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The Role of Marketing Information System Technology in the Decision Making Process Case Study: The Banking Sector in Gaza Strip

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Dedication

I would like to take this opportunity to dedicate this research to my father soul, whose love and support encouraged me throughout life.
May the All-Mighty Allah Bless his soul

To my beloved mother whose love has been with me all my life.

To my beloved wife and children
(Raghad, Mohanned, Yousef)
Who has been patient and supportive throughout my study.

To my wonderful brothers and sisters.

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Abstract

The study examines the role of Marketing Information System Technology in the decision making process of the working banks in Gaza Strip. The study population consists of all the banks' branches in Gaza Strip and the main management centers in Gaza Strip and the West Bank. The research targets the branch managers, the deputy managers, and the marketing managers of the banks.

The researcher used the descriptive analytical method and utilized both primary and secondary sources for data collection. The researcher retrieved 99 of the 117 distributed questionnaires, forming a recovery percentage of 84.6%.

The research results show that the managers rely on Marketing Information Systems (MkIS) in making their decisions and they trust these decisions, because the banks have reliable technology and Marketing Decision Support Systems (MDSS) that organizes the information gathered from all sources and analyze the data to help the managers in making marketing decisions. Moreover, MkIS components (i.e. internal records, marketing intelligence, marketing research, marketing decision support system, and the new technology) have effects on the decision making process. In addition, the study found a significant relationship between on one hand MkIS and all of the components and on the other hand the decision making process.

The research results also clarify the use of the MkIS tools in collecting information by the banks, where marketing research is widely used in the process of collecting the information, and is useful in the decision making process. Moreover, internal records are the second most used component for gathering information by the banks, where marketing intelligence is used for collecting information about competitors and all external environment members.

The researcher recommends that the banks should train the employees to use the MDSS available in the bank. In addition, the banks should enhance the use of marketing intelligence, increase the budget allocated for marketing research, and get more information from outside sources rather than depending only on internal source of information.

ملخص الدراسة:

تهدف الدراسة إلى التعرف على دور تكنولوجيا نظم المعلومات التسويقية في عملية صنع القرار في البنوك العاملة في فلسطين، حيث يتمثل مجتمع الدراسة في البنوك العاملة في قطاع غزة والإدارات العامة لهذه البنوك في فلسطين.

واستهدفت الدراسة كل من مدير البنك، نائب المدير ' ومدير التسويق بالإضافة إلى موظفي الإدارة العامة لهذه البنوك.

استخدم الباحث المنهج الوصفي التحليلي واعتمد على عدد من المصادر الرئيسية والثانوية في جمع المعلومات حيث مثلت المصادر الأولية في استبانة صممت خصيصاً لهذه الدراسة، حيث تم استرداد 99 استبانة من أصل 117 أي بنسبة 84.6%.

ومن أهم النتائج التي خلصت إليها الدراسة هو أن مدراء البنوك يعتمدون على تكنولوجيا نظم المعلومات التسويقية في اتخاذ القرار، ويثق المدراء بهذه القرارات، حيث أن البنوك تمتلك التكنولوجيا اللازمة والبرامج التحليلية المناسبة التي تساعد في إتخاذ القرارات التسويقية. بالإضافة إلى ذلك، فإن مكونات نظم المعلومات التسويقية (السجلات الداخلية، الإستخبارات التسويقية، البحوث التسويقية، نظم دعم القرارات التسويقية) لها تأثير مهم على عملية صنع القرار، وقد خلصت الدراسة إلى وجود علاقة ذات دلالة إحصائية بين نظام المعلومات التسويقية ومكوناته من جهة وبين عملية صنع القرار من الجهة الأخرى.

إن بحوث التسويق هي المصدر الأول في جمع البيانات وأن السجلات الداخلية هي المصدر الثاني للمعلومات في البنوك وأن البنوك تمتلك تكنولوجيا حديثة وبرامج تحليلية جديدة ومتطورة، التي تقوم بتحليل البيانات وتساعد في عملية صنع القرار في حين أن البنوك تعتمد على الاستخبارات التسويقية في جمع البيانات حول المنلفسين والبيئة الخارجية.

ومن أهم التوصيات التي يوصي بها الباحث هي أن على إدارات البنوك توفير برامج تدريبية لموظفيها على استخدام نظم دعم القرارات التسويقية، كما يتوجب على البنوك تعزيز استخدام الاستخبارات التسويقية في جمع المعلومات، زيادة موازنة البحوث التسويقية، و بالإضافة إلى ذلك فإنه يتوجب على البنوك الحصول على المعلومات من مصادر خارجية بالإضافة للمصادر الداخلية .

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List of Abbreviations

MkIS	Marketing Information System
IMkIS	Intelligent Marketing Information System
MI	Marketing Intelligence
DSS	Decision Support System
MDSS	Marketing Decision Support System
PMA	Palestinian Monetary Authority
IS	Information System
IT	Information Technology
CMIS	Computerized Management Information System

Chapter One
Introduction

1.1 Introduction

Marketing deals with customers more than any other business function, where building customer relationship based on customer value and satisfaction is the heart of modern marketing (Armstrong and Kotler, 2010). Marketing is defined as "the process of creating, distributing, promoting, and selling the goods, services, and ideas to facilitate satisfying exchange relationship with customers in a dynamic environment" (Pride And Ferrell, 2003).

According to Kotler and Keller (2009), financial success depend on marketing ability, since finance operations, accounting and other functions will not really matter if there is no demand for the company's products and services. Moreover, the competition is increasing day by day in the very fast growing global marketing, and marketing is affected by internal and external environment forces (Taey and Alaq, 2009). Due to those changes, marketing management is a necessity which is defined as the art and science of choosing target market, winning customer loyalty, and attracting new customers through creating, delivering, and communicating superior customer value (Kotler and Keller, 2012). Marketing managers have to know what to sell, when to sell and how to sell the goods and services and in-order to do so, the managers have to get certain information to be able to make the right marketing decision. The value of information increases since it becomes one of the most valuable assets in ranking the competitive rivalry of the modern markets. The marketing managers have to make marketing decisions such as service to provide, price of the service, promoting the service and the place to sell the service (McLeod and Schell, 2001). This means that the firms need a systematic organization and development of Marketing Information Systems (MkIS) which can effectively collect, process and diffuse the necessary information available both to the internal and external levels (Panigyrakis, 2006). MkIS have been seen as a support system for the firms' marketing management with its decision making process; in addition, to the management perspective, marketing information system can be an essential tool for the entire market organization. Kotler and Keller (2012), defines the Marketing Information Systems as "an interacting structure of people, equipment and procedures to gather sort, analyze, evaluate and distribute, timely and accurate information for use by marketing decision makers to improve their marketing planning, implementation, and control". An efficient MkIS captures the status of and the relevant changes in the marketplace while simultaneously ridding the reporting environment of redundant information"(O'Brien et al, 1995).

MkIS help in analyzing product features with customer data, evaluating channel and pricing options, creating and testing promotion plans, gaining instant feedback on concepts and plans, and moving marketing plans rapidly into production (Harmon, 2003). Kotler and Keller (2012) model of a Marketing Information System has four parts, which are Internal records, Marketing Intelligence, Marketing Research, and Marketing Decision Support System (MDSS).

Internal records are the most used information in all the companies around the world such as reports of orders, sales, prices, costs, inventory levels, receivables, payables and so on. When analyzing these data the managers can spot the opportunities and threats facing the firm (Kotler, 2008).

Market intelligence system is a set of procedures and sources used by managers to obtain their everyday information about pertinent developments in the marketing environment (Kotler and Armstrong, 2010). Marketing intelligence is viewed in its totality as a continuing and interacting structure of people, equipment, and procedures to gather, sort, analyze and distribute pertinent, timely and accurate information for use by marketing decision makers to improve their marketing planning, implementation and control.

Kotler (2006) defines marketing research as the systematic design, collection, analysis and reporting of data and findings relevant to a specific marketing situation facing the company. According to Proctor (2005), the marketing research follows certain steps in the procedure to get the desired and accurate results.

Marketing Decision Support System (MDSS) is a set of core applications in the MkIS that provides computer-based tools, models, and techniques to support the marketing decision making process (Kotler, 2006). In the general case, MDSS is optimized for queries of historical data. MDSS data typically are derived from both internal and external market sources.

"Marketing information system technology is IT within the marketing information system (MkIS). The distinction is important as MkIS do not have to contain any IT, they can be completely manually based. In reality most MkIS within financial institutions contain some IT, although the sophistication varies greatly"(Colgate, 1998). However, when using the technology it will be easier to connect all the departments together, at the same time there will be no redundant information. This will lead to better decision making by the firms when faced by either day to day problems, or for a certain problem. According to the above information, all the components of the MkIS have a relation

with the decision making process. The research will concentrate on the use of the MkIS technology in the working banks in Palestine in the decision making process. The banking industry is one of the major industries in Gaza, and there are many different banks working in Palestine nowadays, and the competition is high.

1.2 Research Problem

Since marketing is more than just selling and promoting, marketing information system technology can be useful for the banks, especially large ones in-order to get the firm to higher ranks. Studies about computer-based marketing information systems technology in Gaza has not been done yet. Moreover, we do not know exactly if the banks in Gaza use the marketing information system technology when making decisions.

This study focuses on the role of Marketing Information System Technology in the decision making processes in the working banks in Gaza Strip.

1.3 Research objectives

1. To identify the role of MkIS technology on decision making process..
2. The extent to which the new technology of Marketing Information Systems affects the decision making processes.
3. To assess the role of internal records in the decision making process.
4. To identify the components and outcomes of the marketing intelligence used by the banks and their role on the decision making process.
5. To clarify the sources of information for marketing research, and the marketing research role in the decision making process.
6. To identify the role of MDSS in the decision making process.
7. To assess the role of personal traits on the role of MkIS in the decision making process.
8. To assess the role of organizational traits on the role of MkIS in the decision making process.

1.4 Research hypothesis

1. There is a significant relationship at the level ($\alpha \leq 0.05$) between Marketing Information Systems Technology and the decision making processes in the banking sector in Palestine.
    a) There is a statistical positive relationship at the level ($\alpha \leq 0.05$) between new technology (Hardware, Software) and the decision making process.

b) There is a statistical positive relationship at the level ($\alpha \leq 0.05$) between Internal Records and the decision making process.

c) There is a statistical positive relationship at the level ($\alpha \leq 0.05$) between Marketing Intelligence and the decision making process.

d) There is a statistical positive relationship at the level ($\alpha \leq 0.05$) between Marketing Research and the decision making process.

e) There is a statistical positive relationship at the level ($\alpha \leq 0.05$) between Marketing Decision Support System and the decision making process.

2. There are no significant statistical differences at significant level (α=0.05) among the respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process due to the personal traits of the executives (Age, Gender, Educational Attainment, Field of Specialization, Job Title, Years of experience, and Years of experience as a manager / deputy).
3. There are no significant statistical differences at significant level (α=0.05) among the respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process due to the organizational traits (Type of the bank "Branch/Main", Bank establishment, and Number Of employees, and Workplace).

1.5 Research Variables

1.5.1 Independent variables

- Internal Records
- Marketing intelligence system
- Marketing research system
- Marketing decision support system (MDSS)
- Marketing Information System Technology

1.5.2 Dependent variable

- The role of Marketing Information Systems technology in the Decision making processes.

1.6 Research Limitations:

- The banks in the west bank were not included due to the closure on Gaza and the geographical barriers to get to the west bank. The main offices were contacted

using the phone and the questionnaire was e-mailed to them, where the branches in the west bank were hard to contact.

1.7 Key terms

Marketing Information systems: Kotler and Keller (2012) defines the Marketing Information Systems as "an interacting structure of people, equipment and procedures to gather sort, analyze, evaluate and distribute, timely and accurate information for use by marketing decision makers to improve their marketing planning, implementation, and control"

Internal records (Database): An electronic collections of information obtained from data sources within the company (Kotler and Armstrong, 2010).

Marketing Intelligence: Marketing intelligence is systematic collection and analysis of publicly available information about competitors and developments in the marketing environment (Kotler and Armstrong, 2010).

Marketing research: Albaum and Duerr (2008), defined Marketing research as" the systematic and objective search for, and analysis of, information relevant to the identification and solution of any problem relevant to the firm's marketing activity and marketing decision makers".

Marketing Decision Support System: A decision support system for marketing activity. It consists of information technology, marketing data and modeling capabilities that enable the system to provide predicted outcomes from different scenarios and marketing strategies, so answering "what if?" questions (Wikipedia, 2011).

1.8 Previous Studies

This parts consists of previous studies conducted in Palestine, regional countries, and other international countries. The findings in these studies help in understanding the topic, and in the comparison of the findings between them and this study.

1.8.1 Local Studies:

1. (Wady, 2009), "*The Effect of Marketing Information System (MkIS) on the Marketing Performance: Case study on Banking Sector in Gaza Strip*".

Purpose: Discuss the importance of Marketing Information System (MkIS), and reveals its effect on marketing performance. This study was applied on the banking sector in Gaza Strip.

Methodology: In order to collect the needed data for this research, the researcher chose random sample to rely on questionnaire as an instrument to collect information and recovered (90.0%) of the distributed questionnaires.

Findings: The study revealed that there is significant effect for the availability of hardware and software used in the system on the effectiveness of marketing performance in banking sector in Gaza strip**.** In addition, the Characteristics of marketing information used in the system of banking sector in Gaza is accurate, flexible and appropriate to the purpose.

The researchers found that effective marketing research and marketing intelligence also reflect positively on the marketing performance of the employees in banking sector in Gaza through predicting, allocating and tracing potential problems.

The researchers found that there are strong correlations between all components of MkIS and the marketing performance of the employees.

2. (Al-Astal, 2009), "*the reality of the application and practice of electronic marketing to banks operating in the Gaza Strip*".

Purpose: Identify the reality of the application and practice of electronic marketing to banks operating in the Gaza Strip, from the viewpoint of administrative levels. Identify the difficulties facing the bank's employees, and customers.

Methodology: The researcher used the descriptive analytical approach in the research. The researcher used stratified random sampling method and rely on Questionnaire as an instrument to collect information and recovered (91.81%) of the distributed questionnaires.

Findings: There was indeed a follower of electronic marketing to banks operating in the Gaza Strip, from the viewpoint of administrative levels, as well as provide elements of the use of electronic marketing in the form of (the database, confidence and safety, privacy and confidentiality, support of senior management, research and development).

There was no statistically significant differences at the level of significance a = 0.05 between the views of respondents attributed to demographic factors such as: (sex, age, qualifications, academic specialization, the Job Title, the average monthly income, the number of years of experience, the duration of the using of the internet).

3. (Arafat, 2007), "*Evaluation of Managerial Requirements Toward Utilization Of Decision Support System (DSS) In Palestinian Ministries (PM) In The Gaza Strip*".

Purpose: Evaluate the managerial requirements toward the utilization of DSS in Palestinian Ministries; the practice has been applied in two ministries (ministry of education and ministry of health).

Methodology: This study uses the descriptive analytical approach. The recovered 141 of the distributed questionnaire forming 94.0% recovery percentage.

Findings:

There is proper awareness of DSS importance in Palestinian ministries management levels that facilitate utilization of DSS and there are significant statistical differences at trends of managers in respect to managerial requirements of DSS due to the age in years, experience and education level at significant level *a*= 0.05. In addition, there is a need for awareness enhancements for utilized DSS in Palestinian ministries main management domains (Human Resource, Organization Structure, Business Process, Control of Change and Conduct &Commitment domains) and the Conduct and Commitments are moderate at Palestinian ministries in terms of facilitating utilization of DSS.

4. (Ghonaim, 2004), "*the Role of Computerized Management Information Systems (CMIS) in Palestinian Gaza Strip Municipalities (PGSM)*".

Purpose: Examine on the Role of Computerized Management Information Systems (CMIS) in Palestinian Gaza Strip Municipalities. The study concentrated on exploring the availability extent of CMIS infrastructure and decision making on PGSM in addition to knowing the most important factors that affects the efficiency of CMIS use in decision making.

Methodology: This study uses the descriptive analytical approach. The study population included all 25 municipalities in Gaza Strip, where a special designed questionnaire was designed to collect the primary data, in addition to in-depth interviews with municipalities management personnel.

Findings: The administrators depend on current CMIS as effective system to make decisions, because the information that current system offers are corresponded with decision making requirements and the municipality uses some of CMIS types. In addition, the study revealed the existence of a direct positive relationship between the availability of CMIS infrastructure and the production and use of information needed to

decision making. Finally, the study revealed that there is a direct positive relationship between the existence of CMIS and the production of information needed for decision making.

5. (El-Shantaf, 2000), "*The Role Of Computerized Management Information Systems In The Decision Making Process - A Field Study Of The Commercial Banks Operating In Gaza Strip*"

Purpose: The study aimed to determine the role of computerized Management information systems "CMIS" in the decision making process.

Methodology: The study is conducted upon sixty-one decision makers of three managerial levels (Top, Middle and Executive) in the commercial banks operating in Gaza Strip, The study has comprised thirteen of the commercial banks operating in Gaza, out of a total population of thirty three branches. A questionnaire was used to collect the required data to measure the five main dimensions which determine the efficiency of "CMIS, in addition to personal interviews.

Findings: The findings conclude that 76.92% of the banks have independent MIS department, and the relationship between MIS and decision making is low. In addition, the banks use of new technology is increasing and became more efficient reaching a percentage of 75.0%, where the percentage of the commercial banks operating in Gaza Strip basically dependent on information resulting from "CMIS" on making their decisions has reached 77.45%. Through personal interviews conducted with some persons who work in the commercial banks sector in Gaza Strip, some abstract results were detected of using "CMIS" such as: speeding up of decision making, improving the quality of supervising and controlling, improving services offered to customers, providing new jobs for new specialization's. The "CMIS" aims at providing a variety of services for customers and these services have reached 83.27%.

1.8.2 Regional Studies:

6. (Ismail, 2011), "*The role of Marketing Information System on Decision making: An applied study on Royal Jordanian Air lines (RJA*)".

Purpose: This study aims at highlighting the significance and importance of utilizing marketing information system (MkIS) on decision-making, by clarifying the need for quick and efficient decision-making due to time saving and preventing of duplication of work.

Methodology: The empirical research method was evaluated by specialized experts, conducted by means of questionnaires, where 170 questionnaires were recovered forming a recovery percentage of 85.0%.

Findings: There are significant relationships between internal records, marketing intelligence, MDSS and decision making in the Royal Jordanian Airlines (RJA). However, the researcher revealed that there is no significant relationship between marketing research and decision making in RJA. The researcher concluded that there is a significant relationship between MkIS and decision making in RJA. The empirical study findings confirmed positive relationships between the level of utilizing and adopting "decision support system & marketing intelligence" and the success of an organizational decision making, and provide the organization with a competitive advantage as it allows the organization to solve problems.

7. (Nasri, 2011), "*Competitive intelligence in Tunisian companies*".

Purpose: The purpose of this study is to investigate the degree of knowledge of competitive intelligence in Tunisian companies.

Methodology: This exploratory study was conducted using semi-in depth interviews and focus group with six executives in six companies in Tunisia. Three sectors were chosen for this study: communication technologies, manufacturing and commercial retailing. These companies are prevalent in Tunisia and are very different.

Findings: The results show that Tunisian managers are conscious of the importance of competitive intelligence in the management of their companies. Second, managers believe that internal sources of information are more valuable than external sources information and personal source information is deemed most valuable. Third, the results of the process and structure questions indicate that companies may not yet be investing appropriately in building the internal infrastructure required for fully effective intelligence efficacy. Finally, this practice is not organized in a separate department and, if it is mostly done in the marketing department.

8.(Hashim, 2006), "*The role of Marketing Information Systems in improving marketing performance of public shareholding companies of Jordan*".

Purpose: The aim of the study is to identify the role of MkIS in improving the marketing performance of public shareholding companies of Jordan.

Methodology: This study uses the descriptive analytical approach. The study population included marketing managers of 194 Jordanian companies listed in Amman

stock exchange divided into four groups (Industry, Services, Insurance and Banks). The researcher recovered 77.5% of the distributed questionnaires designed for the study.

Findings: The researcher concluded the findings for all four groups, and he found that all companies use the components of MkIS with high grade, and also concluded that the banking industry and the Insurance industry are updating their technology more often than others. The study also reveals that internal records are the most dependent on component of MkIS for gathering information. The main findings were that there is a correlation between the availability of MkIS and the improvement of marketing performance, and there are significant relationships between marketing intelligence and marketing research in setting the companies' strategic goals.

1.8.3 International Studies:

9. (Ahlstedt, 2007), "*Implementation of an IT based Marketing information system in a high tech company*".

Purpose: "The aim of this thesis has been to try to answer the question of how an IT based marketing information system support the formation of business and product related strategies and when and how such a system should be integrated in a company.

Methodology: Analytical meta-study of published literature condensed through a SWOT analysis and combined with a qualitative evaluation of questionnaires directed to companies with experience of developing and implementing marketing information systems.

Findings: Company size and market volatility decides the time of implementation of a marketing information system. Implementation should be initiated top-down in order to secure full organizational inertia. The approach should be holistic and tailor-made for each specific organization. Users should fully integrated in development and implementation.

10. (Gounaris et al, 2007), "*Measuring the effectiveness of marketing information systems. An empirically validated instrument*".

Purpose: The purpose of the study is to design and empirically validate an instrument for measuring the effectiveness of a marketing intelligence system.

Methodology: A thorough review of the literature of IS in general and MkIS in particular was the foundation for a new conceptualization of MkIS effectiveness, which was developed into a measuring instrument for experimental application to data collected by a pre-tested postal questionnaire from 254 five-star hotels in Greece.

Findings: The effectiveness of MkIS is found to comprise both internal and external components, related on the one hand to the extent to which the user organization

improves functional effectiveness and corporate climate and on the other hand to its adaptability to market conditions and its customer responsiveness.

11. (Ganeshasundaram and Henley, 2007) "“*Decision research” correlates directly with better business performance*".

Purpose: Proceeding from the widely accepted but relatively untested premise that the gathering of intelligence via market research is central to business success, this paper reports a study investigating the extent to which the type of research carried out influences the level of business performance.

Methodology: Firm size and the market research budget were taken into account as potential confounding variables. ANOVA, MANOVA and factor analysis were applied to data gathered from responses to a questionnaire developed by Diamantopoulos and Souchon, appropriately modified to the specific conditions of this study.

Findings: Companies carrying out mostly “decision research” rated themselves as performing generally better than those placing more emphasis on “background research” regardless of the size of the firm or it’s market research budget. They scored highly on return-on-assets, return-on-sales and sales growth, and exhibited positive overall performance. The initial finding was strongly reinforced by factor analysis, 98% of the variation in business performance being explained by the categorization of a company's research as dominantly “decision” “background” or “mixed”.

12. (Wood, 2001), “*Marketing Information Systems in Tourism and Hospitality small- and – Medium sized Enterprises: a Study of Internet use for Market Intelligence*”.

Purpose: The study investigates the nature of marketing information systems with small- and– medium sized enterprises and focuses on the importance of external information and market intelligence.

Methodology: A survey was chosen as the main method of data collection. The types of companies selected were to cover two main subgroups of tourist attractions and accommodation. These companies were classified as small or medium sized using the DTI classification of less than 250 employees and were independently run. The survey was administered in the form of postal questionnaire. A pilot survey of five companies was undertaken in order to test the appropriateness of the questions, comprehension, relevance, response rates, etc.

Findings: The enterprises make use of informal marketing information systems which mainly concentrate on internal and immediate operating environment data. Important wider marketing intelligence is underutilized owing to the resources constraints of these

smaller businesses, and the MkIS used in the medium sized firms is based largely on internal data.

