

**T.C.
ISTANBUL GEDİK UNIVERSITY
INSTITUTE OF GRADUATE STUDIES**



**THE MEDIATING ROLE OF PRODUCT INNOVATION ON THE
RELATIONSHIP BETWEEN MARKETING INFORMATION SYSTEM AND
CUSTOMER ORIENTATION**

MASTER'S THESIS

Osamah Sohaib Mohammad Sabri ALWATTAR

Business Administration English Program

JUNE 2021

**T.C.
ISTANBUL GEDİK UNIVERSITY
INSTITUTE OF GRADUATE STUDIES**



**THE MEDIATING ROLE OF PRODUCT INNOVATION ON THE
RELATIONSHIP BETWEEN MARKETING INFORMATION SYSTEM AND
CUSTOMER ORIENTATION**

MASTER'S THESIS

**Osamah Sohaib Mohammad Sabri ALWATTAR
(181285013)**

Business Administration English Program

Thesis Advisor: Asst. Prof. Melek YURDAKUL

JUNE 2021



T.C.
İSTANBUL GEDİK ÜNİVERSİTESİ
LİSANSÜSTÜ EĞİTİM ENSTİTÜSÜ MÜDÜRLÜĞÜ

Yüksek Lisans Tez Onay Belgesi

Enstitümüz, Engineering Business Administration İngilizce Tezli Yüksek Lisans Programı (181285013) numaralı öğrencisi Osamah Sohaib Mohammad Sabri ALWATTAR'ın "The Mediating Role of Product Innovation on the Relationship between Marketing Information System and Customer Orientation" adlı tez çalışması Enstitümüz Yönetim Kurulunun 22/06/2021 tarihli kararıyla oluşturulan jüri tarafından *Oy Birliği* ile Yüksek Lisans tezi olarak *Kabul* edilmiştir.

Öğretim Üyesi Adı Soyadı

Tez Savunma Tarihi:

1) Tez Danışmanı:

2) Jüri Üyesi:

3) Jüri Üyesi:

DECLARATION

I, Osamah Sohaib Mohammad Sabri ALWATTAR, do hereby declare that this thesis titled as “The Mediating Role of Product Innovation on the Relationship between Marketing Information System and Customer Orientation” is original work done by me for the award of the masters’ degree in the faculty of Business Administration. I also declare that this thesis or any part of it has not been submitted and presented for any other degree or research paper in any other university or institution. (22/06/2021)

Osamah Sohaib Mohammad Sabri ALWATTAR



DEDICATION

I dedicate my dissertation work to the soul of my beloved parents, who were my companion throughout my life and during my academic career. My father and mother words of encouragement and push for tenacity will stay forever in my ears.

I also dedicate it to my family (my wife and my kids) for their continuous support and encouragement. I just could not imagine my life without them.

I dedicate my dissertation work also to my amazing brothers. I feel so greatly privileged to have them to traverse the eras of life.



PREFACE

I would like to express my thanks and gratitude to my supervisor: Asst. Prof. Melek Yurdakul. She helped, support, and supervised me during my study in master's program. I also would thank the chair and members of the defense committee.

I want to dedicate this thesis to my parents who sacrificed their whole life for me. I could not complete this work without their influential help and support. In addition, I would like to thank my sister for encouraging me through my work. I would also like to say special thanks to my family (my wife and my daughter) for their assistant and support throughout my study. Finally, I would like to thank all my friends for their help and support.

June 2021

Osamah Mohammad Sabri ALWATTAR

TABLE OF CONTENTS

	<u>Page</u>
PREFACE	v
TABLE OF CONTENTS	vi
ABBREVIATIONS	viii
LIST OF TABLES	ix
LIST OF FIGURES	x
ABSTRACT	xi
ÖZET	xii
1. INTRODUCTION	1
1.1 An Overview.....	1
1.2 Literature Review.....	2
1.2.1 Studies that are related to the marketing information system.....	3
1.2.2 Studies that are related to customer orientation.....	5
1.2.3 Studies that are related to product innovation.....	5
1.3 The Study Hypotheses.....	6
2. THE MARKETING INFORMATION SYSTEM	8
2.1 The Concept of the Marketing Information System.....	8
2.2 The Elements of the System.....	9
2.3 Marketing Information System's Functions and Advantages.....	10
2.4 The Importance of Marketing Information Systems.....	11
2.5 The MIS Systems Development.....	12
2.5.1 Introduction to systems life cycle development.....	12
2.5.2 The analysis process in MIS development.....	14
2.5.3 The analysis plan in MIS development.....	15
2.5.4 The system analysis.....	16
2.6 The System Design.....	17
2.6.1 The concept and activities.....	17
2.6.2 The components.....	17
2.6.3 The models.....	18
2.7 Chapter's Conclusion.....	21
3. MARKETING AND CUSTOMER ORIENTATION	22
3.1 Marketing.....	22
3.1.1 The concept of marketing.....	22
3.1.2 The marketing development.....	22
3.2 The Customer Orientation.....	23
3.2.1 The marketing and customer orientation.....	23
3.2.2 The concept of customer value and the factors affecting determining its dimensions.....	24
3.2.3 Analyzing the customer's value and benefits.....	25
3.3 Complete Customer Services.....	26
3.4 Customers' Satisfaction, Loyalty, and Retention.....	27
3.4.1 Measuring the customer satisfaction.....	28

3.4.2 The concept and dimensions customers' loyalty	29
3.4.3 Customer retention	30
3.5 Customer Relationship Management (CRM).....	31
3.5.1 The concept of CRM and its relationship with marketing	31
3.5.2 The relationship between CRM and information and communication technologies	32
3.5.3 The process of CRM	32
3.6 Chapter's Conclusion	33
4. PRODUCT INNOVATION	34
4.1 The Concepts of Innovation	34
4.1.1 The innovation's requirements.....	34
4.1.2 The forms of innovation.....	35
4.2 Product Innovation	37
4.2.1 The concept of product innovation	37
4.2.2 The importance of product innovation.....	37
4.2.3 The risks and benefits of product innovation.....	38
4.2.4 The factors of success and failure of the innovative product.....	38
4.3 The Stages of the Product Innovation Process	39
4.3.1 Generate ideas	39
4.4 Chapter Conclusion	44
5. THE METHODOLOGY AND ANALYSIS	45
5.1 Conceptual Model	45
5.2 The Sample of the Study	45
5.3 Research Methodology.....	46
5.3.1 Collecting data	47
5.3.2 Data explanation	48
5.3.3 Data analysis	49
5.4 The Empirical Results	52
5.4.1 Factor analysis.....	52
5.4.2 Regression analysis	56
6. CONCLUSION.....	59
REFERENCES	62
APPENDICES	69
RESUME.....	73

ABBREVIATIONS

MIS	: Marketing Information Systems
MDSS	: Marketing Decision Support System
DSS	: Decision Support Systems
AI	: Artificial Intelligence
ICT	: Information and Communication Technology
IT	: Information Technology



LIST OF TABLES

	Page
Table 5.1: The study dimensions, and the number of items for each dimension.	48
Table 5.2: The characteristics of questionnaire’s participants	48
Table 5.3: Descriptive statistics	50
Table 5.4: Continue of descriptive statistic.....	51
Table 5.5: The results of Cronbach alpha test.....	52
Table 5.6: Correlation between the items of orientation towards the customer.....	53
Table 5.7: Correlation between the items of product innovation.....	54
Table 5.8: Correlation between the items of marketing information system.....	54
Table 5.9: Factor analysis results.....	55
Table 5.10: The coefficients of relationships between the factors.....	56
Table 5.11: The results of regression analysis	57

LIST OF FIGURES

	Page
Figure 2.1: Marketing information system components.	9
Figure 2.2: The components of feasibility studies.	13
Figure 2.3: Kotler model for marketing information system.	19
Figure 2.4: Macleod model of the marketing information system.....	20
Figure 3.1: Customer is the center of the business environment.	24
Figure 3.2: Loyalty components	30
Figure 3.3: The relationship between the business's orientation towards customer and customer retention.	31
Figure 4.1: Requirements of marketing innovation.	36
Figure 4.2: Comparing forms of innovation.	36
Figure 4.3: Sources of product innovation ideas.	40
Figure 5.1: The conceptual model.....	45

**THE MEDIATING ROLE OF PRODUCT INNOVATION ON THE
RELATIONSHIP BETWEEN MARKETING INFORMATION SYSTEM
AND CUSTOMER ORIENTATION**

ABSTRACT

Marketing information system (MIS) is an essential factor of developing business' performance and getting sustainable success. That is because it can lead the business to achieve good overall performance. In addition, it can lead the business to achieve high customers' satisfaction, which has become the crucial factor of marketing activities. Therefore, it is important to evaluate and develop the marketing information system. This study sought to analyze the marketing information system and measure its effect on the customer orientation and product innovation. The data of the study were collected using questionnaire. The data were analyzed using statistical tools and SPSS programming. The results of the study showed that the MIS can positively and significantly effect product innovation. Also, the results show that MIS can positively and significantly effect customer orientation. Moreover, MIS and product innovation together can positively and significantly effect customer orientation. According to that, product innovation has a mediation role in relationship between MIS and the customer orientation. The findings are important in terms of developing and revealing the effects of MIS in Iraqi operations

Keywords: *Marketing information system, Customer Orientation, Product Innovation*

PAZARLAMA BİLGİ SİSTEMİ VE MÜŞTERİ ODAKLILIK İLİŞKİSİNDE ÜRÜN İNOVASYONUNUN ARA DEĞİŞKEN ROLÜ

ÖZET

Pazarlama bilgi sistemi (MIS), iş performansını geliştirmek ve sürdürülebilir başarı elde etmek için önemli bir faktördür. Bunun nedeni, işletmenin iyi bir performans elde etmesine yol açabilmesidir. Buna ek olarak, pazarlama faaliyetlerinin önemli bir faktörü haline gelen yüksek müşteri memnuniyetine ulaşmak için işletmeyi yönlendirebilir. Bu nedenle pazarlama bilgi sisteminin değerlendirilmesi ve geliştirilmesi önemlidir. Bu çalışmada, pazarlama bilgi sistemini analiz etmek ve bunun müşteri odaklılık ve ürün inovasyonu üzerindeki etkisini ölçmek amaçlanmıştır. Araştırmanın verileri anket formu kullanılarak toplandı. Veriler istatistiksel araçlar ve SPSS programlaması kullanılarak analiz edildi. Çalışmanın sonuçları, MIS'in ürün inovasyonunu olumlu ve önemli ölçüde etkilediğini gösterdi. Ayrıca sonuçlar, MIS'in müşteri yönelimini olumlu ve önemli ölçüde etkilediğini göstermektedir. MIS ve ürün inovasyonunun birlikte müşteri yönelimini olumlu ve önemli ölçüde etkilediğini göstermektedir. Buna göre ürün inovasyonu, MIS ile müşteri odaklılık arasındaki ilişkide ara değişken rolüne sahiptir. Bulgular, Irak işletmelerinde MIS'in geliştirilmesi ve etkilerini ortaya koyması bakımından önemlidir.

Anahtar Kelimeler: *Pazarlama bilgi sistemi, Müşteri Odaklılık, Ürün İnovasyonu*

1. INTRODUCTION

1.1 An Overview

Developing the marketing information system (MIS) is important for any business. The importance of MIS for businesses is related to several issues. The first issue is the change in the business environment. That is, the new global environment creates more competition for businesses. In addition, the second issue is the advance development in the field of communications and information technology. These issues have led to many changes in the businesses environment and structure. Therefore, MIS has become one of the main tools that help companies working successfully within the new environment. More specifically, the MIS has become one of the essential elements of developing business performance (Al-Taher et al, 2009).

The second issue is that many changes have happened in the past two decades in markets and production technologies. These changes have had a significant role in increasing the market competition. In addition, the developments that accompanied our present-day made it described as the age of knowledge, information and communication technology. Today's business businesses can grow and progress through them in the world. These encourage most businesses to develop their MIS to improving their operation systems and products to satisfy customers' needs and desires (Al-Taie & Sarhan, 2006).

The third issue is that the expansion of marketing information has created tremendous pressure on traditional operational systems. That is because the large volume of data related to the high-speed changes in customers' needs. As a response to that quick change, most businesses adopted strategies to develop their MIS (Kotler& Philip, 1997).

Finally, the customers now become the crucial factor of marketing activities. Therefore, it is important for the businesses to develop their MIS that can help achieving high customers' satisfaction (Gandhi, 2002).

According to these issues, the rational businesses' managers must work on developing their businesses' MIS. In addition, they should focus more on applying customers' orientation, product innovation to achieve their businesses' goals.

This study is applied on Iraqi businesses. Iraqi businesses were selected because Iraq has closed economy for more than 20 years. That is because of the wars, which created many problems related to adopting new technologies. However, after 2003, Iraq has become more economically open towards the entire world. That has increased the global competition and put Iraqi businesses under high pressure. Therefore, it is expected that Iraqi businesses started working on improving their MIS to improve their performance (Musa& Sattar, 2012).

This study focuses on two main problems. First, there is no evidence that shows whether Iraqi businesses have developed their MIS as a response to the new changes in business environment. Second, the literature does not have studies that test the impact of Iraqi businesses' MIS on customer orientation and product innovation.

The purpose of this study is to investigate the performance of the MIS in a sample of Iraqi businesses. More specifically, the study investigates the impacts of Iraqi businesses' MIS. The study tests whether Iraqi businesses have applied customer orientation and product innovation. Finally, the study tests the relationship between MIS, customer orientation and product innovation of Iraqi businesses.

1.2 Literature Review

Many studies in the literature have presented the MIS in different ways. They also tested its impact on customers' satisfaction and on the businesses' performance and success. Therefore, it is important to reviews some previous studies that dealt with this issue to indicate their problems, objectives, methodology, and findings. Reviewing previous studies can help providing theoretical and practical information about MIS and about its effects on customer orientation and product innovation. Therefore, the next sections review some studies from the literature that are related to the research topic.

1.2.1 Studies that are related to the marketing information system

The purpose of the study conducted by Al-Adwani (1998) was to analyze the reality of the existing MIS system (Deepak& Jeyakumar, 2019).

In addition, the study purpose was also to reveal the most essential problems related to MIS, and to search for possible solutions. The study presented new MIS system that can be a substitute for the old one to solve the existing problems. The results of the study showed that the existing MIS system is just a simple manual system. In addition, that MIS system is not consistent with the work nature of the business.

The purpose of the study conducted by Gandhi, (2002) was to develop the marketing information system. The study indicated that the existing MIS was not directed toward customer's orientation and product innovation. In addition, there was no computers and internet to support the operation of MIS (Gandhi, 2002). This study showed that the MIS could provide decision-makers with better information when using computers and the internet. Also, the results showed that the MIS could be more effective when it consistency with the business's structure. Moreover, the results showed that the developed MIS could improve the types of information obtained from the market. That could increase the link and the balance between supply and demand. In addition, it could make the production and marketing more efficient.

The purpose of the study conducted by Nedeva (2004) was to examine the MIS and its ability for use in decision-making process. More specifically, testing the ability of MIS to provide information and using communication technologies. The study also tested the effectiveness of building an integrated MIS. The study included 25 plans of a business for the period 1999-2002(Nedeva & Veselina, 2004). The results of this study showed that the use of the internet had a significant impact on decision-making through providing the MIS with important information. The important information was related to the change in customers' preference, taste, behavior, and others. Another result showed that the integration of MIS was new development. This integration represented data integration, and information technology integration.

The purpose of the study conducted by Tawfiq (2006) was to develop MIS by using new technologies. Then using the developed MIS to serve warehouses and support marketing decisions-making process (Al-Adwani, 1998). The results of this study

showed that the use of developed MIS could provide better data about warehouses' operation. That could support customers' relationship management because it provides information about customers' preferences over time. It could also help in rationalizing marketing decisions.

The purpose of the study conducted by Jobber, and Ashill (2000), was to develop a framework that includes the information required by marketing decision-makers. The study identified six general characteristics to an effective MIS based on three issues. These issues were limited marketing information, analytical marketing information, and information about marketing decision models Lancaster (Geoff et al, 1998). The results of this study showed that focusing on designing the MIS could lead to better MIS performance.

The purpose of the study conducted by Kemper (2002) was to provide a design for customer-oriented data system of warehouses. This design was a new technique of customer relationship management (CRM). In that CRM, the company obtains data on the preferences and desires of the customers. Then the company turns the data into information that used to provide the appropriate services to the customers (Kemper, et al, 2002). The results of this study showed that adoption the new CRM system could improve the MIS of the company. That was because it could be used to better analyze the needs of the customers.

