Da'our, 2013; Waweru, 2013). As a result, using ABC in conjunction with improved information technology works to improve the control of indirect costs and reduce them. Moreover, information technology helps to provide a set of non-financial performance measures through indicators for measuring the causes of cost and helps in preparing planning budgets based on activities. This consequently helps in identifying the activities that consume resources and determining the costs of these activities and any activities that have large costs

Hypothesis suggesting that there is no positive statistical significance between the uses of information technology in increasing the efficiency of the total quality management method. This possibly suggests that the industrial companies have reached an optimum production point. Hence, additional use of IT results in diseconomies of scale and adversely affected.

Hypotheses were also accepting regarding ideas that using information technology increases the efficiency of the just-in-time, continuous improvement, and target cost

methods. This relates to performance improvements in each department in attaining set product standards, minimizing production costs, and maximizing revenue inflows.

4.2 Recommendations

Having established that information technology is positively correlated with management accounting methods and that improvements in one accounting method results in an improvement in the other accounting methods, the following recommendations will be made;

- There is a greater need to balance the allocation of resources invested between information technology and human resources. This will help to avoid diseconomies of scale and improve labor productivity.
- Additional measures are needed by managers to ensure that all the modern managerial accounting methods used by the industrial companies are supporting their goals to avoid contradiction in activities, goals, and performance.
- Performance evaluation methods are needed to reinforce the use of modern managerial accounting methods as performance evaluation tools. This will help to cater for the non-financial measures of performance.
- The industrial companies in Iraq train their cadres to use the programs and applications of modern electronic management accounting methods.
- The need to keep abreast of developments and pursue modern systems, especially in the areas of modern managerial accounting method, and training accountants and administrators on it by raising their efficiency, considering practical Employing information technology in modern management accounting methods
- Always working to keep pace with modern technology and developing technologies used by companies Industrial when processing data
- The importance of industrial companies continuing to develop plans and strategies to maintain the modernization process Continuous in light of the new developments in information technology to be able to compete in the market, and to maintain its presence and continuity.

4.3 Suggestions for future studies

The findings of this study relate to manufacturing industries and have incorporated ideas and situations from various industrial companies in Iraq. This ensures that the

findings of this are highly applicable to any industry. However, the number of respondents was limited due to the effects of the COVID 19 pandemic. Thus, future studies can increase the study population. Also, mediating effects should be examined since they are possible mediating effects affecting the use of information technology by companies around the world.

REFERENCES

Abdin, M. (2015). Introduction to Achievement Accounting for the Development of the Cost System in Light of Trends Modern Management Accountancy. *Amount of Commerce, Islamic University,*.

Abdulrahman, A. (2004). “Study and evaluation of cost accounting systems in light of manufacturing system Hadithah, *(Master Thesis: Alexandria University), Egyp*.

Abu Hadaf, S. (2013). . Determinants affecting the development of management accounting methods. The amount of trade, *Islamic University, Gaza, Palestine*.

Abu Hashish, K. A. (2012). *Accounting and Cost Management Planning. 1st Edition.* Amman: Dar Wael.

Abu Yusef, I. A. (2016). The effect of using modern management accounting methods on increasing investor confidence in public shareholding companies listed on the Palestine Stock Exchange. *College of Commerce, Islamic University*.

Adler, R. E. (2000). Advanced Management Techniques in Manufacturing Utilization, Benefits and Barriers to Implementation”. *Accounting Forum*.

Al-Agha, M. I. (2006). Re-engineering administrative processes (engineering) in banks in a sector Gaza ", *Islamic University, Palestine*.

Al-Daour, J. (2004). Recent trends in cost accounting”. *Faculty of Economics and Administrative Sciences, Al-Azhar University, Gaza*.

Al-Daour, j. (2008). the management accounting methods used in publicly traded companies In the Palestine Exchange and the Determinants of Its Use. *, ”Journal of Al-Azhar University in Gaza.*, 32-35.

Al-Da'our, J. a. (2013). Modern management accounting methods and their impact on raising the credit efficiency of public shareholding companies listed on the Palestine Exchange, *Journal of Accounting Thought, Trade Quantities, Aif Shams*.