13. (Li, McLeod, and Rogers, 2001), "*Marketing information systems in Fortune 500 companies: a longitudinal analysis of 1980, 1990, and 2000*".

Purpose: The aim of this stud is to reveal the pattern in MkIS usage in Fortune 500 companies.

Methodology: The study population in this study consisted of managers of marketing research in Fortune 500 companies listed in the April 1999 issue of Fortune magazine. A four-page questionnaire was sent and recovered only 51 questionnaires, forming a recovery percentage of 10%. The questionnaire was divided into two sections. The first section contained general questions regarding the computer and networking support. The second section contained specific questions relating to the MkIS support.

Findings: This study is the first where the marketing managers reported a decrease in the existence of an MkIS in their firms. Many marketers today are using computers and the Internet. They are more and more knowledgeable about computer technologies and actively taking part in creating computer applications to meet their own information needs. In addition, 96% of the marketing managers have a computer available and 88% use it daily indicates that the computer is a vital part of marketing operations and management. The study revealed that data warehouses and data mining techniques will become essential for marketers to fully utilize their internal data and environmental information.

14. Nelson, R. (1999), "*Bank Marketing and Information Technology: A Historical Analysis of the post-1970 Period*".

Purpose: Analyzing the bank marketing and information technology in the working bank in the United States, and check the level of alignment between the marketing and information services.

Methodology: Literature review and Semi-structured interviews with the managers at several organizations within the United States retail banking industry were conducted.

Findings: There is a lack of alignment and integration between the marketing and information services in the banks. Improving the communication between the marketing and information systems will lead to better performance by the banks.

15. **(Xianzhong, 1999)**, "*The strategic orientation of marketing information systems – an empirical study*".

Purpose: The aim of the study is to examine the current practice of the strategic function of marketing, and the application of information systems in supporting the strategic function.

Methodology: The companies selected for conducting this study were drawn from company database by specifying industry as ``computer" and ``finance". In total 200 companies with employees over 250 have been selected. Small entrepreneurial firms thus are excluded from the study due to the concern that small sized companies may not commit to strategic activities to a significant extent. A total of 200 questionnaires were mailed to the named addressee which had recovered only 55 of them, where 58.2% of the respondents are either marketing directors, or marketing managers.

Findings: The study reveals that the strategic function of marketing has been perceived important by marketing managers, and many companies perform some of the strategic functions, such as market segmentation/targeting, competition and market analysis. Yet, the application of MkIS does not keep abreast with the current practice of marketing strategic function. Qualitative data generated from the survey suggests that marketing managers view lack of a strategic sense and vision by some marketing managers and professionals, and lack of a strategic marketing culture and organizational support that enable the company to gear towards strategic marketing; in addition to the lack of knowledge, experience and tools to diminish overwhelmed data from the marketing daily operations, and to base the development of strategic oriented marketing information systems as the main barriers that hamper the shift towards strategic oriented marketing and MkIS. Moreover, the size of a company and communication is the biggest barrier to success.

16. (Colgate, 1998), "*Creating sustainable competitive advantage through marketing information system technology: a triangulation methodology within the banking industry*".

Purpose: This paper hypothesizes that marketing information system technology can leverage this sustainable competitive advantage ahead of other marketing technologies which bank management have implemented or are thinking of implementing. An analysis of the current use of marketing information system technology, however, reveals low levels of sophistication throughout the UK and Irish retail banking

industries. Given this fact, the factors involved in successfully implementing marketing information system technology are presented.

Methodology: Empirical evidence was drawn from 48 postal questionnaires conducted in the UK and Ireland and ten case studies undertaken in the UK, USA and Australasia.

Findings: From the quantitative data it was found that the most successful banks in terms of implementing IT were those banks who had greater responsibility in marketing activities, had a clear vision of what MkIS technology should be used for and where they should be heading in the future, had a strong marketing culture and had available resources to invest into MkIS technology.

17. (Amaravadi et al., 1995), *"Intelligent marketing information systems: computerized intelligence for marketing decision making*".

Purpose: Introduce IMkIS as a decision-making aid for managers.

Methodology: Secondary sources of information used to collect the information needed for the study, and comparison between the authors opinion to come with the final coclusion.

Findings: IMkIS has the potential to address some of the pressing concerns facing marketers today. It could help in analyzing product features with customer data, evaluating channel and pricing options, creating and testing promotion plans, gaining instant feedback on concepts and plans, and moving marketing plans rapidly into production. The knowledge-base component of the Intelligent MkIS enables marketing expertise to be accessed and shared easily. Marketing managers should seriously consider the potential of interfacing artificial intelligence with conventional MkIS in order to have a system that supports their strategic decision making.

18. (Li, 1995), "*Marketing information systems in the top U.S. companies: A longitudinal analysis*".

Purpose: The purpose of the study is to determine the overall status of MkISs in top U.S. companies.

Methodology: A questionnaire concerning the use of MkIS with instructions for completing it was mailed to the marketing executives of the top 1000 firms listed in a recent issue of Business Week. 138 replies were returned. The questionnaire was pretested twice to determine its format and wording. The final questionnaire was sent to all 1000 executives.

Findings: Of the 138 respondents, 25% said that they did not have a corporate MkIS; however, they all agree that computers are needed by marketing managers, for retrieving data and then storing and processing it.

Internal accounting continues to be the most important source of MkIS information while the use of marketing intelligence and marketing research as information source

are more balanced, where Decision models are used mostly for product and price decisions.

19. (Talvinen, 1995), "*information systems in marketing, identifying opportunities for new applications*".

Purpose: The purpose of this article is to identify opportunities offered by integrating MkIS with other marketing and management related IS in the company.

Methodology: Analysis were based on a literature review in the context of marketing management and IS in marketing. To make the study feasible, the analysis were limited mainly to traditional, internal IS.

Findings: Information technology has a key role to play in new flexible organization forms such as strategic partnerships and cross-functional networks. While new organizations will be designed around business processes rather than functional hierarchies, we definitely have a need also for new kinds of IS in marketing. In fact, IS will be the cornerstone of a new approach to marketing. Therefore management and systems designers should be better aware of the avenues available to integrate marketing and management processes in new innovative ways.

20. (Talvinen, and Saarinen 1995), "*MkIS support for the marketing management process: perceived improvements for marketing management*".

Purpose: First, to evaluate which information included in marketing information systems (MkIS) has been important in providing support for the marketing management process. Second, to analyze what improvements in marketing and sales have been realized by implementing MkIS to support the marketing management process. Third, to investigate, in more detail, what operational MkIS sub-systems have contributed to improved effectiveness for implementing and controlling marketing efforts.

Methodology: They conducted a mail survey in Finnish wholesale companies followed by in-depth case studies in two organizations. In the mail survey their unit of analysis was senior marketing management and in the case studies the entire marketing organization.

Findings: The findings of this study indicated that in order to achieve improvements in the fifth step of the marketing management process, i.e. implementing and controlling marketing efforts, an operational MkIS should be used for telemarketing and especially for direct mailing.

21. (Saaksjarvi and Talvinen, 1993), "*Integration and effectiveness of Marketing Information Systems*".

Purpose: The purpose of the study is to empirically evaluate the impact of integration of MkIS on marketing effectiveness. Also, studying of several parts of the system that could improve effectiveness.

Methodology: The methodology used was by selecting one large organization the detailed and case-oriented study. Two broad principles of case selection by Markus were used.

Findings: Technical integration of marketing systems is needed, since many of the users need several subsystems of the MkIS in their work. This seems to result in a significantly better service level and benefits of the system.

22. (Li et al., 1993), "*Marketing information systems in the Fortune 500 Companies: Past, Present, and Future*".

Purpose: This study is to examine the attitudes of marketing executives in *Fortune 500* firms toward their marketing information systems (MkIS).

Methodology: The population selected is the marketing executives for the fortune 500 companies. A questionnaire was mail to them with questions about the firm's usage of information systems.

Findings: The findings indicated that although 132 firms have returned the questionnaires, only 99 firms indicated they have some forms of MkIS. The responses from the 99 firms were analyzed and compared with those of the two similar earlier surveys on *Fortune 500* firms, one in 1972 and the other in 1980. The results of this survey revealed that 35 of the 95 managers (37%) who answered the question regarding the MkIS framework view their MkISs as the data gathering and information producing system known as the framework of the marketing information system. Eighteen managers (19%) see their MkISs as systems intended to help the manager answer key questions, 16 managers (17%) regard their systems as data banks and model banks, and 12 managers (13%) see their systems as primarily helping in the development of marketing programs.

1.9 Distinction of the Study

The findings of the previous studies show that, the organizations around the world are depending more on new technology in processing their operations. MkIS is used widely in all kinds of businesses, and has a great effect on decision making. The studies also show that MkIS popularity is increasing, and the information gathered by the firms is stored in the database, where it can be easily reached when making decisions.

The previous studies concentrates on MkIS in general or at one component of the MkIS only; moreover, studies about the MkIS use in the Palestinian banking sector has not been done, where this study concentrates on the use of each component of the MkIS in the banks, and it shows the level of importance to each component with regard to the MkIS. In addition, the study reveals the use of the MkIS in the banks, and clarifies the sources of information that the banks rely on.

Chapter Two
Literature Review

2.1 Marketing Information System (MkIS)

2.1.1 Introduction

There are some firms which lack information sophistication, and others do not have marketing research department, and others do their work on a routine basis. "Without good marketing information, managers have to use intuition or guesses-and in today's fast-changing and competitive markets, this invites failure." (McCarthy and Perreault, 1993). Moreover, there are some managers who complain about the lack of information, getting the information needed late, and getting too much information that they can't use. All the firms around the globe should organize the information and distributed in a timely fashion continuously. The firms have functional information systems that consist of Marketing IS, Manufacturing IS, Finance IS, Human Resource IS, and Information Resource IS (McLeod and Schell, 2001). The firms have to study the manager's needs and design a Marketing Information System that really meets their needs (kotler and Keller, 2012).

Kotler and Armstrong (2010), pointed out that there is no one MkIS that will serve all organizations because of the unique information requirements of different organizations which are composed of sub-systems and they have been built over a long period of time. From the marketing management point of view, MkIS are tools for managing marketing information, marketing research, modeling marketing transactions, decision making in marketing, planning marketing strategy and tactics, budgeting, analyzing different courses of action, and reporting and control(Li, 1995) and (Higby and Farah, 1991).

The general system elements for any MkIS include a data acquisition system, database management system, graphical and statistical analysis tools, model base, directories (specific data elements/information classification schemes) and retrieval systems (Amaravadi et al., 1995).

2.1.2 Definition

Marketing Information System (MkIS) was first seen by Cox and Good (1967) as a set of procedures and methods for the regular planned analysis and presentation of information for use in making marketing decisions. The purpose of the earliest marketing systems was to gather, sort, analyze, evaluate and distribute pertinent, timely and accurate information for marketing decision makers to improve their planning, implementation and control (Talvinen, 1995).

Cox (1979), defined MkIS as “a structured, interacting complex of persons, machines and procedures designed to generate an orderly flow of pertinent information, collected from both intra- and extra-firm sources, for use as the basis for decision making in specified responsibility areas of marketing management.

"An MkIS is an organized set of data that is analyzed through reports and statistical routines and models on an ongoing basis. The data are transformed into information that allows the marketing manager to make better decisions and perform better planning and budgeting"(O’Brien et al., 1995).

"An MkIS is a computerized system that is designed to provide an organized flow of information to enable and support the marketing activities of an organization", (Harmon, 2003).

All of these descriptions envisioned the MkIS as an information processor, gathering data and information from the marketing environment, processing that data and information, and providing the results to marketing managers in the form of management information. The managers would act on the information and make decisions that affect the environment as well as the firm's operations (Li et al., 1993).

2.1.3 Benefits and Importance of MkIS

One of the very first benefits that a company derives from the use of IT-based MkIS is improvements in the reporting system. Information processing becomes faster and the company’s management is able to relate pertinent information from different sources within the organization (Van Bruggen et al., 2001). Such information would be almost impossible to bring together in a meaningfully and integrated fashion without the necessary IT infrastructure. The purpose of MkIS applications is to integrate inputs from various organizational functions into a holistic and meaningful map of company’s activities, depicting its interactions with suppliers, customers, and so on. As a result of doing this in a timely fashion, decision making is enhanced by relying more on facts than gut-feeling and intuition (Van Bruggen et al., 1998; Talvinen and Saarinen, 1995). This is a major prerequisite for developing realistic and successful marketing plans (McDonald and Payne, 2005), which in turn affects both the company’s marketing planning process and the outcome of this process (Amaravadi et al., 1995; O’Brien et al., 1995). Such improvements in the marketing planning effort have, among many other consequences, a positive direct effect on marketing operations (Baker, 2001). As companies assimilate the IT-based MkIS, they eventually become capable of

transforming marketing intelligence into concrete benefits for their customers (Brady et al., 2002), which in turn allows them to improve their marketing operations.

MkIS gives the management the opportunity to make better decisions by providing a flow of information continuously, such as prices, advertising expenditures, sales, competition, and distribution expenses (Pride and Ferrell, 1987).

MkIS has been a tool for analyzing both internal and external effectiveness of marketing and for controlling marketing activities and environment. MkIS can be seen as a natural expansion of traditional market research (Heiser et al. , 1987). From the planning point of view, analyzed data in MkIS are used as a basis for planning, but planning itself is done in other systems and often manually (Talvinen, 1995). Implementation and control of these plans is then performed with the help of management and operational MkIS.

The MkIS can enable marketers to collaborate with customers on product designs and requirements.

MkIS systems are designed to be comprehensive and flexible in nature and to integrate with each other functionally. They are formal, forward looking and essential to the organization's ability to create competitive advantage. The MkIS is the firm's "window on the world" and, increasingly, it is the primary customer interface (Harmon, 2003).

An MkIS can support managers in their marketing decision due to the fact that MkIS provide integration between functional departments or divisions (O'Brien et al., 1995).

MkIS plays a major role in the international marketing decisions support system. MkIS involves data collection, data management, data storing and retrieving, processing data into useful information, and disseminating information to people inside the firm who need the information (Albaum and Duerr, 2008).

An MkIS organizes the data that has been available to the firm in order for it to be available when needed. Most of the companies have information processing specialists who are assigned for making standard reports from the available data to help managers make better decisions (Perreault and McCarthy, 1993).

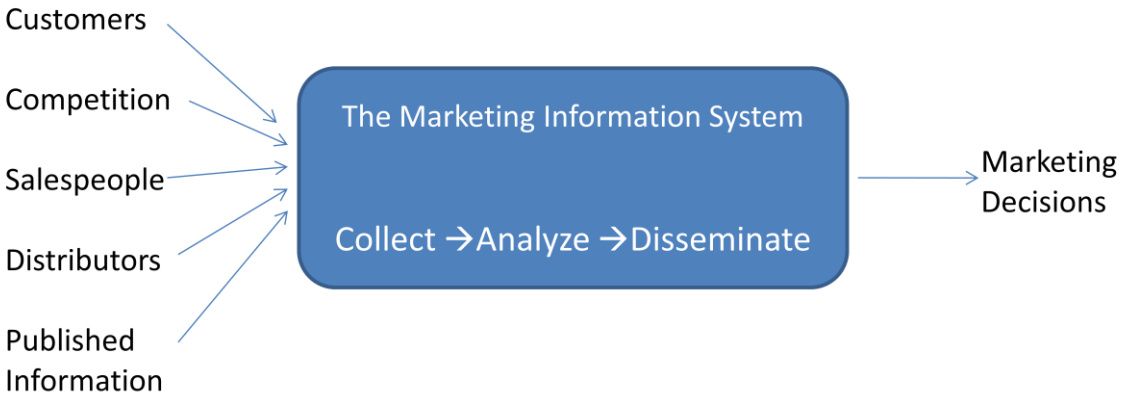
Amaravadi et al. (1995) mentioned, "Intelligent Marketing Information System (IMkIS) has the potential to address some of the pressing concerns facing marketers today. It could help in analyzing product features with customer data, evaluating channel and pricing options, creating and testing promotion plans, gaining instant feedback on concepts and plans, and moving marketing plans rapidly into production".

According to Harmon (2003), the primary benefits of the MkIS can be useful in the areas of functional integration, market monitoring, strategy development, and strategy implementation.

- *Functional integration:* The MkIS enables the coordination of activities within the marketing department and between marketing and other organizational functions.
- *Market Monitoring*: Through the use of market research and marketing intelligence activities the MkIS can enable the identification of emerging market segments, and the monitoring of the market environment for changes in consumer behavior, competitor activities, new technologies, economic conditions and governmental policies.
- *Strategy Development*. The MkIS provides the information necessary to develop marketing strategy. It supports strategy development for new products, product positioning, marketing, pricing, personal selling, distribution, customer service and partnerships and alliances.
- *Strategy Implementation*. The MkIS provides support for product launches, enables the coordination of marketing strategies, and is an integral part of sales force automation (SFA), customer relationship management (CRM), and customer service systems implementations. The MkIS enables decision makers to more effectively manage the sales force as well as customer relationships.

There are three roles for the marketing information system according to Assael (1993), which are data collection, analysis, and dissemination. The MkIS must be able to collect relevant data from different sources such as customers, competition, and government. At the mean time, the MkIS must be able to analyze the data, and disseminate the data to the management and the departments in the firm (Assael, 1993). The figure (2.1) explains the role of MkIS:

Figure (2.1): Role of MkIS



Source: Assael, H., 1993, p.210

2.1.4 MkIS Functions

According to Alzabi (2010). the functions of nay MkIS are :

1. Identify information needs.
2. Gathering information from different sources.
3. Data processing and preparing the information for use.
4. Disseminating information to the decision makers.
5. Saving and recording the information.

2.1.5 Types of Marketing Information

A Marketing Information System supplies three types of information (scribd.com, 2011):

1. **Recurrent Information:** The data that MkIS supplies which includes data such as sales, Market Share, sales call reports, inventory levels, payables, and receivables. which are made available regularly. Information on customer awareness of company's brands, advertising campaigns and similar data on close competitors can also be provided.

2. **Monitoring Information:** The data obtained from regular scanning of certain sources such as trade journals and other publications. Here relevant data from external environment is captured to monitor changes and trends related to marketing situation. Data about competitors can also be part of this category

3. **Problem related or customized information:** Developed in response to some specific requirement related to a marketing problem or any particular data requested by a manager. Primary Data or Secondary Data (or both) are collected through survey Research in response to specific need.

2.1.6 Factors helped in the spread of MkIS

As seen of the benefits and importance of MkIS, there are some reasons why MkIS is widely spread and used by the organizations. According to Alzabi (2010), there are five factors helped in the spread of MkIS :

1. Restrictions on the time allocated for the manager to make decisions and the speed needed to make many decisions.
2. The diversity and complexity of marketing activities and it's increase in depth.
3. Information revolution and stunning development in information technology and computers.
4. The growing discontent of consumers due to the lack of adequate knowledge of management of their expectations, needs and desires.
5. Deficit in energy and other raw material resources necessary for the industry.

2.1.7 Difficulties of MkIS

"Setting up a MkIS requires a significant investment of time and money. Trained personnel are needed to maintain and analyze the data collected in the system. Vast amounts of data can be readily obtained with computerized systems; therefore, businesses sometimes have to prioritize the kind of information that is most useful to them." (Farese et al., 2003).

2.1.8 Designing MkIS

Companies must design effective marketing information systems that give managers the right information, in the right form, at the right time to help them make better marketing decisions (Armstrong and Kotler, 2007). There is no one MkIS that is suitable for all companies, that is the reason why the companies design their system on a way that will best fit the needs. According to Alzabi (2010), there are some factors that has to be taken in consideration when building the MkIS. These factors are

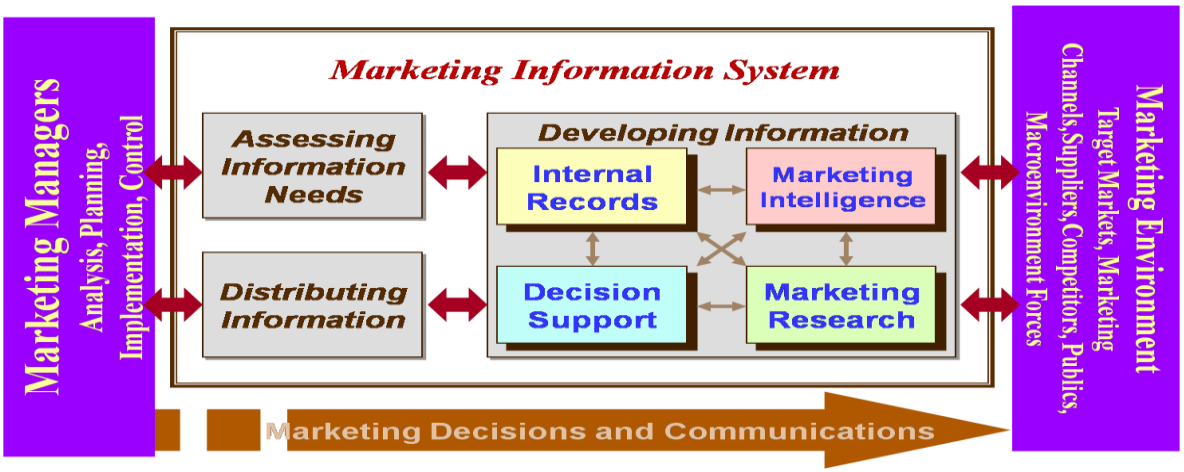
1. How to reach and get the needed data?
2. A continuous flow of information, and input it in the system in a timely fashion.

3. The ability to provide the reports to the management in a way that will help in the decision making process.
4. The system must be flexible, which means that the system will be able to have some modifications whenever needed.
5. The system designer should be one of the decision makers in the firm.

2.1.9 MkIS Models:

Kotler (2012) defines the Marketing Information Systems as "an interacting structure of people, equipment and procedures to gather sort, analyze, evaluate and distribute, timely and accurate information for use by marketing decision makers to improve their marketing planning, implementation, and control" (Kotler, 2012).

Figure (2.2): Shows Kotler model for MkIS

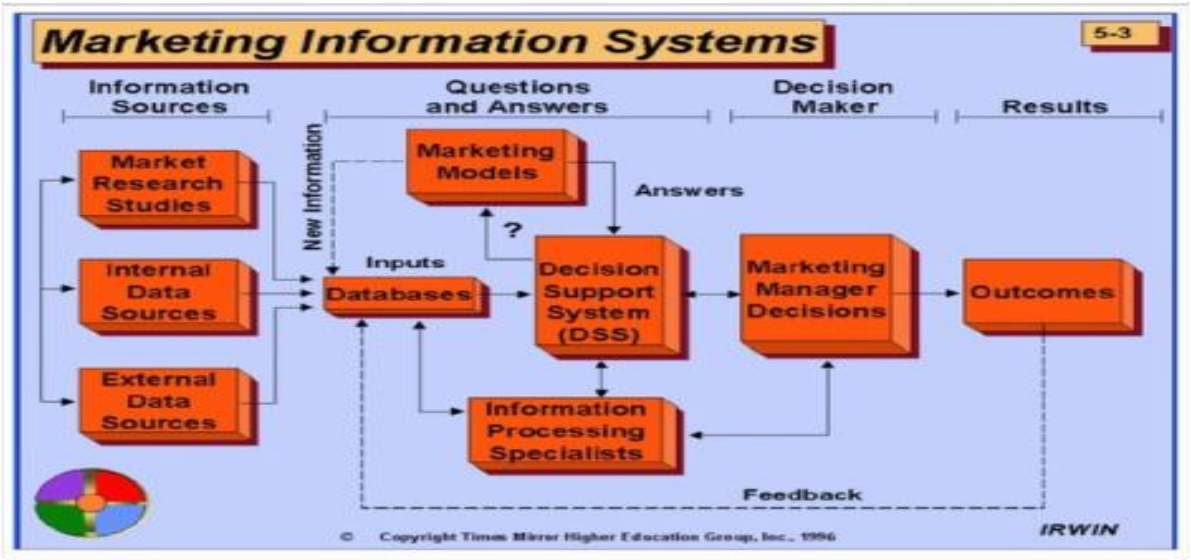


Source : Armstrong and Kotler (2005), pp. 110.