The purpose of the study conducted by Alsuwaidi (2010) was to evaluate the role of MIS towards the customer orientation and product innovation. The study used the questionnaire to collect the study data. The study was applied one of Iraqi companies in Mosul, Iraq. The results of the study indicated that the marketing information system in the company was not efficient in providing the required information to the managers. The study suggested that the company should have used the new technology to develop its MIS.

This study is important as a guide to my study. However, unlike this study, my research is applied in different economic environment and marketing conditions especially in Mosul. Also, my research has another difference because of sector. I got data from The State Company for Ready-Made Wear in Mosul, Iraq. This work has a difference about "sector, environment and marketing conditions" and different in legislation and regulations than other researches in the literature.

1.2.2 Studies that are related to customer orientation

The purpose of the study conducted by Gharib (2006) was to examine the extent to which the marketing relationships could be applied. More specifically, it examined marketing relationships' characteristics, activities, and strategies in the private commercial banking sector (Gharib, 2006).

The results showed that most of banks in the sample could apply marketing relationships. However, they did not have modern tools such as the internet and customer databases to communicate with customers.

The purpose of the study conducted by Sadiq (2008) was to examine the customer orientation. It was also to examine the effects of customer orientation on the performance of the businesses. The study tried to do the tests to evaluate whether the businesses did response to the economic shifts and the changing in international conditions (Baron& Kenny, 1986). The results showed that the companies' plans and strategies did not include customer orientation. That was because of the lack of data and information about customers.

The purpose of the study conducted by Al-Baghdadi, (2008) was to develop and integrate businesses' knowledge management practices. The study used the principles of customer relationship management (CRM) to examine the performance of the businesses regards customers' satisfaction (Al-Baghdadi, 2008). The results of this study showed that developed CRM could help the business responding quickly to the needs of customers. The results showed that using developed CRM could provide appropriate information about each customer. In addition, it could be a useful tool in achieving future forecasting in different marketing fields. Moreover, CRM could reduce the marketing costs and achieve higher return on investment. That could be done through identifying and targeting the best customers and increasing sales.

1.2.3 Studies that are related to product innovation

The purpose of the study conducted by Al-Taie Amal (2006) was to determine the relationships types between information and communication technology (ICT), product design, and development strategy (Al-Taie, 2006).

The results of this study showed that ICT could play a role in product design and innovation. That could be done by reducing the costs of the final product. In addition, it could be done by improving the products quality.

The purpose of the study conducted by Toubia (2005) was to test the effect of incentives on improving products innovative.

Specifically, it tested the effect of incentives on generating ideas and using models related to product innovations. The study introduced a new tool that used for generating ideas.

The tool was using rewards that were given to the participants based on the weighted average rate between their contributions and their influence in the group (Toubia & Oliver, 2005). The results of this study showed that generating ideas was related mostly to increasing interest in the process of innovating product.

1.3 The Study Hypotheses

In accordance with the purpose of the study, the hypotheses were formed as follows:

H1: MIS can positively affect the product innovation.

H2: MIS can positively affect the customer orientation.

H3: MIS and product innovation together can positively affect the customer orientation.

H4: The product innovation has a mediation role in the relationship between MIS and the customer orientation.

The rest of the study has the following sections:

- **Chapter2**, which discusses the theoretical framework of developing the marketing information system (MIS). This chapter has two main parts. The first part discusses the concept of the MIS, its components, and its functions. The second part discusses the ways and strategies of developing MIS.
- **Chapter 3**, which discusses the theoretical framework of customer orientations. Specifically, it discusses developing the ideas of customer orientations, customer value. It also discusses the customers' satisfaction, loyalty, and ways to maintain them.

- **Chapter 4**, which discusses the theoretical framework of product innovation, the concept of products' design, and the requirements for products' creation.
- **Chapter 5**, includes the empirical analysis. That includes the study methodology, conceptual model, the sample of the study, the study data, the regression and correlation analysis, and the empirical result.
- The study's conclusion.



2. THE MARKETING INFORMATION SYSTEM

Researchers have become increasingly interested in studying MIS and its components, effectiveness, and ways of developing it. That is because development MIS can play an important role in the business performance. The development of the MIS requires learning the concept of the system, its components, and its functions. It also requires learning how to develop the systems including the stages of this process passes (Stair et al, 2003).

2.1 The Concept of the Marketing Information System

The marketing information system is a system that contains information about the business and its internal and external environment. It has defined as a group of employees, databases, procedures. They all used to provide routine information to managers and decision-makers within the business (Haag &Phillips, 2007).

It can also be defined as a system that use information technology tools to develop, manage, and help individuals complete all their jobs' tasks (Haag &Phillips, 2007).

It can also be defined as the integrated structure of machinery, programs, equipment, rules, and workforce that collecting data to provide the necessary information. In addition, it can use to forecasts to facilitate the decision-making missions (Etzel &et al, 2004).

It is also known as a method of collecting and analyzing data that can be used by the marketing managers for decision-making processes (Perreault & McCarthy, 2006).

In general, the above definitions present the MIS as a process for collecting, analyzing, and distributing data to managers and beneficiaries. They use this data to make the required marketing decisions (Boone & Kurtz, 1998).

However, some other definitions present the MIS as a computer network that use to collect data.

For example, the marketing information system is a computer-based system that used to provide managers with information used in their decisions-making processes (Harrell& Gilbert, 2010). It is also defined as a computer-based system, which collects and organizes marketing data on a time basis to prepare information for decision-making (Al-Dewachi, 2000).

The basis of the concepts of the MIS now is not very different from what it was 20 years ago. The current development in information technologies has had a fundamental impact on the speed, accuracy, and ease of accessing information. Even managers with little computer experience can learn to use it quickly. That can allow them obtain marketing information in the forms of reports, maps, pictures, charts, and statistical tables (Laudon et al, 2011).

2.2 The Elements of the System

The marketing information system, like any other information system, contains three essential elements as shown in figure (2.1).

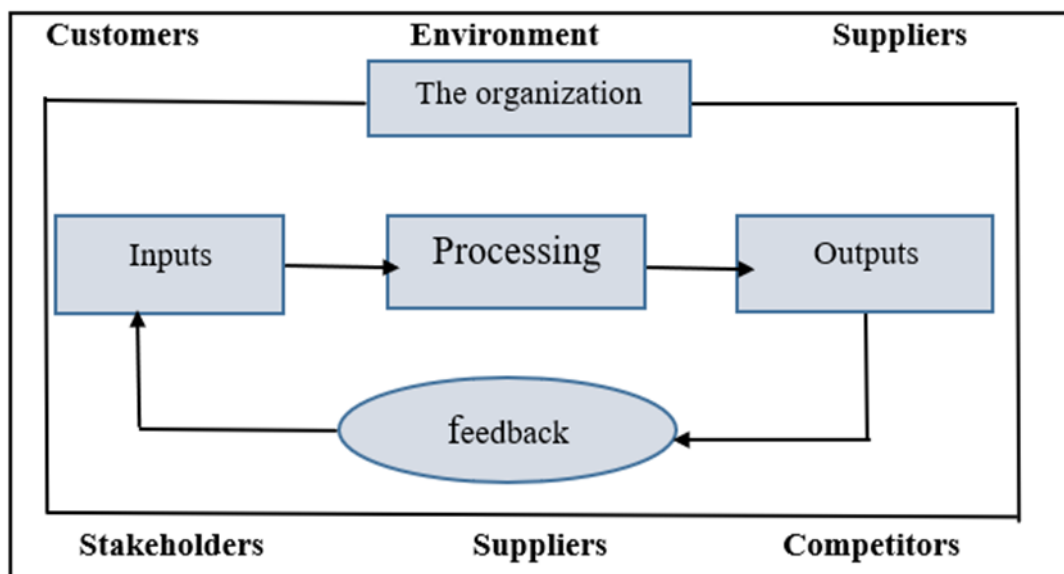


Figure 2.1: Marketing information system components.

Source: (Laudon et al, 2011).

1. Inputs: It is all that enters the system from the primary elements obtained from the business and from the external environment. All the information entering the system will be processing and converting into useful reports.

2. Operations: The process that transforms data into useful information.
3. Outputs: The outputs of the system are usually reports that represent the results of the processing step. The outputs are used for decision-making.
4. Feedback : All information that coming back from customers, suppliers, stockholders, and others that help improving the operational performance.

For the MIS to perform the required activities, it usually needs to use the following resources:

1. Personnel resources: the beneficiaries and the specialists.
2. Hardware Resources: Information Technologies, and Communications networks.
3. Everything related to databases and database management.
4. Procedures and programs.

2.3 Marketing Information System's Functions and Advantages

The functions of the marketing information system can have summarized as the following (Al-Taei, 2005).

- Analyze data using statistical analyzes and mathematical models that simulate the reality.
- Prepare appropriate and regular reports within the limits of the businesses' missions, strategies, and potential tactical plans.
- Store data for future uses and comparison.
- Forecasting the future trends.
- Obtaining massive data from inside and outside the business in real-time.

The advantages of the marketing information system can have summarized as the following (Evans et al, 1997).

- Achieving competitive advantages.
- Reducing financial risks.
- Monitoring the business's environment.
- Gathering information about competitors.
- Achieving coordination strategies.
- Measuring marketing performance.
- Improving the business's effectiveness.

In general, the MIS system is working based on the concept of the marketing analysis. Its main components are planning, management, and marketing research.

It also has other components such as consumer behavior, promotion research, market competition analysis, and marketing competition trends. All of these components can lead to the MIS advantages that listed above (Turban et al, 2017).

2.4 The Importance of Marketing Information Systems

The MIS is important because it consider a daily framework for management. In addition, it is structuring information that is collected regularly from internal and external sources (Pride & Ferrell, 2003).

The importance of MIS can be explained as following (Farahatia & Eid, 2006):

1. Providing data and information promptly with appropriate quality and accuracy.
2. Preparing information briefly for each alternatives and analyze their effect on the objectives to be achieved.
3. Helps in achieving the best results in planning, implementing, and monitoring marketing activities.
4. Contributing in modifying information effortlessly through the computer system.
5. Answering any questions related to customers, goods, or sales assistants in a fast manner.
6. Encouraging the marketing department to take risks and continuously search for marketing opportunities.
7. Helps in products design and provision, and providing multidimensional information for the businesses to make marketing decisions (Lazhar, 2006).
8. Providing economic indicators. The increasing importance of economic indicators has increased the importance of MIS. Economic indicators contribute to a fundamental role in the success of marketing management (Mohamed, 2006).

2.5 The MIS Systems Development

2.5.1 Introduction to systems life cycle development

According to systems theory, every system has a life cycle that consists of several stages. Just as an organism has a life cycle that begins with birth and ends with death. For example, the product has a life cycle that starts with the stage of presentation, then growth and maturity, and the end (Dendera, 2009).

The researchers believe that the process of developing MIS can include the following stages (Dendera, 2009):

- The first stage is the stage of identification the problems and the feasibility of the MIS. The proposed process of developing MIS begins with understanding and the status of the business. Then, determining if there are problems facing the business or the beneficiaries in obtaining the required information.
- The second stage is studying the extent of possible MIS development. That is, the businesses should analyze and understand the nature of the existing problems facing the MIS development. In addition, they should analyze and understand the requirements of economic feasibility regards developing MIS, (Radwan, 2010).

The components of feasibility studies are shown in figure (2.2). Figure (2.2) shows that the feasibility studies of developing MIS have four parts. The first part is the economic feasibility, which deals with reducing costs, increasing returns and profits. The second part is the organizational feasibility, which focuses on how the proposed MIS supports the business's strategic goals. The third part is the operational feasibility, which deals with management's issues. Finally, the fourth part is technical feasibility, which focuses on the availability of MIS technical requirements such as networks and hardware (Obrien&James, 2001).

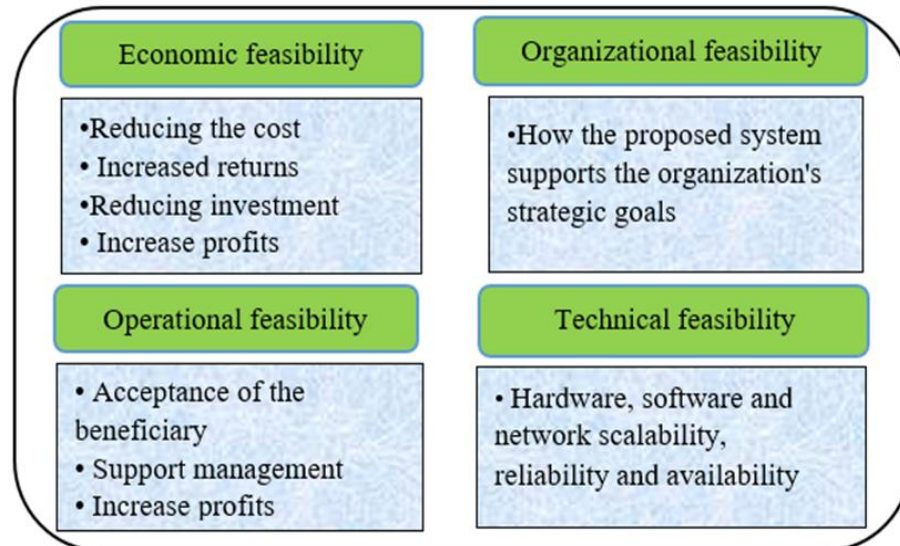


Figure 2.2: The components of feasibility studies.

Source: (OBrien&James, 2001)

- The third stage is the stage of analyzing the current MIS. More specifically, analyzing the beneficiaries of the system and their needs, the documentation needed in work, and the requirements to meet these needs.
- The system design stage is the fourth stage. This stage describes the functional requirements of the proposed system. In addition, it describes the characteristics of the necessary hardware, software, data resources, individuals, and networks. It also describes the procedures required to operate the system. The design stage usually integrates with the analysis stage.
- The fifth stage is the implementation stage. The goal of this stage is to develop the work program, prepare and test plans and procedures, and prepare documents.
- In addition, this stage includes also training the beneficiaries on how to use the system and providing them with the system instructions guide (OBrien & James, 2001).
- The final stage is the modification and maintenance. After operating the system, and practicing its functions, it is necessary to establish a program for the maintenance the system (Yassin, 2006).

Recently, most businesses have used new the rapid development approach when developing their MIS. The goal of this approach is to reduce the MIS development

process stages. That can be done by using modern methods and tools that can make rapid MIS development (Evans & Berman, 1997).

2.5.2 The analysis process in MIS development

This section discusses one of the important stages of MIS development which is the analysis process. In this process, the businesses try to identify solve problems related to their MIS. Therefore, this process consists of identifying the problem, its causes, and identifying the possible solutions (Etzel & William, 2004).

There are two types of analysis in the MIS development process (Al-Dewachi , 2000):

1. Initial analysis, which refers to observing the current situation and may describe the problems that the information system to solve.
2. Logical analysis, in which a systems analyst determines the answer to two fundamental questions. The first question is “what does the system need?”

The second question is “What are marketing information system requirements?” or “How will the system perform its functions?” It identifies the information needs, the processes, and the general operations’ requirements of the system.

The analysis procedure may include the following steps (Al-Muhtadi, 2003).

- Create a working group for the participants in the systems analysis process.
- Collecting data on the appropriate requirements.
- Analysis of the requirements data.
- Preparing a report on the current marketing information system, the requirements of the new system, and the required priorities.

The tasks involved in systems analysis are (Rose & Jeremy, 2000):

- Collecting, using, and processing information.
- Record information in a clear and accessible way for all analysts and designers using graphic methods.
- Use the existing recorded information about the business as a basis to indicate requirements for expanding the new system.

2.5.3 The analysis plan in MIS development

The analysis plan can include the following steps (Al-Shamaa, 2004):

1. The stage of team formation that undertakes the analysis

It is the first practical step in the process of analyzing plan, as a multidisciplinary team is formed to start the analysis process. The team may include:

a) Specialized systems analysts

The analysts should know in the field of computer and information systems and have experiences in analyzing, dismantling, and splitting the system into its components.