Al-Fadl, M. a.-A.-K. (2007). *Administrative Accounting.* Jordan: Dar Al Masirah for Publishing, Distribution, and Printing.

Al-Hussein, M. I. (2001). Production Planning and Control, Amman: . *House of Approaches for Publishing*.

Al-Jabali, M. (1994). an analytical study of the requirements for applying the subsidized cost accounting systems to the business Management to Face Modern Industrial Developments, *Journal of Costs, Arab Society for Costs, No. First,*.

Al-Jhelab, D. M. (2007). The role of modern management accounting methods in developing financial performance, a study A paper on preparing the budget of the Islamic University according to ABC. *College of Application of Business Method, Islamic University, Gaza.*

Al-Mutarna, G. (2008). requirements and obstacles to implementing the target cost approach in companies The Jordanian Industrial Public Contribution: An Applied Study, . *"Damascus University Journal of Economic Sciences The Legal, Volume Twenty-fourth,*, 277-305.

Al-Rajabi, M. T. (2010). *Principles of Cost Accounting, 5th Edition,* Oman: Wael Publishing and Distribution House.

Al-Rumahi, N. (2009). *Management Accounting: 1st Edition,* Jordan: Safaa Publishing House.

Al-Saqqaf, H. (2005). *"The Comprehensive Introduction to Total Quality Management,".* Jordan.: Dar Al-Shorouk for Publishing and Distribution,

Al-Tai, A. A.-J. (2010). Employing information and communication technology in designing a Network-based human resource information system. *University of Mosul,*

Alwan, K. (2005). *Total Quality Management and the requirements of ISO 1000: 2001," First Edition,.* Amman, Jordan: House of Culture for Publishing and Distribution, .

archna, m. (2020, 10 1). *https://www.accountingnotes.net/*. accounting notes : https://www.accountingnotes.net/cost-accounting/target-costing/target-costing-definition-objectives-and-advantages adresinden alınmıştır

Arora, M. (2009). Cost and Management Accounting Mumbai. *IND: Himalaya publishing House*.

Atkinson A., K. R. (2004). *Management Accounting", (4th ed.),.* New Jersey:: Prentice-Hall.

Bahar, M. N. (2012). 'Conceptual Framework for Launching and Implementing Target Costing in Automotive Industry". *Engineering International Journal of Research in IT and Management*, IJRIM, Volume 2, Issue 6, (June), (ISSN 2231- 4334), 21-33.

Baraka, K. Y. (2012). The role of management accounting methods in activating corporate governance, an applied study on industrial companies operating in the Gaza Strip,. *College of Commerce, University of Salmiya, Gaza.*

Boer, G. a. (1999). "Target costing can boost your Bottom Line". *Strategic Finance,*, Vol. 81, No. 1, July, 1999, 49-53.

Brigham, E. F. (2011). Financial Management Theory and Practice South Western Cengage Learning Graphic World. *. Inc. London.*

Brimson.j. (1991). *"Activity Accounting: An Activity-Based Costing Approach",.* New York,: John Wiley & Sons Inc.

Carlin, d. &. (2014). A big 4 Firm's use of information technology to control the audit process. How an audit support system is changing auditor behavior.

CIMA. (1987). *Management accounting : official terminology.* london: https://www.worldcat.org/title/management-accounting-official-terminology-of-the-cima.

Clifton, B. A. (2004). *Target Costing;.* new york: Market-Driven Product Design. Marcel Dekke.

Cooper, R. a. (1998). "Profit Priorities from ABC Costing", . *Harvard Business Review*.

Dalahma, S. (2008). Basics of accounting information systems and information technology Oman: . *Al-Warraq Foundation for Publishing and Distribution.*

dave, R. (2017, 11 22). *How Information Technology Works"*. www.money.howstuffworks.com,: (https://mawdoo3.com/ adresinden alınmıştır

Dergham, M. (2007). The extent of the availability of the basic components needed to implement the activity cost system for industrial companies in the Gaza Strip (field study). . *Salmiya University Journal for Economic and Administrative Studies*, 45-53.