(Perreault and McCarthy, 2003), "A Marketing Information System is an organized way of continually gathering and analyzing data to provide marketing managers with information they need to make decisions. Perreault and McCarthy added, that in some of the companies an MkIS is setup by the marketing managers, where in other companies the system is setup by a group that provides information to every department inside the firm.

McCarthey and Perreault (1993) specified the elements of the MkIS to be as shown below

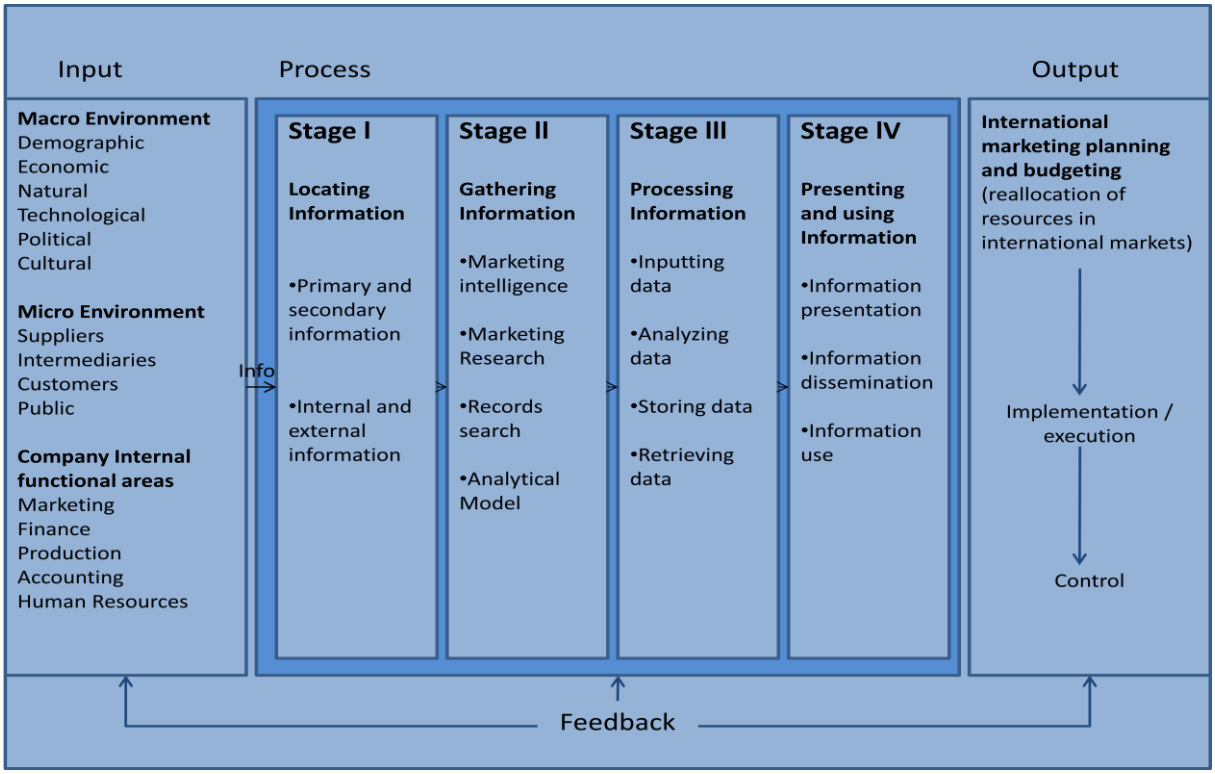
Figure (2.3): elements of MkIS



Source : McCarthy and Perreault (2003), pp.145

Pride and Ferrell(1987), defined MkIS as "the framework for the day-to-day managing and structuring of information gathered regularly form sources both inside and outside an organization".

Figure (2.4): Albaum and Duerr MkIS model



Source: Albaum and Duerr, 2008, p.224.

All the above models include collecting information and analyzing the data. Kotler's MkIS model will be used in this research.

2.2 Components of MkIS

2.2.1 Technology

2.2.1.1 Introduction

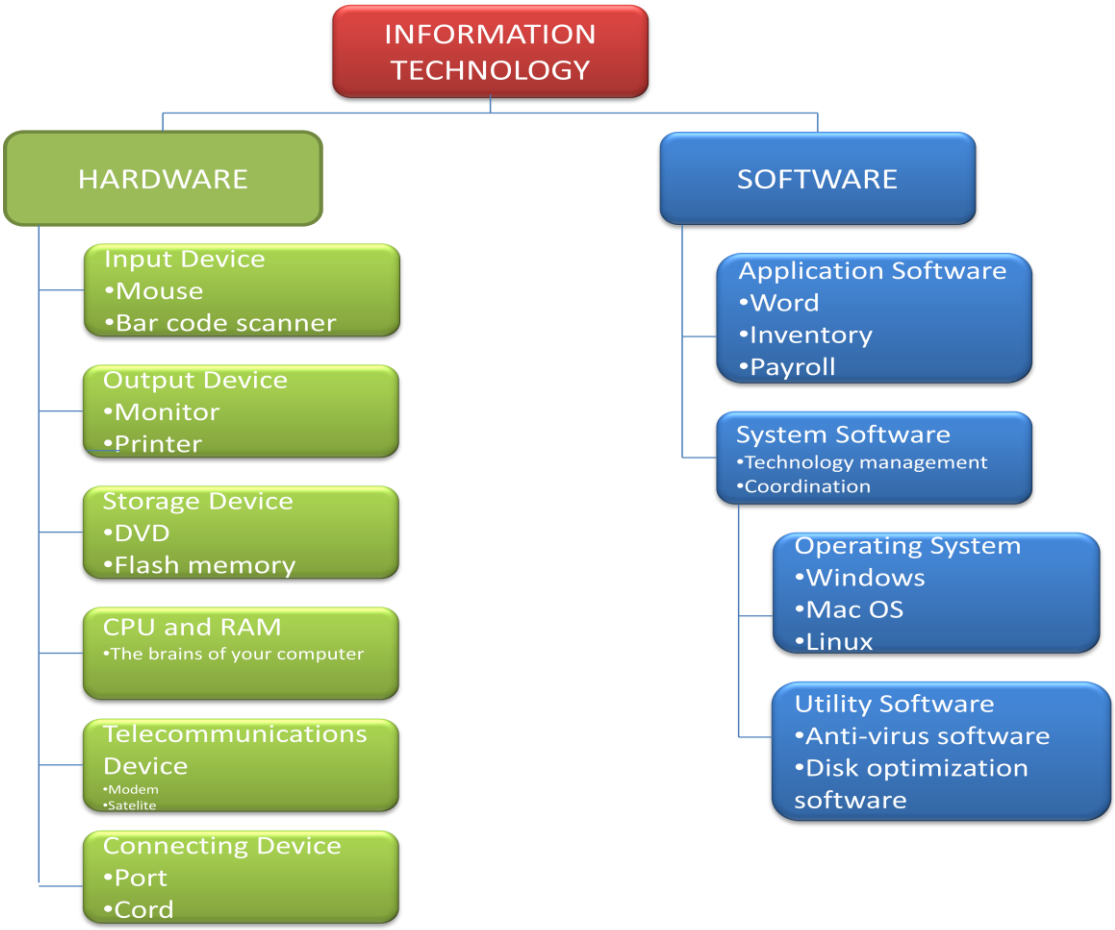
The new technology is surrounding us in all aspects of life nowadays. The computers are one major technological innovation that is helping most of the people. The people use it to communicate, the students use them to learn and the firms use them to store and analyze information. The technology has changed over the years and will continue to change. Information technology is a term that generally covers the harnessing of electronic technology for the information needs of a business at all levels (Adetayo, Sanni, and Ilori, 1999).

2.2.1.2 Development of Computing Technology

The electronic are modern invention, although their manual predecessors go back to several centuries, where Pascal and Leibnitz developed the first calculating machine in the seventeenth century (Curtis and Cobham, 2005). Curtis and Cobham (2005) added that the first generation of the electronic computer was built in the 1940's, the second generation was built in the 1960's using the solid transistors, the third generation was the minicomputers, and the fourth generation is the microchip generation.

There are many tools that managers use to cope with the change; Information technology is one of these tools (Laudon and Laudon, 2010). Boddy et al. (2005) mentioned that any computer-based information system include hardware, software, networks, telecommunications and data. On the other hand, others divided the technological part into either hardware or software (Haag and Cummings, 2010).

Figure (2.5): Information Technology Components



Source : Haag, S., and Cummings, M., 2010 p. 15.

2.2.1.3 Hardware

"Hardware refers to the physical components within a computer system" (Boddy et al. 2005). Laudon and Laudon (2010) defined hardware as the physical equipment used to inputting the data and outputting the results. They also added that the hardware consists of input, output, and storage devices; computer processing unit, and the media to link the devices together. At the same time, Haag and Cummings (2010) simply defined hardware as the physical devices that form the computer. According to Haag and Cummings (2010) and Boddy et al. (2005) , the hardware consists of the following:

- Input Devices : Any tool used to enter information or command.
- Output Devices : Any tool that recognizes the results of the process.
- Storage Devices : Tools used to store information for later use.
- Central Processing Unit : Control the computer system and manipulates data.
- Communication Devices : Link computer with computer networks.

2.2.1.4 Management issues regarding hardware

Boddy et al. (2005) summarized the management issues regarding hardware to four main points:

1. Whether to use the latest hardware.
2. Which applications will have the greatest effect on productivity.
3. Whether to provide the mobile staff with personal computers.
4. Whether to invest directly in computer systems, or by the service.

2.2.1.5 Software

"Software is a set of instructions written in a specialized language that controls the operation of the computer." (Boddy et al., 2005). Laudon and Laudon (2006) defined the software as detailed programmed instructions that control and coordinate the computer hardware components in an information system. Curtis and Cobham (2005) defined software as "the general term for instructions that control the operation of the computer". The software is divided into two main groups (Boddy et al., 2005) and (Haag and Cummings, 2010):

1. System Software: Programs that manage the resources of the computer, and handles tasks specific to technology management.
2. Application Software: Software that enables the user to perform specific tasks, and solve certain problems.

2.2.1.6 Management issues regarding software

- Whether to buy software off-the-shelf or having a custom made software
- How fully to involve users in such decisions.
- Should the departments use common software or custom made software for their needs.

The technology helps in using the data much more effectively than analyzing the data manually (Boddy et al., 2005). the technology made easier for the users to communicate and use the available data in every department in the firm. In addition, with the high storing capacity available the firm will be able to design data warehouse that can store information about customers, vendors, and activities.

2.2.2 Internal Records

2.2.2.1 Introduction

Kotler and Keller (2009) mentioned that "Marketing managers rely on internal reports of orders, sales, prices, costs, inventory levels, receivables, payables, and so on. By

analyzing this information they can spot important opportunities and problems". Most marketing information systems rely heavily on internal records and data (Farese et al, 2003). According to Armstrong and Kotler (2005), Firms around the globe build extensive internal databases, which are defined as "the electronic collections of information obtained from data sources within the company". Armstrong and Kotler (2005), added that this information is useful for the marketing manager to identify the marketing opportunities and problems, evaluate performance, and plan programs.

Many companies build extensive internal data base, electronic collections of consumers and market information obtained from data source within the company network. Marketing managers can readily access and work with information in the data base to identify marketing opportunities and problems, plan programs, and evaluate performance (Kotler and Armstrong, 2008). Internal data bases usually can be accessed more quickly and cheaply than other information sources (Pride and Ferrell, 2003).

The internal records are data generated from company transactions which are processed in a systematic manner that can be linked to management decisions on marketing mix changes.

2.2.2.2 Use of Internal Records

Information gathered from sources within the company to evaluate marketing performances and to detect marketing problems and opportunities (Wikipedia.com**)**. Most marketing managers use internal records and reports regularly, especially for making day-to-day planning, implementation and control decisions. Internal records information consists of information gathered from sources within the company to evaluate marketing performance and to detect marketing problems and opportunities.

An organization usually begins by gathering data about its own internal operations, and plans. If the proper transaction processing systems and corporate data bases have been put into place, this data should be readily available to support planning and control activities.

Internal data are also used to compare actual results to plans and, through this monitoring, allow managers to initiate appropriate action. How do actual sales compare to the sales forecast? How does actual production compare to the schedule? (Reynolds, 1992).

Companies build up extensive internal databases: computerized collection of information obtained from data sources from the company. Marketing managers rely on internal reports on orders, sales, prices, costs, inventory levels, receivables and payables to identify marketing opportunities and problem and to evaluate performance (Kotler and Keller, 2012).

2.2.2.3 Purpose of Internal Records

Internal records are used by all the firms to store and retrieve the information needed for decision making. In addition, there are other purposes for having a database inside the firm, some of those purposes are (ba.cmu.ac.th):

- Customer Satisfaction
- Creative and effective marketing strategy
    - Integrated marketing strategy
- Realities of the organization
    - Strength and weaknesses
- Competitive advantage
- Marketing control

2.2.2.4 Internal Data Elements

The data inside the company can be gathered from many different sources. All the transactions and customers are part of this data. The data can be gathered from (Bunchua, 2011):

- Accounting data
    - Sales : planned vs. actual
    - Costs and expenses
    - Profits and returns
- Marketing data
    - Target market(s)
    - Marketing mix
    - Marketing activities
- Employee data
    - Salespersons
    - Customer service representatives
    - Other marketing staff
- Stakeholder data

- Suppliers (current and ex-)
- Intermediaries (current and ex-)

2.2.2.5 The order to payment cycle

The order to payment cycle is considered as the heart of the internal record system (Kotler, 2012). The firm receives orders from sales representatives, dealers, and customers. Those orders have to be managed as quick and accurate as possible. Many firms use the Internet and extranets to improve the speed accuracy and efficiency of the order to payment cycle (Kotler, 2012). The sales department prepares invoices, while the accounting department keeps records of sales, costs and cash flows, manufacturing reports on production schedules, shipments and inventories. The customer service department keeps records of consumer satisfaction or service problems. Moreover, the shipped items generate shipping and billing documents those have to be transmitted to various departments.

In this way, sales representatives provide immediate feedback on sales and marketing managers have access to up-to-the-minute reports on current sales and reseller reaction. However, although internal data bases can be accessed cheaply and quickly, they also present problems. They can be incomplete, and tend to age quickly. On their own, they don't provide enough information.

2.2.2.6 Database Marketing

"The companies organize their information into customer, product and salesperson databases, and then combine their data" (Kotler, 2012). The decision makers in the firms should receive these data in a timely fashion in-order to make better decisions. The analysts can mine the data to get information about neglected customer segments, recent customers, and other useful information. The new technology made easier for the firms to keep track of millions of customers, and millions of transactions easily and more efficient (Farese et al., 2003). A marketing database, therefore, can be described as a collection of data, such as customers' names, addresses and purchases, which provides marketers with information that enables them to make better decisions in working toward accomplishing the company's objectives (Schoenbachler et al., 1997).

All database marketing starts with customer information that is organized into a single, retrievable marketing database. The database is usually compiled from internal sources such as orders, catalog inquiries, e-mail requests for information, trade show leads, warranty cards, and other promotional efforts. Database marketing takes advantage of

information in the marketing database to develop and implement action plans to enhance marketing results.

2.2.2.7 Benefits of database marketing

Database marketing can vastly improve the economics of the marketing process through targeting the right message to the appropriate audience. There are four primary reasons to begin implementing database marketing (Keipper and Romans, 2011):

1. Improve profitability: Database marketing can target marketing efforts and allocate resources, which will help in improving the efficiency and increasing the profit margin.
2. Increase sales: Database marketing goal is to take advantage of new market opportunities, and reduce waste and unprofitable segments.
3. Improve communications: Keeps record of all communications with customers to be able to use the information for better development.
4. Improve product development: With a customer database, the firm should talk to these customers to determine why they may not purchase the product.

There are even more reasons why the company should have database marketing, some of them might be (courses.PSU.edu, 2011):

- Evaluate sales territory.
- Identify most profitable and least profitable customers.
- Identify most profitable market segments and target efforts with greater efficiency and effectiveness.
- Aim marketing efforts to those products, services, and segments that require the most support.
- Increase revenue through repackaging and re-pricing products for various market segments.
- Evaluate opportunities for offering new products or services.
- Identify products or services that are best-sellers or most profitable.
- Evaluate existing marketing programs.

2.2.3 Marketing Intelligence

2.2.3.1 Introduction

As they manage their businesses and compete in a global market, decision makers face many questions every day. Is the business healthy? Who are my best customers? What supplier should I choose? Where are we quarter-to-date? Do we deliver products consistently on time? Do we have the right mix of people? Effectively managing the performance of the business means knowing what questions to ask and having the facts readily at hand to answer them. This is what business intelligence (BI) delivers. BI, at its core, is the ability to access data from multiple sources within an enterprise and deliver it to business users for analysis.

Business intelligence tools and systems play a key role in the strategic planning process of a firm. These systems allow the firm to gather, store, access, and analyze corporate data to aid in decision making (Aakar et al. , 2009).

2.2.3.2 Business Intelligence

- Accounting Intelligence
- Marketing Intelligence
- Management Intelligence
- Financial Intelligence

2.2.3.3 Marketing Intelligence Definitions

According to American Marketing Association, marketing is defined as the activity, set of institutions, and processes for creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large (Keefe, 2007). The marketing concept does not focus on one aspect of marketing, but recognizes the roles of non-marketers in the marketing process such as customers, vendors, or external agencies who regulate marketing. While marketing centers around satisfying customer needs, an organization would often face the requirement of obtaining information on customer needs. Marketing intelligence helps organizations in this process and revolves around gathering customer level information that would assist in business decision making and policy analysis Aakar et al. , 2009).

Competitive intelligence provides knowledge of competitors, their marketing strategies, objectives, research activity, their strengths and weaknesses and other information. (Nasri, 2011).

Organizations are increasingly seeking to better understand how they can leverage their value propositions in the marketplace. It is generally a new research area at international level, several studies has being concentrated in US firms (Wright et al., 2002). Although the needs for competitive intelligence in organizations are growing and decision makers are starting to recognize the role an importance of competitive intelligence.

2.2.3.4 What Is Marketing Intelligence?

Market intelligence (MI) is "the process of acquiring and analyzing information in order to understand the market (both existing and potential customers); to determine the current and future needs and preferences, attitudes and behavior of the market; and to assess changes in the business environment that may affect the size and nature of the market in future." (Cornish, 1997).

Market intelligence system is a set of procedures and sources used by managers to obtain their everyday information about pertinent developments in the marketing environment (Kotler and Keller, 2012).

Marketing Intelligence has the capacity to be at the forefront in contributing to the development of a business environment through strategic research, risk and policy analysis, credit-rating documentation, storage, publication, reporting, and communication of reliable, timely, and objective business information. It incorporates information from customer analysis and industry analysis as well as general market conditions(Armstrong and Kotler, 2007).

Marketing intelligence calls for understanding, analyzing and assessing the internal and external environment related to a company's customers, competitors, markets, and industry to enhance the decision-making process. This would require the integration of competitive intelligence, marketing research, market analysis, and business and financial analysis information (Huster, 2005).

Marketing intelligence is viewed in its totality as a continuing and interacting structure of people, equipment, and procedures to gather, sort, analyze and distribute pertinent, timely and accurate information for use by marketing decision makers to improve their marketing planning, implementation and control (Kotler and Keller, 2009).

2.2.3.5 Components of Marketing Intelligence

According to Kotler and Keller (2012), marketing managers collect marketing intelligence using too many different ways. They can collect intelligence by reading

books, newspapers, and trade publications. In addition, the managers might talk to customers, distributers and suppliers to collect intelligence. Some managers go even further to collect the intelligence; they meet with other companies' managers.

2.2.3.6 Need for Marketing Intelligence

Marketing research plays a critical part in a marketing intelligence system. It aids in improving management decision making by providing relevant, accurate, and timely information. The fundamental purpose of marketing intelligence is to help marketing managers make decisions they face each day in their various areas of responsibility, including pricing (Kumar, 2009).

Tan and Ahmed (1999) mentioned that according to Caudron (1994, p. 39), market intelligence serves four primary purposes.

These are:

1. Competitors' assessment and tracking.
2. Early warnings of opportunities and threats.
3. Support for strategic planning and implementation.
4. Support of strategic decision-making.

The need for marketing intelligence will increase over the years, because all the firm are in a great need of all kind of information that will help in maintaining a good position among the competitors. Global marketing is playing a major role in the big size businesses around the world, which will make the demand for the intelligence even more.

2.2.3.7 Domains of Marketing Intelligence

■ Product decisions

Marketing intelligence helps in making decisions on investing in new products and also in optimizing product specifications or offering to target customer groups.

■ Customer segmentation decisions

Marketing intelligence gives an opportunity for companies to study the impact of advertisements— before and after advertisements. Based on research and audience composition, marketing intelligence gives companies the flexibility to choose advertising media. Finally, MI also gives companies enough information for selection of target segments.

■ Brand and pricing decisions

Marketing intelligence helps decision makers in building brand equity and consciousness among the targeted customer segments. Gathering marketing intelligence also helps capture popular perceptions and changing trends, tastes, and lifestyles.

■ Keeping stakeholders happy

Understanding stakeholder needs and responding to them keeps all stakeholders—customers, channels, and suppliers—satisfied. A satisfied customer is a profitable customer.

■ Market estimation, competitive benchmarking, and distribution

Marketing intelligence also helps in quantitative analysis of market forces—estimating size of the market, quantitative and behavioral analysis of the market, and forecasting future trends/needs.

Marketing intelligence also helps in market share analyses.

In short, the domains of marketing intelligence application appear vast and include identifying marketing opportunities to build profitable businesses; developing and using marketing intelligence; designing the marketing mix; acquiring and retaining customers; and planning, organizing, evaluating, and controlling market performance.

Judicious gathering of marketing intelligence helps companies to walk up the marketing thinking ladder by explaining how to grasp and outperform consumer value migration and hence to make more money by adding more value to existing brands. Outcome is simply more consumer oriented businesses.

Source : Aakar et al., 2009, P. 6.

2.2.3.8 Benefits of embracing market intelligence

According to (Heist.co.uk), the benefits of embracing market intelligence are :

• Clarity regarding the competition

• Deliver the value that customers seek

The ability to:

• Articulate institution qualities succinctly
• Change perceptions
• Update or modify market empathy and understanding
• Provide the in-depth picture
• Differentiate your offer
• Create your own market space
• Enable a true '3D vision' of the organization

2.2.3.9 Improving Marketing Intelligence

Kotler and Keller (2012) also believed that there are eight steps to improve the quality and quantity of marketing intelligence. First, train and motivate the sales force to spot and report new developments; because they are the company's ''eyes and ears,'' they are in an excellent position to pick up information missed by other means. Second, motivate distributors, retailers, and other intermediaries to pass along important intelligence; because they are closer to the customer and the competitor. Third, hire external experts to collect intelligence; this can be done by sending shoppers to the company's stores to find out how the employees deal with the customers. Fourth, network internally and externally; where the firm collects the information by attending open house and trade shows, red competitors' published reports, and collect competitors' ads. Fifth, set up a customer advisory panel; where the members might include most spoken, most sophisticated, and most representative customers. Sixth, take advantage of government-related data sources. Seventh, Purchase information from outside research firms and vendors. Finally, Collecting Marketing Intelligence on the Internet.