The skills required by a systems analyst are (Dennis & Charles, 2005):

- Technical skills in the way of understand the technology of the organization, and the technology of the new system. In addition, technical skills on how to combine the two in an integrated technology solution.
- Business skills that ensuring obtaining higher value through the application of information technologies.
- Communication and human interaction skills that help in direct interaction with system users, administrators, and programmers.
- Management skills that lead the efforts of the individuals to clarify situations.
- Ethical skills, in which the polite engages with the staff and members of the business.

b) The beneficiary

The beneficiaries are the individuals who use the system. They play an essential role in obtaining the information and data needed. In addition, they can an essential role in designing and operating the system.

In many systems, the beneficiaries of the marketing information system are the senior managers, the managers of the marketing department, stakeholders, customers, and the public (Al-Bakri, 1985).

c) Experts in the field of business administration

The experts in the field of the business administration can help in analysis, and designing the works and the distributing the tasks. In addition, they can help in adopting the new system and reduce potential resistance to change by workers.

2.5.4 The system analysis

The system analysis is the process that analyzes the work of the computer-based elements of the current system. In addition, it analyzes the other elements of the business. All of these elements can lead to significant benefits if they restructure with the activities of the business and the associated system information (Haag et al, 2007).

For example, individuals want to continue in the same way and with the same behavior at work unless they push for change. The changes caused by the new information system may makes individuals learn new procedures and use new technologies (Oz, 2011).

In general, analyzing the system has two stages as following:

1. Analysis of the current information system

The analysts can find and analyze the current information system. However, they perhaps do not find an information system. This case can be existed when the business does the work only recently. An essential step in analyzing the current system is data collection. The data collection process begins by identifying the different sources of data such as internal and external data. Internal data sources are the users of the system, stakeholders, and managers. They can be also business maps, forms, documents, manual procedures, and policies. Furthermore, they include financial reports, manual information systems, and other measures of the businesses' operations (Strauss et al, 1999).

2. Analysis of job requirements

Job requirements are defined as the functions that the system performs and the characteristics by which it will achieve its tasks. It includes identifying who needs the information, and how can use this information develop new system. It can also be defined as set of knowledge that the system must meet to be successful (O'Brien & James, 2001).

2.6 The System Design

2.6.1 The concept and activities

The system design shows how the proposed system will work. That is, it shows the specifications of different requirements included in the proposed system include, and how they work as an integrated unit. The system design describes the system created to meet the information needed by the beneficiaries. It consists of designing activities and the functional requirements to develop the new system (Dendera, 2009).

It also describes the details about how the new system works to meet the needs of the business that identified by the systems analyst during the analysis stage (Evans& Berman, 1997).

It can help rearranging and installing many separate elements and linking them to make them a new entity. In addition, it can help bypassing the problems of the old system to achieve the best goals (Al-Sharman, 2004).

Some specialist indicated that the system design process consists of two main packages, which are the logical design and the physical design (Al-Baghdadi, 2008).

2.6.2 The components

The marketing information system consists of four main components (Harmon& Robert, 2003).

1. **User interface:** It is an essential component for managers in analyzing the use of marketing information. It includes the types of elements that will be used in the information analysis. For example, the uses of coordination, presentation, and reports. It takes into account the ease of use, confidentiality, and easy access to information.
2. **Software applications:** The software that marketing decision-makers use to develop the process of decisions making. For example, the marketing support software is used for immediate online selling and customer service.
3. **Marketing database:** It is a system, in which the marketing data files and stored. This data is usually collected from internal sources such as sales data, shipping data, inventory data, and product data.

It is also collected from external sources such as marketing researches, competitor intelligence, credit agencies, and financial institutions.

4. Support System: It is a group of managers, who manage and maintain the systems components such as software and network devices. They also monitor the system's activities and ensure their complementarity with the business's policies.

2.6.3 The models

There are several designs' models for the marketing information system developed by researchers, which including the following:

1. Kotler model

Philip Kotler used the term "nerve center" to describe a new unit of marketing function that collects and operates marketing information. Kotler identified three types of marketing information in his model, which are (Martin, 2006):

- Data that travels to the business from the environment, which is called marketing intelligence.
- Information gathered within the business, which is called internal marketing information.
- Information flowing from the business to the external environment, which is called marketing communication.

Kotler noted the tendency of the nerve center to support decision-making, and he did not use the term MIS. The Kotler's system has four essential components, as shown in Figure (2.3) (Ong, 2012):

a. The internal documentation system

Managers rely on internal reports from orders, sales, prices, costs, inventory levels, receipts, and payments as well as from financial budget. In addition, they rely on information about the opportunities and risks.

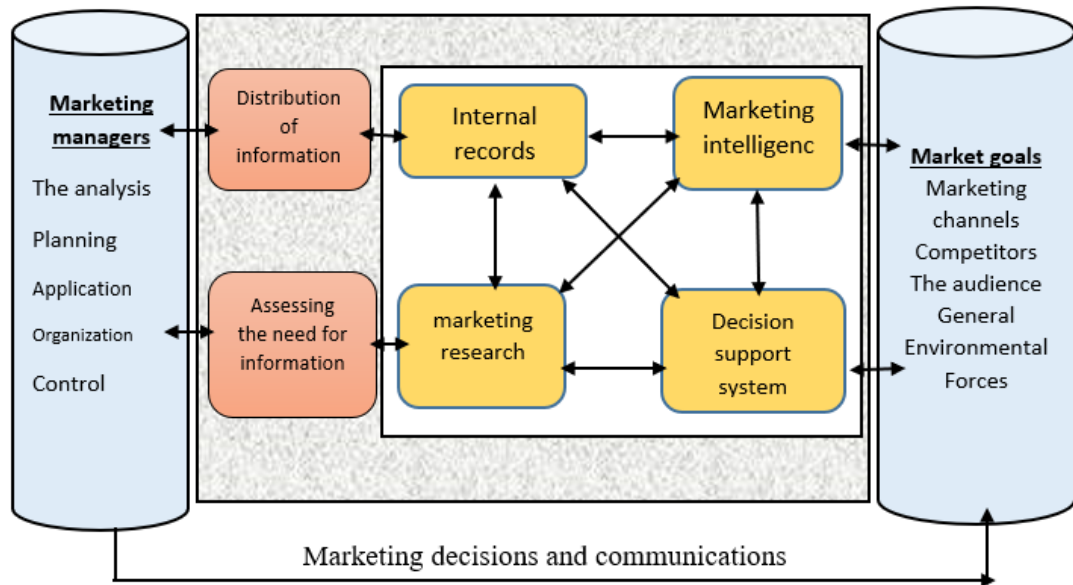


Figure 2.3: Kotler model for marketing information system.

Source: (Kotler & Philip, 1997)

b. Marketing Intelligence:

It is a set of procedures and sources that are used by managers to obtain daily information on the marketing environment. It can help managers to make marketing analysis and improvements.

c. Marketing research

The American Marketing Association defined marketing research as the process of collection, recording and analyzing the data related to marketing problems. Marketing research starts with studying the capabilities and shares of the market.

It ends with determining the level of the needs and desires of customers, and the types of purchasing behavior. The business may include a special section for research or obtain it from independent sources (McLeod et al, 2000).

d. Marketing decision supports

Marketing decision support system is a coordinated set of data, technologies, and tools with supporting programs and devices. The business uses this system to collect and interpret relevant information. Then, the business distributes this information for marketing purposes (Mohamed, 2006).

2. Macleod model

Raymond McLeod presented a model of the marketing information system containing a mixture of input and output subsystems related to a database. Each output's subsystem provides information on its parts of the mix.

Figure (2.4) shows the product subsystem that includes information on the business's products. The location (distribution) subsystem provides information about the business's distribution network. The promotional subsystem provides information on the business's promotional activities and sales professionals. The price sub-system assists the manager in pricing decisions. In addition, there is a fifth sub-system called the integrated mix sub-system. They enable the manager to develop strategies that are part of the mix (Al-Bakri, 2002).

McLeod indicated in his model that the design of the marketing information system should satisfy what the managers need. McLeod indicated also that the analysis team should interview a variety of marketing managers to find out the information they need.

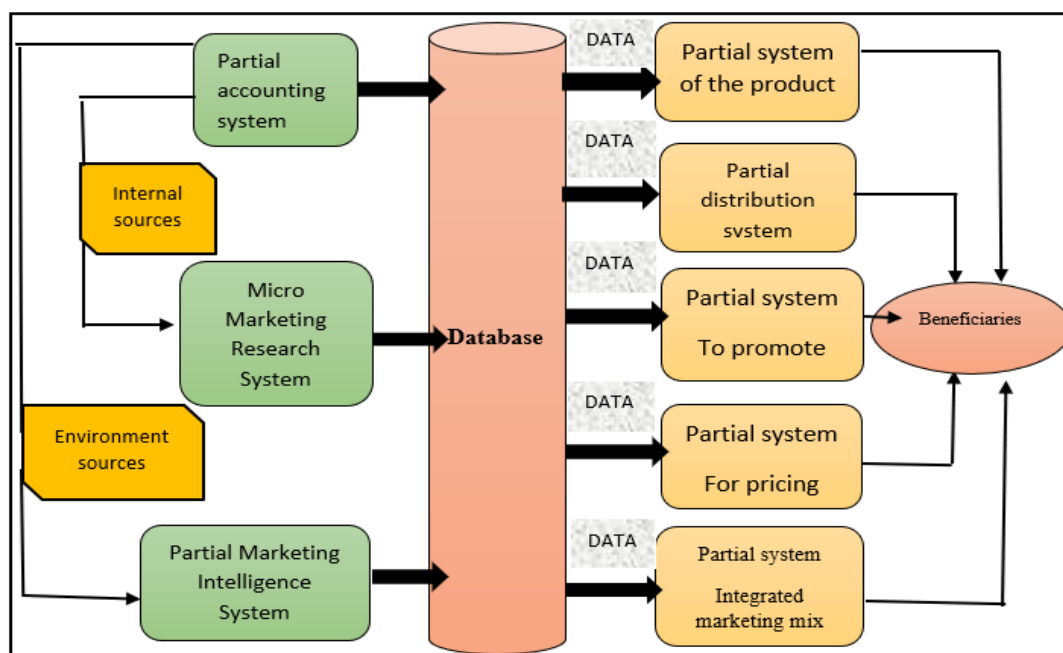


Figure 2.4: Macleod model of the marketing information system

Source: (McLeod et al, 2000)

2.7 Chapter's Conclusion

The marketing information system is an organized and continuous procedure for generating, analyzing, storing, and retrieving information. This information is used in the marketing decision-making process. The advanced innovation in networks and communication systems can play a significant role in the performance of MIS. That is because; they can enable the transition to the electronic method and dealing with the vast amount of information. That can prompt many researchers to stress the necessity of using computer-based systems as part of MIS.

There are many ways to develop marketing information systems. Any business can choose the way that suits its needs, philosophy, and resources. Businesses should know that the development of the MIS is not only one-time development. The development of the MIS is a continuous process, and it changes based on the changes in the markets' environments and conditions.



3. MARKETING AND CUSTOMER ORIENTATION

This chapter discusses the theoretical framework of customer-orientation. It presents first a brief introduction to the marketing and its relation with the customers. Then, it discussed the customer-orientation's concepts, dimensions, and developments.

3.1 Marketing

3.1.1 The concept of marketing

Marketing can be defined as the process of potential interesting customers in businesses' products or services. Marketing usually includes researching, selling, promoting, and products or services distributing (Ong, 2012).

The Marketing can play a significant role in promoting the mission of any business. The marketing goal is to help the business reaching out the customers, investors and the community (Mohamed, 2006).

There are several requirements that can lead businesses to successful marketing processes. For example, the business objectives that need to be achieved. Identifying customers' needs. Selecting the methods that help meeting the customers' desires and needs. Organizing the marketing methods for each category of customers according to their desires (Berkowitz et al, 2000).

Marketing has many types or strategies. For example, the cause marketing or cause-related marketing, which links company's products to the social cause. The relationship marketing, which focuses on customer satisfaction and making good relationships with existing customers. The scarcity marketing, which based on creating a perception of a shortage. That can encourage customers to purchase out of fear because they feel that they may not be able to purchase later.

3.1.2 The marketing development

The marketing concept first appeared at General Electric Company. One of the company's annual reports introduced the idea of marketing at every stage of its work.

This report had two essential points. First, it considers sales as just one element of marketing, as marketing involves a broader range of activities.

Second, it changed the idea that the marketing is coming after production to coming before products' design (Peter & Donnelly, 2007).

After the Second World War, customers became more knowledgeable, experienced, and had better options. In addition, the continuous development of technology made it possible to produce more and more (Various & McCarthy, 2006).

The customer becomes the center of businesses' attention, especially businesses that have shifted from looking to production and selling to success, growth, and survival. The marketing definition changed to be the process that is responsible for satisfying customer requirements (Al-Dewachi, 2000).

The paper by Kotler (2003) focused on including competitors to the marketing concept. The paper mentioned that active businesses' marketing should focus on the external environment, which includes both customers and competitors. The definition of the marketing become as achieving the goals of the business by providing what satisfies the customer's needs more than focusing on competitors. This definition added the competition as an additional dimension of the marketing concept (Lancaster et al, 1998).

3.2 The Customer Orientation

3.2.1 The marketing and customer orientation

Customer orientation is one of the businesses' approaches that help focusing on customers. Specifically, considering the customer needs and wants more valued than the businesses' needs. The marketing concept has significantly changed over time in terms of tools, methods, and applications. These changes have led to more changes in marketing functions that started focusing on customer satisfaction (Al-Dewachi, 2000).

Marketing functions now include marketing planning, marketing control, and marketing information systems. The marketing functions, and then customer orientation, can be affected by some factors (Al-Dewachi, 2000). These factors

include suppliers, distributors, and competitors. In addition, there are some external factors such as political, legislations, and socio-cultural environment.

One of the examples of the marketing changes is that many businesses provide special offers and services customers. That indicates the importance of the customer in the marketing process. Figure (3.1) shows the modern marketing process.

Figure (3.1) shows that customers are placed in the center of the process. That is, the companies consider customers the starting point for marketing activity, surrounded by the components of the marketing mix (product, price, distribution, and promotion (Kotler et al, 2013).

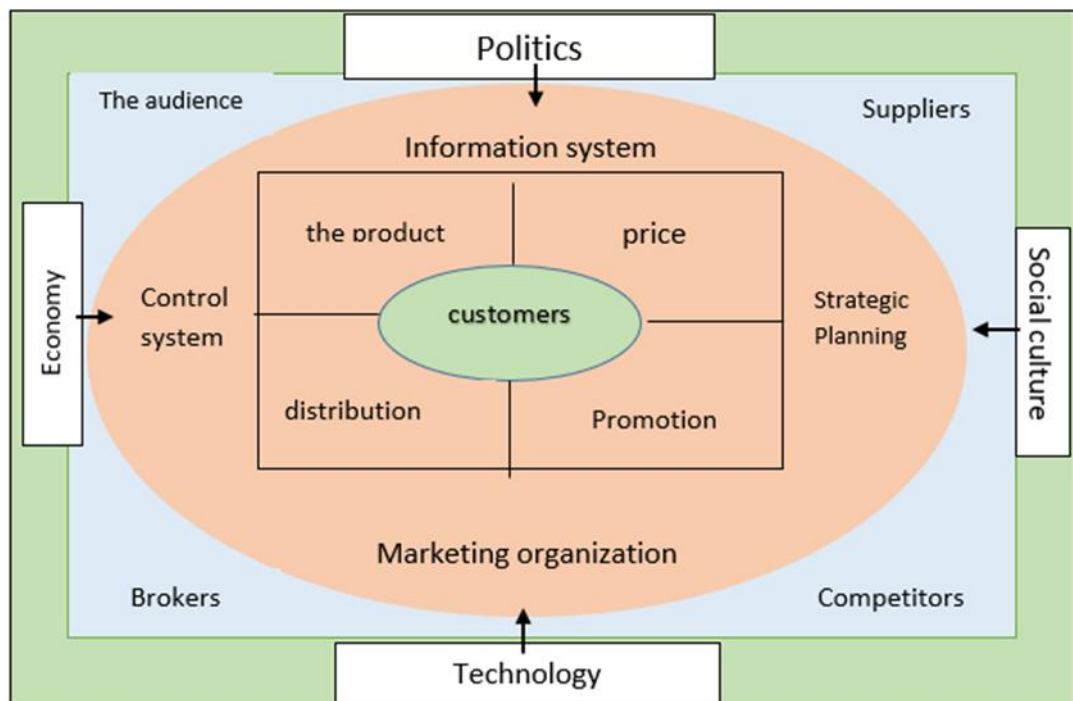


Figure 3.1: Customer is the center of the business environment.