Devra. (2019). *The Advantages & Disadvantages of Continuous Improvement*. Gartenstein, " bizfluent.com,: https://bizfluent.com/info--advantages-disadvantages-continuous-improvement.html. adresinden alınmıştır

Ding, Y. Y. (2013). The development of management accounting at Alex. . *Cowan & Sons Ltd, Penicuik, 1779–1965.Accounting History,.*

Edwards, S. (2008). *wikipedia*. CIMA official Terminology, : https://en.wikipedia.org/wiki/Activity-based_costing#cite_ref- adresinden alınmıştır

Enaam, A. T.-S. (2007). Information Technology. *Concept and Dimensions in Arab Culture, Previously Cited Source*, 19-20.

Fawzi, A.-B. A.-A. (1999). Department of Technology in Developing Countries,. *Sharjah, Gulf Voice Press*, 12.

Gagne M. and R. Discenza. (1995). "Target Costing", . *Journal of Business & Industrial Marketing,*, Vol. 10 Iss: 1, 16 – 22.

Garison R., N. E. (2012). *Managerial Accounting", 14Th ed, .* New York: McGraw-Hill/Irwin, a business unit of The McGraw-Hill Companies, Inc., 1221 Avenue of the Americas, .

Habibullah, A.-S. (2015). Methods of Managerial Accounting between Theory and Practice (an applied study on industrial companies in Algeria),. *Arabi Bin Mahdi University, Umm El-Bouaghi,*.

Hamad, t. (2003). the role of management accounting information in building a balanced company strategy.

hars, O. (2004). *Management Accounting, 1st Edition, : .* Jordan: Al-Hamid House for Publishing and Distribution.

Hilton, R. (2008). *Managerial Accounting: Creating Value in a Dynamic Business Environment. .* New York, USA: Seventh Edition. : McGraw-Hill.

Hilton, R. W. (2003). *Solutions Manual to Accompany Managerial Accounting: Creating Value in a Dynamic Business Environment. .* McGraw-Hill Irwin.

Horngren C., D. S. (2012). *"Cost Accounting: A Managerial Emphasis", 14Th ed.,.* new jersey: Prentice-Hall.

Howell A. and S. Soucy. (1987). "The new manufacturing environment: Major trends for management accounting", Management Accounting. *Consortium of Advanced Management – International. (July):*, 21-27.

Ibrahim, s. n. (2008). the reality of using management accounting methods in industrial companies ina sector Gaza. *faculty of commerce, salmia university, Gaza*, 45-46.

IFAC. (1998). *"International Management Accounting Practice Statement: Management Accounting Concepts".* new york.

IMA. (2008). *Definition of Management.* United States: Institute of Management Accountants, https://www.imanet.org/.

Izzat, R. S.-D. (2010). The Kaizen Method and its Relation to Cost Reduction. . *Journal of Accounting and Financial Studies,*.

Jablonski, J. R. (1991). *Implementing total quality management: an overview, ,.* San Diego: CA: Pfeiffer & Company.

Jamal, R. a.-D. (2005). “Cost management for measurement, planning and control purposes”,. *University House, Alexandria*.

james. (2006). *office of finnancial management*. http://fiscal.wa.gov/: https://www.ofm.wa.gov/ adresinden alınmıştır

Jasim, J. (2005). "Information Technology". *Amman: Jordan, Osama House for Publishing and Distribution*, 122-127.

Jassim, J. H. (2008). information technology and its role in reducing natural disasters in the Arab region University. *the Arab region University Journal, No. 16.* .

Joudeh, Y. (2001). , “The Egyptian director’s attitudes towards some modern management philosophies and methods: An Applied Study on the Egyptian Management Environment ",. *Journal of Commercial Research, Volume Twenty-Three, No. The second.*

Judah, A. H. (2011). The extent of using methods Administrative Accounting in Public Joint Stock Jordanian Industrial Companies. *Journal of Management and Economics* .

Jumaa, A. H. (2011). *Auditing and Quality Control) Assurance - Quality Control - Auditing - Related services The Relationship) First Edition, .* Amman, Jordan,.: Safaa House for Publishing and Distribution.

Khalil, A. (2012). A proposed model for applying the target cost method in the Middle East Laboratories Company for the Medicines and Cosmetics Industry in the Gaza Strip. *Trade Quantities, Islamic University, Gaza, Palestine*.