2.2.3.10 Collecting Marketing Intelligence on the Internet

According to Kotler and Keller (2012), the marketers can research the strength and weaknesses of the competitor's online on five different ways

1. Independent customer goods and service review forums.
2. Distributor or sales agent feedback sites.
3. Combo sites offering customer reviews and expert opinions.
4. Customer complaint sites.
5. Public blogs.

2.2.4 Market Research

2.2.4.1 Introduction

The information is really needed by the decision makers to make better decisions. However, the information needed to solve a certain problem might not be suitable for another situation. Marketing research is responsible for gathering the information needed for a certain situation or a given problem. Most of the firms nowadays have a special marketing research department, and the budget for the department might be considered very high compared to other departments. Some firms do not have a marketing research department, but they rely on outside marketing research firms.

According to ESOMAR, the World Association of Opinion and Market Research Professionals, the total spending on marketing research on the year 2006 topped $24 billion globally (kotler and Keller, 2009).

2.2.4.2 Definitions:

Albaum and Duerr (2008), defined Marketing research as" the systematic and objective search for, and analysis of, information relevant to the identification and solution of any problem relevant to the firm's marketing activity and marketing decision makers". Marketing research is a process of gathering information needed for a given situation regarding the firm (Pride and Ferrell, 1987). Marketing research is designing, collecting, and reporting of data and findings regarding a specific marketing situation facing the company (kotler and Keller, 2009). "Marketing research is the systematic gathering, recording, and analyzing of data about problems relating to the marketing of goods and services"(Cox, 1979). Kotler and Armstrong (1991) defined marketing research as “the function that links the consumer, customer, and public to the marketer through information-information used to identify and define marketing opportunities and problems; to generate, refine, and evaluate marketing actions; to monitor marketing performance; and to improve understanding of the marketing process”.

Looking at all the definitions above, they all conclude that marketing research is a systematic way of gathering and analyzing the information needed by the managers for a given situation in order to help in the decision making process.

2.2.4.3 Marketing Research Firms

There are firms that specialize in marketing research. Kotler and Keller (2009) divided marketing research firms into three categories:

1. **Syndicated-service research firms**: These firms are specialized for gathering information about consumers and trade information and then sell the information to the firms.
2. **Custom marketing research firms**: The companies hire these firms for special and specific projects.
3. **Specialty-line marketing research firms**: These firms provide specialized projects, such as selling field interviewing services to other firms.

2.2.4.4 Types of Marketing Research

According to Armstrong and Kotler (2005), the market research can be divided into three types:

1. *Exploratory research* **:** Marketing research to gather preliminary information that will help define problems and suggest hypotheses.
2. *Descriptive research* **:** Marketing research to better describe marketing problems, situations, or markets, such as the market potential for a product or the demographics and attitudes of consumers who buy the product.
3. *Causal research* **:** Marketing research to test hypotheses about cause-and-effect relationships.

2.2.4.5 Marketing Research Process:

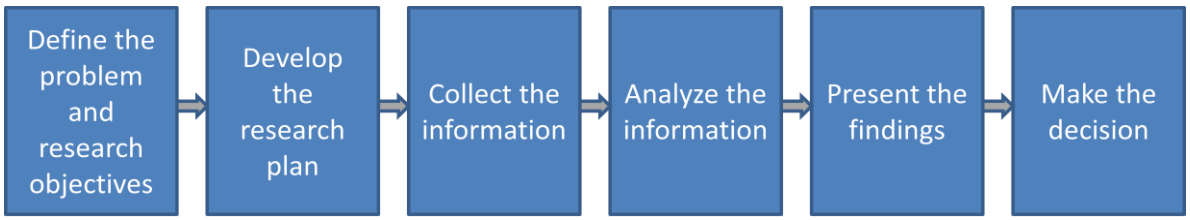
The marketing research process consists of five steps according to Pride and Ferrell (1987). Those steps are shown in the figure (2.6)

Figure (2.6): Pride and Ferrell Marketing Research Process

Source: Pride and Ferrell (2003), p.143.

Kotler and Keller (2009) have a similar model for the research process: however, they have added a six step which is making the decision. The model is shown in figure (2.7)

Figure (2.7): Kotler Marketing Research Process



Source: Kotler and Keller (2009), p. 131.

As seen in the above figures, the marketing research process follows the same steps according to different authors. To be able to understand the process, each step would have to be analyzed.

2.2.4.6 Step 1: Defining the problem

The first and hardest step in the marketing research process is the first process. The process of formulating the problem has been assumed to be a subjective and creative process (Pride and Ferrell, 1987). The managers might know that there is something wrong, without knowing exact and specific cause of it(Armstrong and kotler, 2005). The managers have to be very careful not to be too broad or too narrow when defining the problem (kotler, 2009). The problem has to be defined in a way where it reflects a specific need from the market research; however, not all the problems can be very specific. The objective of the research is responsible for the type of information that will be collected, and the analysis process of the research (pride and Ferrell, 1987). All the authors agree upon the fact that the first step is very crucial in deciding whether to conduct a research or not. Kotler and Armstrong (1991) intended, "the marketing manager and the researcher must work closely together to define the problem carefully and agree on the research objectives. The managers best understands the decision for which information is needed; the researcher best understands marketing research and how to obtain the information". According to Kotler and Armstrong (2010), after defining the problem carefully, the research objective must be set. The objectives of the marketing research can be divided into three types:

1. Exploratory research
2. Descriptive research
3. Causal research

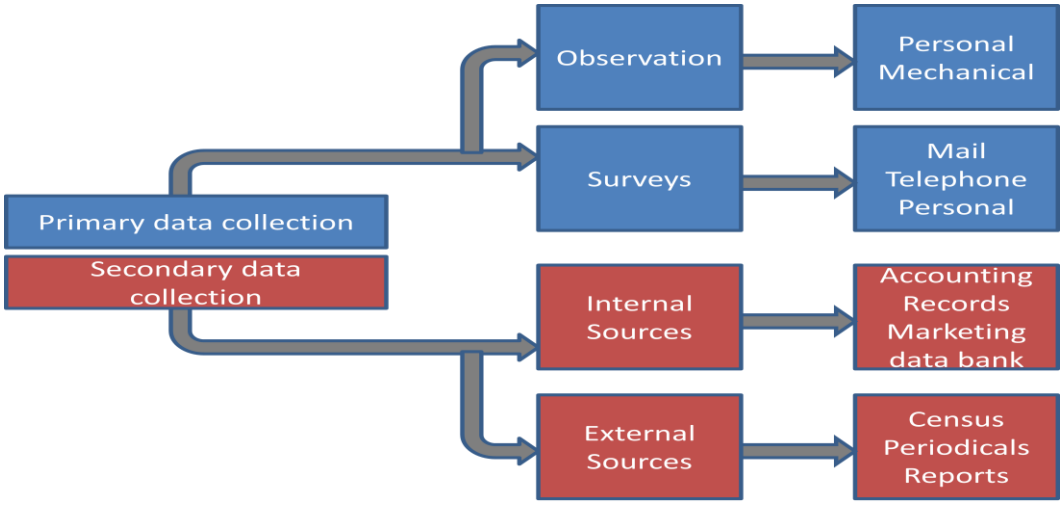
2.2.4.7 Step 2: Developing the plan

According to Kotler (2009), this stage of marketing research is where the development of the most efficient plan for gathering the needed information for the research and the cost of the research. However, in the first model the second stage is developing hypotheses where the objective statement of the marketing research should include the hypotheses which are drawn from previous studies or expected research findings (Pride and Ferrell, 1987). "The research plan outlines sources of existing data and spells out the specific research approaches, contact methods, sampling plans, and instruments the researchers will use to gather new data"(Armstrong and Kotler, 2005).

2.2.4.8 Step 3: Collecting the needed information

The research design must be able to specify what types of data to collect and how they will be collected (Pride and Ferrell, 2003). The collection of the needed data for the research relies on two kinds of data which are primary data and secondary data. The primary data consists of information gathered for the specific purpose of the research; however, the secondary data consist of information that has been collected elsewhere for or for another purpose (Kotler and Armstrong, 2010), (Pride and Ferrell, 1987). The researchers can use both primary and secondary data.

Figure (2.8): Data Sources



Source: Pride and Ferrell (1987), p. 174.

The researchers always start by gathering secondary data, where the company's internal database is a very good start. The companies also buy secondary data from outside sources, or they can use the internet to collect the data (kotler and Armstrong, 2010).

2.2.4.9 Step 4: Analyzing the information

After collecting data, the marketers need to interpret the findings of the research. Moreover, the interpretation of the findings will be easier if the data analysis methods have been planned carefully by the marketers earlier in the research process (Pride and Ferrell, 2003). Kotler and Keller (2010) intended, the next step after collecting the data is extracting the findings by tabulating the data and developing frequency distributions. "The researcher now compute averages and measures of dispersion for the major variables and apply some advanced statistical techniques and decision models in the hope of discovering additional findings" (Kotler and Keller, 2010).

2.2.4.10 Step 5: Reporting the findings

The last step in the research process is reporting the research findings. However, the researcher must take a clear, objective look at the findings to make sure that the research findings answer the research questions (pride and Ferrell, 2003). The researcher must be able to present findings those are relevant to the major marketing decisions (Kotler and Keller, 2010). Kotler and Keller (2010) added, the researcher have to play a more proactive role in translating data and information into insights and recommendations. The researcher have to make sure not to overwhelm the management with fancy statistical techniques and undefined numbers; however, the presented findings should be useful in the decision making process for the management (Kotler and Armstrong, 2010).

2.2.4.11 Marketing Research Outcomes:

The first step of marketing research is defining the problem, that is the reason why marketing research plays a major role in the decision making process. For all the firms around the world, there are reasons for making a research; however, there are reasons that can be shared for most of them. According to Cox (1979), Assael (1993), marketing research can be used by the firms to uncover new uses of the existing products by the customers. Cox (1979) also added that another use for marketing research is to improve the operations for existing products.

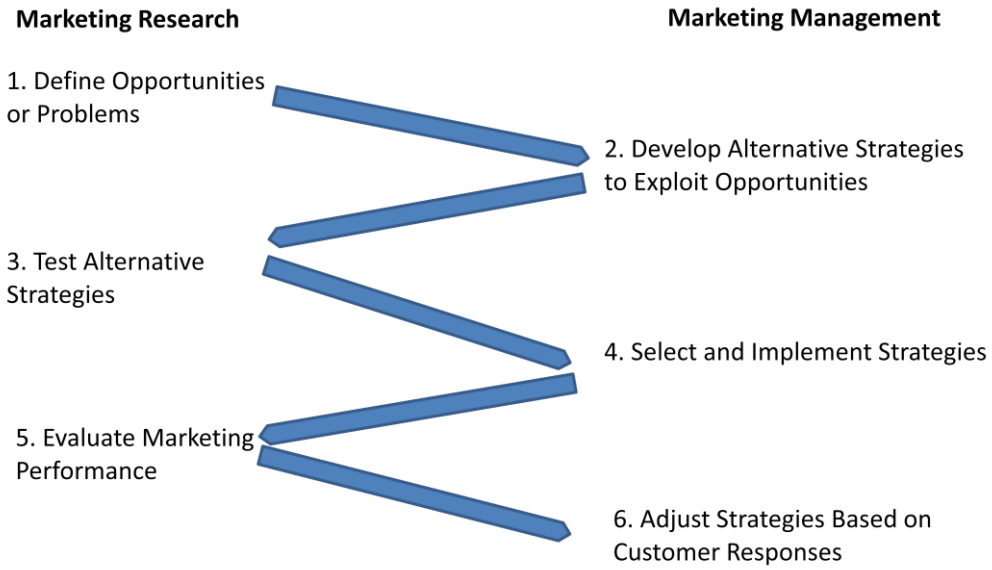
"Marketing research is essential in providing marketing managers information to identify marketing opportunities and to develop strategies to benefit from these opportunities"(Assael, 1993). Assael (1993) added, the first role of marketing research is providing the informational base to introduce new products, the second role the research can uncover opportunities for existing products.

The improvements in a marketer's ability to make better decisions for the firm is the measurement for the success of the marketing research that the firm conduct(Pride and Ferrel, 1987). The function of marketing research in the companies those market their goods abroad is to provide the necessary information for effective planning of future foreign market marketing activity, control of international market operations, and evaluation of the results(Albaum and Duerr, 2008).

"marketing research specifies the information needed to address marketing issues, designs the method for collecting information, manages and implements the data-collection process, analyzes the results, and communicates the findings and their implications"(kotler and Armstrong, 1991).

There is a strong relationship between marketing research and the marketing management. For the marketing research to fulfill its role, the information gathered by the marketing research should be passed to the marketing management to help in the decision making process(Assael, 1993). Figure (2.9) shows the relationship between marketing research and marketing management.

Figure (2.9): Relationship between marketing research and marketing management



Source: Assael (1993), P. 219

2.2.4.12 Marketing Research Risks

When conducting marketing research there are some risks that the firm must be aware of. First, making the wrong assumption about the research needed: second, conducting the wrong kind of research; third, misinterpreting the data after finishing the research(Assael, 1993).

2.2.5 Marketing Decision Support System (MDSS)

2.2.5.1 Introduction

As the marketing environment becomes more complex and competitive the need for tools to assist the marketing decision maker could not be greater. DSS can be used to improve the quality and timeliness of marketing decisions by improving the effectiveness of decision making. Decision support systems are interactive, computer-based systems that aid users in judgment and choice activities. They provide data storage and retrieval but enhance the traditional information access and retrieval

functions with support for model building and model-based reasoning. They support framing, modeling, and problem solving.

Typical application areas of DSSs are management and planning in business, health care, the military, and any area in which management will encounter complex decision situations. Decision support systems are typically used for strategic and tactical decisions faced by upper-level management decisions with a reasonably low frequency and high potential consequences in which the time taken for thinking through and modeling the problem pays of generously in the long run.

Decision support systems are gaining an increased popularity in various domains, including business, engineering, the military, and medicine. They are especially valuable in situations in which the amount of available information is prohibitive for the intuition of an unaided human decision maker and in which precision and optimality are of importance. Decision support systems can aid human cognitive deficiencies by integrating various sources of information, providing intelligent access to relevant knowledge, and aiding the process of structuring decisions. They can also support choice among well-defined alternatives and build on formal approaches, such as the methods of engineering economics, operations research, statistics, and decision theory in addition to employing artificial intelligence. Proper application of decision-making tools increases productivity, efficiency, and effectiveness and gives many businesses a comparative advantage over their competitors, allowing them to make optimal choices for technological processes and their parameters, planning business operations, logistics, or investments.

2.2.5.2 MDSS Definitions

The concepts involved in DSS were first expressed in the early 1970s by Scott Morton under the term management decision systems. He defined the system as "interactive computer-based systems, which help decision makers utilize data and models to solve unstructured problems" (Cassie, 1997). The concept of a Decision Support System DSS is extremely broad and its definitions may vary according to the point of view of the author. It can take many different forms and can be used in many different ways. In addition, Hagg and Cummings (2010) defined DSS as "a highly flexible and interactive IT system that is designed to support decision making when the problem is not structured".

A decision support system (DSS) is an interactive computer system that is easily accessible to, and operated by non-computer specialists to assist them in planning and decision-making functions (Ismail, 2011).

A decision support system (DSS) is "a computer-based information system that supports business or organizational decision-making activities. DSSs serve the management, operations, and planning levels of an organization and help to make decisions, which may be rapidly changing and not easily specified in advance" (Wikipedia.com).

A marketing decision support system is "a decision support system for marketing activity. It consists of information technology, marketing data and modeling capabilities that enable the system to provide predicted outcomes from different scenarios and marketing strategies, so answering "what if?" questions." (Wikipedia.com).

2.2.5.3 DSS Overview

No matter what kind of information is available, and where it has come from. All the available information must be analyzed and reported to the management to help in the decision making process. MDSS help decision-makers utilize data and models to solve unstructured problems based on management science, decision theory, systems science, behavioral science, computer science, and information technology (Li and Davies, 2001). They are used to improve the quality and timeliness of marketing decisions by improving the effectiveness of decision- making (Buttery and Tamaschke, 1995). They focus on supporting, rather than replacing, managerial judgment, and ultimately, it is the harmony created between the strategic analysis of the system and the intuition of the manager that helps achieves a synergy during the decision-making process (Li and Davies, 2001).

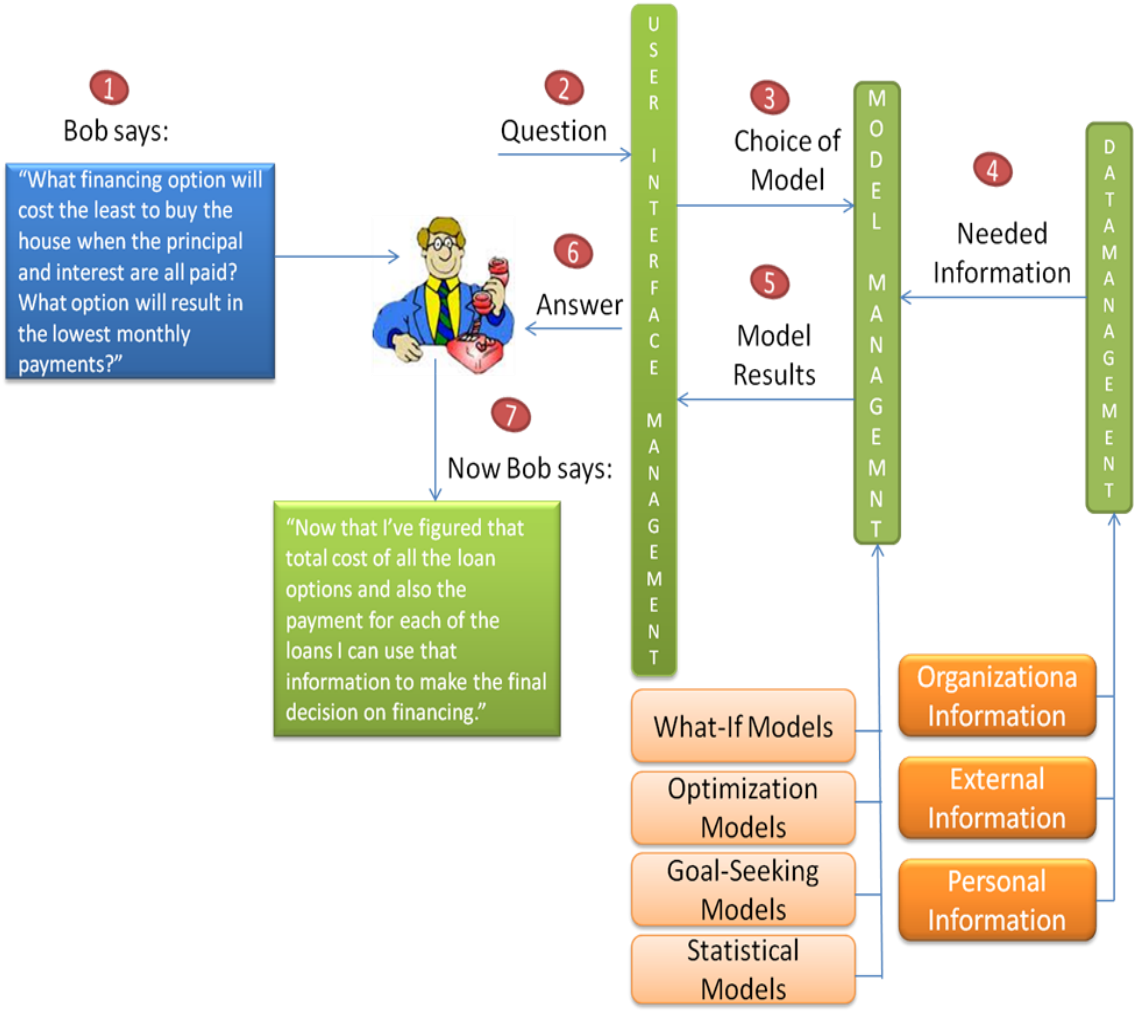
2.2.5.4 Components of DSS

Model Management : The models create new information that decision makers need to plan product lines and inventory levels. The model management consists of both the DSS models and the DSS model management (Haag and Cummings, 2010).

Data Management : According to Haag and Cummings (2010), "the data management components performs the function of storing and maintaining the information that you want your DSS to use.". Both DSS information and DSS database management system form the data management.

User Interface: The user interface management component allows the communication with the DSS. It consists of the user interface and the user interface management system (Haag and Cummings, 2010).

Figure (2.10): Components of DSS



Source: Haag, S., and Cummings, M. (2010), p. 100.

MDSS consist of the same essential set of components—the same identifiable generic architecture—that characterizes virtually any DSS. These components include the user-system interface subsystem, the database management subsystem, and the model base management subsystem (Cassie, 1997).

2.2.5.5 DSS Taxonomies

Beginning in about 1980 many activities associated with building and studying DSS occurred in universities and organizations that resulted in expanding the scope of DSS applications. These actions also expanded the field of decision support systems beyond the initial business and management application domain. These diverse systems were all called Decision Support Systems. From those early days, it was recognized that DSS could be designed to support decision-makers at any level in an organization. Also, DSS could support operations decision making, financial management and strategic decision-making. Power (2007) differentiates communication-driven DSS, data-driven DSS, document-driven DSS, knowledge driven DSS, and model-driven DSS.

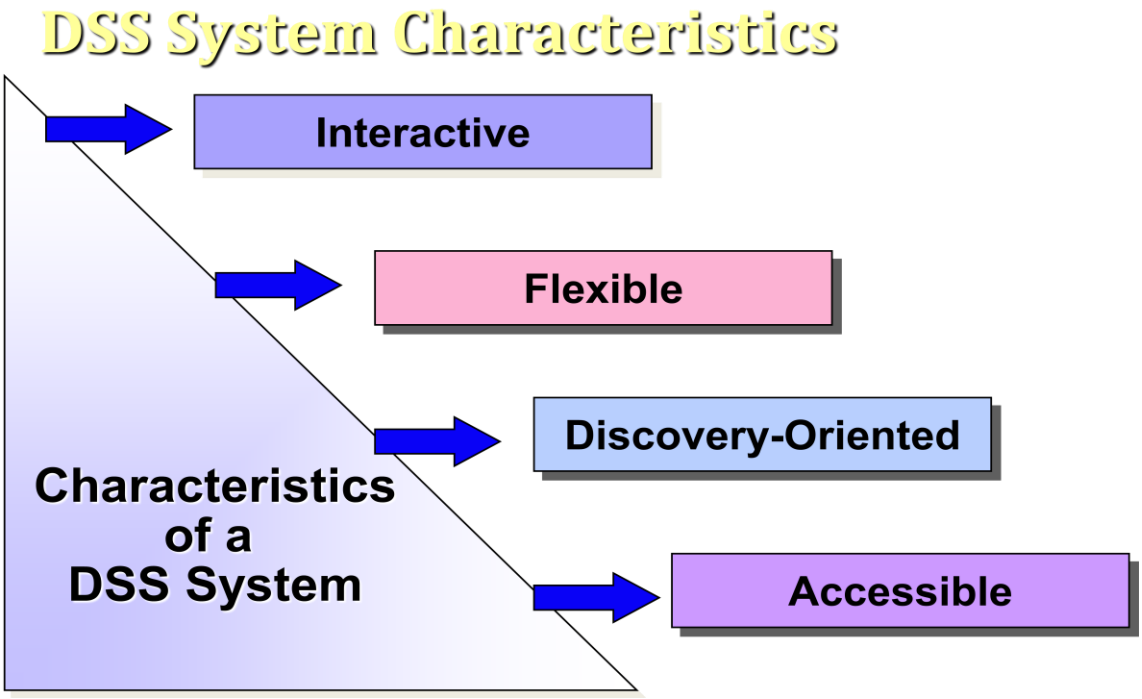
1. Model-Driven DSS: A model-driven DSS emphasizes access to and manipulation of financial, optimization and/or simulation models. Simple quantitative models provide the most elementary level of functionality. Model-driven DSS use limited data and parameters provided by decision makers to aid decision makers in analyzing a situation, but in general large data bases are not needed for model-driven DSS (Power, 2007).
2. Data-Driven DSS: a data-driven DSS emphasizes access to and manipulation of a time-series of internal company data and sometimes external and real-time data. Simple file systems accessed by query and retrieval tools provide the most elementary level of functionality. Data warehouse systems that allow the manipulation of data by computerized tools tailored to a specific task and setting or by more general tools and operators provide additional functionality (Power, 2007).
3. Communication-Driven DSS: Communications-driven DSS use network and communications technologies to facilitate decision-relevant collaboration and communication. In these systems, communication technologies are the dominant architectural component. Tools used include groupware, video conferencing and computer-based bulletin boards (Power, 2007).
4. Document-Driven DSS: A document-driven DSS uses computer storage and processing technologies to provide document retrieval and analysis. Large document databases may include scanned documents, hypertext documents, images, sounds and video. A search engine is a primary decision-aiding tool associated with a document-driven DSS (Power, 2007).