Source: (Kotler et al, 2013).

3.2.2 The concept of customer value and the factors affecting determining its dimensions

The customer is the party (individual or organization) that deals with the business such as the buyers of business's products (Lamb et al, 2004). When customers try to purchase a specific product, they have many available options that provided from different competitors.

Before buying the product, they think about prices and the benefits that this product expects to offer compared to alternative products. The price alone is not always sufficient to make the purchase decisions.

Therefore, the customer value can be defined as the total benefits that customers receive in return for their associated payments (Srinivasan & Madhav, 1996).

Based on that, businesses have to evaluate and balance the benefits and costs of their products depending on the customer's awareness. The selling price is an essential component of the customer. It is the most comfortable comparable property, and the critical point is that customers use to distinguish between the products. Most customers know that the actual value of a product starts from the sale price but also includes maintenance, parts replacement, warranties, and service (Lamb et al, 2004).

There are some problems or difficulties related to the subjectivity or objectivity of customers' value. That is because when they try to determine and measure value, they include financial and psychological costs (O'Brien & James, 2001). However, the businesses can improve their offers to increase the customer's value. The businesses can reduce buyer's non-cash product costs such as time, energy, and psychological fees. In addition, they can reduce the costs of the cash for the buyer. For example, if buyer pays cash, the price will be less (Berkowitz et al, 2000).

3.2.3 Analyzing the customer's value and benefits

Customer orientation focuses on meeting customers' needs and desires. It is the way of achieving the goals of the business. Understanding the customer's value and benefits requires answering some questions. The first question is "What do customers want from the business?" the second question is "What is the real value of the business's products and services to customers?" The answers to these questions can be done based on analyzing the customer behavior and market dynamics (Cox & Michael, 1999).

The customer satisfaction still measured and used by many businesses to make decisions. However, businesses have begun to reveal that traditional customer satisfaction does not provide a real understanding of customer behavior and market dynamics. Therefore, most business started new ways of analyzing customer behavior and market dynamics.

The Customer value analysis has the following steps:

1. Asking customers to describe the characteristics of the product and using the questionnaire, telephone, and interviews to do so.
2. Evaluating the relative importance of the products properties, as customers are asked to rank the products properties specified in the properties list from most to least important.
3. Evaluating the management of the business and the business's products characteristics. The arrangement must meet the priority of the customer.
4. Asking the customers to rate the business's product characteristics in comparison to competitors' product characteristics.

These steps can help the business to understand how customers perceive value on a comparative basis. They also give the business the information needed to improve their products based on the customers' desires.

3.3 Complete Customer Services

The complete customer services are part of customer orientation process, in which the businesses offer support to customers. Supporting customers is an important part of the business marketing. The changes in markets conditions and environments have led the marketing process to face many challenges. Therefore, businesses have to provide services to the broad customers (Martin, 2006).

The complete customer services can be done in different forms as following (Anderson& David, 2004).

1. Developing the process of shipping various products for every potential customer.
2. Some business started using robots. The robots perform most of the required tasks and save more time. However, skilled workers complete the assembly process such as finishing processes.
3. The use of internet services can give customers an easy and affordable way to know which products are on the market. Businesses can also obtain a large amount of product information on web pages. They can receive orders from anywhere in the world, and know what buyers want.

4. The use of computer-oriented machines can allowed producing different styles. Production lines can produce many forms of the products with the help of computer designs and models.
5. The Improvements in distribution processes can reduce the costs of bringing products to customers. They also can enable shippers to improve speed, accuracy, type, path, and package shipping.
6. Assembling: Assembling the product parts for the customers is one way to provide complete services. That is because; some customers do not know how to assemble the product parts.
7. Modifying the products: Modifying the mechanical or electronic components of the product to meet the customers' needs. The manufacturer or the dealers may make the modifications or rearrangements on the product.
8. Products customization: It includes changing the product according to what a specific customer's need. It includes changing measurements, sizes, and colors of the products.

3.4 Customers' Satisfaction, Loyalty, and Retention

Customers' satisfaction is defined as the customers' feeling that the products meet or exceeded their expectations. It is the basic concept of customer orientation since primary goal of most businesses is to satisfy their customer. Customers' satisfaction is one of the objectives that the businesses can achieve by increasing sales, earning profits, and others.

Many evidences showed that the customers' satisfaction could lead to the business's success and gaining loyalty (Srinivasan & Madhav, 1996).

The customer satisfaction usually depends on the perceived performance of the products related to the customer's expectations. If the product fails to perform within a short period, the customer will be dissatisfied. However, if the products' performance matched the customers' expectations, the customers will be satisfied (Al-Zaywani, 2004).

3.4.1 Measuring the customer satisfaction

Customer satisfaction is one of the measures used by businesses to evaluate performance and measure the non-financial outputs. Customer satisfaction reflects customer perceptions of the business's offerings. The businesses today operate under a highly competitive and rapidly changing environment. Therefore, they started focusing more on customer satisfaction, and how to measure it.

The happiness alone is not sufficient to measure the customers' satisfaction with the provided products. However, establishing the level of satisfaction can be expressed using other aspects that can be measured, and analyzed (Al-Daiwahi, 2001). The customer satisfaction level can be measured using through the following methods, (Shafiq, 2005):

1. The suggestions and complaints systems

These systems allow customers to submit their suggestions and complaints. They can send them through free hotlines, e-mails and websites. These systems help the business achieving fast and better communications with their customers (Holetzky & Sherry, 2008). It is important to indicate that most customer complaints are related to provided products and services. For example, they may be related to lack of customer information and a lack of experience in operating the product. They may be related to defects in the product and the product performance. The business can use these complaints to fix any problems and provide better services.

2. Customers' satisfaction surveys

Studies show that even when customers are dissatisfied with their purchases, less than 5% of them present their complaints. Therefore, most businesses use direct surveys to measure their customers' satisfaction. They ask their customers many questions about the provided products and services, and then estimate the level of their customers' satisfaction.

3. Hidden shopping method

In this method, the businesses use individuals who act as buyers and report to the administration the strengths and weaknesses they notice through their experience. They report all information about the businesses themselves and about their

competitors. This method helps evaluating and adjust the sales operation to achieve customers' satisfaction

4. Losing customers' analysis

Most businesses contact their customers who have either stopped purchasing or switched to another business. They usually asked them about the reasons why they stopped purchasing.

The business collects and analyzes the answers of those customers. Then the business takes actions to fix any problems in their operational system.

3.4.2 The concept and dimensions customers' loyalty

Businesses strive to satisfy their customer's desires. They consider the customers' satisfaction as an indication of their business' success.

However, this is not sufficient for new businesses. According to the theory of customer orientation, achieving customer satisfaction is a crucial stage to gain loyalty and retain it (Evans et al, 1997).

There is strong relationship between customer satisfaction and loyalty. Some researchers consider customer satisfaction as the commitment to the business or to its products. That is, the customers who are satisfied of a business's products will continue dealing with that business (Kroenke & Hatch, 1994).

It is important to indicate that the relationship between customer satisfaction and loyalty is not proportional. Assuming that customer satisfaction has a scale of 5 degrees, where 5 is the highest level. The customers with the first level of satisfaction tend to give up that business, and report negatively about them. The customers in the second to fourth levels of satisfaction do not give up until they find better offer. At the fifth level, the customer tends to repurchase, and report positive words. In general, high satisfaction can create an emotional connection with the business (Ong, 2012).

Although satisfaction does not guarantee loyalty, high satisfaction is an essential component of the loyalty formula. In addition, it can be more important when there is intense competition in the marketplace, and the customer has readily available alternatives (Obrien & James, 2001). Figure (3.2) shows the loyalty components.

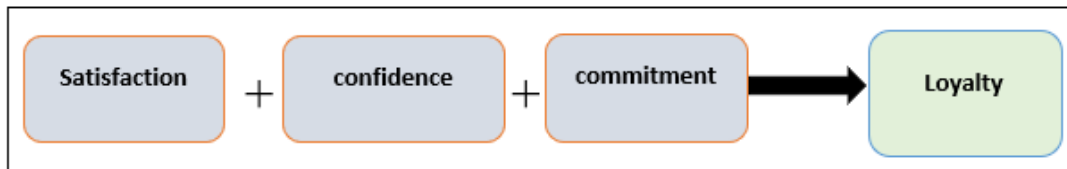


Figure 3.2: Loyalty components

Source: (O'Brien, 1999).

In some cases, customer loyalty can be obtained by offering incentives to make the customer happy and pushing them to buy again. These incentives are as following (Martin, 2006):

- Provide a high quality product with the business's guarantee.
- Buy One – Get – One free.
- Provide a free trial period for products.
- Replace the defective product or refund.
- Offer gifts or a discount.

3.4.3 Customer retention

The satisfaction itself is not the final step to keep the customers. Hence, businesses should measure success based on customers' retention data instead of customer satisfaction data (Lamb et al, 2004).

There is a direct relationship between the business's orientation towards the customer and customer retention. Moving towards the customers' retaining can help businesses achieving many competitive advantages. The competitive advantages achieved by the business are shown in Figure (3.3). Figure (3.3) shows that the competitive advantages are the benefits from increasing profitability, and the benefits from generating growth. Despite the importance of winning new customers, keeping the customer is vital factor for achieving competitive advantages (Adcock et al, 2001).

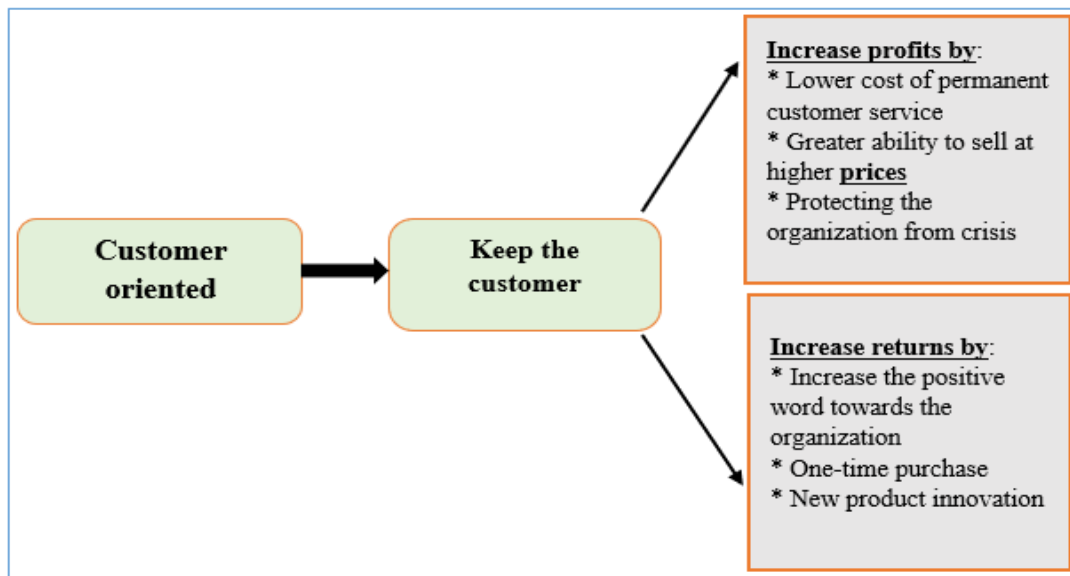


Figure 3.3: The relationship between the business’s orientation towards customer and customer retention.

Source: (Adcock et al, 2001)

3.5 Customer Relationship Management (CRM)

In general, the relationship with the customer means dealing with them in different ways. That is because customers think about this relationship differently.

Customer relationship management is an approach that considers customers as the soul of the business. Therefore, businesses must be willing to change their behavior all the time towards the customers (Boone et al, 1998).

3.5.1 The concept of CRM and its relationship with marketing

The CRM has defined as the process of collecting information about customers. Businesses can use the collected information to design marketing strategies. These marketing strategies can be used to develop the relationships with customers. A marketing strategy targets high customers’ satisfaction over time (Turban et al, 2017).

In general, The CRM is the process of managing detailed and accurate information about customers to increase their loyalty. Recently, The CRM is considered as a comprehensive process of building and maintaining profitable customers’ relationships. In other words, this process is based on the concepts of customer

acquisition and retention. The main goals of CRM are to deliver key value to the customers, and achieve customers' satisfaction (Al-Zaywani, 2004).

It is known that competitive environment and a large number of goods and services increased the options available to customers. As a result, achieving customers' retention became more challenging. Many businesses now work hard on establishing relationships with customers, and retain these relationships (Levitt, 1983).

The relationship between CRM and marketing can be seen through the marketing relationship concept. In general, the principle of managing the relationship with the customer is one of the principles of the administrative concept (marketing relationship). The marketing relationship is an integrated effort to build and maintain a business network with customers to achieve benefits for both sides Hughes (Martin et al, 2000).

3.5.2 The relationship between CRM and information and communication technologies

The interaction channels and communications technology helps businesses perform efficiently in marketing relationships. For example, the use of internet can provide fast, low-cost, and single-channel of communication between businesses and their customers.

The information and communication technologies can provide the following primary tasks (Strauss & Frost, 1999).

- Track purchase patterns and overall relationships of existing customers.
- Coordinate and integrate the shipment of multiple services to the same customer.
- Reducing the possibility of error and failure in service.
- Increasing the quality of the service provide value.

3.5.3 The process of CRM

Most businesses depend on past purchases' behavior to predict future behavior. The CRM process usually depends on three facts about the customers (Obaidat, 2004):

1. Customers who bought recently are closer to buy again versus customers who have not purchased in a long time.

2. Customers who frequently buy are more likely to buy again compared to customers who have made one or two purchases.
3. Customers who spent heavily on their purchases are closer to buy again.

All the customers are classified according to these three facts. Therefore, the customers who recently bought, more frequently buying, more spending money are the top customers. However, customers who did not buy a while ago, the number of their purchases is small, spent less money are the bottom of the list (Adams et al, 2006). The business needs to focus on the top customers in their CRM processes. That is, businesses should focus on three important issues in their CRM process, which are (bin Mahfodh et al, 2020):

- Understand the needs of customers and how can meet them.
- Obtaining information about the interaction between the customers and the businesses.
- Obtaining information about the products that purchased by customers, and how their purchases are perceived. It is vital to improve products and services since it provide feedback information from customers.

3.6 Chapter's Conclusion

The concept of marketing that emerged since the fifties of the twentieth century faced significant changes. These changes were at the level of tools, methods, and applications. These changes have prompted researchers to consider the concept of customer orientation as an independent concept from the marketing.

The modern marketing systems mostly target customers' satisfaction. They shifted their strategies towards focusing on building good relationships with customers, and customers' retention. The advanced developments in the field of communication technologies have had significant impact on CRM.

Some researchers consider managing the relationship with the customer as the technical dimension of customer orientation.

Management must first create an information system to discover the real needs of customers. Then use this information to provide products that satisfy them. Without an information system, the business cannot be customer-oriented.

4. PRODUCT INNOVATION

4.1 The Concepts of Innovation

Innovation is one of the sources of businesses' growth and sustainable development. Innovations can provide essential and affordable solutions to economic and social problems. That is because it can lead to more productivity, flexibility, and higher living standards. Innovation can provide new products and services, new jobs, new processes and methods.

In addition, it can provide new ways of thinking and living, new enterprises, new sectors, new business models, and new social models (Najm, 2003).

The innovation is the method of production, organization, and marketing within the business. It aims to affect positively and successfully the businesses' performance.

It is important to indicate that innovation is different from creativity. Some specialists define creativity as the way to find creative ideas. However, innovation is the process of applying new ideas. Thus, creativity is associated with the original idea, while innovation is the tangible part related to implementation or conversion ideas to be products (Al-Qaryouti, 2000).

4.1.1 The innovation's requirements

Businesses respond to the need for innovation in different ways, and with varying degrees of interest. Some of them have adopted comprehensive policies for innovation at the individual, group, and organizational levels. Some other businesses have created organizational units for innovation such as research and development department. Some businesses have training programs to improve the skills of individuals or groups of innovative behavior and thinking. Businesses compete with each other in the field of innovation to get competitive advantages (Al-Rahim et al, 2005).

This intense competition has led to emergence businesses to more investment in the innovations. That is one of the reasons for continually introducing new products that are designed by the businesses (Al-Saad et al, 2001).