Krishan, K. M. (2013). The effect of using information technology on increasing the efficiency of modern management accounting tools. *. College of Business, Amman Arab University, Jordan*.

Kwah, D. G. (2004). Target Costing In Swedish Firms Fiction, fad or fact? An Empirical Study of some Swedish firms, International Management, , . *School of Economics and Commercial law, Göteborg University*.

Mahmoud, Y. ,. (2016). The Effectiveness of using Information Technology (IT) in Auditing and its impact on improving the quality of Auditing service in the Gaza Strip (A field study on auditing offices operating in the Gaza Strip). *) Faculty of Commerce, an Islamic university in Gaza*.

Mansour, M. (2008). “What are the targeted costs”. *, (Master's thesis, Al-Azhar University), Cairo.*

Mansour, M. M. (2011). The role of modern methods of administrative accounting in strengthening the competitiveness of the company", . *Scientific Journal of Research and Commercial Studies, Issues Three and Four*, 11-51.

Marianne Broadbent, P. W. (1999). the Implications of Information Technology Infrastructure for Business Process Redesign. *Management Information Systems Research Center, University of Minnesota.*, 159-182.

Marwa, H. (2020, 4 28).- . information technology (IT) (: https://mawdoo3.com/)

Mithqal Hammoud, S. Q. (2011). "The impact of using information technology on the credibility of financial statements as perceived by the external Jordanian auditors". *Business school Middle East University*.

Mustafa, F. (2011). Information Security,. *a scientific course, Arab Organization for Administrative Development, Cairo*, 10.

Niya, j. (2019, 12 9). *Importance of information technology in today's world",* . www.medium.com,: www.sotor.com)

Prachi Juneja. (2020). *plan-do-study-act-technique*. Reviewed By Management Study Guide Content Team.: https://www.managementstudyguide.com/

Ravi. Raj Labh. (2017). *Total Quality Management Notes,.* Symbiosis Institute of International Business.

Rebischke, A. S. (2005). "Activity-based information for financial institutions". *Journal of Performance Management, 18(2):.*, 22-55.

Riege, A. M. (2013). Validity and reliability tests in case study research: a literature review with "hands-on" applications for each research phase. *Qualitative market research:An international journal.*

Sabah, N. I. (2008). The reality of using management accounting methods in industrial companies in a sector Gaza. . *Faculty of Commerce, salmiya University, Gaza.*

Saban, M., & Efeoglu, Z. ((2012).). An examination of the effects of information technology on managerial accounting in the Turkish iron and steel industry. *International Journal of Business and social science,*, 105-117.

saraj, q. (2017). The Impact of Using the Information tecnology on modern management accounting methods in the industial company Gaza Strip. *islamic gaza university*, 2.

scapens, R. W. (1991). *Management Accounting: A Review of Recent Developments.* LONDON: https://books.google.iq/books?The+Macmillan+Press+LTD.

Shamri, M. A. (2013). The Role of Information Technology in Achieving Innovation in Entrepreneurial Projects: A Field Study on Food Products in the State of Kuwait. *College of Business, Middle East University, Amma*.

Sheikh, I. Y. (2000). The extent to which the production system can be applied on time, a field study. . *The Jordanian Journal of Applied Sciences, 3*, 63-66.

Shenqar, M. H. (2009). The role of management accounting in decision-making and raising the efficiency of financial performance in banks. *Omdurman University of Salmiya, Republic of Sudan*.

Sumkaew N., L. L. (2012). *Management Accounting Practices in Thailand", Business School, Newcastle University Newcastle upon Tyne, U.K.f*. www.wbiconpro.com

Taha, A. M. (2010). Conditional determinants of applying management accounting methods and their relationship to financial performance Application to the Egyptian industrial sector. *Faculty of Commerce, Zaqaziq University, Egypt*.

Turney P. and B. Anderson. ((1992),). *Accounting For Continuous Improvement", Management Review.*

Wadongo, B. &.-K. (2014). Contingency theory, performance management and organizational effectiveness in the third sector: A theoretical framework. *International Journal of Productivity and Performance Management*, 680-703.