5. Knowledge-Driven DSS: Knowledge-driven DSS can suggest or recommend actions to managers. These DSS are person-computer systems with specialized problem-solving expertise. The "expertise" consists of knowledge about a particular domain, understanding of problems within that domain, and "skill" at solving some of these problems (Power, 2007).

2.2.5.6 Characteristics of DSS

There are too many different definitions to the term DSS; however, they all come to the same conclusion and having the same characteristics.

Figure (2.11): DSS Characteristics



Source : Baker, D. (2003)

The need for interactive support: The decision maker has to get immediate answers for the questions regarding the semi or unstructured decisions (Curtis and Cobham, 2005).

Flexible access to data: Most of the semi-structured decisions are possible if the decision maker has immediate access to ad hoc data retrieval and report-generation facilities(Curtis and Cobham, 2005). DSS are flexible, so users can add, delete,

combine, change, or rearrange basic elements providing fast response to unexpected situations. This capability makes possible timely and quick *ad hoc* analyses (Cassie, 1997).

DSS is adaptive over time. The decision maker should be reactive, being able to confront changing conditions quickly and adapt the DSS to meet these changes (Druzdzel and Flynn, 2002).

DSS supports a variety of decision making processes and styles: there is a fit between the DSS and the attributes of the individual decision. In addition, the decision maker has complete control over all steps of the decision making process.

A DSS aims to support and not replace the decision maker. The decision maker can override the DSS recommendations.

Alter concluded from his research (1980) that decision support systems could be categorized in terms of the generic operations that can be performed by such systems. These generic operations extend along a single dimension, ranging from extremely data-oriented to extremely model-oriented. Alter conducted a field study of 56 DSS that he categorized into seven distinct types of DSS. His seven types include (Power, 2007):

- **File drawer systems** that provide access to data items.
- **Data analysis systems** that support the manipulation of data by computerized tools tailored to a specific task and setting or by more general tools and operators.
- **Analysis information systems** that provide access to a series of decision-oriented databases and small models.
- **Accounting and financial models** that calculate the consequences of possible actions.
- **Representational models** that estimate the consequences of actions on the basis of simulation models.
- **Optimization models** that provide guidelines for action by generating an optimal solution consistent with a series of constraints.
- **Suggestion models** that perform the logical processing leading to a specific suggested decision for a fairly structured or well-understood task.

2.2.5.7 The benefits of MDSS

DSS was traditionally aimed at managers to assist in high-level decision-making. The application is much wider and has been applied across the spectrum of business and industry. Any given DSS can be tailored to provide features across a spectrum of users, firstly to ensure the system is accessible at the right level for different audiences and secondly to provide only the information appropriate for confidentiality and security purposes.

Marketing problems are characterized by specific issues such as the behavioral phenomena, the complexity of the problems and the uncertainty of the environment which can be addressed by DSS characteristics identified by Turban (Cassie, 1997). Cassie (1997) added "marketing is much more involved in behavioral phenomena – cultural, social and psychological than other functional areas of business".

DSS provides support for decision makers mainly in semi-structured and unstructured situations by bringing together human judgment and computerized information (Turban, 1995). In addition, Thierauf (1982) comments "experience and intuition (or the behavioral aspects) are vital ingredients in marketing, but their value can be greatly enhanced by computer measurement that utilizes quantitative techniques". Marketing problems such as forecasting, launching a new product and marketing planning, are subject to many variables and tend to be complex.

According to Cassie (1997):

- DSS provides support to several interdependent and/or sequential decisions.
- Advanced DSS are equipped with a knowledge component that enables the efficient and effective solution of very difficult problems.
- A DSS usually utilizes models for analyzing decision situations. The modeling capability enables experimenting with different strategies under different configurations. Such experiments can provide new insights and learning.
- DSS assist in solving a semi-structured problem and improved the performance of the decision maker.
- The ability to look forward, rather than simply assessing the past. Historical data can be used as a basis for problem solving, and frequently is, but future influences and occurrences must be taken into account.

- The MDSS is without doubt a tool that increases the effectiveness of decision making within the marketing environment.

2.2.5.8 Limitations of MDSS

While it is true that using an MDSS can provide excellent decision support to marketing managers, it is quite apparent that the full potential of MDSS has yet to be reached. In fact, researchers and marketing practitioners alike have found that MDSS frequently fall short of their promise and that users often become dissatisfied with the results (Li and Davies, 2001).

Although marketing is often viewed as one of the lifeblood activities of an organization, it has been one of the last and least successful to benefit from the DSS revolution (Cassie, 1997). In other words, the MDSS is less evolved than those DSS used to support decision- making in other functions.

While current marketing decision support systems offer tremendous assistance for data retrieval and analysis, less support is available for the decision support itself (Li and Davies, 2001).

MDSS currently rely on limited quantitative models, and they are therefore not as good at handling missing data or situations requiring expertise (Amaravadi, 1995). This shortcoming can be addressed somewhat, however, by combining basic MDSS models with the advanced intelligence technology. Researchers have also frequently found that MDSS developers tend to pay more attention to technological aspects rather than the nature of the strategic marketing decisions and managerial needs (Li and Davies, 2001). Fortunately, involving decision-makers more throughout the development process can reduce this problem.

Perhaps the biggest and most expensive shortcoming an MDSS can have is that it is not used (Wober and Gretzel, 2000). On the other hand, an accepted MDSS that caters to the needs of its users is more likely to be applied in all stages of the decision- making process, and it can thus lead to improved marketing decisions. This is true, in spite of the limitations that currently exist in the MDSS realm.

2.2.5.9 Relationship between DSS and MkIS

Since DSS is an outgrowth of the MkIS, there are basic similarities between them. They are both computer-based and designed to supply information to marketing managers (Stoner and Freeman, 1992). However, there are some important advantages to a DSS. First of all, a DSS is geared to information manipulation and not essentially to data

storage and retrieval, as are many MkISs. A DSS is operated directly by its users; when they need access to information, they can immediately consult their own on-line system without having to wait days or week for result from the MkIS department. Once manager call up the required data through a DSS, they can manipulate it directly, asking questions and reformatting the data to meet their specific needs without having to explain what they want to the MkIS staff (Wood, 1984). Managers can thus be certain that they will get the information they need when they need it. In addition, direct manipulation of data has the advantage of greater security for sensitive information.

MkIS emphasizes standard, periodical reports and cannot respond well to non-routine, unstructured, or ad hoc situation. MkIS departments may be unfamiliar with the decisions made in such situations; because they often have a tremendous backlog of requests for data they may be unable to respond quickly to additional special requests. Conversely, some managers who have no difficulty manipulating the data. DSS helps marketing managers make non-routine decisions in unstructured situations (Masland, 1984).

Most previous work has focused on incorporating the latest techniques and technologies, often giving much less attention to whether these support systems are actually compatible with managers' needs; there has been little consideration of how to take advantage of managers' strengths and compensate for their weaknesses (Mintzberg, 1994a). Previous research has paid very little attention to the importance of managers' judgment, and how to couple it with strategic analysis. Each specific technique or technology employed has its own particular strengths and weaknesses that make it suitable for some situations and not effective for others (Duan and Burrell, 1995). A single support technique often fails precisely to fit the decision-making parameters, and to meet the wide range of information, modeling and conceptual needs of marketing strategy formulation. Any particular strategic analysis model used has its own advantages and limitations. A single strategic analysis model is sometimes difficult to adapt to specific circumstances, and can only illuminate part of the strategic landscape. No one tool on its own is adequate in dealing with the complexity of marketing (McDonald, 1992).

Although marketing strategy development involves a high degree of uncertainty and ambiguity, previous support systems seem to have done very little in helping managers deal with uncertainty in developing marketing strategy. A large-scale mail questionnaire survey conducted by (Li, 1998) found that, of the 104 responding marketing directors

and managing directors in the UK large companies, most are very dissatisfied or dissatisfied with the computer-based systems currently supporting marketing strategy development. It appears that most current systems fail to provide even moderate help for most requirements. The four principal factors contributing to managers' dissatisfaction are:

1) Individual systems currently used are limited in support capabilities.
2) Systems used cannot couple strategic analysis with managers' judgment.
3) Particular strategy analysis models employed are limited in function and scope.
4) The systems used cannot cope with uncertainty.

In addition, respondents reported that the main factor holding companies back from using or making greater use of computer based systems in support of marketing strategy development is the lack of appropriate computer-based support systems. The survey also revealed that the computer-based support that marketing directors need most are:

1. Appropriate support systems;
2. Strategic analysis tools and models;
3. Relevant strategic information analysis and interpretation; and
4. Strategic analysis knowledge and skills assistance.

Having identified managers' needs for computer- based support in developing marketing strategy and the gaps between those needs and the current provision of computer-based systems, it should be possible to develop the computer-based systems needed to satisfy managers' perceived needs for support and to fill the existing gaps. New roles for computer-based systems are proposed by Li (1998) as the following:

1. Provide and interpret strategic information for the process of developing strategy (McDonald and Wilson, 1990).
2. Provide strategic analysis assistance and organized methods of strategy development to guide the strategy formulation process (Curry et al., 1992).
3. Offer domain expert knowledge at key aspects of key stages of strategy formulation (Duan and Burrell, 1995).
4. Make recommendations for managers in selecting marketing strategy (Duan and Burrell, 1995).
5. Help managers cope with uncertainty and ambiguity in the process of developing marketing strategy.
6. Help managers understand marketing strategy factors and how they interact. . Provide mechanisms to couple systematic analysis with managers' judgment.

7. Help strategic thinking .
8. Help scrutinize the proposed strategies against unintended biases.
9. Depict the chosen strategy.

According to Etzel, Walker, and Stanton (2007) :

- MkIS and DSS both rely on a wide variety of data.
- They are both able to analyze data.
- Unlike MkIS, a manager using DSS can interact directly with data to produce customized reports.
- A DSS complements instead of replaces MkIS by adding speed and flexibility to the research process.
- DSS has cost as a major drawback, which currently limits its use to large firms.

2.3 Decision Making

2.3.1 Introduction:

Is the Problem really the problem? Problems are often the symptom and not the true problem.

Whenever more than one possible action is available, a decision must be made. If you have to decide based only on one thing, making a decision is easy (Effy, 2009).

A decision is a conscious choice from among two or more alternatives. All of us make many such decisions daily. At work we choose from alternative ways to accomplish an assigned task. Managers and researchers have tried to improve the outcomes of decisions by using more formal, systematic approaches to decision making, the act of consciously choosing from alternatives (Berkowtiz et al, 1986).

A decision is easy to make when one option will clearly bring about a better outcome than any other. Decisions become more difficult when more than one alternative seems reasonable and when the number of alternative is great (Effy, 2009).

Decision-making is a conscious human process. A particular course of action from among a set of possible alternatives. To decide means to come to a conclusion or resolution (Ismail, 2011), decision-making defined as the "conscious and human process, involving both individual and social phenomenon based upon factual and value premises, which concludes with a choice of one behavioral activity from among one or more alternatives with the intention of moving toward some desired state of affairs".

To make a decision means that:

1. The person has started a series of behavioral reaction in favor of something.
2. The person made up his mind to do a certain thing or action.
3. To make a judgment regarding what a person must do for a certain condition after evaluating several alternatives

Decisions are a big part of everything managers do. Planning, organizing, leading and controlling are the basic management functions. Each of these calls for decisions, which plan to implement, what goals to choose, which people to hire (Dessler, 2002).

A basic understanding of decision making is essential because most information systems are designed to support decision making in one way or another (Effy, 2009).

2.3.2 The significance of decision making

Decisions are the core transactions of all the firms. In addition, there are at least three ways where successful organization out decide the competitors (Harrison, 1999)

1. The firm makes better decisions
2. The firms makes faster decisions
3. The firm implements the decisions more than competitors.

"The facility to predict decision-making performance of individual managers is of significance, not only for executives and scientists, but for society itself" (Streufert and Swezey, 1986).

2.3.3 Decision making and problem solving

The terms decision making and problem solving are used interchangeably. However, problem solving involves of overcoming a certain obstacle in the path toward the goal. At the mean time, decision making is defined as choosing from different solutions to achieve the best results (Harrison, 1999).

A decision is a choice from among the available alternatives. Decision making is the process of developing and analyzing alternatives and making a choice. Decisions don't always involve problems. On the other hand, problem solving always involves making decisions. Managers make decisions every day, and these often decide the success or failure of their firms (Dessler, 2002).

According to Rue and Byares (2009), "Decision making in its narrowest sense, is the process of choosing from various alternatives. A problem is any deviation from some

standard or desired level of performance. Problem solving, then, is the process of determining the appropriate responses or actions necessary to alleviate a problem".

- Decision-making is represented as a ***problem-solving process*** preceded by a separate ***problem-finding process***.
- ***Problem-solving*** is the use of information, knowledge, and intuition to solve a problem that has previously been defined.
- A ***Problem*** exists when there is a major difference

2.3.4 Types of Decisions

2.3.4.1 Structured Decisions

When an optimal solution can be reached following certain steps, the problem is called a structured one (Effy, 2009). Effy (2009) added, since the steps are known, and they must be followed the same way, this yields to getting the same solution for the same problem all the time. Operational management and team leader end to execute and handle the structured decisions (Laudon and Laudon, 2006).

2.3.4.2 Unstructured decisions

A problem can be classified as an unstructured problem when reaching an optimal solution does not follow a certain set of steps or there is no algorithm to follow(Effy, 2009). The senior management of the company is responsible for making the decisions for the unstructured problems, because the problem requires many sources of information, and the evaluation procedure is not easy. In addition, this kind of decision depends on the personal experience of the decision maker (Laudon and Laudon, 2006).

2.3.4.3 Semistructured decisions

According to Effy (2009), "a semistructured problem is one that is neither fully structured nor totally unstructured. Middle management in the firms is responsible for making the semistructured decisions. However, they face more structured decisions, but their decisions include unstructured components (Laudon and Laudon, 2006).

2.3.5 Classification of Decision

2.3.5.1 Programmed decisions

When the decision maker knows the situation, and the decisions are repetitive, the decision can be called a programmed decision. Each decision that can be reached by an established or systematic procedure is a programmed decision(Rue and Byars, 2009). According to Dessler (2002) intended, "programmed decisions are repetitive and routine

and can be solved through mechanical procedures such as applying rules, and through mathematical procedures". When classifying the decision, it was found that 90% of managerial decisions are programmed decisions (Dessler, 2002).

2.3.5.2 Nonprogrammed decisions

Nonprogrammed decisions have no precedent, which means that the decision maker is faced by a new situation. Those decisions are unstructured and require a more creative approach by the decision maker. Dessler (2002) intended, " nonprogrammed decisions are unique and novel". Nonprogrammed decisions are the kind of decisions that the managers are paid to address, and they rely heavily on judgment and on the strategic development and survival of the firm (Dessler, 2002). This leads to the fact that nonprogrammed decisions are more difficult to make (Rue and Byars, 2009).

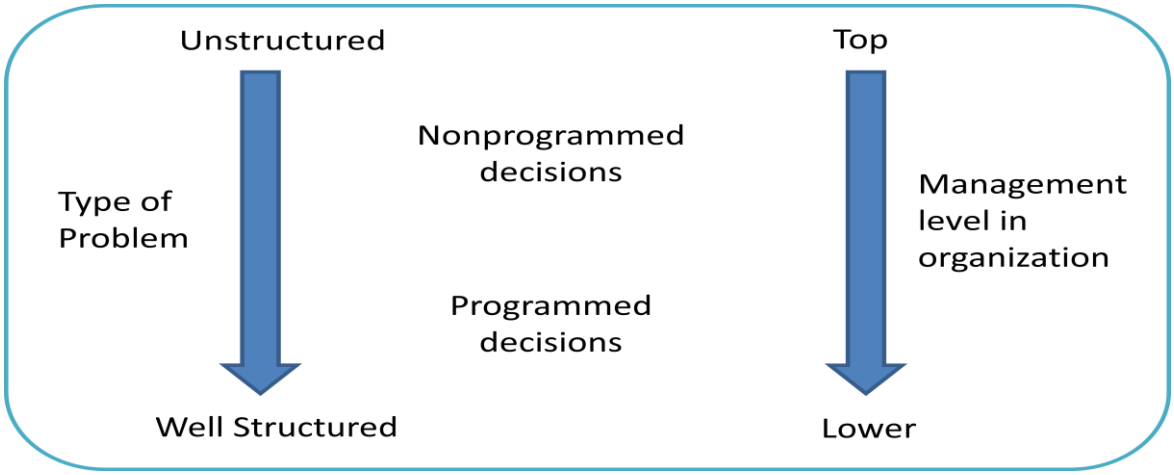
Table (2.1): Programmed Vs. Nonprogrammed decisions

Comparing Programmed and Nonprogrammed Decisions

	Programmed	Nonprogrammed
Type of Decision	Programmable; routine; generic; computational	Nonprogrammable; Unique; innovative
Nature of Decision	Procedural; Predictable; Well-defined information and decision criteria	Novel; unstructured; incomplete channels of information; unknown criteria
Decision-Making Strategy	Reliance on rules and computation	Reliance on principles; judgment; creative; problem-solving processes
Decision-Making Technique	Management science; Capital budgeting; computerized solutions; rules	Judgment; intuition; creativity

Source : Dessler, G., 2002, p. 70

Figure (2.12): Programmed Vs. Nonprogrammed decisions



Source : Dessler, G., 2002, p. 70

2.3.6 Conditions for making decisions

The available information for the decision maker play a major role in the impact of the decision. The impact of the decision is the factor that decides if the decision made was the best choice (Rue and Byars, 2009).

Certainty: This situation occurs when a decision maker knows exactly what will happen, and knows the exact outcome of his decision(Rue and Byars, 2009).

Risk: Rue and Byars, (2009) defined the situation of risk as "situation that occurs when a decision maker is aware of the relative probabilities of occurrence associated with each alternative.

Uncertainty: When the decision maker has little information about a certain condition, or no reliable information to evaluate the outcomes, this means that the manager is operating in a situation of uncertainty (Rue and Byars, 2009).

2.3.7 The decision making process

"The process of making a decision, of getting from the first signifying that a choice is there to be made to making the choice, can be understood as a response partly the problems raised by the subject of decision and partly to the interest implicated by it"(Hickson et al, 1986).

As defined by Baker et al in their 2001 study, "efficient decision-making involves a series of steps that require the input of information at different stages of the process, as well as a process for feedback".

In business, there can be dozens, hundreds, or even millions of different courses of action available to achieve a desired result. The problem is deciding on the best alternative.

Decision making is a three-phase process (Effy, 2009).

Table (2.2): Phases of decision making

The three phases of decision making	
Intelligence	• Collect data from inside the organization. • Collect data from outside the organization • Collect Information on Possible ways to solve the problem.
Design	• Organize the data; select a model to process the data. • Produce a reasonable, potential course of action.
Choice	• Select a course of action.

Source: Effy O., 2009, p. 343.

Herbert Simon, a Nobel Prize winner, also described the manager's decision process in the same three stages. The intelligence stage involves searching the surrounding environment for certain conditions those are in need for making a decision. The design stage is where to inventing, developing and analyzing possible actions. The final stage is to choose from the different alternatives (Rue and Byars, 2009). Lauden and Lauden (2006) added one more step to the process. They added the implementation step that is responsible for testing the solution and try to make it better.

According to Dessler (2002), the manager who approached decision making rationally have to:

1. Have complete information about the situation.
2. Perfectly define the problem.
3. Identify all the criteria and weigh all of them.
4. Know all possible alternatives and assess each one.
5. Choose the best alternative.

Thus, the rational decision making process should include (Dessler, 2002)

1. Define the problem: Managerial decision making is sparked by identifying the problem. In addition, identifying the problem correctly is really hard.

2. Identify and weigh the criteria: Some criteria are more important than others, which leads to the fact that the managers weigh some criteria more than weighing another one.
3. Develop alternatives: To develop good and reliable alternatives is a very complex situation. This is where managers differ from each other.
4. Analyze the alternatives: This step requires forecasting the future which makes it the most difficult step in the process.

The key point—the decision process should collect and analyze useful data that lead to effective actions.

2.3.8 Factors affecting the decision making process

There are many factors that affect the decision making process. They are devided into three categories (Toma, 2010):

1. Factors related to the problem.
2. Environmental Factors.
3. Manager personal traits.

2.4 The Palestinian Banking Sector

2.4.1 Introduction

The banking sector plays a vital role in the development of the local economy in terms of increasing the effectiveness and efficiency of the role of financial intermediation. The Palestinian banking sector evolution after the advent of the National Authority in 1994 where they built the Palestinian Monetary Authority, which serve as the nucleus of the Central Bank. The monetary authority was assigned to rebuild the Palestinian banking system (Kahlout, 2004).

Palestinian banking sector started to grow at a rapid pace and followed the developments of banking management and technology in the surrounding countries, and became efficient and highly qualified. The banking sector consists of the Palestinian Monetary Authority, eighteen banks offering their services in various Palestinian areas which have reached 175 branches and offices at the end of 2010 (appendix 2) divided by 143 branches and offices in the governorates of the West Bank and 32 branches and offices in the governorates of the Gaza Strip (PMA, 2011).

2.4.2 The emergence of the Palestinian banking sector:

The Palestinian banking sector was the most affected sectors as a result of the policy of the Israeli occupation and through the practices of occupation. After occupying the West Bank and Gaza Strip in 1967, the occupation closed the banks operating in the West Bank (22 Bank and Branch) and the Gaza Strip (6 banks and branches) recalled by the military order No. 7 dated 8/6/1967 until the beginning of the eighties. It was not allowed to any of the banks to open branches until the occupation government lost trial in the court in favor to the Bank of Palestine in Gaza, which lead to reopening of the bank. Later in 1985 Cairo Amman bank in Nablus returned to work. The resumption of work within the framework of an agreement signed between the Central Bank of Jordan and the Bank of Israel, and Department of Cairo Amman Bank. The banking space prevails throughout the occupied territories from 1967 and until the signing of the Declaration of Principles between the PLO and the Israeli government in September 1993. In 1994 after the arrival of the Palestinian National Authority, the Palestinian Monetary Authority was created under the presidential decree and to oversee monetary policy within the territory of the Palestinian National Authority and supervise the licensing of banks and control. The Palestinian Monetary Authority started to build the money and banking system and ensure stability and promote economic growth in the Palestinian territories, until the Palestinian banking system became one of the of the best systems in the region (PMA, 2011).