In general, the process of innovation depends on the following (Cleary et al, 1998):

1. Create an appropriate innovation environment that allows for differentiation and independent thinking, and the presentation of new opinions and ideas.
2. Dealing with innovation as a continuous process, but not a one-time implementation mechanism.
3. Adopting the principles of participation in innovations and proposals. That should be in organized forms of joint actions that are directed towards innovation.
4. Taking the advantages of creativity and innovation methods introduced by others. Then, adapt them to meet the conditions of the business.

The requirements of innovation's process are as following (Andrews& Gordon, 1970):

- Organizational and administrative requirements.
- Information requirements.
- Managing employee's requirements.
- Feasibility and evaluation of innovative Requirements
- Other requirements.

Figure (4.1) shows the requirements of innovation's process and some details about each one of the.

4.1.2 The forms of innovation

The three forms of innovation that are shown in figure (4.2) are listed as the following (Solomon et al, 2003):

1. Continuous innovation

This form includes making a modification of the existing products to present them as innovations. It can include also modulating the current effects that place a distinctive mark on business's competitors. Making small changes gives the

product a new position or allows the businesses to provide a unique perspective development. Most innovative products are of this type.

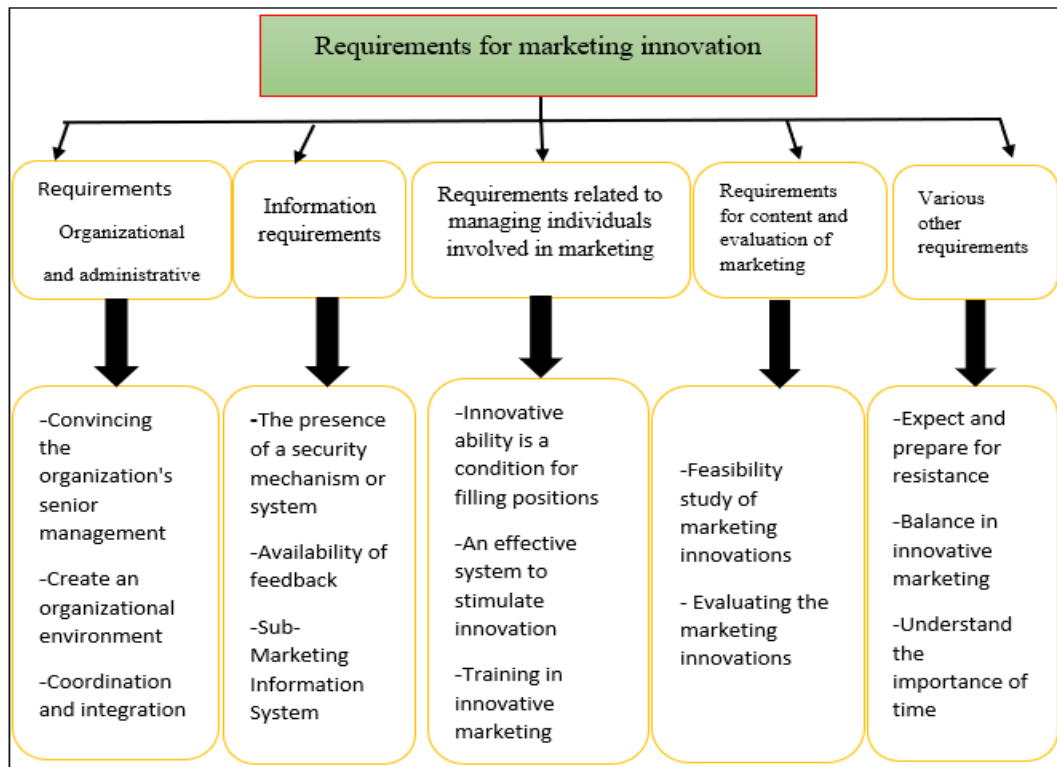


Figure 4.1: Requirements of marketing innovation.

Source: (Abu Jum, 2004)

The diagram shows a spectrum from 'Low' to 'High' degree of behavior change and learning required from the customer. A double-headed arrow at the top indicates this spectrum. Below it is a table with four columns representing different types of innovation: Continuous, Dynamic continuous, and Discontinuous. The table includes definitions, marketing focus, and examples for each.

	Continuous innovation	Dynamic continuous innovation	Discontinuous innovation
the definition	It does not require new learning from customers	It deviates from the regular routine of customers but does not need entirely new learning	Creates new consumption models by customers
Marketing focus	Generating public interest in customers and includes wide distribution	Announcing benefits to customers, highlighting points of excellence in benefits	Educating customers through product experience and personal selling
Examples	New enhanced washing powder	Electric toothbrush	Home computer

Figure 4.2: Comparing forms of innovation.

Source: (Abu Jum, 2004)

2. Dynamic continuous innovation

This form is characterized by making changes that are more complex. These changes require more significant customer learning to accept them.

3. Discontinuous innovation

An ultimate innovation that appears first in the world. The customer has never seen that innovation before. This innovation requires a greater degree of learning, changes in customer behavior. In addition, it also requires advance thinking about the benefits and costs of the new product (Evans et al, 1997).

4.2 Product Innovation

4.2.1 The concept of product innovation

The product innovative is defined as the process of providing what satisfying the customers' needs. It can be goods, services, ideas, and others(Dendera,2009). The new product can be defined as the product that is offered for the first time. In other words, the product that is completely new in the market (Abu Jum, 2004).

It is important to indicate that the concept of the new product may not always coincide with the idea of the innovative product (Al-Qaryouti, 2000). It does not always fall within innovation even it falls within the concept of the original product (Harem, 2003).

4.2.2 The importance of product innovation

Product innovation is a critical challenge for businesses of all sizes and in all industries. The product innovation is an important factor for any business to achieve the fundamental strategic goals. Businesses that fail to develop new products can be at high risk because of several reasons. For example, the customer needs and desires are changing all the time, changing technology, and increasing internal and external competition (Ong, 2012).

The product innovation has also a social dimension. The social dimension of product innovation is the contribution to developing communities. For example, new products can make people's lives easier and happier. The businesses offer new products to make our lives better and create more profits (Brown& Steve, 1996).

In general, the businesses' goals of introducing innovative product can be explained as following (Brown& Steve, 1996):

- Meeting the changing customers' needs and desires.
- Maintaining current levels of sales that may not be possible with current products at the end of the product life cycle.
- Increasing profitability when the sales cannot increase, and prices cannot increase without loss in selling.
- Meeting the competition requirements since intense competition leads to the continued introduction of an innovative product.

4.2.3 The risks and benefits of product innovation

Most businesses are seeking to get more profits through their innovation, and their successful products' designs. However, there are real risks that these businesses may face in the case of failure of the innovative product. Many studies in the literature showed that businesses could have big losses because of the failure of their innovations (McLeod, 2000).

The risk of developing a new product is usually associated with enormous losses resulting from its failure. Statistics show that at least 50-70% of new products fail in the first year (Levitt, 1983).

The product innovation that brings new product can put the innovative business in the position of monopoly. Even that can happen for a short period, the innovative business gets the advantage of the higher price and the monopolist's profits. In addition, the innovative business gets the advantage of reducing the unit costs (Al-Qaryouti, 2000).

4.2.4 The factors of success and failure of the innovative product

1. The factors that can lead to failure of the innovative product are (Ong, 2012):

- Small market size, which leads to low sales and profits.
- High costs include the costs of research and development, manufacturing, and marketing.
- Lack of capital.
- The lack of speed required for product development in the product life cycle.

2. Many businesses make efforts to introduce innovative products and work for their success in the market. However, some essential factors can lead to successful innovative products. The following factors have identified as key to the success of the innovative product (Cooper et al, 1986):

- Understand the customer needs.
- Make unremitting efforts when placing the new product in the market. These efforts include selling, promoting, distributing. They also include the compatibility between product technology, technical resources, and skills available in the organization.
- Efficient utilizing to the business's resources, marketing needs, and marketing skills.
- Commitment and support from management.

4.3 The Stages of the Product Innovation Process

IN some case, the innovation occurs by chance. Products that are invented in this way have achieved great success such as X-ray, Coca-Cola, and others. However, businesses follow a systematic process in product innovation that consists of several stages. Any idea that expected to introduce new product with less risk should be applied. Implementing this idea can face many difficulties and challenges. However, product developers should work hard to increases the likelihood of the innovative product success (Jobber et al, 2003).

The stages of the product innovation process can be explained as following:

4.3.1 Generate ideas

Generate ideas is the first stage of product innovation process. The new ideas come from different external and internal sources. These sources can be customers, employees, distributors, sales personnel, consultants, competitors, and others (Curtis& Graham, 1998). All new ideas about product innovation must take their chances of hearing and evaluation. That is because they are the raw material from the next products (Jobber et al, 2003).

The most important sources of collecting product innovation ideas are shown in figure(4.3) and discussed as following:

a. Customers

The customer’s needs and desires are what most businesses want to satisfy. Customers usually cannot tell the businesses about any products they wish to be developed. Customers also do not have an idea about the technical characteristics that the innovative product may contain.

However, customers can give reliable information about the performance of the products they used, and the problems they faced when using them.

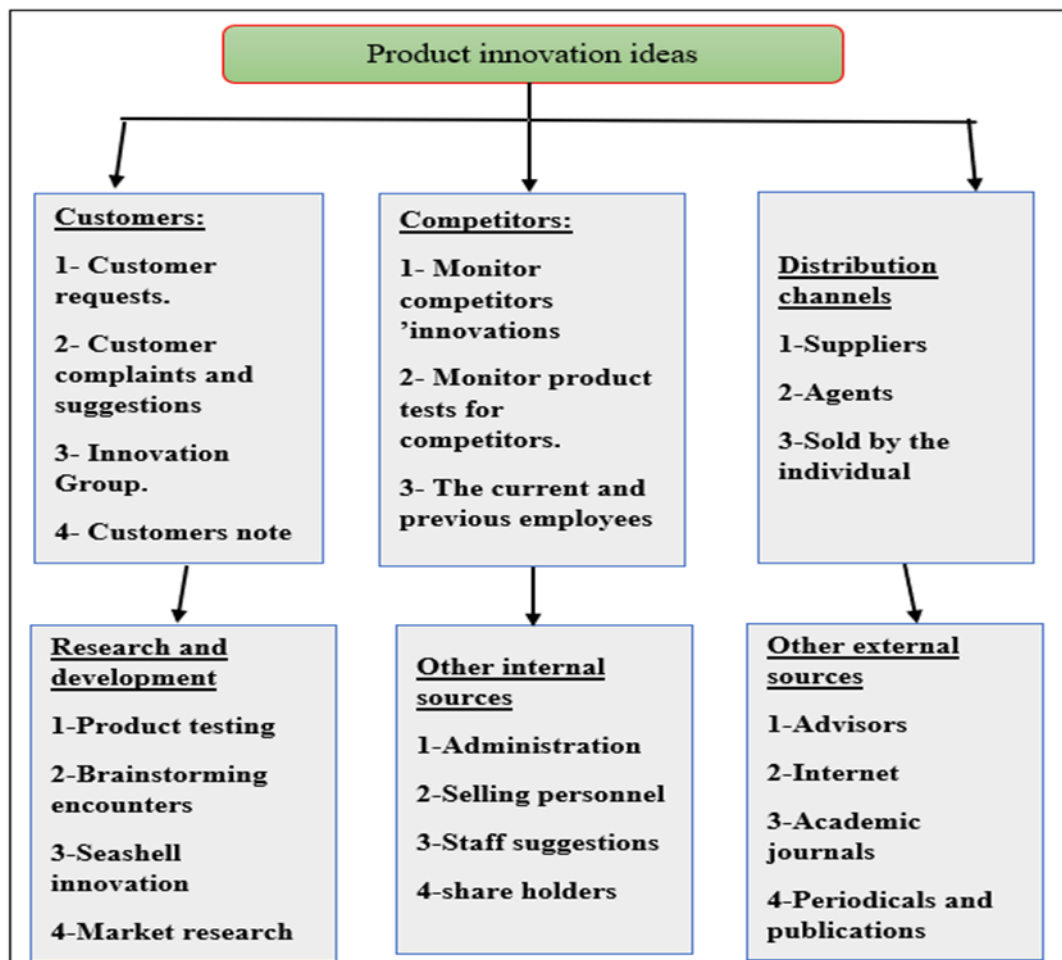


Figure 4.3: Sources of product innovation ideas.

Source: (Kotler& Philip, 1997)

There are several ways to collect innovative product ideas from customers. The most important ones are:

- Acting like the customer

Businesses put members of the innovation team in positions where they could solve significant customer problems. For example, living with customers, noticing where to use the product, and asking them about the issues they face when using product.

- Making direct interview with customers

The direct interview with customers can help better understanding their opinions and observe the problems they face when using the products.

The direct interview with customers can help also understand the customers' needs that do not meet yet. It can also help knowing the benefits provided to them when using the products (Deepak et al, 2019).

- Using the survey

The marketing surveys and questionnaires send by businesses to customers to collect data about their needs, desires. In addition, they used to collect data about the problems that customers face when using the products. Furthermore, they can be used to obtain any proposals or innovative ideas. The surveys are essential source for obtaining creative product ideas.

- Meeting a group of the business's customers

The business's leaders and innovators can do meeting with customers to discuss the characteristics of the next innovative product. That can help obtaining ideas regarding the specifications and functions of the innovative product (Ashill & Jobber, 2000).

- Using the customer complaints and suggestions system

Complaints and suggestions that are submitted to the business directly or by e-mail are sources of new products ideas. These complaints and suggestions can be analyzed to identify the needs and desires of customers.

It is essential to maintain the confidentiality of ideas from the moment the business receives them and in all subsequent stages. Businesses must deal with all information related to product innovation as secrets that must prevent from others.

b. Research and development

Research and development team at any business is one of important sources of innovative products' ideas. The cost of research and development can be high, but it can add businesses' value and benefits (Peter et al, 2007).

c. Businesses' employees

Businesses' employees can provide product innovation ideas whether they come up with them in a deliberate way or by accident. The business should encourage their employees to offer innovative or unfamiliar ideas. The business should also reward contributors for their new ideas (Ong, 2012).

d. Brokers and Suppliers

Brokers and suppliers have essential information about the products, brands, and specifications offered by the businesses.

They know the customer's needs and preferences. They know the reasons that motivate customers to buy specific products. Therefore, brokers and suppliers can be good source of innovative product ideas. They can transfer the information and ideas that extracted to the businesses to produce innovative product (Perreault et al, 2006).

e. Competitors

The competitors are considered as the primary source of innovative product ideas. This is a systematic process of monitoring the competitors' products and projects. The information collected from this process can help finding new innovative product ideas (Srinivasan & Madhav, 1996).

f. External consultants

The external consultants are another source that can provide the business new product ideas. The consultants are marketing professionals who have long experience or knowledge of marketing operations.

2. Filtering the ideas

Filtering the ideas is the second stage of product innovation process. This stage includes screening and identifying the best new ideas that have highly probability of success.

The filtering can be done by removing the ideas that cannot be applied. It can be done by removing the ideas that do not have a strong possibility of success, and giving a chance to ideas that can success through studying or testing. It can also be done by removing ideas that are outside of interest the business does not have the resources and technology to apply them (Jobber et al, 2003).

3. Economic analysis

The economic analysis is the third stage of the product innovation process. The economic analysis is an evaluation of the expected profitability of the product, and its suitability in the market. That is, if the new product is appropriate, the demand should be strong enough to justify entering the market (Harrell & Gilbert, 2010). The financial analysis is an important part of the economic analysis. It includes calculating the prices of the new products, and testing their impact on sales and profits (Fletcher& Keith, 1990).

4. Designing and implementing

The fourth stage of product innovation is the planning and implementing. The important factor of products' success is their design. The good designed product can attract more customers' attention. The innovated products must be compatible with the new technology to be easier for use (Anderson & David, 2004).

5. The market test

The fifth stage of product innovation is the market test. After manufacturing the product, many businesses choose specific market to test their new product. The goal of this test is to observe the extent to which customers buy them (Bove's et al, 1995). Therefore, market testing can be defined as an introduction of the new products to analyze the potential customers' reactions at specific markets (Srinivasan &Madhav, 1996).

The market testing process requires identifying when and where to take the test. It requires determining the test period, what information needed from the test, and

analyzing the test's results. The market testing process is useful for businesses since it can significantly reduce losses and costs. It can also help indicating the ability that the business will continue providing its innovative products (Adams et al, 2006).

6. The trading

The final stage in the product innovation process is trading. When the innovative product is born, it can be available for customers to purchase. Then, the external competitive environment will be the determining factor for its future (Brown & Steve, 1996).