Waldron. (2007). "Today's Management Accounting Techniques in NZ Businesses". *Chartered Accountants Journal*.

Waweru, N. &. (2013). Management accounting change in South Africa: Case studies from retail services. *Accounting, Auditing &Accountability Journal*, 675-704.

Wen Lin, C. &. (2011). A selection model for auditing Industrial Management & Data Systems. .

Weygandt J., K. P. (2012). *" Management Accounting Tools for Business Decision Making", 6th ed, .* John Wiley & Sons.

Zomlot, I. S. (2013). Modern management accounting methods and their impact on raising the credit efficiency of companies. *Public shareholding listed on the Palestine Stock Exchange. (Unpublished MA Thesis) Al-Azhar University, Palestine.*

Zyznarska-Dworczak, B. (2018). The development perspectives of sustainable management accounting in Central and Eastern European countries. *Sustainability*, 10(5), 1445.

LIST OF APPENDICES

Appendix 1: Research questionnaire

Near East University

Graduate School of Social Sciences

DEPARTMENT OF BANKING AND ACCOUNTING

The role of using information technology on increasing the efficiency of modern managerial accounting methods in Industrial companies in Iraq

Introduction:

The researcher prepared this questionnaire in order to obtain the study information, and you were selected within The sample that answers this questionnaire is in belief and confidence in the importance of my opinion on the subject of the study, and an appreciation of your experience in this field, which is of importance in achieving the objectives of the study and community service.

We hope that you will kindly answer the questions of this questionnaire accurately, as the results of this are correct The questionnaire depends largely on the correctness of your answer We value your honest and detailed responses.

With the utmost respect and appreciation

Please complete the following questionnaire with specific regard to the above inquiry,

By placing a CROSS (X) in the appropriate box

Section One: Personal Information:

1- Age: 20-25 ☐ 25-30 ☐ 30-35 ☐ 35-40 ☐

40-45 ☐ more than 45 ☐

2. Education Level:

Below Diploma ☐ Diploma ☐ B.Sc. ☐

M.Sc. ☐ PhD ☐ Other ☐

3. Years of Experience:

Less than one Year ☐ 1-3 ☐ 4-6 ☐ 7-10 ☐

More than 10 ☐

4. Job Title

Accountants ☐ Chartered accountant ☐ Accounting Manager ☐

Administrative ☐ Department Head ☐ Director ☐

Others, specify .....

Section Two: Information related to the company

1- The period of the company's activity:

1-5 ☐ 6-10 ☐ 11-15 ☐ more than 15 ☐

2- The legal form of the company:

Sole proprietorship ☐ partnership ☐ corporation ☐

3- The industry sector to which the company belongs:

Construction industries sector ☐ Food industries sector ☐ Iron industries ☐

Wood industries sector ☐ Plastic industries sector ☐ Chemical industries sector ☐

Fashion Industries Sector ☐ Other, specify.....

Third section: axes of the questionnaire

Dimensions	strongly agree	agree	uncertain / not	disagree	strongly disagree

The first axis: the use of information technology has a role in improving the increasing efficiency on the total quality management method:						
A	**total quality management method**					
A1	Is it possible to reach a high level of total quality management without any defects by using information technology in an attempt to prevent operational errors?					
A2	The application of information technology helps the organization achieve its goals in growth Continuity, development, and optimization of resources.					
A3	The use of information technology leads to interest in the flow of processes and the solution Continuous problems to improve the quality of products.					
A4	Application software is used to enhance the competitive position of industrial companies by paying attention to providing high-quality goods and products.					
A5	Information technology contributes to achieving excellence for the organization.					
A6	The use of information technology helps to better implement the total quality system.					
A7	Activities that do not add value to a product or service can be reduced by using information technology and replaced by activities that add value to the products.					
Dimensions		strongly agree	agree	uncertain / not	disagree	strongly disagree
The second axis: the use of information technology has a role in improving increasing efficiency on the production method on time:						
B	**production method on time:**					