2.4.3 Classification of banks operating in Palestine:

There are 18 banks working in Palestine (See Appendix 2), and they are divided into two parts (Journal of banks in Palestine, 2010):

1 - local banks: The banks that have the Palestinian nationality and numbering 8 banks, where only 5 banks are working in the governorates of the Gaza Strip (Bank of Palestine, Arab Islamic Bank, Islamic Bank of the Palestine, Al Quds Bank for Development and Investment, Palestinian investment bank).

2 – Foreign banks: There are 10 banks that have a different nationality other than Palestinian, and are divided into Egyptian, Jordanian, and foreign banks.

2.4.4 Distribution of the Palestinian banking sector employees:

The number of employees by the end of the Palestinian banking sector at the end of the year 2010 was 4687 employees.

The bulk of the staff with a percentage of 78.5 % of the total employees are working in the West Bank, due to the wide area of the West Bank and the high number of banks and branches compared with the provinces of Gaza. In addition, the bulk of public administrations and regional banks are in the cities of Ramallah and Al Bireh in the West Bank (Journal of banks in Palestine, 2010).

Chapter Three
Methodology

3.1 Introduction

This chapter presents the methodology of the study including research method, research population, the questionnaire and its' design, data collection, response rate, and data analysis.

3.2 Research Method

The researcher used a descriptive analytical method for the study, since it will best achieve the objective of the research. The main objective is to assess the role of the marketing information system in the decision making process. The research used types of data: primary and secondary sources.

Primary resources: The primary information was collected using the questionnaire designed to serve the goals of the study.

Secondary resources: The data is collected depending on reviewing of: Published data search including papers, documents, books, Researches, leaflets and previous studies those are related to marketing information systems or one of its' components.

3.3 Research Population

The targeted study population consists of all managers, deputy managers, and marketing managers for the working banks in Palestine; however, due to the closure on Gaza Strip the accessible population was all the banks in Gaza Strip, in addition to the main management centers in Gaza Strip and some of the main management centers in the West bank. The total number of the working bank branches in Gaza Strip is 27 and the total number of bank offices is 7 (table 3.1). The researcher used the Palestinian Monetary Authority information to get the names and count of the banks in Palestine. The questionnaire was distributed to 11 working banks in Gaza Strip, which have a total of 34 branches and offices. In addition, questionnaires were distributed to top level management centers of the banks which are located in the west bank. A total of 117 questionnaires were distributed, and 99 questionnaires were recovered with a percentage 84.6%.

Table (3.1): Study Population

Bank Name	# of Gaza Strip Branches & Offices	# of Distributed Questionnaires	# of Retrieved Questionnaires
Bank of Palestine P.L.C	10	33	27
Palestine Investment Bank	1	3	3
Palestine Commercial Bank	1	3	3
Al-Quds Bank	2	6	3
Arab Islamic Bank	2	12	12
Palestine Islamic Bank	6	21	20
Cairo Amman Bank	4	13	13
Arab Bank	1	3	3
Bank of Jordan	2	6	4
Egyptian Arab Land Bank	2	9	6
The Housing Bank for Trade & Finance	2	8	5
TOTAL	**34**	**117**	**99**

3.4 The Questionnaire Design

The questionnaire was designed to be understood by all attendants, that is the main reason it was written in the Arabic language. The questions are straight forward to avoid the complexity and redundancy. A covering letter and a consent form awere provided in addition to the questionnaire.

The questionnaire consists of 8 sections:

1. General information about the respondent (7 questions).
2. General information about the bank (3 questions).
3. Information about the system used:
   - Hardware (8 questions)
   - Software (8 questions)
4. Information about internal records and its' use in the bank (11 questions).
5. Information about marketing intelligence and its' use in the bank (12 questions).
6. Information about marketing Research and its' use in the bank (14 questions).
7. Information DSS and its' use in the bank (12 questions).
8. The extent to which the MkIS is used in the decision making process (7 questions).

3.5 Pilot Study

A pilot study for the questionnaire was conducted before distributing the questionnaire to all of the study population. A total of 30 questionnaires were distributed to 10 different branches to make sure that the questionnaire will give good results to the research; in addition, these questionnaires were used in the analysis, because the number of the working branches is small.

3.6 Data Measurement

In order to be able to select the appropriate method of analysis, the level of measurement must be understood. For each type of measurement, there is/are an appropriate method/s that can be applied and not others. In this research, numerical scale 1-10 is used, where "1" indicates a weak answer while "10" indicates a strong answer.

3.7 Test of Normality:

Table (3.2) shows the results for Kolmogorov-Smirnov test of normality. From Table (3.1), the p-value for each field is greater than 0.05 level of significance, then the distribution for each field is normally distributed. Consequently, Parametric tests will be used to perform the statistical data analysis.

Table (3.2): Test of Normality

No	Field	Kolmogorov-Smirnov	
		Statistic	P-value
1.	The Availability of hardware used in the system	0.885	0.413
2.	The Availability of the Software Components	0.716	0.685
3.	Marketing Information System Technology	0.653	0.788
4.	Internal Records	0.855	0.458
5.	Marketing Intelligence System	0.773	0.588
6.	Marketing Research System	0.717	0.682
7.	Marketing Decision Support System (MDSS)	0.585	0.884
8.	All independent variables together	0.635	0.815
9.	Marketing information system	0.805	0.537

3.8 Statistical analysis Tools

The researcher would use qualitative data analysis methods. The Data analysis will be made utilizing (SPSS 19). The researcher would utilize the following statistical tools:

1) Kolmogorov-Smirnov test of normality.
2) Cronbach's Alpha for Reliability Statistics.
3) Pearson correlation coefficient for Validity.
4) Frequency and Descriptive analysis.

5) Parametric Tests (One-sample T test, Independent Samples T-test , Analysis of Variance).

- *T-test* is used to determine if the mean of a paragraph is significantly different from a hypothesized value 6 (Approximately the middle value of numerical scale 1-10). If the P-value (Sig.) is smaller than or equal to the level of significance, $\alpha = 0.05$, then the mean of a paragraph is significantly different from a hypothesized value 6. The sign of the Test value indicates whether the mean is significantly greater or smaller than hypothesized value 6. On the other hand, if the P-value (Sig.) is greater than the level of significance, $\alpha = 0.05$, then the mean a paragraph is insignificantly different from a hypothesized value 6.
- The *Independent Samples T-test* is used to examine if there is a statistical significant difference between two means among the respondents toward the " The Role of Marketing Information Systems Technology in the Decision Making Process "due to the personal traits of the executives (Age, Gender) and due to organizational traits (Type of the bank "Branch/Main", Bank establishment, , and Workplace).
- The *One- Way Analysis of Variance (ANOVA)* is used to examine if there is a statistical significant difference between several means among the respondents toward the " The Role of Marketing Information Systems Technology in the Decision Making Process" due to the personal traits of the executives "Educational Attainment Field of Specialization, Job Title, Years of experience, and Years of experience as a manager / deputy and due to organizational traits (Number Of employees).

3.9 Validity of Questionnaire

Validity refers to the degree to which an instrument measures what it is supposed to be measuring. Validity has a number of different aspects and assessment approaches. Statistical validity is used to evaluate instrument validity, which include internal validity and structure validity.

3.9.1 Internal Validity

Internal validity of the questionnaire is the first statistical test that used to test the validity of the questionnaire. It is measured by a scouting sample, which consisted of 30

questionnaires through measuring the correlation coefficients between each paragraph in one field and the whole filed.

Table (3.3) clarifies the correlation coefficient for each paragraph of the **The Availability of hardware used in the system** and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table (3.3) Correlation coefficient of each paragraph of The Availability of hardware used in the system and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Current marketing information system your bank utilizes, is based primarily on the computer	0.642	0.000*
2.	The devices your bank use commensurate with the nature of work	0.824	0.000*
3.	Your bank uses sophisticated equipment with efficiency and high quality	0.845	0.000*
4.	The devices used have the capacity of storage/ conservation efficiently	0.774	0.000*
5.	Your bank use equipments which is flexible and can be adjusted &maintained	0.822	0.000*
6.	Input Units(mouse, keyboard and ,....) is sufficient, and help in the process of entering data efficiently	0.730	0.000*
7.	Directing units (screen, printer ,.....) sufficient, and help in the process of directing	0.817	0.000*
8.	The efficiency of the devices used in the bank contribute to the quality of marketing decision.	0.579	0.000*

* Correlation is significant at the 0.05 level

Table (3.4) clarifies the correlation coefficient for each paragraph of **The Availability of the Software Components** and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table (3.4) Correlation coefficient of each paragraph of The Availability of the Software Components and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Your bank uses programs which facilitate the communication process among different users at the same time.	0.724	0.000*
2.	There is protection system for marketing database to prevent it from nonauthorized person to access the system	0.741	0.000*
3.	There is flexibility of exchanging marketing information among system's users in your bank.	0.894	0.000*
4.	The programs used by your bank have the ability of storage, summarizing, retrieval and modification the marketing information.	0.849	0.000*
5.	The software your bank uses, contributes in minimizing the over usage of papers among sections.	0.560	0.001*
6.	The software used by your bank facilitates emails utilization.	0.404	0.017*
7.	The software package your bank use is efficient and effective.	0.657	0.000*
8.	The abundance and efficiency of the software in the bank affect the quality of marketing decision.	0.754	0.000*

* Correlation is significant at the 0.05 level

Table (3.5) clarifies the correlation coefficient for each paragraph of the **Internal Records** and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table (3.5) Correlation coefficient of each paragraph Internal Records and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Your bank has multiple and comprehensive internal marketing database.	0.559	0.001*
2.	Each department in the bank keeps the information in the internal database.	0.768	0.000*
3.	The internal records of the bank provide important information on the performance of customers.	0.753	0.000*
4.	The internal records of the bank provide important information on sales and purchases.	0.528	0.002*
5.	The marketing information in the bank's internal records is considered accurate enough	0.522	0.002*
6.	The marketing information in the bank's internal records fit with the purpose of being used for.	0.597	0.000*
7.	The Bank maintains all the information received from the Intelligence and Market Research in the internal records.	0.578	0.001*
8.	The Bank is constantly updating internal records.	0.534	0.001*
9.	The bank depends on the internal records to identify problems.	0.616	0.000*
10.	Internal marketing database is less expensive than other information sources	0.795	0.000*
11.	The computerized records and internal reports of the bank affect the decision-making process.	0.855	0.000*

* Correlation is significant at the 0.05 level

Table (3.6) clarifies the correlation coefficient for each paragraph of the **Marketing Intelligence System** and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table (3.6) Correlation coefficient of each paragraph of Marketing Intelligence System and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	The bank benefits from the marketing intelligence techniques in knowledge and keep abreast of the ongoing marketing of emerging circumstances.	0.686	0.000*
2.	The Bank uses the marketing intelligence on a regular basis in gathering information about competitors.	0.668	0.000*
3.	The bank relies on the media to get information.	0.398	0.000*
4.	Bank customers offer useful information about the market and competitors.	0.572	0.000*
5.	Bank relies on internal sources of information (managers, consultants, sales representatives, delegates of purchase).	0.839	0.000*
6.	Marketing intelligence in the bank is considered of vital resources to understand the nature of the market requirements.	0.790	0.000*
7.	Marketing intelligence in the bank Provide sufficient and useful information about the customers.	0.891	0.000*
8.	Marketing intelligence in the bank help in obtaining the necessary information services.	0.860	0.000*
9.	Marketing intelligence for the bank help in the process of tracking and evaluating the performance of competitors catalog constantly.	0.838	0.000*
10.	Marketing intelligence in the bank Help in early warning of threats and opportunities.	0.849	0.000*
11.	Marketing intelligence effectiveness in the bank is positively reflected on the marketing performance of the staff of the institution.	0.684	0.000*
12.	The resulting information of the marketing intelligence at the bank contribute to the decision-making process.	0.897	0.000*

* Correlation is significant at the 0.05 level

Table (3.7) clarifies the correlation coefficient for each paragraph of **Marketing Research System** and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table (3.7) Correlation coefficient of each paragraph of Marketing Research System and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	The budget allocated to marketing research department in the bank sufficient to perform the work efficiently.	0.816	0.000*
2.	The bank periodically and regularly work in the field of marketing research.	0.898	0.000*
3.	The bank's management perform continuous improvement on the research plan.	0.891	0.000*
4.	Bank relies on primary data (interviews, research, monitoring) to gather information.	0.659	0.000*
5.	The secondary data (internal records, research institutions, government research) is the base in gathering information.	0.778	0.000*
6.	Marketing research is relevant to marketing situations facing the bank.	0.850	0.000*
7.	Marketing research in the bank help in the detection, collection, tracking problems and provide adequate solutions to them.	0.893	0.000*
8.	Marketing research in the bank help in assessing the current market accurately.	0.598	0.000*
9.	Marketing research in the bank help in understanding consumer behavior.	0.545	0.001*
10.	Marketing research effectiveness is reflected positively on the performance of the bank 's marketing staff.	0.571	0.000*
11.	Marketing research in the bank reduce the risk of uncertainty.	0.659	0.000*
12.	to Marketing research in the bank contribute to stand on new opportunities.	0.915	0.000*
13.	Marketing research the in the bank provides information needed for decision making in a timely manner.	0.725	0.000*
14.	The marketing research findings, recommendations, and proposals contribute to the decision-making process.	0.730	0.000*

* Correlation is significant at the 0.05 level

Table (3.8) clarifies the correlation coefficient for each paragraph of **Marketing Decision Support System (MDSS)** and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table (3.8) Correlation coefficient of each paragraph of Marketing Decision Support System (MDSS) and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Computer programs provide useful information used to achieve marketing objectives efficiently.	0.532	0.001*
2.	Computer programs are able to predict the change may occur to the marketing strategy variables for the bank.	0.604	0.000*
3.	Computer programs describe the consequences of a change in marketing variables.	0.790	0.000*
4.	Computer programs can analyze and identify the marketing problems.	0.621	0.000*
5.	Computer programs reduce the effort, time, and cost.	0.722	0.000*
6.	Computer programs measure the effectiveness of marketing activities.	0.592	0.000*
7.	Computer programs determine the size of the customer influencing in the organization sales.	0.739	0.000*
8.	Computer programs refer to the software constraints and bottlenecks affecting the course of daily work.	0.749	0.000*
9.	Computer programs help the institution to seize opportunities and avoid threats.	0.739	0.000*
10.	Computer programs can identify the marketing strengths and weaknesses in the organization.	0.707	0.000*
11.	Training program for the use of computer programs improve the efficiency of the marketing performance.	0.695	0.000*
12.	Bank relies on the analysis of information arising from the computerized decision-support programs in the decision-making process.	0.563	0.001*

* Correlation is significant at the 0.05 level

Table (3.9) clarifies the correlation coefficient for each paragraph of the **Decision Making Process** and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

Table (3.9) Correlation coefficient of each paragraph of Decision Making Process and the total of this field

No.	Paragraph	Pearson Correlation Coefficient	P-Value (Sig.)
1.	Bank's staff understand the goals and objectives of the computerized marketing information system in the bank.	0.693	0.000*
2.	Tangible benefit from computerized information system in the bank is found in the decisions you make in your field.	0.706	0.000*
3.	You trust the decisions taken based on computerized information systems of the bank.	0.676	0.000*
4.	Computerized marketing information systems in the bank contribute to determining the real problem.	0.795	0.000*
5.	Computerized marketing information systems in the bank provide adequate alternatives solutions to the problems at hand.	0.718	0.000*
6.	Computerized marketing information systems in the bank provide adequate information on all alternatives to the decision maker.	0.816	0.000*
7.	Computerized marketing information systems in the bank provide adequate information in a timely manner.	0.697	0.000*

* Correlation is significant at the 0.05 level

Table (3.9) clarifies the correlation coefficient for each paragraph of the questionnaire and the total of the field. The p-values (Sig.) are less than 0.05, so the correlation coefficients of this field are significant at $\alpha = 0.05$, so it can be said that the paragraphs of this field are consistent and valid to be measure what it was set for.

3.9.2 Structure Validity of the Questionnaire

Structure validity is the second statistical test that used to test the validity of the questionnaire structure by testing the validity of each field and the validity of the whole questionnaire. It measures the correlation coefficient between one filed and all the fields of the questionnaire that have the same level of liker scale.

Table (3.10) Correlation coefficient of each field and the whole of questionnaire

No.	Field	Pearson Correlation Coefficient	P-Value (Sig.)
1.	The Availability of hardware used in the system	0.802	0.000*
2.	The Availability of the Software Components	0.865	0.000*
3.	Marketing Information System Technology	0.876	0.000*
4.	Internal Records	0.785	0.000*
5.	Marketing Intelligence System	0.830	0.000*
6.	Marketing Research System	0.888	0.000*
7.	Marketing Decision Support System (MDSS)	0.845	0.000*
8.	All independent variables together	0.996	0.000*
9.	Decision Making Process	0.742	0.000*

* Correlation is significant at the 0.05 level

Table (3.10) clarifies the correlation coefficient for each filed and the whole questionnaire. The p-values (Sig.) are less than 0.05, so the correlation coefficients of all the fields are significant at $\alpha = 0.05$, so it can be said that the fields are valid to be measured what it was set for to achieve the main aim of the study.

3.9.3 Reliability of the Research

The reliability of an instrument is the degree of consistency which measures the attribute; it is supposed to be measuring (Polit & Hunger,1985). The less variation an instrument produces in repeated measurements of an attribute, the higher its reliability. Reliability can be equated with the stability, consistency, or dependability of a measuring tool. The test is repeated to the same sample of people on two occasions and then compares the scores obtained by computing a reliability coefficient (Polit & Hunger, 1985).

3.9.4 Cronbach's Coefficient Alpha

This method is used to measure the reliability of the questionnaire between each field and the mean of the whole fields of the questionnaire. The normal range of Cronbach's coefficient alpha value between 0.0 and + 1.0, and the higher values reflects a higher degree of internal consistency. The Cronbach's coefficient alpha was calculated for each field of the questionnaire.

Table (3.11) shows the values of Cronbach's Alpha for each filed of the questionnaire and the entire questionnaire. For the fields, values of Cronbach's Alpha were in the range from 0.804 and 0.945. This range is considered high; the result ensures the

reliability of each field of the questionnaire. Cronbach's Alpha equals 0.973 for the entire questionnaire which indicates an excellent reliability of the entire questionnaire.

Table (3.11) Cronbach's Alpha for each filed of the questionnaire and the entire questionnaire

No.	Field	Cronbach's Alpha
1.	The Availability of hardware used in the system	0.886
2.	The Availability of the Software Components	0.804
3.	Marketing Information System Technology	0.911
4.	Internal Records	0.844
5.	Marketing Intelligence System	0.922
6.	Marketing Research System	0.945
7.	Marketing Decision Support System (MDSS)	0.861
8.	All independent variables together	0.971
9.	Decision Making Process	0.837
	All paragraphs of the questionnaire	0.973

3.9.5 Split Half Method:

Table (3.12) : Split Half Method for each field of the questionnaire and the entire questionnaire

No.	Field	Correlation Coefficient	Spearman-Brown Correlation Coefficient
1.	The Availability of hardware used in the system	0.769	0.869
2.	The Availability of the Software Components	0.656	0.792
3.	Marketing Information System Technology	0.790	0.883
4.	Internal Records	0.805	0.893
5.	Marketing Intelligence System	0.906	0.951
6.	Marketing Research System	0.940	0.969
7.	Marketing Decision Support System (MDSS)	0.810	0.895
8.	All independent variables together	0.971	0.985
9.	Decision Making Process	0.784	0.881
	All paragraphs of the questionnaire	0.978	0.989

Table (3.12) clarifies the correlation coefficient for each field of the questionnaire. The correlation coefficients of all field are significant at $\alpha = 0.05$, so it can be said that the fields are consistent and valid to be measure what it was set for.

The Thereby, it can be said that the researcher proved that the questionnaire was valid, reliable, and ready for distribution for the population sample.

Chapter Four
Data Analysis and Interpretation of the Study Dimensions

Data Analysis

4.1 Statistical description of the study population

4.1.1 Age Group

Table (4.1) shows that 56.6% of the respondents are between the age 25 and 40, and 43.4% are 40 years and older. The findings disagree with Al-Astal (2009) study where 72% are less than 40 years of age, and 28% are older than 40 years of age. The difference appears because the study population concentrates on the management positions in the banks.

Table (4.1): Age Group

Age	Frequency	Percent
25- less than 40 years	56	56.6
40 years and above	43	43.4
Total	99	100.0

4.1.2 Gender

Table (4.2) shows that the ratio of the male respondents is 83.8%, and the ratio of the female respondents is 16.2%. The ratio is distributes as sees due to the cultural force, and the fact that more men get managerial positions than women. The findings agree with Al-Astal (2009) study where the male ratio is 79%, and the female ratio is 21%.

Table (4.2): Gender

Gender	Frequency	Percent
Male	83	83.8
Female	16	16.2
Total	99	100.0

4.1.3 Educational Attainment

Table (4.3) shows that the highest ratio of 80.8% of the respondents have bachelor degree, and 13.1% have a master degree. The fact that the employees progress in the bank hold them of looking to get a better college degree. In addition, these figures send a positive sign that the employees will be able to deal with the new technology much more easier.

Table (4.3): Educational Attainment

Education	Frequency	Percent
Diploma or less	6	6.1
Bachelor degree	80	80.8
Master degree	13	13.1
Total	99	100.0

4.1.4 Field of Specialization

Table (4.4) shows that the highest ratio of 43.4% is for the accounting major, and the second highest ratio of 26.3% is for the business administration major. The good sign that the study show is the fact that the information technology major has its share in the management positions in the banks, which will directly lead to more use of the new technology.

Table (4.4): Field of Specialization

Specialization	Frequency	Percent
Business Admin	26	26.3
Economics	10	10.1
Accounting	43	43.4
IT	14	14.1
Banking and Financial Sciences	4	4.1
Other (Math, Science)	2	2.0
Total	99	100.0

4.1.5 Job Title

table (4.5) shows that 21.2% of the respondents are branch managers, 27.3% are deputies, and 5.1% are marketing managers. In addition, the table shows that 15.2% are executive managers. The other 31.2% is distributed between other department heads and the deputies and assistants.

Table (4.5): Job Title

Job Title	Frequency	Percent
Executive manager	15	15.2
Manager	21	21.2
Deputy	27	27.3
Marketing Manager	5	5.1
Department head	12	12.1
Department head deputy	2	2.0
General manager assistant	3	3.0
Deputy assistant	10	10.1
Customer service	2	2.0
Other (Accountant, Cashier)	2	2.0
Total	99	100.0

4.1.6 Years of experience

Table (4.6) shows that 41.4% of the respondents have more than 15 years of experience, 33.3% with 10 to 15 years of experience, and 25.3% with less than 10 years of experience. The distribution is acceptable since most of the respondents have management positions in the banks.

Table (4.6): Years of experience

Experience	Frequency	Percent
Less than 10 years	25	25.3
10-15 years	33	33.3
15 years and above	41	41.4
Total	99	100.0

4.1.7 Years of experience as a manager / deputy

Table (4.7) shows that 46.5% of the managers have an experience of less than 5 years, 29.6% with 5 to 10 years of experience, and 23.9% of the respondents with more than 10 years of experience in the management positions. These figures show that the bank are counting on fresh blood to lead the banks, at the same time there is still a big room for older and more experienced employees.