4.4 Chapter Conclusion

Product innovation is an important part of businesses success. Providing innovative products can help businesses obtain high customers' satisfaction. That is because innovative products can satisfy the customers' needs and desires. Products innovative process has many ideas' sources and many stages. Recently, product innovative process is a key factor of market competition.

The marketing information system can play a vital role in the product innovation process. That is because MIS can help collecting data and information that supports the decisions of the specialized managers in all stages of that process.

For example, at the stage of generating ideas, the MIS can collect data and information about candidate ideas for innovative products. It can also organize them according to their sources and analyzes them to get the required results.

5. THE METHODOLOGY AND ANALYSIS

This chapter presents all empirical work including conceptual model, sample of the research, collecting data, statistical analyses, and the empirical results.

5.1 Conceptual Model

The main goal of the research is to measure effect of MIS on customer orientation and product innovation. Also, another goal is to analyze the mediation role of product innovation in relationship MIS and customer orientation. The conceptual model represents the main dimensions of the study. It also represents the nature of the relationships between these dimensions. The model consists of three main dimensions. The first dimension is the customer orientation, which is the dependent variable. The second dimension is the MIS, which is the independent variable. The third dimension is the product innovation, which is the intermediate variable. The conceptual model is shown in figure (5.1).

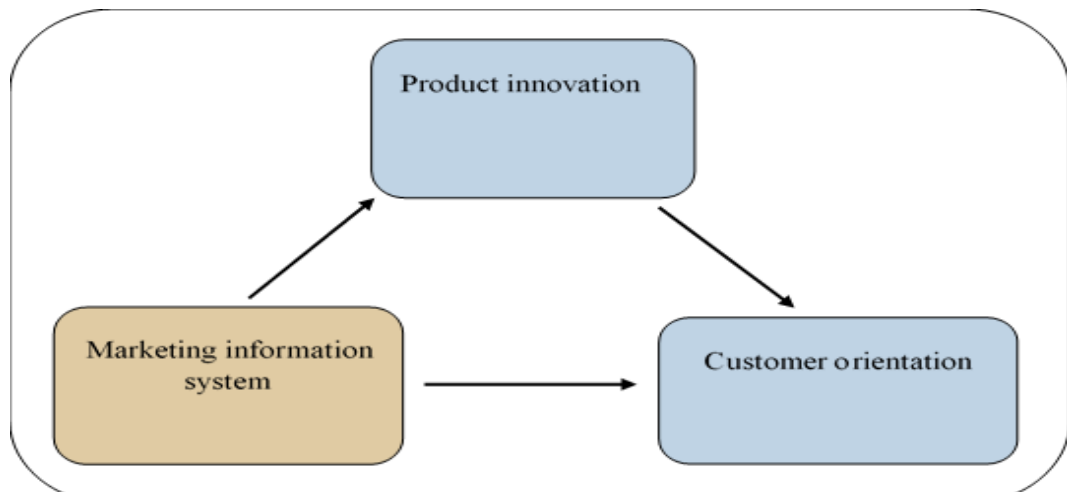


Figure 5.1: The conceptual model.

5.2 The Sample of the Study

This study focused on the manufacturing companies that apply MIS in Mosul, Iraq. The manufacturing companies are 100 companies in that region. However, there are

three companies meet the conditions of having MIS. According to the purpose of the study, data were collected from departments of marketing, planning, research and development, information technology (IT). As a result of interviews with companies, it was determined that there are 130 employees in these departments.

The questionnaire sheets were sent to the three companies. Only 110 returns were received, and 10 of them were ignored because they were not filled completely. The 100 returns were only from one of the three companies which is The State Company for Ready-Made Wear. The other two companies did not respond because these companies have stopped working in MIS practices for a long time. Stopped working in MIS is due to different internal and external factors. The State Company for Ready-Made Wear in Mosul, Iraq is one of the large Iraqi manufacturing businesses. It has many facilities in different locations. It is known for its successful performance since it provides most of the customers' needs in its market. The apparel industry has strong direct connection with the customers. That can help testing the relation between the study dimensions (Al Samman, 2014).

The sample size was calculated based on Slovin's formula, [92]. The sample size was calculated as following:

$$n = N / (1 + Ne^2) \dots\dots\dots (5.1)$$

n: the sample size

N: the sample population = 130

e: the confident level which is 95% (the error is 5%)

$$n = 130 / (1 + (130 * 0.0025))$$

$$n = 130 / 1.325 = 98$$

The study has 100 sample returns, which meets the limit of sample size. Therefore, 100 sample sizes were used.

5.3 Research Methodology

The goal of this study is to investigate the performance of the MIS in a sample of Iraqi businesses. The study contributes to the literature by provides empirical analysis about the performance of MIS in a sample of Iraqi businesses.

The study used the questionnaire method to collect data (Tellis, 1997). The questionnaire was used because it can provide cheap, quick and efficient large

amounts of information. In addition, it also allows getting large sample (Patten, 2016).

The study limitation is the difficulties of collecting data since most companies in Iraq do not have MIS systems.

The study methodology has the following steps:

5.3.1 Collecting data

The method that used to collect data was the questionnaire. The questionnaire has four parts. The first part is the demographic information of the respondents. The second part is related to customer-orientation, which has twelve items. The third part is related to product innovation, which has seven items. The last part is related to marketing information system, which has three items.

The study conducted by Alsuwaidi (2010) was used to form the questionnaire. The questionnaire consists of (22) main items as shown in appendix (A-1). The part of demographic information of respondents includes their name, age, gender, education level, and others (Alsuwaidi, 2010). Table (5.1) shows the numbers of items in the questionnaire that are related to each study dimension.

Alsuwaidi (2010) created a synthesis scale for marketing information systems, customer orientation, and product innovation through the papers by Goetsch & Davis (1997), Sheth, Mittal, & Newman (1999), Boone & Kurtz (1998), Harmon (2003), and Kotler (2003), (Lamb et al, 2004).

Five departments were selected as the target when collecting data. These departments are the planning department, the marketing department, the production department, and the design department. These were selected because of their strong relationship with the study variables.

The questionnaire sheets were printed on paper and gave directly by hand (face-to-face) to each responder. Three days were given to each responder to fill the questionnaire. During these three days, the researcher was talking to the responders to explain any understandable questions. Then, the information from the questionnaire was formed in Excel sheet to be ready for analyzing.

Table 5.1: The study dimensions, and the number of items for each dimension.

Dimensions	Number of questions	The sequence of items in the questionnaire	The sources
Customer orientation	12	Q1- Q12	(Alsuwaidi,2010)
Product innovation	7	Q13- Q19	(Alsuwaidi,2010)
Marketing information system	3	Q20-Q22	(Alsuwaidi,2010)

5.3.2 Data explanation

Before analyzing the data that collected via questionnaire, it is important to start with explaining the characteristics of participants. Then, explaining the descriptive analysis of all questionnaire items. The characteristics of participants are shown in table (5.2).

Table 5.2: The characteristics of questionnaire's participants

Work place	Marketing Dept.	Planning Dept.	Production Dept.	Design Dept.
Male	13	11	22	19
Female	12	14	3	6
Age	28 - 44	40 - 55	35 -58	27 - 36
Education	BA	BA &Master	High school & BA	BA
Experiences (years)	8 -15	13- 18	10 - 20	2 - 16

Table (5.2) shows the numbers of males and females who response to the questionnaire and their work location. The table shows the average ages of the participants in the questionnaire. The table shows the education levels and years of experiences of the participants.

Table (5.3) and (5.4) show the descriptive statistics of the data that are collected from the questionnaire. The tables show the mean and the standard deviation, and

Skewness. The questionnaire items from X1 to X22 are constructed to collected data about the study dimensions.

5.3.3 Data analysis

Before starting the data analysis, some important statistical tests were applied on the data. The data were examined for normality analysis with the coefficients of skewness and kurtosis. The coefficient of skewness is less than (± 3), and the coefficient of kurtosis is less than (± 10) indicates that the normal distribution assumption is met, (Kline, 2011).

To examine the outliers that make multivariate normal distribution difficult, Cook distance values were calculated. Cook distance values greater than (1) indicate that there are outliers (Stevens, 2002). The results of these tests are shown in tables (5.3) and (5.4). The results show that the Skewness values of items range between (1 and 3). That indicates that the data has normal distribution. The results show that there are no outliers in the data set. Accordingly, all items were normal.

After the normality analysis, reliability or internal consistency and validity analysis of the scales were performed via Cronbach Alpha (or coefficient alpha). If the alpha coefficient takes values close to (1), the reliability due to internal consistency is at a high level. If the alpha coefficient takes values between (0.60-0.80), that shows that the scale is reliable. If alpha coefficients was between (0.81-1.00), it means that the scale is highly reliable (Özdamar, 2004).

The results of data reliability are shown in Table (5.5). The results in table (5.5) indicate that the coefficient alpha is (0.91) for orientation towards the customer. The coefficient alpha is (0.87) for product innovation. The coefficient alpha is 0.80 for marketing information system. The overall coefficient alpha is (0.92). These results indicate that that the scales are highly reliable.

The following analyzes were respectively applied to the data:

- 1- Exploratory factor analysis was applied to examine the factor structure. Exploratory factor analysis is a statistical technique that is used to reduce data to a smaller set of summary variables. In addition, it is used to explore the underlying theoretical structure of the phenomena (Kline, 2011).

Table 5.3: Descriptive statistics

Questions	Dimension	Reference	N	Mean	Standard Deviation	Skewness	
						statistic	Std.Error
X1	Customer Orientation		The preference of customer value elements in demand over to-wear:1. cloth2. Fashion3.Price4. Promotion 5. Distribution				
1		Goetsch and Davis,(1997)	100	1.810	0.693	-0.46	0.19
2			100	2.550	0.431	1.05	0.19
3			100	2.250	0.583	-0.75	0.19
4			100	2.250	0.073	0.05	0.19
5			100	2.220	0.317	0.20	0.19
X2			The company offers products that are comparable to its competitors with:1. High-quality fabric2. High price3. Modern Model (Fashion) 4. Good promotion5. Wide distribution coverage				
1		Goetsch and Davis(1997)	100	2.110	0.221	0.91	0.19
2			100	2.100	0.629	-0.72	0.19
3			100	1.990	0.771	-0.20	0.19
4			100	1.650	0.399	0.52	0.19
5			100	1.720	0.903	-0.65	0.19
X3			When customers feel dissatisfied with their products, the company takes corrective action				
			100	1.780	0.317	-1.41	0.19
X5		Sheth and Mittal (1999)	The company directs its production according to the customer's needs and technical capabilities				
			100	1.850	0.039	-0.42	0.19
X6			Management directs excellent customer care				
			100	2.180	0.189	-0.15	0.19
X4			The company offers a variety of products				
			100	1.880	0.526	0.54	0.19
X7		Goetsch and Davis(1997)	The company develops different marketing offers for multiple divisions or classes				
			100	1.970	0.465	-0.18	0.19
X8		(Boone and Kurtz (1998)	Design officials meet directly with customers				
			100	1.390	0.730	0.40	0.19
X9			The goal of the company is to establish continuous relationships and contacts with customers				
		Sheth and Mittal, (1999)	100	1.850	0.963	-0.24	0.19
X10			The company seeks to contact customers (contracts) whose purchases have decreased and to find out the reasons				
			100	1.840	0.970	-0.25	0.19
X11			The company contacts essential customers who have stopped dealing with the company to find out the reasons				
		Boone and Kurtz (1998)	100	1.760	0.258	0.44	0.19
X12			The company gives incentives (discount or gifts) to more dealing customers				
			100	1.920	0.018	-0.35	0.19

Note: items from X1 to X12 are related to customer orientation. The highest average is 2.55 in X1 and the lowest average is 1.39 in X8. The highest Skewness values are 1.05 in X1, and -0.72 in X2. The highest Standard deviation value is 0.970 in X10, and 0.018 in X12.

Table 5.4: Continue of descriptive statistic.

Questions	Dimension	Reference	N	Mean	Standard Deviation	Skewness				
						Statistic	Std.Error			
X13	Product innovation	Harmon, (2003)	Product innovation is everyone's responsibility in the company	100	1.920	0.018	-0.98	0.19		
X14			The overall atmosphere in the company encourages innovation and renewal	100	1.780	0.535	-1.18	0.19		
X15			The company encourages customers to offer product innovation ideas	100	1.700	0.535	1.10	0.19		
X16			The company encourages working individuals to provide product innovation ideas	100	1.680	0.503	1.06	0.19		
X17			The company monitors the innovations of competitors that brought to the market	100	1.990	0.658	1.09	0.19		
X18			The company informs about the latest technologies provided by suppliers in the field of product innovation	100	1.870	0.623	-1.00	0.19		
X19			The internet helps the department work towards product innovation	100	2.020	0.726	-0.82	0.19		
X20			Marketing information system	Kotler, (2003)	When making important decisions, I need information that the company does not provide to me regarding:1. The need and desires of customers for the specifications of the required products2. Promote company3. Characteristics and models of competing products4. Methods of distribution of competitors and their agents5. Promotion of competitors (efficiency and effectiveness)6. Competitive product prices7. Market conditions	100	1.920	0.505	-0.57	0.19
1					100	2.080	0.733	0.02	0.19	
2	100	2.250			0.434	-0.46	0.19			
3	100	1.830			0.503	-1.05	0.19			
4	100	2.330			0.733	0.75	0.19			
5	100	2.330			0.503	-0.05	0.19			
6	100	2.250			0.154	0.20	0.19			
7	100	2.250			0.154	0.20	0.19			
X21	There are magazines/catalogs/brochures about my work that I would like to have	100	2.650	0.171	1.14	0.19				
X22	The company has an information system (computer, records, documents, reports) through which the required information can be obtained:1. Timely2. Comprehensively3. Correctly and accurately	100	2.330	0.503	0.72	0.19				
1	100	2.250	0.154	-0.20	0.19					
2	100	1.520	0.328	0.52	0.19					
3	100	1.520	0.328	0.52	0.19					

Note: items from X13 to X19 are related to product innovation. The highest average was 2.02 in X19 and the lowest average was 1.68 in X16. Items from X20 to X22 are related to MIS. The highest average was 2.65 in X21 and the lowest average was 1.52 in X22. The highest Skewness values are 1.14 in X21, and -1.18 in X14. The highest Standard deviation values are 0.726 in X19, and 0.018 in X13.

Table 5.5: The results of Cronbach alpha test.

Dimension	Number of items	Cronbach Alpha
Orientation towards the customer	11	0.91
Product innovation	6	0.87
Marketing information system	3	0.80
Total	20	0.92

The extracted factors will be used to do the regression analysis that tests the study hypothesis. Pearson correlation coefficients were calculated to determine the relationships between scale factors

2- Regression analysis is used to test the hypotheses. It is important to indicate that for the product innovation to have a mediation role, three conditions required to be applied based on Baron & Kenny (1986).

The first condition is that the independent variable (MIS) should have a significant effect on the mediator variable (product innovation). The second condition is that the independent variable (MIS) should have a significant effect on the dependent variable (customer orientation). In addition, the effect of the independent variable (MIS) on the dependent variable (customer orientation) should decrease. The third condition is that the mediator variable (product innovation) should have a significant effect on the dependent variable (customer orientation) (Baron & Kenny, 1986). Analyzes were performed using SPSS 25.0 statistics package program.

5.4 The Empirical Results

5.4.1 Factor analysis

Before doing the factor analysis, it is important to investigate whether the sample size is sufficient, and whether the data are suitable for factor analysis (Hair et al,2014).

Kaiser-Meyer-Olkin (KMO) coefficient was calculated, and the Bartlett Sphericity test was applied. The results showed that the KMO= 0.88, and the Barlett Sphericity

(χ^2 (190)) = 1165.10, $p < 0.001$). These results indicate that the sample size is sufficient, and the scale data is suitable for factor analysis.

The results in table (5.6) show the correlation between the items that are related to customer orientation (X1 to X12). The results in table (5.6) show that the relationships between the items were found to be statistically significant ($p < 0.01$).

The results in table (5.6) show that the minimum correlation coefficients is ($r = 0.264$), and the maximum is ($r = 0.686$). Therefore, all the items of the first dimension correspond internally. The total score of the axis confirms the internal correlation of the items of the first dimension.

Table 5.6: Correlation between the items of orientation towards the customer.