B1	Electronic technologies help reduce wait times and reduce initialization and restart times.					
B2	Information technology helps to reduce defective production to a minimum					
B3	Information technology is working to keep inventory to a minimum					
B4	Information technology contributes to maintaining a certain level of production					
B5	The use of application programs leads to the reduction of surplus production, by determining the production necessary to keep pace with demand and reduce unnecessary production					
B6	The use of information technology leads to a focus on productive processes only, minimizing unnecessary movements and producing large quantities					
The third axis: the use of information technology has a role in improving increasing efficiency on the activity-based costing method:						
C	**activity-based costing method:**					
Question		strongly agree	agree	uncertain / not	disagree	strongly disagree
C1	We can find the cost drivers for each activity or the same group of activities using Information technology.					
C2	Information technology is working to improve the control of Indirect costs and reduce them.					
C3	Information technology helps to provide a set of non-financial performance measures through indicators for measuring the causes of cost and helps in preparing planning budgets based on activities.					

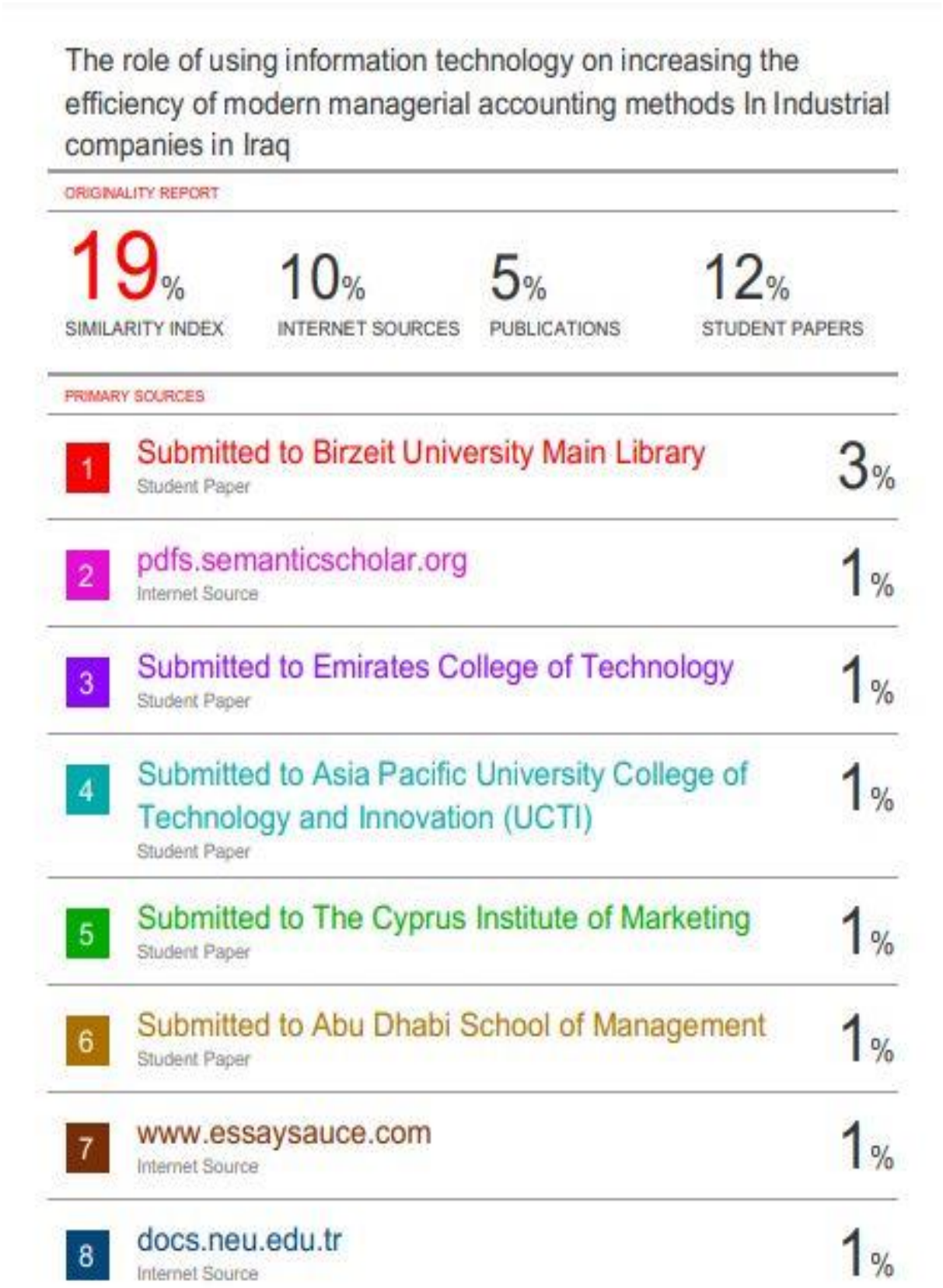
C4	Information technology helps in identifying the activities that consume resources and determining the costs of these activities and any activities that have large costs					
C5	Information technology actively contributes to pricing decisions by accurately determining product cost					
C6	Information technology determines the cost pools and allocates the costs of activities. Each major activity is allocated a cost base that accumulates the cost of this activity.					
C7	The use of application programs helps to reduce costs by reducing the time and effort required to carry out the activity					
The fourth axis: the use of information technology has a role in improving increasing efficiency on the target cost method:						
D	**target cost method:**					
D1	The use of information technology helps the company to reduce product costs early in production					
Question		strongly agree	agree	uncertain / not	disagree	strongly disagree
D2	The use of information technology helps the company to determine the profit margin of the product before production					
D3	Information technology helps create a competitive future for the organization by focusing on market-oriented management.					
D4	The use of electronic technologies reduces the cost of the product to a minimum, to ensure achieving the target profit for the requested price.					
D5	The use of information technology ensures that the quality of products is competitive and meets customers' needs.					