Table (4.7): Years of experience as a manager / deputy

Experience as a manager / deputy	Frequency	Percent
Less than 5 years	33	46.5
5-10 years	21	29.6
10 years and above	17	23.9
Total	71	100.0

4.2 Statistical description of the banks traits

4.2.1 Bank establishment

Table (4.8) show that 47.5% of the banks were established within the last 20 years, and 52.5% were established for more than 21 years. The 52.5% ratio is justified by the fact that Bank of Palestine returned to work in the year 1983.

Table (4.8): Bank establishment

Bank establishment	Frequency	Percent
Less than 20 years	47	47.5
21 years and more	52	52.5
Total	99	100.0

4.2.2 Number of employees

Table (4.9) shows that 59.6% of the banks have more than 21 employees, and 10.1% have less than 10 employees. The banks with less than 10 employees are considered small branches by their management.

Table (4.9): Number Of employees

Number Of employees	Frequency	Percent
Less than 10 employees	10	10.1
10-20 employees	30	30.3
21 employees and more	59	59.6
Total	99	100.0

4.2.3 Workplace

Table (4.10) shows that 68.7% of the working banks are local, and 31.3% of the banks are local and international. The findings can be characterized as acceptable, because there are international banks working in Palestine such as Bank of Jordan.

Table (4.10): Workplace

Workplace	Frequency	Percent
Local	68	68.7
Local and International	31	31.3
Total	99	100.0

4.2.4 Type of the bank

Table (4.11) have the correspondents figures were 85.9% are from the bank branches, and 14.1% from the top management in the main banks.

Table (4.11) : Type of Bank

Type of the bank	Frequency	Percent
Bank Branches	85	85.9
Main Banks	14	14.1
Total	99	100.0

Table (4.12): Bank's names

Bank's names	Frequency	Percent
Arab Islamic Bank	12	12.1
Palestinian Islamic Bank	20	20.2
Bank of Jordan	4	4.0
Palestine Investment Bank	3	3.0
The Housing Bank for Trade and Finance	5	5.1
Palestinian Commercial Bank	3	3.0
Arab Bank	3	3.0
Egyptian Arab land Bank	6	6.1
Cairo-Amman Bank	13	13.1
Al-Quds Bank	3	3.0
Bank of Palestine	27	27.3
Total	99	100.0

Statistical analysis of the study dimensions (MkIS technology components):

4.3 The System Used:

4.3.1 Field of: The Availability of hardware used in the system

Table (4.13) shows the following results:

- The mean of the filed "The Availability of hardware used in the system" equals (88.2%), Test-value = 29.5, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is

significantly greater than the hypothesized value 6, which means that **the hardware used in the system is available with high grade and affects the decision making process** where all the banks are depending on computers on all transactions and processes. Moreover, the banks have top of the line hardware such as input and output units. In addition, the new hardware has the ability to store, access, and retrieve more data faster and more efficient.

The banks use new technology to be able to contribute more to customers, and have better communication within the branch and with other branches. All the banks around the world use new technology, which make it necessary for the Palestinian banks to use the same technology to perform better when dealing with customers transactions, especially with the international banks.

The findings agree with Al -Astal (2009) study where 81.1% of the respondents agree on the fact that the new hardware help in better performing the transactions in a timely manner. In addition, Ghonaim (2004) findings show that 93.8% of the respondents agree that the system din the municipalities epends primarily on computers, and 81.4% assure that the devices used have high storing capacity. Moreover, Wady in his (2009) study concluded that the hardware is available with high grade in the banks, and has a great effect on the employees' marketing performance. El-Shantaf (2000) study also agree to the findings, and concluded that the banks use new technology and they depend on it to make their decisions.

Table (4.13): Means and Test values for "The Availability of hardware used in the system"

No	Paragraph	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Current marketing information system your bank utilizes, is based primarily on the computer	9.41	94.1	35.1	0.000*	1
2.	The devices your bank use commensurate with the nature of work	8.91	89.1	25.7	0.000*	4
3.	Your bank uses sophisticated equipment with efficiency and high quality	8.49	84.9	17.5	0.000*	7
4.	The devices used have the capacity of storage/ conservation efficiently	8.74	87.4	19.9	0.000*	5
5.	Your bank use equipments which is flexible and can be adjusted &maintained	8.54	85.4	18.1	0.000*	6
6.	Input Units(mouse, keyboard and ,....) is sufficient, and help in the process of entering data efficiently	9.01	90.1	25.3	0.000*	3
7.	Directing units (screen, printer ,.....) sufficient, and help in the process of directing	9.02	90.2	25.8	0.000*	2
8.	The efficiency of the devices used in the bank contribute to the quality of marketing decision.	8.45	84.5	19.3	0.000*	8
	All paragraphs of the filed " The Availability of hardware used in the system "	8.82	88.2	29.5	0.000*	

* The mean is significantly different from 6

4.3.2 Field of: The Availability of the Software Components

Table (4.14) shows the following results:

- The mean of the filed "The Availability of the Software Components" equals (84.9%), Test-value = 23.4, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 6, which means that **the Software Components is available with high grade and affects the decision making process** where the software used by the banks minimizes the over use of papers between the banks' departments due to the present of automated communication processes such as e-mail. In addition, the new software ease the retrieval of stores information, and with the presence of high secures systems the banks' management is not afraid to store all kind of information on the system. The banks also depend on computers to execute the transactions because the new software improve the flexibility of the system, and perform in a more efficient way.

The software changes more often than ever before, which lead to having a special department for the information technology in the banks to assist in getting the needed and more advanced software.

The findings agree with Arafat (2007) findings where 62.55% agree that the proper software tools are used in the system, and the new software help in executing the processes faster and more efficient. In addition, Wady concluded in his (2009) study that the software is available in the banks and play a major role on the employees' marketing performance.

Table (4.14): Means and Test values for "The Availability of the Software Components"

No	Paragraph	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Your bank uses programs which facilitate the communication process among different users at the same time.	8.70	87.0	18.3	0.000*	3
2.	There is protection system for marketing database to prevent it from non-authorized person to access the system	9.14	91.4	24.4	0.000*	1
3.	There is flexibility of exchanging marketing information among system's users in your bank.	8.31	83.1	13.7	0.000*	7
4.	The programs used by your bank have the ability of storage, summarizing, retrieval and modification the marketing information.	8.79	87.9	22.2	0.000*	2
5.	The software your bank uses, contributes in minimizing the over usage of papers among sections.	8.45	84.5	14.3	0.000*	4
6.	The software used by your bank facilitates emails utilization.	7.85	78.5	7.0	0.000*	8
7.	The software package your bank use is efficient and effective.	8.33	83.3	16.9	0.000*	6
8.	The abundance and efficiency of the software in the bank affect the quality of marketing decision.	8.33	83.3	16.3	0.000*	5
	All paragraphs of the filed " The Availability of the Software Components"	8.49	84.9	23.4	0.000*	

* The mean is significantly different from 6

In General: Technological part of Marketing Information System

- The mean of all paragraphs of " Marketing Information System Technology " equals (86.6%), Test-value =28.2, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of all paragraphs of " Marketing Information System Technology " is significantly greater than the hypothesized value 6, which means that new **Technology of Marketing information system is available with high grade and affects the decision making process** because the hardware and the software are the components of the new technology. Both the hardware and software rely on each other, because new software require new and better hardware. Moreover, the new hardware gives more storage space and more user friendly output. The availability of the new technology especially in the communication part help in making the branches serve the bank's customer very fast even if they are from a different branch.

The findings agree with Wady (2009) study, where he concluded that there is a significant effect of new technology on the employees' marketing performance. Moreover, El-shantaf agree with the research results where his (2000) study revealed that new technology is increasing in the banks and became more efficient, and Hashim (2006) study on public shareholding companies of Jordan agree with the findings and revealed that the banks are updating their technology more often than other sectors. Colgate (1998) study concluded that the most successful banks in terms of implementing IT were those who had greater responsibilities in marketing activities.

Table (4.15): Means and Test values for "Technological part of Marketing Information System"

field	Mean	Proportional mean (%)	Test value	P-value (Sig.)
All paragraphs of Marketing Information System Technology	8.66	86.6	28.2	0.000*

*The mean is significantly different from 6

4.4 Field of: Internal Records

Table (4.16) shows the following results:

- The mean of the filed "Internal Records" equals (80.5%), Test-value = 18.7, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 6, which means that **Internal Records system is available and affects the decision making process** where the respondents agree that internal records are easy and cheap source of information. The internal records are considered accurate, and fit with the purpose that records are being used for; moreover, the internal records contain up to date information that help in making better decisions. Each department in the bank keeps information in the database to make it easier for them and for other departments to access this information when needed.

The database should have information from all the departments in the bank such as intelligence and market research department. This loaded information into the system has rich data that help in making better decisions. The internal records can also be used to design a system called database marketing, where all the customers' information and their service history is loaded into the system that can be used later on to determine the customers that might be looking for a certain service.

The findings agree with Wady (2009) study, where he concluded that marketing managers believe that Internal records has great effects on employees' marketing performance and decision making. In addition, Wood (2011), study found that MkIS used in small to medium companies is based on Internal Data Records. Nasri (2011) study also agree with the research findings where he concluded that managers consider Internal Marketing as the most reliable source of information and has effects on the decision making. Hashim (2006), concluded that Internal Records are the most dependent on source of information.

Table (4.16): Means and Test values for "Internal Records"

No	Paragraph	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Your bank has multiple and comprehensive internal marketing database.	7.76	77.6	11.3	0.000*	10
2.	Each department in the bank keeps the information in the internal database.	8.26	82.6	15.9	0.000*	2
3.	The internal records of the bank provide important information on the performance of customers.	8.08	80.8	12.6	0.000*	8
4.	The internal records of the bank provide important information on sales and purchases.	8.15	81.5	12.9	0.000*	5
5.	The marketing information in the bank's internal records is considered accurate enough	8.19	81.9	13.9	0.000*	4
6.	The marketing information in the bank's internal records fit with the purpose of being used for.	8.10	81.0	14.8	0.000*	6
7.	The Bank maintains all the information received from the Intelligence and Market Research in the internal records.	7.98	79.8	11.1	0.000*	9
8.	The Bank is constantly updating internal records.	8.21	82.1	13.6	0.000*	3
9.	The bank depends on the internal records to identify problems.	7.60	76.0	9.3	0.000*	11
10.	Internal marketing database is less expensive than other information sources	8.09	80.9	13.5	0.000*	7
11.	The computerized records and internal reports of the bank affect the decision-making process.	8.28	82.8	15.5	0.000*	1
	All paragraphs of the filed " Internal Records "	8.05	80.5	18.7	0.000*	

* The mean is significantly different from 6

4.5 Field of: Marketing Intelligence System

Table (4.17) shows the following results:

- The mean of the filed "Marketing Intelligence System" equals (78.4%), Test-value = 16.5, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 6, which means that **Marketing Intelligence System is available and affects the decision making process** where marketing intelligence in all the banks rely on internal sources of information, and the banks use Marketing Intelligence in regular basis in gathering information. The respondents agree that Marketing Intelligence provide sufficient and useful information about customers and competitors, and they also agree that Marketing Intelligence help in the early warning of threats and opportunities. In addition, the findings show that marketing intelligence is useful also in understanding the market requirements and the market changes.

Marketing Intelligence contributes to making better decisions when accounted for, and can be a big plus to the needed information on competitors and customers. Marketing Intelligence gives day to day information about the changes in the internal and external environment, and help in avoiding threats and seizing opportunities. The banks rely on marketing intelligence to determine the market share, and to identify the kind of new service that customers look for; in addition, the marketing intelligence provides information about the service on-going prices.

The findings agree with Wady (2009) study, which concluded that Marketing Intelligence improve the MkIS efficiency in the working banks in Gaza; moreover, Nasri (2011) study concluded that Tunisian managers are aware of competitive intelligence effects on the firms' performance. In addition, Li (1995) study also agrees with the finding and concluded that Marketing Intelligence is considered a good source of daily information about competitors.

Table (4.17): Means and Test values for "Marketing Intelligence System"

No	Paragraph	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	The bank benefits from the marketing intelligence techniques in knowledge and keep abreast of the ongoing marketing of emerging circumstances.	8.03	80.3	13.8	0.000*	4
2.	The Bank uses the marketing intelligence on a regular basis in gathering information about competitors.	7.79	77.9	12.5	0.000*	7
3.	The bank relies on the media to get information.	7.19	71.9	8.0	0.000*	12
4.	Bank customers offer useful information about the market and competitors.	7.82	78.2	13.8	0.000*	6
5.	Bank relies on internal sources of information (managers, consultants, sales representatives, delegates of purchase).	8.23	82.3	18.1	0.000*	1
6.	Marketing intelligence in the bank is considered of vital resources to understand the nature of the market requirements.	8.09	80.9	15.2	0.000*	3
7.	Marketing intelligence in the bank Provide sufficient and useful information about the customers.	7.79	77.9	11.3	0.000*	7
8.	Marketing intelligence in the bank help in obtaining the necessary information services.	7.74	77.4	10.9	0.000*	9
9.	Marketing intelligence for the bank help in the process of tracking and evaluating the performance of competitors catalog constantly.	7.61	76.1	9.7	0.000*	11
10.	Marketing intelligence in the bank Help in early warning of threats and opportunities.	7.74	77.4	10.2	0.000*	9
11.	Marketing intelligence effectiveness in the bank is positively reflected on the marketing performance of the staff of the institution.	8.11	81.1	14.4	0.000*	2
12.	The resulting information of the marketing intelligence at the bank contribute to the decision-making process.	8.01	80.1	12.3	0.000*	5
	All paragraphs of the filed " Marketing Intelligence System "	7.84	78.4	16.5	0.000*	

* The mean is significantly different from 6

4.6 Field of: Marketing Research System

Table (4.18) shows the following results:

- The mean of the filed "Marketing Research System" equals (76.7%), Test-value = 13.2, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 6, which means that **Marketing Research System is available and affects the decision making process** by improving the capability of MkIS, and this fact can be characterized by the fact that Marketing Research provides the needed information for the decision makers in a timely manner. In addition, Marketing Research can identify the opportunities and threats, and reduces the risk of uncertainty. Marketing Research help in assessing the current market, understanding consumer behavior, and provide adequate solutions to the problems facing the banks.

Marketing research has its' own department because it provides most of the information needed for a specific problem, or for a certain condition, and the information provided by the department is considered very accurate. The marketing research in the banks is used to determine the need of a new branch, the promotions that the bank should offer, and the price of the services offered by the bank

The findings agree with Wady (2009) study, which concluded that effective Marketing Research is a main component of MkIS that reflects positively on marketing performance. In addition, Ganeshasundaram and Henley (2007) study agree with the findings and concluded that companies carrying out research perform better than others, and Li (1995) study also concluded that marketing research is a good source of information specially when making pricing decisions.

Table (4.18): Means and Test values for "Marketing Research System"

No	Paragraph	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	The budget allocated to marketing research department in the bank sufficient to perform the work efficiently.	7.25	72.5	6.1	0.000*	14
2.	The bank periodically and regularly work in the field of marketing research.	7.39	73.9	7.0	0.000*	12
3.	The bank's management perform continuous improvement on the research plan.	7.57	75.7	8.0	0.000*	10
4.	Bank relies on primary data (interviews, research, monitoring) to gather information.	7.77	77.7	10.9	0.000*	8
5.	The secondary data (internal records, research institutions, government research) is the base in gathering information.	7.38	73.8	8.4	0.000*	13
6.	Marketing research is relevant to marketing situations facing the bank.	7.54	75.4	9.8	0.000*	11
7.	Marketing research in the bank help in the detection, collection, tracking problems and provide adequate solutions to them.	7.62	76.2	9.7	0.000*	9
8.	Marketing research in the bank help in assessing the current market accurately.	7.77	77.7	11.4	0.000*	7
9.	Marketing research in the bank help in understanding consumer behavior.	7.88	78.8	13.3	0.000*	3
10.	Marketing research effectiveness is reflected positively on the performance of the bank 's marketing staff.	7.97	79.7	13.3	0.000*	1
11.	Marketing research in the bank reduce the risk of uncertainty.	7.85	78.5	12.4	0.000*	5
12.	to Marketing research in the bank contribute to stand on new opportunities.	7.87	78.7	11.7	0.000*	4
13.	Marketing research the in the bank provides information needed for decision making in a timely manner.	7.88	78.8	11.3	0.000*	2
14.	The marketing research findings, recommendations, and proposals contribute to the decision-making process.	7.82	78.2	10.8	0.000*	6
	All paragraphs of the filed " Marketing Research System "	7.67	76.7	13.2	0.000*	

* The mean is significantly different from 6

4.7 Field of: Marketing Decision Support System (MDSS)

Table (4.19) shows the following results:

- The mean of the filed "Marketing Decision Support System (MDSS)" equals (78.6%), Test-value = 18.3, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 6, which means that **Marketing Decision Support System (MDSS) is available and has a role on the effectiveness of the MkIS in the decision making process** since the respondents agree that computer programs reduce the employees' time, effort, and cost. In addition, the survey shows that the output of the Marketing Decision Support System determine the good customers and the ones affecting the sales, identify the bottlenecks affecting the daily work, and measure the effectiveness of the marketing activities. MDSS identify the strengths and weaknesses, the bottlenecks affecting daily work, and the opportunities and threats.

Marketing Decision Support System analyze the information gathered from research, intelligence, and internal records. The Marketing Decision Support System give reliable results when getting good information; moreover, the different analysis that Marketing Decision Support System give assist in determining the strength and weaknesses which lead to better decisions. New trends in MDSS are available such as expert systems that is used for strategic marketing decisions, fuzzy logic that is used for new products decisions, and Artificial Neural Networks that is used for market segmentation and predicting market response.

The findings agree with Ismail (2011) and Wady (2009) studies, where they found that MDSS is used by the banks and the other firms and has a great effect on the right decision making and the employees' marketing performance. In addition, Arafat (2007) in his study about the Palestinian Ministries agrees with the findings, where the researcher concluded that the ministries are aware of the importance of utilizing DSS.

Table (4.19): Means and Test values for "Marketing Decision Support System (MDSS)"

No	Paragraph	Mean	Proportional mean	Test value	P-value (Sig.)	Rank
1.	Computer programs provide useful information used to achieve marketing objectives efficiently.	8.34	83.4	16.6	0.000*	1
2.	Computer programs are able to predict the change may occur to the marketing strategy variables for the bank.	7.57	75.7	10.9	0.000*	10
3.	Computer programs describe the consequences of a change in marketing variables.	7.42	74.2	8.4	0.000*	12
4.	Computer programs can analyze and identify the marketing problems.	7.43	74.3	9.4	0.000*	11
5.	Computer programs reduce the effort, time, and cost.	8.31	83.1	13.5	0.000*	2
6.	Computer programs measure the effectiveness of marketing activities.	7.83	78.3	10.8	0.000*	5
7.	Computer programs determine the size of the customer influencing in the organization sales.	8.28	82.8	16.5	0.000*	3
8.	Computer programs refer to the software constraints and bottlenecks affecting the course of daily work.	7.70	77.0	12.3	0.000*	9
9.	Computer programs help the institution to seize opportunities and avoid threats.	7.76	77.6	13.6	0.000*	8
10.	Computer programs can identify the marketing strengths and weaknesses in the organization.	7.78	77.8	13.3	0.000*	7
11.	Training program for the use of computer programs improve the efficiency of the marketing performance.	8.08	80.8	15.0	0.000*	4
12.	Bank relies on the analysis of information arising from the computerized decision- support programs in the decision-making process.	7.81	78.1	11.1	0.000*	6
	All paragraphs of the filed " Marketing Decision Support System (MDSS)"	7.86	78.6	18.3	0.000*	

* The mean is significantly different from 6

4.8 In General: All MkIS Technology components

Table (4.20) shows the following results:

- The mean of all paragraphs of the questionnaire equals (80.5%), Test-value =24.1, and P-value=0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of all paragraphs of the questionnaire is significantly greater than the hypothesized value 6, which means that **All Marketing Information System Technology components together are playing a major role in the decision making process** because the system is designed to gather as much information possible, and analyze this information. The analysis shows that most of the variables are highly agreed upon separately, which leads to high agreement on the system as a whole.

Information systems in general whether it marketing, management, or Human resource information system are designed to collect as much of the needed information as possible. The quantity and the quality of the information gathered and analyzed contribute to the decision making process. The findings agree with all the previous study articles, where all the researchers concluded that MkIS technology is available in all kinds of businesses, and has a great effect on decision making.

Table (4.20): Means and Test values for "All MkIS Technology Components"

field	Mean	Proportional mean (%)	Test value	P-value (Sig.)
All paragraphs of the independent variables together	8.05	80.5	24.1	0.000 *

*The mean is significantly different from 6

4.9 Field of: Decision Making Process

Table (4.21) shows the following results:

- The mean of the filed "Marketing information system" equals (80.1%), Test-value equals 18.1, and P-value = 0.000 which is smaller than the level of significance $\alpha = 0.05$. The sign of the test is positive, so the mean of this field is significantly greater than the hypothesized value 6, which means that the respondents agree on the fact that **Marketing information system has a major effect in the decision making process** because the decision making process follows a systematic order. The respondents agree that the system can define the real problem and situation facing the bank and the system provide different solutions for the problems. When having a problem and different solutions, the managers have to get as much of useful information about the alternatives as possible to be able to choose the best alternative as fast as they can. The respondents agree that the MkIS can do the above steps efficiently, and they consider the MkIS in the banks useful and they trust the decisions taken based on MkIS. The hardest part of the decision making process is to be able to define the real problem facing the organization, and the speed of getting the needed information for the decision maker to be able to solve the problem before the situation changes.

Table (4.21): Means and Test values for "Decision making process"

No	Paragraph	Mean	Proportional mean (%)	Test value	P-value (Sig.)	Rank
1.	Bank's staff understand the goals and objectives of the computerized marketing information system in the bank.	8.28	82.8	15.1	0.000*	1
2.	Tangible benefit from computerized information system in the bank is found in the decisions you make in your field.	8.25	82.5	14.8	0.000*	2
3.	You trust the decisions taken based on computerized information systems of the bank.	8.23	82.3	15.5	0.000*	3
4.	Computerized marketing information systems in the bank contribute to determining the real problem.	7.98	79.8	15.3	0.000*	4
5.	Computerized marketing information systems in the bank provide adequate alternatives solutions to the problems at hand.	7.71	77.1	11.1	0.000*	6
6.	Computerized marketing information systems in the bank provide adequate information on all alternatives to the decision maker.	7.58	75.8	9.7	0.000*	7
7.	Computerized marketing information systems in the bank provide adequate information in a timely manner.	7.96	79.6	14.6	0.000*	5
	All paragraphs of the filed " Marketing information system "	8.01	80.1	18.1	0.000*	

* The mean is significantly different from 6

Hypothesis Testing

Hypothesis #1:

There is a significant relationship at 0.05 level between Marketing Information Systems Technology and the decision making processes in the banking sector in Palestine.

This hypothesis is divided into the following sub-hypotheses:

a) There is a significant positive relationship at the level $\alpha \leq 0.05$ between new technology (Hardware, Software) and the Decision Making Process.

This hypothesis is divided into the following two sub-hypotheses:

a1) There is a significant positive relationship at the level $\alpha \leq 0.05$ between new Hardware technology and the Decision Making Process.

Table (4.22) shows that the correlation coefficient between new hardware technology and Marketing Information Systems equals 0.373 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at $\alpha = 0.05$.

Wady (2009) study concluded that There is significant relationship between the hardware used in the system and the effectiveness of marketing performance in banking sector.

Table (4.22) Correlation coefficient between new hardware technology and the Decision Making Process

Field	Pearson Correlation Coefficient	P-Value (Sig.)
New hardware technology	0.373	0.000*

* Correlation is statistically significant at 0.05 level

a2) There is a significant positive relationship at the level $\alpha \leq 0.05$ between New Software technology and the Decision Making Process.