	It1	It2	It3	It4	It5	It6	It7	It8	It9	It11	It12
It1	1										
It2	0.521**	1									
It3	0.438**	0.293**	1								
It4	0.548**	0.410**	0.358**	1							
It5	0.506**	0.554**	0.264**	0.487**	1						
It6	0.442**	0.624**	0.384**	0.487**	0.663**	1					
It7	0.474**	0.483**	0.444**	0.487**	0.621**	0.747**	1				
It8	0.351**	0.412**	0.338**	0.309**	0.449**	0.367**	0.449**	1			
It9	0.419**	0.590**	0.350**	0.524**	0.613**	0.656**	0.699**	0.562**	1		
It11	0.598**	0.378**	0.499**	0.430**	0.382**	0.382**	0.536**	0.533**	0.544**	1	
It12	0.526**	0.582**	0.439**	0.527**	0.505**	0.648**	0.648**	0.466**	0.686**	0.561**	1

** $p < 0,01$

The results of table (5.7) show the relationships between the items that are related to product innovation (X13 to X19). The results were found to be statistically significant ($p < 0.01$).

The results of table (5.7) show that the minimum correlation coefficients is ($r = 0.378$) and the maximum is ($r = 0.731$). Accordingly, all the items of the second dimension are internally consistent with the overall degree of the second axis. That proves the validity of the internal Correlation of the sections of the second dimension.

Table 5.7: Correlation between the items of product innovation.

	It13	It15	It16	It17	It18	It19
It13	1					
It15	0.559**	1				
It16	0.432**	0.500**	1			
It17	0.553**	0.594**	0.609**	1		
It18	0.640**	0.593**	0.515**	0.731**	1	
It19	0.378**	0.384**	0.477**	0.558**	0.418**	1

**p<0,01

The results of the table (5.8) show the relationships between the items that are related to MIS (X20 to X22). The results were found to be statistically significant ($p<0.01$). The minimum correlation coefficients is ($r=0.521$) and the maximum is ($r=0.605$). Accordingly, all the items of the third dimension are internally Correlation with the overall degree of the third axis. That proves the validity of the internal Correlation of the third dimension items.

Table 5.8: Correlation between the items of marketing information system.

	It20	It21	It22
It20	1		
It21	0.605**	1	
It22	0.521**	0.598**	1

**p<0,01

In general, the results of the internal consistency in the previous tables indicate that the questionnaire tool has a high degree of reliability. In addition, its internal correlation is high too, which indicates that the data are suitable for factor analysis.

Principal component and Varimax vertical rotation methods were applied. Since the measurement tool was designed with three factors, the analysis was done by forcing the scale items into three factors. The factor load was taken as (0.5). According to the study conducted by Hair, et al (2014), the items with a factor load of (0.50) and higher can contribute significantly to the variance (Hair, 2014).

Factor loadings for all items were placed between (0.50 and 0.84). That is, there is no item with a factor load value below (0.50). However, two items (item 10 and item

14) have high factor's loadings in more than one factor. The analysis was repeated by removing these items. Table (5.9) shows the factors, factor loads, and eigenvalues. In addition, it shows the explained variance rates obtained from factor analysis.

Table 5.9: Factor analysis results.

Items	Component			Eigenvalues	% of Variance
	1	2	3		
It9	0,84				
It7	0,77				
It12	0,75				
It5	0,74				
It6	0,74				
It2	0,74			8,50	42,48
It8	0,63				
It11	0,60				
It4	0,59				
It1	0,54				
It3	0,50				
It18		0,82			
It17		0,80			
It16		0,73			
It15		0,72		1,86	9,32
It13		0,69			
It19		0,58			
It22			0,81		
It21			0,80	1,76	8,78
It20			0,73		

The result of the factor analysis showed that the scale consists of three factors. These factors represent customer orientation, product innovation, and marketing information system, respectively.

The factor loads of the items took values between (0.50 and 0.84). The three-factor measurements explain (60.58%) of the total variance.

Table (5.10) shows the coefficients of relationships between the factors.

The table shows that there is a positive and significant relationship between customer orientation scores and product innovation scores ($r=0.610$, $p<0.01$). In addition, there is a positive and significant relationship between orientation towards the customer scores and marketing information system scores ($r=0.420$, $p<0.01$).

Table (5.10) shows that there is a positive and significant relationship between product innovation scores and marketing information system scores ($r=0.386$, $p<0.01$). The results in table (5.10) indicate that there was a moderate relationship between the factors. In addition, they indicate that the internal consistency of the scales were sufficient.

Table 5.10: The coefficients of relationships between the factors.

Factor	M	SD	1.	2.	3.
1. Customer Orientation	1,34	0,41	1		
2. Product innovation	1,62	0,62	0.610**	1	
3. Marketing information system	2,30	0,69	0.420**	0.386**	1

** $p<0.01$

5.4.2 Regression analysis

Using the regression analysis, this part empirically tests the study hypotheses. As indicated before, the study model shows that the marketing information system is the independent variable. It shows that the product innovation is the intermediary variable, and the customer orientation is the dependent variable. The method introduced by Baron and Kenny (1986) was used to test the mediation effect. In addition, the Sobel test is used to determine whether the resulting indirect effect is statistically significant.

The results of regression analysis are shown in the table (5.11). The results show that in the model (1), the results show that ($R=0.39$, $R^2=0.15$, $F_{1, 0.33}=17.16$, $p<0.05$). The results show that the marketing information system effects the product innovation positively and significantly ($B = 0.35$; $p < 0.01$).

As the marketing information system increased, product innovation also increased. According to this result, the H1 hypothesis was accepted.

Table 5.11: The results of regression analysis

				B	SE	t	p	LLCI	ULCI
Model 1									
H1	Marketing information system	--->	Product innovation	0,35	0,08	4,14	0,00	0,18	0,52
Model 2									
H2	Marketing information system		Customer Orientation	0,25	0,05	4,58	0,00	0,14	0,36
Model 3									
H3	Marketing information system	--->	Customer Orientation	0,13	0,05	2,58	0,01	0,03	0,23
	Product innovation	--->	Customer Orientation	0,35	0,06	6,24	0,00	0,24	0,46
Total effect									
	Marketing information system	--->	Customer Orientation	0,25	0,05	4,58	0,00	0,14	0,36
Direct effect									
	Marketing information system	--->	Customer Orientation	0,13	0,05	2,58	0,01	0,03	0,23
Indirect effect									
H4	Marketing information system	--->	Customer Orientation	0,12	0,04			0,06	0,20

Sobel ($Z=3,80$; $p=0,0001$); LLCI= Lower limit of Confidence interval, ULCI= Upper limit of Confidence interval.

In Model (2), the results show that ($R=0.42$, $R^2=0.18$, F_1 , $0.14=21.05$, $p<0.01$). The results show that the marketing information system positively and significantly effects the customer orientation ($B = 0.25$; $p < 0.05$). As the marketing information system increased, customer orientation also increased. According to the result, the H2 hypothesis was accepted.

In Model (3), the results show that ($R=0.64$, $R^2=0.41$, $F_{2, 0.10}=34.08$, $p<0.01$). The results show that the marketing information system can positively and significantly effects customer orientation ($B = 0.13$; $p < 0.05$).

In addition, the product innovation can positively and significantly effects customer orientation ($B = 0.35$; $p < 0.05$).

As marketing information system and product innovation increased, customer orientation also increased. According to that, the H3 hypothesis was accepted.

When product innovation (the mediator variable of the research) was included in the regression analysis, the direct effect of the MIS on customer orientation decreased ($B = 0.13$; $p < 0.05$). In addition, the indirect effect of the MIS on customer orientation was found to be significant ($B = 0.12$; $Z = 3.80$; $p < 0.05$). The results obtained showed that the product innovation variable has a partial mediator role in the relationship between marketing information system and customer orientation. Accordingly, the H4 hypothesis was accepted.

6. CONCLUSION

The fast changes that happened in the entire world including markets conditions and production technologies have increased the global competition. The new age of knowledge, information and communication technology have led businesses to grow up. It also has led them to make many developments in their operation systems. More specifically, it enforces businesses to focus more on improving their operation systems and their products based on customers' needs and desires.

Based on that, the marketing information system has become one of the main factors of businesses' sustainable success. That is because the marketing information system has become one of the essential factors of developing business performance. More specifically, developing marketing information system can lead to high customers' satisfaction.

The businesses today pay more attention to achieve customers' satisfaction. That is because customers now become the crucial factor of marketing activities. Therefore, it is important to develop their marketing information system, customer orientation, and product innovation.

This study was applied on a sample of Iraqi businesses. The study focuses on the Iraqi businesses because the Iraqi economy was closed for more than 20 years. That created many problems related to adopting new technologies especially the use of MIS.

In addition, after 2003, Iraq has become more economically open towards the entire world. That put Iraqi businesses under high pressure and led them to respond to these new changes. However, there is no evidence that can indicate whether Iraqi businesses have developed their MIS.

The goal of the study is to investigate the performance of MIS in a sample of Iraqi businesses. The study tests also whether these businesses have applied customer orientation and product innovation. In addition, the study statistically tests the

relationship between MIS, customer orientation and product innovation of this company.

The data of the study were collected using the questionnaire. Statistical tests were done to ensure that the collected data are reliable and stable, and normally distributed. The correlation tests were used to test the relationships between the variable.

Factor analysis technique was used to identify the study dimensions. Finally, the regression analysis was used to test the study hypotheses.

The results of the study showed that the collected data are reliable, stable, and normally distributed based on skewness and kurtosis coefficients. The results showed that based on Kaiser-Meyer-Olkin (KMO) coefficient, and the Bartlett Sphericity test, the sample size was sufficient, and the scale data were suitable for factor analysis.

Principal component and Varimax vertical rotation methods were applied. Since the measurement tool was designed with three factors, the analysis was carried out by forcing the scale items into three factors. These factors are customer orientation, product innovation, and marketing information system, respectively. The results showed that the three-factor measurement tool explains 60.58% of the total variance.

The regression analysis was used to test the study hypotheses. The results of the study show that MIS can positively and significantly impact the product innovation, and the customer orientation. These results are in line with the findings of the studies conducted by Nedeva (2004), Ashill & Jobber (2000), and Sadiq (2008).

The results show that the MIS and product innovation together can positively and significantly affect the customer orientation. In addition, the results show that the product innovation can have a mediation role in the relationship between MIS and the customer orientation. Following Baron and Kenny (1986), and Sobel test, the results show that product innovation has partial mediator role in the relationship between MIS and customer orientation.

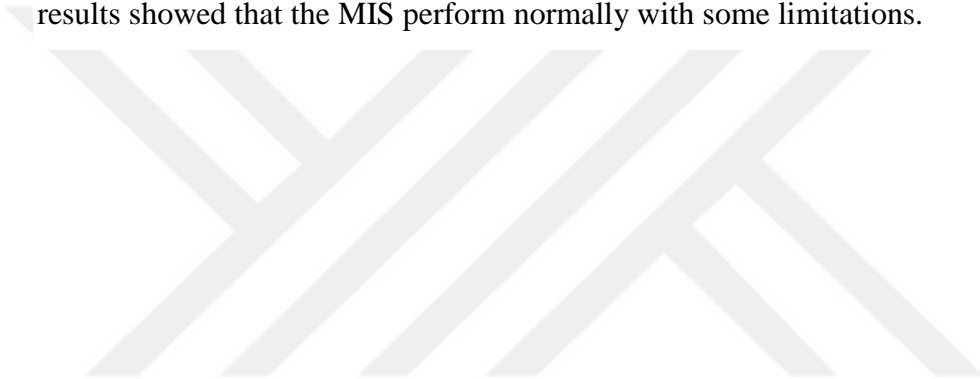
All of these results are in line the literature. Therefore, the MIS is still performing, but its performance is not enough to achieve its goals. In other words, the MIS can positively effect product innovation by 0.35 and customer orientation by 0.25.

However, even the impact of MIS on other dimensions is significant; it is still small in magnitude. That is because the companies in the sample are a public company, which indicate that they may have some limitations.

In other words, the companies are not independent in terms of decision making and getting financial resources. That can negatively affect the performance of MIS.

In addition, Iraqi economy still has many problems such as politics and safety, which can put more restrictions on making development in any Iraqi business.

The contribution of this study is it analyzes the performance of MIS of companies that operate under unstable environment (Iraqi economy). That can lead the expectation about the results to be not in line with the literature. However, the study results showed that the MIS perform normally with some limitations.



REFERENCES

- Abu Jum` a Naeem Hafez**, 2004. Contemporary Trends in Marketing, Arab Administrative Development Organization, GTA, Cairo.
- Adams, R., Bessant, J. and Phelps, R.**, 2006. Innovation management measurement: A review. *International journal of management reviews*, 8(1), pp.21-47.
- Adcock, Dennis, Halborg, Al & Ross, Caroline**, 2001. Marketing Principles & Practice, 4th. Ed, F.T. Prentice-Hall, U.K.
- Ajzen, I.**, 2002. Constructing a TPB questionnaire: Conceptual and methodological considerations.
- Al Samman, T.A.S.**, 2014. Modelling Lean, Agile, Leagile Manufacturing Strategies: An fuzzy analytical hierarchy process approach for readymade ware (clothing) industry in Mosul, Iraq. *International Journal of Advances in Engineering & Technology*, 7(3), p.1091.
- Al-Adwani, Abdul Sattar Muhammad Ali**, 1998. Development of Administrative Information with a Focus on Modern Information Technology, Case Study at the Technical Institute / Mosul, Ph.D. Thesis in Business Administration Unpublished, *College of Administration and Economics, University of Mosul*, pp. 22-25.
- Al-Baghdadi, Adel Hadi**, 2008. "Using the relationship between knowledge management and customer relationship management and marketing within an integrated framework. Regarding Iraqi business businesses." *Iraqi Journal of Administrative Sciences, Volume (5), Iraq, Karbala*, pp.19.
- Al-Bakri, Sonia Muhammad**, 1985. Management Information Systems, Modern Arab Office, c, pp. 196.
- Al-Bakri, Thamer Yasser**, 2002. Marketing Department, Ministry of Higher Education and Scientific Research, University House for Printing and Publishing, Iraq, pp. 19.
- Al-Daiwahi G, Abi Saeed**, 2001. Marketing Research, 1st Floor, Al-Hamid for Publishing and Distribution, Jordan, Amman.
- Al-Dewachi G, Abi Saeed**, 2000. The Modern Concept of Marketing Management, Al-Hamid for Publishing and Distribution, Jordan, Amman, pp .104-141.
- Al-Hawary, S.I.S. and Al-Smeran, W.F.**, 2016. Impact of electronic service quality on customer's satisfaction of Islamic banks in Jordan. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 7(1), pp.170-188.

- Al-Muhtadi, Munther Khidr Yaqoub**, 2003. The Role of Hotel Services Marketing Information System in Promoting Customer Satisfaction - A Case Study of Jian Hotel in Duhok Governorate, Unpublished Master Thesis, *College of Administration and Economics, University of Mosul*, pp.14.
- Al-Qariuti, M.**, 2000. Organizational Behavior a Study of Individual and Collective Human Behavior in Different Organizations. *Dar Al Shorouk, Third Edition, Amman, Jordan*.
- Al-Rahim, Iyad Mahmoud and Salman, Khudair Zughair**, 2005. "Technological innovation and its impact on product design decisions - a case study in the General Company for Electrical Industries," *Journal of Economic and Administrative Sciences, Volume (11), University of Baghdad, Baghdad, Iraq*, p. 36.
- Al-Saad, Allawi Muslim and Al-Olaiwi, Mezher Abdul-Sadah**, 2001. "Factors Affecting Innovation Development in the Industrial Establishment," *Journal of Economic and Administrative Sciences, Special Issue of the First Country Conference on Administrative Sciences, University of Baghdad, Iraq*.
- Al-Shamaa, Khalil Muhammad Hassan**, 2004. Principles of Management with a Focus on Business Administration, Al Masirah House for Publishing, Distribution and Printing, Jordan, Amman.
- Al-Sharman, Ziad Muhammad**, 2004. Introduction to Management Information Systems Mis, 1st edition, Safaa House for Publishing and Distribution, Jordan, Amman, pp. 179.
- Alsuwaidi, Nabil. H.**, 2010. Marketing Information System Oriented Towards Customers and Product Innovations, Doctoral dissertation, The University of Mosul, pp. 20-21 - 169-172.
- Al-Taei, Muhammad Abd Hussein**, 2005. Introduction to Administrative Information Systems, Wael Publishing House, Jordan, Amman, pp. 24-25.
- Al-Taher, Asmahan Majed and Mansour, Ibrahim Mahmoud**, 2009. Requirements for sharing knowledge and obstacles facing its application in Jordanian telecom companies, *the third annual scientific conference, Applied Science University, Jordan, Amman*.
- Al-Taie, Amal Sarhan**, 2006. The Role of Information and Communications Technology in Product Technology, Unpublished Master Thesis, *Department of Industrial Management, University of Mosul*, pp. 24-25.
- Al-Zaywani, Awatef Younis**, 2004. Implications of E-Commerce on the Marketing Performance of Service Businesses, Study on a Selection of Service Businesses in Nineveh Governorate, Ph.D. Thesis, Unpublished. Business Administration, College of Administration and Economics, University of Mosul, pp. 123-124.
- Anderson, David M.**, 2004. Mass customization The Proactive Management of Variety.