The fifth axis: the use of information technology has a role in improving increasing efficiency on the continuous improvement method:						
E	**continuous improvement method:**					
E1	The use of information technology helps the company to conduct continuous inspections and control over products to ensure quality					
E2	The use of information technology helps an industrial company to continuously adjust in Production processes tailored to consumer needs					
E3	Information technology contributes to achieving a competitive advantage by improving quality and customer satisfaction.					
E4	The use of information technology reduces costs continuously To maintain its competitive advantage by adopting a production policy Free from defects and damage.					
The sixth axis: the use of information technology in industrial companies:						
F	Question	strongly agree	agree	uncertain / not	disagree	strongly disagree
F1	The company uses electronic and digital technologies to store and process data					
F2	The company uses electronic technologies in all parts of the company					
F3	The company uses information technology to analyze various data across all departments					
F4	The company is working to continuously follow up the modern technological systems to keep pace with Technological development to facilitate the work					

F5	The company uses information technology to facilitate the exchange of information between different departments					
F6	The company uses a modern communication system such as the Internet, social media and others to facilitate or quickly implement a daily work					
F7	The company works to provide personal computers to employees with all technology tools to facilitate work					

Thank you for taking the time to complete this questionnaire. If you have any queries or comment, please do not hesitate to contact **(Goran Younis)** by telephoning (**009647504214938**).

PLAGIARISM REPORT



The role of using information technology on increasing the efficiency of modern managerial accounting methods In Industrial companies in Iraq

ORIGINALITY REPORT

19%	10%	5%	12%
SIMILARITY INDEX	INTERNET SOURCES	PUBLICATIONS	STUDENT PAPERS

PRIMARY SOURCES

1	Submitted to Birzeit University Main Library Student Paper	3%
2	pdfs.semanticscholar.org Internet Source	1%
3	Submitted to Emirates College of Technology Student Paper	1%
4	Submitted to Asia Pacific University College of Technology and Innovation (UCTI) Student Paper	1%
5	Submitted to The Cyprus Institute of Marketing Student Paper	1%
6	Submitted to Abu Dhabi School of Management Student Paper	1%
7	www.essaysauce.com Internet Source	1%
8	docs.neu.edu.tr Internet Source	1%

ETHICAL APPROVAL FORM

YAKIN DOĞU ÜNİVERSİTESİ

BİLİMSEL ARAŞTIRMALAR ETİK KURULU

05.01.2021

Dear Goran Younis Shakir

Your application titled **"The role of using information technology on increasing the efficiency of modern managerial accounting methods in Industrial companies in Iraq"** with the application number YDÜ/SB/2020/862 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.