- Andrews, F.M. and Gordon, G,** 1970. Social and organizational factors affecting innovation research. Proceedings for the American Psychological Association.
- Armstrong, G., Adam, S., Denize, S. and Kotler, P.,** 2014. *Principles of marketing*. Pearson Australia.
- Ashill & Jobber,** 2000, Marketing Information System (MKIS) Design Characteristic: Preliminary Finding and Future Research Directions.
- Baron, R. M., & Kenny, D. A.** 1986. The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology*, 51(6), pp.1176.
- Berkowitz, N. Eric, Kerin, Roger A., Hartley, Steven W & Rudelius, William** 2000. *Marketing*, Irwin / McGraw – Hill, U.S.A, pp .305.
- Bin Mahfodh, A.B.S. and Obeidat, A.M.,** 2020. Knowledge Sharing Tools and their Impact on Enhancing Organizational Performance. *Sciences*, 10(9), pp.91-112.
- Boone, L.K.,** 1998. DL: Contemporary Marketing Wired.
- Brown, S.,** 1996. Strategic manufacturing for competitive advantage: transforming operations from shop floor to strategy.
- Bueren, A., Schierholz, R., Kolbe, L. and Brenner, W.,** 2004, January. Customer knowledge management-improving performance of customer relationship management with knowledge management. In 37th Annual Hawaii International Conference on System Sciences, 2004. Proceedings of the (pp. 10-pp). IEEE.
- Cicmil, S.,** 1997. Achieving completeness through TQ principles and organizational learning. *The Learning Organization*.
- Cleary, Timothy, Business Information Technology,** 1998. 3ed. Ed., F.T. Prentice-Hall, U.K, pp. 246-247.
- Cooper, Robert G. & Kleinschmidt, Elko.** 1986. An Investigation into the New Product Process: Steps, Deficiencies, and Impact.
- Cox, M. and Alm, R.,** 1999. The right stuff: America’s move to mass customisation. National Policy Center Association. *Policy Report*, (225).
- Curtis, Graham,** 1998. *Business Information Systems Analysis and Design and Practice*, 3rd.ed., F. T. Prentice-Hall.
- Dalrymple, Douglas J. & Parsons, Leonard J,** 2000. *Marketing Management*, John Wiley & Sons, U.S.A.
- Deepak, R.K.A. and Jeyakumar, S.,** 2019. *Marketing management*. Educreation Publishing.
- Dendera, Youssef Abdel-Qader,** (2009). *Tourism Marketing Information Systems, and Tourism Marketing Research*, Studies Academy, Libya pp. 3
- Dennis, Charles,** 2005. *Introduction to System Analysis and Design*, 3rd.ed, pp 20.

- Donalek, J.G.**, 2005. The interview in qualitative research. *Urologic Nursing*, 25(2), pp.124-125.
- Etzel, Michael.J., Walker, Bruce J. & Stanton, William J.**, 2004. *Marketing*, 13th. Ed, McGraw – Hill, U.S.A, New York, pp.223.
- Farahatia, Eid**, 2006. The role of the marketing information system in planning and controlling the marketing activity, *Master Thesis, Faculty of Economic Sciences, Management Sciences and Commercial Sciences, University of Mohamed Boudiaf, Mila, Algeria*, pp.30
- Gandhi, V.P.**, 2002. Decision-oriented market information system for forest and agro-forest products in India.
- Gharib, Delaware Jalal**, 2006. Possibility of Accreditation of Marketing in International Relations, Application in a Sample of Private Banks, Unpublished *Master Thesis in Business Administration, College of Business and Economics, University of Mosul*, pp.12.
- Haag, Stephen, Cummings, Maeve & Phillips, Amy**, 2007. *Management Information Systems for The Information Age*, 6th.ed., Irwin / McGraw – Hill, U.S.A, pp. 282-286.
- Hair Jr, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M.** 2014. *A primer on partial least squares structural equation modeling (PLS-SEM)*: Sage Publications
- Hair, J.F., Celsi, M., Ortinau, D.J. and Bush, R.P.**, 2010. *Essentials of marketing research* (Vol. 2). New York, NY: McGraw-Hill/Irwin.
- Harmon, Robert R.**, 2003. "Marketing Information Systems," *Encyclopedia of*, pp. 6-46.
- Harrell, Gilbert D.**, (2010. *Marketing, Connecting with Customers*. 2nd. Ed, Prentice-Hall, U.S.A. New Jersey, pp .137.
- Holetzky, Sherry**, 2008. What is Customer Loyalty.
- Hughes, Martin & Buchanan, William J.**, 2000. *Mastering: Systems Analysis & Design*, Macmillan Master Series, England.
- Isip, Franklin. B. T**, 2009. Encouraging the use of Slovin's Formula in computing sample sizes in DMS survey related projects. Position Paper, pp.2
- Jeremy Rose, M.A.**, 2000. Information systems development as action research—soft systems methodology and structuration theory.
- Jobber, David & Fahy, John**, 2003. *Foundation of Marketing*, McGraw – Hall Education, U.K, pp. 4-14.
- Kemper, H.G. and Lee, P.L.**, 2003, January. The customer-centric data warehouse—an architectural approach to meet the challenges of customer orientation. In *36th Annual Hawaii International Conference on System Sciences, 2003. Proceedings of the* (pp. 8-pp). IEEE.
- Yassin, Saad Ghaleb**, 2006. *Fundamentals of Management Information Systems and Information Technology*, 1st Floor, Dar Al-Manhaj for Publishing and Distribution, Jordan, Amman, pp. 183-201.

- Kline, R. B.** 2011. Principles and practice of structural equation modeling. New York, NY: Guilford, pp.682.
- Kotler, Philip,** 1997. Marketing Management,9th Ed., Prentice-Hall International, USA, New Jersey, pp.13.
- Kotler, Philip, Saunders, John, Gary, Armstrong, Young, Veronica,** 2002. Marketing: Behavior-Markets-Environment-Information, Mazen Nafaa translation, Part 2, Aladdin Publishing House, Syria, Damascus, pp. 309.
- Lamb, Charles W., Hair, Joseph F.& Carl, McDaniel,** 2004. Marketing, South-Western College Publishing, I.T.P.
- Lancaster, Geoff & Reynolds, Paul,** 1998. Marketing, 1st. Ed, Macmillan Business Master, U.K. pp 11.
- Laudon, K.C. and Laudon, J.P.,** 2011. *Essentials of management information systems*. Upper Saddle River: Pearson.
- Lazhar, Alami,** 2006. The Importance of the Marketing Information System in Marketing Decision Making, Master Thesis, College of Economic and Management Sciences, Ben Youssef ibn Khadda University, *Algeria, (rsscrrs.info)*, pp. 129.
- Levitt, T.,** 1983. After the sale is over... *Harvard business review*, 61(1), pp.87-93.
- Martin, E,** 2006. Survey questionnaire construction. *Survey methodology*, pp.13.
- McCarthy, E.J. and Perreault, W.D.,** 1994. Essentials of marketing: a global-managerial approach. Irwin Professional Publishing.
- McLeod, R. and Schell, G.P.,** 2007. *Management information systems (Vol. 104). USA: Pearson/Prentice Hall*.
- McLeod, Raymond, Ali Ibrahim,** 2000. Management Information Systems, translation of Sorour, Part 1, Mars Publishing House, Kingdom of Saudi Arabia, Riyadh, pp .722.
- Mohamed, Hishmawi,** 2006. New Trends of International Trade in the Light of Economic Globalization, *Ph.D. Thesis, Faculty of Economic and Management Sciences, University of Algeria, (talabadz.info)*, pp. 15.
- Musa, P. and Sattar, A.,** 2012. Development challenges for Iraqi economy. *Available at SSRN 2272855*.
- Najm, Abboud Najm,** 2003. Innovation Management, Concepts, Attributes, and Modern Experiences, Wael Publishing and Distribution House, Jordan, Amman, pp .226.
- Nedeva, Veselina Ivanova,** 2004. Concept of Marketing Information System, *Journal of Sciences*, pp. 4.
- O'Brien, J.A.,** 1999. Introduction to Information Systems. McGraw-Hill, Inc. [32] Little, Ed & Marandi, Ebi, 2003. Relationship Marketing Management, Thomson, London, pp. 47.
- Ong, S.F.,** 2012. Constructing a survey questionnaire to collect data on service quality of business academics.

- Oz, Effy**, 2011. Management Information Systems, 3rd.ed., Thomson, Canada, pp16.
- Özdamar, K.** 2004. Paket programlar ile istatistiksel veri analizi (çok değişkenli analizler). Kaan Kitabevi, Eskişehir, p.633.
- Palia, A.P.**, 2009. Online marketing control with the Strategic Business Unit Analysis package. In *Developments in Business Simulation and Experiential Learning: Proceedings of the Annual ABSEL conference* (Vol. 36).
- Patten, M.L.**, 2016. Questionnaire research: A practical guide. Routledge.
- Patten, M.L.**, 2016. Questionnaire research: A practical guide. Routledge.
- Pride, M. William & Ferrell, O.C.**, 2003. Marketing – Concepts & Strategies, 12th. Ed, Houghton Mifflin Company, U.S.A, pp. 15-30.
- Radwan, Hisham Mohamed**, 2010. Marketing Information Systems, College of Graduate Studies, The Arab Academy in Denmark, (www.aacademy.org), pp. 10.
- Rus, R.V.**, 2006. Decision Support Systems: Concepts, Definitions and Typologies. *Studia Universitatis Babeş Bolyai-Negotia*, 51(1), pp.113-118.
- Sadiq, Derman Sulaiman**, 2008. “Measuring the dimensions of the market - a study in the maternity clothes laboratory in the city of Mosul,” *Iraqi Scientific Journal*, Volume (5), Issue (21), Iraq, Karbala.
- Shafiq, Mona**, 2005. Relationship Marketing, Arab Administrative Development Organization, Research and Studies, c. M. AR, Cairo, pp .45.
- Sheth, J.N. and Parvatiyar, A.**, 1995. The evolution of relationship marketing. *International business review*, 4(4), pp.397-418.
- Smith, J.**, 2000. Measuring value in product development.
- Solomon, Michael R. & Stuart, Elnora**, 2003. Marketing – Real People Real Choices, 3rd.ed., Prentice-Hall, U.S.A, New Jersey.
- Srinivasan, Madhav**, 1996. Profiting from Customer value analysis., Articles, pp .1.
- Stair, R. and Reynolds, G.**, 2020. *Principles of information systems*. Cengage Learning.
- Stevens, J.** 2002. Applied multivariate statistics for social sciences (4th edition ed.). Mahwah NJ: Lawrence Erlbaum Associates Inc, pp.108.
- Strauss, Judy & Frost, Raymond**, 1999. Marketing on the Internet, Principles of Marketing, Prentice-Hall, U.S.A, New Jersey, pp20.
- Tabachnick, B.G. and Fidell, L.S.**, 2007. Using multivariate statistics. Allyn & Bacon/Pearson Education.
- Tawfiq, Hassan Othman Muhammad**, 2006. Using data warehouse management techniques to support marketing decisions, unpublished doctoral thesis in business administration, *College of Administration and Economics, University of Mosul*, pp.18.

Tellis, W, 1997. Introduction to case study. The qualitative report, pp. 269.

Toubia, O., 2006. Idea generation, creativity, and incentives. *Marketing Science*, 25(5), pp.411-425.

Turban, E., Leidner, D., McLean, E. and Wetherbe, J., 2007. *Information technology for management: Transforming organizations in the digital economy*. John Wiley & Sons, Inc.



APPENDICES

Appendix A: The questionnaire form

Form A.1: The questionnaire form

Subject / questionnaire form

Peace, mercy and blessings of God

The form in your hand is part of the requirements for the MBA thesis tagged "THE Mediating Role Of Product Innovation On The Relationship Between Marketing Information System And Customer Orientation " a study on a sample of Iraqi businesses that are located in Mosul, Iraq

Your preference for accurate answers to the questions in a realistic manner will thank you for your cooperation with the researcher

Notes:

The researcher hopes that your honorable person will read the phrases carefully first, and then answer by marking the box that represents your perception within the answer scale.

Please answer the questions accurately and realistically to reach accurate results that enhance the research objectives. Contribute to obtaining accurate results

Researcher

Master student

Osamah Sohaib Muhammad Sabri Al-Wattar

First - General Statements

1. Job Data

Office Name:

Name of the business:

Career Title:

Years of Work Experience in the Company: () Years

2. Personal Data

Gender Male () Female ()

Age: () Years Old

Academic achievement: Ph.D. () MA or higher diploma ()

Bachelor Degree () Technical Diploma ()

Prep () without prep ()

Second - Customer Orientation

Q1 / The preference of customer value elements in demand over ready-to-wear:

	Terms	Agreed	neutral	I do not agree
1- cloth				
2- Fashion				
3- Price				
4- Promotion				
5- Distribution				

Q2 / The Company offers products to its customers that compared to its competitors with:

	Terms	Agreed	neutral	I do not agree
1. High-quality canvas				
2. High price				
3. Modern model				
4. good promotion				
5. wide distribution coverage				

Q3 / When the company feels that customers are not satisfied with its products; it takes corrective action:

Fast ()

Average ()

Slow ()

Q4 / The company offers a variety of products:

Wide ()

Somewhat ()

Limited Variety ()

Q5 / The company directs its production:

According to the Needs of Customers ()

Somewhat ()

According to Technical Capabilities ()

Questions	Terms	Agreed	neutral	I do not agree
Q6	Management directives require great customer attention			
Q7	The company develops different marketing offers for multiple divisions or categories			
Q8	Design officials meet directly with customers			
Q9	The goal of the company is to establish relationships and contacts of continuous nature with customers			
Q10	The company seeks to contact customers (contracts) whose purchases have declined and know the reasons			

Q11 / The Company Calls Important Customers Who Stopped Dealing with The Company to Find Out the Reasons:

- Regularly ()
- Calls Sometimes ()
- Do Not Call ()

Q12 / The company gives incentives (discount or gifts) to the most dealing customers:

- Regularly ()
- Sometimes Granted ()
- No Incentives ()

Three - Product Innovation

Questions	Terms	Agreed	neutral	I do not agree
Q13	Product innovation is everyone's responsibility in the company			
Q14	The company's general climate encourages innovation and renewal			
Q15	The company encourages customers to submit product innovation ideas			
Q16	The company encourages working people to submit product innovation ideas			
Q17	The company monitors the innovations of competitors put on the market			
Q18	The company is acquainted with the modern technologies provided by the suppliers in the field of product innovation			

Q19 The internet helps the department work towards product innovation

Four - Marketing Information System:

Questions	Terms	Agreed	neutral	I do not agree
Q20	When making important (non-routine) decisions, i need information that the company does not provide me with: 1. The needs and desires of the customers about the specifications of the products required by the company 2. Promotion of the company 3. Characteristics and models of competing products 4. Methods of distribution among competitors and their agents 5. Promotion among competitors (efficiency and effectiveness) 6. Prices of competing products 7. Market conditions Other (please list them if applicable):			
Q21	There are magazines/catalogs/brochures of my job that i would like to have			
Q22	The company has an information system (computer, records, documents, reports) to obtain the required information: 1. In time 2. Comprehensively 3. Correctly and accurately			

RESUME

EDUCATION

Degree	Institution	Year Of Graduation
M.Sc.	Istanbul Gedik University, Business Administration	2021
B.Sc.	Mosul University, Management Information System	2009
High School	Omar Ban Abdulazeez / Scientific Section	2005

SPOKEN LANGUAGES

Native Arabic, English and Beginner Turkish.