Table (4.23) shows that the correlation coefficient between New Software technology and Marketing Information Systems equals 0.352 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at $\alpha = 0.05$. We conclude there exists a significant positive relationship between New Software technology and Marketing Information Systems.

The findings agree with Wady (2009) study which concluded that there is a positive relationship between Software and marketing performance of the employees in the banks.

Table (4.23) Correlation coefficient between New Software technology and the Decision Making Process

Field	Pearson Correlation Coefficient	P-Value (Sig.)
New Software technology	0.352	0.000*

* Correlation is statistically significant at 0.05 level

In general:

a) There is a significant positive relationship at the level $\alpha \leq 0.05$ between new technology (Hardware, Software) and the Decision Making Process.

Table (4.24) shows that the correlation coefficient between New technology (Hardware, Software) and Marketing Information Systems equals 0.384 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at $\alpha = 0.05$. We conclude there exists a significant positive relationship between New technology (Hardware, Software) and Marketing Information Systems.

The findings agree with Nelson (1999) study that concluded " Technological innovation is changing the nature of the retail bank industry, both in the USA and other countries". The conclusion of Harmon (2003) agree with the study, since Harmon concluded that "Marketing information systems, in particular, are being transformed as these new technologies are enabling the integration of marketing, sales and customer service activities.. Moreover, Amarvadi, Samattar, and Dutta in their (1995) study mentioned "as technologies proliferate, the future of intelligent MkIS will become more exciting". Talvenin (1995) also agrees to the findings where Talvenin study concluded that Information technology has a key role to play in new flexible organization forms. The findings also agree with Li (1995) study which found that Computers are needed by marketing managers, for retrieving data and then storing and processing it. In addition, Saaksjarvi and Talvinen (1993) study main conclusion was that "technical integration of marketing systems is needed, since many of the users need several subsystems of the MkIS in their work", which supports the study findings.

Table (4.24) Correlation coefficient between New technology (Hardware, Software) and the Decision Making Process

Field	Pearson Correlation Coefficient	P-Value (Sig.)
New technology (Hardware, Software)	0.384	0.000*

* Correlation is statistically significant at 0.05 level

b) There is a significant positive relationship at the level $\alpha \leq 0.05$ between Internal Records and the Decision Making Process.

Table (4.25) shows that the correlation coefficient between Internal Records and Marketing Information equals 0.510 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at $\alpha = 0.05$. We conclude there exists a significant positive relationship between Internal Records and Marketing Information.

The findings agree with Ismail (2011) study found that internal records have a strong relationship with making better decisions through the MkIS. In addition Wady (2009) study agree with the findings and mentioned that Internal records have a vital role in enhancing MkIS through providing complete information, extensive data records, and that there is a positive relationship between Internal Records and employees' marketing performance.

Table (4.25) Correlation coefficient between Internal Records and the Decision Making Process

Field	Pearson Correlation Coefficient	P-Value (Sig.)
Internal Records	0.510	0.000*

* Correlation is statistically significant at 0.05 level

c) There is a significant positive relationship the level $\alpha \leq 0.05$ between Marketing Intelligence and the Decision Making Process.

Table (4.26) shows that the correlation coefficient between Marketing Intelligence and Marketing Information Systems equals 0.398 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at $\alpha = 0.05$. We conclude there exists a significant positive relationship between Marketing Intelligence and Marketing Information Systems.

Marketing intelligence purpose is to get everyday information about customers, competitors, and market. All of these information enhance the MkIS. The findings agree with Wady (2009) study which concluded that Marketing intelligence improve marketing information system in banks of Gaza and there is a positive relationship between Marketing Intelligence and employees' marketing performance. Moreover, one of Ismail (2011) study main findings was that there is a positive relationship between utilizing and adopting marketing intelligence and the right decision making, which also agree with the findings. Hashim (2006) study agrees with the finding and concluded that there is a correlation between marketing intelligence and setting the strategic goals of the organization. Wood (2001) disagree with the findings where he concluded that marketing intelligence does not have an effect on decision making in small and medium sized enterprises.

Table (4.26) Correlation coefficient between Marketing Intelligence and the Decision Making Process

Field	Pearson Correlation Coefficient	P-Value (Sig.)
Marketing Intelligence	0.398	0.000*

* Correlation is statistically significant at 0.05 level

d) There is a significant positive relationship at the level $\alpha \leq 0.05$ between Marketing Research and the Decision Making Process.

Table (4.27) shows that the correlation coefficient between Marketing Research and Marketing Information Systems equals 0.615 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at $\alpha = 0.05$. We conclude there exists a significant relationship between Marketing Research and Marketing Information Systems.

Marketing research is a good source of information, which will positively contribute to the MkIS. The high correlation between marketing research and MkIS is justified because every bank has a special department for the marketing research. The findings agree with Wady's findings in his (2009) study concluded that effective marketing research reflects positively on the marketing performance of the employees in banking sector in Gaza through predicting, allocating and tracing potential problems. In addition, Ismail in his (2011) study found a positive relationship between marketing research and the decision making process, which agrees with the study findings.

Table (4.27) Correlation coefficient between Marketing Research and the Decision Making Process

Field	Pearson Correlation Coefficient	P-Value (Sig.)
Marketing Research	0.615	0.000*

* Correlation is statistically significant at 0.05 level

e) There is a significant positive relationship the level $\alpha \leq 0.05$ between Marketing Decision Support System and the Decision Making Process.

Table (4.28) shows that the correlation coefficient between Marketing Decision Support System and Marketing Information Systems equals 0.723 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less than 0.05, so the correlation coefficient is statistically significant at $\alpha = 0.05$. We conclude there exists a significant positive relationship between Marketing Decision Support System and Marketing Information Systems.

The findings agree with Ismail on his (2011) study agrees where he found a strong relationship between MDSS and the right decision making, where this finding was one of the main findings in his study. Wady on his (2009) study agree with the findings and concluded that there is a positive relationship between MDSS and employees' marketing performance. Arafat in his (2007) also agrees with the findings, where he concluded that in the Palestinian ministries, they are aware of the importance of utilizing DSS.

Table (4.28) Correlation coefficient between Marketing Decision Support System and the Decision Making Process

Field	Pearson Correlation Coefficient	P-Value (Sig.)
Marketing Decision Support System	0.723	0.000*

* Correlation is statistically significant at 0.05 level

In general:

There is a significant relationship at 0.05 level between Marketing Information Systems Technology and the decision making processes in the banking sector in Palestine.

Table (4.29) shows that the correlation coefficient between Marketing Information Systems Technology and the decision making processes in the banking sector in Palestine equals 0.662 and the p-value (Sig.) equals 0.000. The p-value (Sig.) is less

than 0.05, so the correlation coefficient is statistically significant at $\alpha = 0.05$. We conclude there exists a significant positive relationship between Marketing Information Systems Technology and the decision making processes in the banking sector in Palestine.

The findings agree with Ismail (2011), Wady (2009), Hashim (2006), Gounaris et al. (2007), Wood (2001), Talvinen and Saarine (1995), Talvinen (1995), and Li (1995), where they all concluded that there is a positive correlation between MkIS and employees' performance and management decision making.

Table (4.29) Correlation coefficient between Marketing Information Systems Technology and the decision making processes in the banking sector in Palestine

Field	Pearson Correlation Coefficient	P-Value (Sig.)
The decision making processes	0.662	0.000*

* Correlation is statistically significant at 0.05 level

Hypothesis #2:

There are no significant statistical differences at significant level (α=0.05) among the respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process due to the personal traits of the executives (Age, Gender, Educational Attainment, Field of Specialization, Job Title, Years of experience, and Years of experience as a manager / deputy).

This hypothesis can be divided into the following sub-hypotheses:

2-a There are no significant statistical differences at significant level (α=0.05) among the respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process due to Age.

Table (4.30) shows that the p-value (Sig.) is smaller than the level of significance α = 0.05 for the fields "The Availability of the Software Components, Marketing Information System Technology and all independent variables together", then there is significant difference among respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward these fields due to Age. We conclude that the personal trait Age has an effect on these fields. Since the sign of the test for each of these fields is negative, then the age group "40 years and above " respondents' is significantly higher than those for the other age group.

Table (4.30) shows that the p-value (Sig.) is greater than the level of significance α = 0.05 for the other fields, then there is insignificant difference among respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward these fields due to Age. We conclude that the personal trait Age has no effect on these fields.

The younger age deal better with computers and new technology. This fact justifies the significant difference in the answers between the two age groups in the MkIS technology part. When looking at the independent variables separately, the results show that there are no significant differences between the answers of the two age groups. This result show that the traditional MkIS before using the computers was found, and still has its' effects on older managers. The results also show that older managers have

higher mean average on every single variable. The significant difference between the answers of all the independent variables together is due to the fact that younger age expect even much more from the new technology than the older age.

Table (4.30): Independent Samples-Test of the fields and their p-values for each field for Age

No	Field	Mean		Test value	P-value (Sig.)
		25- less than 40 years	40 years and above		
1.	The Availability of hardware used in the system	8.72	8.95	-1.209	0.115
2.	The Availability of the Software Components	8.29	8.74	-2.255	0.013*
3.	Marketing Information System Technology	8.51	8.85	-1.879	0.032*
4.	Internal Records	7.95	8.17	-1.014	0.157
5.	Marketing Intelligence System	7.71	8.00	-1.338	0.092
6.	Marketing Research System	7.50	7.90	-1.640	0.052
7.	Marketing Decision Support System (MDSS)	7.83	7.89	-0.254	0.400
8.	All independent variables together	7.93	8.20	-1.694	0.047*
9.	Decision Making Process	7.92	8.12	-0.907	0.183

***** The mean difference is significant a 0.05 level

2-b There are no significant statistical differences at significant level (α=0.05) among the respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process due to Gender

Table (4.31) shows that the p-value (Sig.) is smaller than the level of significance $\alpha = 0.05$ for the fields "The Availability of the Software Components, and Marketing Information System Technology", then there is significant difference among respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward these fields due to Gender. We conclude that the personal trait Gender has an effect on these fields. Since the sign of the test for each of these fields is positive, then the Males respondents' is significantly higher than females.

Table (4.31) shows that the p-value (Sig.) is greater than the level of significance $\alpha = 0.05$ for the other fields, then there is insignificant difference among respondents'

answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward these fields due to Gender. We conclude that the personal trait Gender has no effect on these fields.

There are no significant differences among the answers regarding the gender except in the technological part, where male respondents have a higher mean than female respondents. This can be justified by the fact the percentage of the male employees in the bank is 84%, and they are more likely to be trained on new systems than females.

Table (4.31): Independent Samples-Test of the fields and their p-values for each field for Gender

No	Field	Mean		Test value	P-value (Sig.)
		Male	Female		
1.	The Availability of hardware used in the system	8.87	8.55	1.213	0.114
2.	The Availability of the Software Components	8.59	7.95	2.213	0.015*
3.	Marketing Information System Technology	8.73	8.27	1.789	0.038*
4.	Internal Records	8.12	7.67	1.486	0.070
5.	Marketing Intelligence System	7.88	7.60	0.911	0.182
6.	Marketing Research System	7.68	7.61	0.208	0.418
7.	Marketing Decision Support System (MDSS)	7.89	7.66	0.838	0.202
8.	All independent variables together	8.09	7.79	1.280	0.102
9.	Decision Making Process	8.03	7.87	0.541	0.295

***** The mean difference is significant a 0.05 level

2-c There are no significant statistical differences at significant level (α=0.05) among the respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process due to Educational Attainment

Table (4.32) shows that the p-value (Sig.) is greater than the level of significance $\alpha = 0.05$ for each fields, then there is insignificant difference among respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward these fields due to Educational Attainment. We conclude that the personal trait Educational Attainment has no effect on these fields.

There are no significant differences among the answers because the bank's train their employees on their system the same way. In addition, all managers have a long experience in working in the banks, which will make them deal with the situations with the bank perspective not their own.

Table (4.32): ANOVA test of the fields and their p-values for Educational Attainment

No	Field	Test Value	Sig.
1.	The Availability of hardware used in the system	0.325	0.724
2.	The Availability of the Software Components	0.499	0.609
3.	Marketing Information System Technology	0.033	0.967
4.	Internal Records	0.498	0.609
5.	Marketing Intelligence System	0.825	0.441
6.	Marketing Research System	0.266	0.767
7.	Marketing Decision Support System (MDSS)	0.712	0.493
8.	All independent variables together	0.010	0.990
9.	Decision Making Process	1.789	0.173

* The mean difference is significant a 0.05 level

2-d There are no significant statistical differences at significant level (α=0.05) among the respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process due to Field of Specialization

Table (4.33) shows that the p-value (Sig.) is smaller than the level of significance $\alpha = 0.05$ for the fields "The Availability of hardware used in the system, The Availability of the Software Components, and Marketing Information System Technology", then there is significant difference among respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward these fields due to Field of Specialization. We conclude that the personal trait Field of Specialization has an effect on these fields.

Table (4.33) shows that the p-value (Sig.) is greater than the level of significance $\alpha = 0.05$ for the other fields, then there is insignificant difference among respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward these fields due to Field of Specialization. We conclude that the personal trait Field of Specialization has no effect on these fields.

The only significant difference is found in the technological part, which is justified by the fact that 14.1% of the managers' major is IT. People with IT major always expect and want more of the technology.

Table (4.33): ANOVA test of the fields and their p-values for Field of Specialization

No	Field	Test Value	Sig.
1.	The Availability of hardware used in the system	2.958	0.024*
2.	The Availability of the Software Components	4.174	0.004*
3.	Marketing Information System Technology	3.873	0.006*
4.	Internal Records	1.788	0.138
5.	Marketing Intelligence System	0.343	0.848
6.	Marketing Research System	1.016	0.403
7.	Marketing Decision Support System (MDSS)	0.464	0.762
8.	All independent variables together	1.426	0.231
9.	Decision Making Process	0.257	0.905

* The mean difference is significant a 0.05 level

Table (4.34) shows the mean for each field for **Field of Specialization** .

- For the field " The Availability of hardware used in the system", the mean for respondents with " Other field of specialization" of these fields is higher than other Field of Specialization classifications.

- For the fields " The Availability of the Software Components and Marketing Information System Technology ", the mean for respondents with " Economics" of these fields is higher than other Field of Specialization classifications.

The mean average of the IT major is the lowest, because they always look for new technology that will make their work easier.

Table (4.34): Mean for each field of Field of Specialization

No	Fields	Means				
		Business Admin	Economics	Accounting	IT	Other Specify
1.	The Availability of hardware used in the system	8.73	9.13	8.96	8.15	9.33
2.	The Availability of the Software Components	8.57	8.81	8.70	7.52	8.38
3.	Marketing Information System Technology	8.65	8.97	8.84	7.83	8.85
4.	Internal Records	8.21	8.51	7.99	7.47	8.30
5.	Marketing Intelligence System	7.79	8.13	7.86	7.61	7.96
6.	Marketing Research System	7.43	8.28	7.75	7.43	7.73
7.	Marketing Decision Support System (MDSS)	7.94	8.13	7.72	7.84	8.04
8.	All independent variables together	8.03	8.43	8.08	7.65	8.20
9.	Decision Making Process	8.03	8.33	7.94	7.96	7.98

2-e There are no significant statistical differences at significant level (α=0.05) among the respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process due Job Title

Table (4.35) shows that the p-value (Sig.) is greater than the level of significance $\alpha = 0.05$ for each fields, then there is insignificant difference among respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward these fields due to Job Title. We conclude that the personal trait Job Title has no effect on these fields.

Table (4.35): ANOVA test of the fields and their p-values for Job Title

No	Field	Test Value	Sig.
1.	The Availability of hardware used in the system	0.705	0.551
2.	The Availability of the Software Components	0.788	0.504
3.	Marketing Information System Technology	0.775	0.511
4.	Internal Records	0.827	0.482
5.	Marketing Intelligence System	0.690	0.561
6.	Marketing Research System	1.819	0.149
7.	Marketing Decision Support System (MDSS)	1.187	0.319
8.	All independent variables together	1.158	0.330
9.	Decision Making Process	0.217	0.885

2-f There are no significant statistical differences at significant level (α=0.05) among the respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process due to Years of experience.

Table (4.36) shows that the p-value (Sig.) is smaller than the level of significance α = 0.05 for the field "The Availability of the Software Components", then there is significant difference among respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward this field due to Years of experience. We conclude that the personal trait Years of experience has an effect on this field.

Table (4.36) shows that the p-value (Sig.) is greater than the level of significance α = 0.05 for the other fields, then there is insignificant difference among respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward these fields due to Years of experience. We conclude that the personal trait Years of experience has no effect on these fields.

Table (4.36): ANOVA test of the fields and their p-values for Years of experience

No	Field	Test Value	Sig.
1.	The Availability of hardware used in the system	0.678	0.510
2.	The Availability of the Software Components	4.227	0.017*
3.	Marketing Information System Technology	2.335	0.102
4.	Internal Records	0.972	0.382
5.	Marketing Intelligence System	2.719	0.071
6.	Marketing Research System	1.996	0.142
7.	Marketing Decision Support System (MDSS)	0.629	0.535
8.	All independent variables together	2.782	0.067
9.	Decision Making Process	0.520	0.596

* The mean difference is significant a 0.05 level

Table (4.37) shows the mean for each field for **Years of experience** .

For the field " The Availability of the Software Components ", the mean for respondents with years of experience "15 years and above" of these fields are higher than other years of experience groups.

The results show that the more years of experience the higher the mean for every single variable. This means that the managers get more familiar to the system, and they do not have to learn new things to get their work done better.

Table (4.37): Mean for each field of Years of experience

No	Fields	Means		
		Less than 10 years	10-15 years	15 years and above
1.	The Availability of hardware used in the system	8.66	8.80	8.94
2.	The Availability of the Software Components	8.01	8.52	8.77
3.	Marketing Information System Technology	8.35	8.66	8.85
4.	Internal Records	7.84	7.99	8.22
5.	Marketing Intelligence System	7.52	7.72	8.13
6.	Marketing Research System	7.37	7.54	7.96
7.	Marketing Decision Support System (MDSS)	7.74	7.78	7.99
8.	All independent variables together	7.79	7.97	8.27
9.	Decision Making Process	7.97	7.88	8.14

2-g There are no significant statistical differences at significant level (α=0.05) among the respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process due to Years of experience as a manager / deputy

Table (4.38) shows that the p-value (Sig.) is smaller than the level of significance α = 0.05 for the field "Marketing Intelligence System", then there is significant difference among respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward these fields due to Years of experience as a manager / deputy. We conclude that the personal trait Years of experience as a manager / deputy has an effect on these fields.

Table (4.38) shows that the p-value (Sig.) is greater than the level of significance α = 0.05 for the other fields, then there is insignificant difference among respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward these fields due to Years of experience as a manager / deputy. We conclude that the personal trait Years of experience as a manager / deputy has no effect on these fields.

When looking at table (4.38), the use of marketing intelligence grows with the years of experience. More experienced managers always try to get fresh information about their customers and competitors. This fact justifies the significant difference in the answers between the respondents regarding marketing intelligence.

Table (4.38): ANOVA test of the fields and their p-values for Years of experience as a manager / deputy

No	Field	Test Value	Sig.
1.	The Availability of hardware used in the system	0.186	0.831
2.	The Availability of the Software Components	1.165	0.318
3.	Marketing Information System Technology	0.555	0.577
4.	Internal Records	0.818	0.446
5.	Marketing Intelligence System	3.913	0.025*
6.	Marketing Research System	1.416	0.250
7.	Marketing Decision Support System (MDSS)	0.525	0.594
8.	All independent variables together	1.380	0.259
9.	Decision Making Process	0.681	0.510

* The mean difference is significant a 0.05 level

Table (4.39) shows the mean for each field for Years of experience as a manager / deputy.

For the field "Marketing Intelligence System", the means for respondents with Years of experience as a manager / deputy "10 years and above" of these fields are higher than other Years of experience as a manager / deputy groups.

Table (4.39): Mean for each field of Years of experience as a manager / deputy

No	Fields	Means		
		Less than 5 years	5-10 years	10 years and above
1.	The Availability of hardware used in the system	8.80	8.80	8.94
2.	The Availability of the Software Components	8.38	8.77	8.68
3.	Marketing Information System Technology	8.59	8.79	8.81
4.	Internal Records	7.84	8.07	8.24
5.	Marketing Intelligence System	7.52	8.23	8.26
6.	Marketing Research System	7.76	7.52	8.18
7.	Marketing Decision Support System (MDSS)	7.90	7.78	8.09
8.	All independent variables together	7.96	8.11	8.36
9.	Decision Making Process	8.04	7.98	8.34

Hypohesis#3:

There are no significant statistical differences at significant level (α=0.05) among the respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process due to the organizational traits (Bank establishment, Number Of employees, Workplace, and Type of the bank "Branch/Main").

This hypothesis can be divided into the following sub-hypotheses:

3-a There are no significant statistical differences at significant level (α=0.05) among the respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process due to Bank establishment.

Table (4.40) shows that the p-value (Sig.) is smaller than the level of significance α = 0.05 for the fields "Marketing Intelligence System, Marketing Research System, Marketing Decision Support System (MDSS), All independent variables together, and Marketing information system", then there is significant difference among respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward these fields due to Bank establishment. We conclude that the personal trait Bank establishment has an effect on these fields. Since the sign of the test for each of these fields is positive, then the Bank establishment "21 years and more" group respondents' is significantly higher than the "Less than 20 years" group.

Table (4.40) shows that the p-value (Sig.) is greater than the level of significance α = 0.05 for the other fields, then there is insignificant difference among respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward these fields due to Bank establishment. We conclude that the personal trait Bank establishment has no effect on these fields.

Due to the fact that internal records has been the most relied on source of information for a long time, that is the reason that are no significant differences in the respondents answers. In addition, all the banks nowadays get the latest available technology to help make their transaction faster and more efficient. Regarding all the other variables and the MkIS part there are significant differences, because more experienced manager deal more with the system and they know its' strength and weaknesses. The results show

that the mean for all independent variables together is very close to the MkIS, which means that the answers can be relied on.

Table (4.40): Independent Samples-Test of the fields and their p-values for each field for Bank establishment

No	Field	Mean		Test value	P-value (Sig.)
		Less than 20 years	21 years and more		
1.	The Availability of hardware used in the system	8.70	8.93	-1.196	0.117
2.	The Availability of the Software Components	8.33	8.63	-1.444	0.076
3.	Marketing Information System Technology	8.51	8.79	-1.454	0.075
4.	Internal Records	7.94	8.14	-0.896	0.186
5.	Marketing Intelligence System	7.49	8.15	-3.096	0.001*
6.	Marketing Research System	7.23	8.06	-3.426	0.000*
7.	Marketing Decision Support System (MDSS)	7.64	8.04	-2.001	0.024*
8.	All independent variables together	7.80	8.27	-2.838	0.003*
9.	Decision Making Process	7.76	8.23	-2.162	0.018*

***** The mean difference is significant a 0.05 level

3-b There are no significant statistical differences at significant level (α=0.05) among the respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process due to Number of employees.

Table (4.41) shows that the p-value (Sig.) is greater than the level of significance $\alpha = 0.05$ for each fields, then there is insignificant difference among respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward these fields due to Number of employees. We conclude that the personal trait Number of employees has no effect on these fields.

The findings disagree with Ahlstedt (2007) study, where he concluded that company size decides the time of implementing Marketing Information Systems.

Table (4.41): ANOVA test of the fields and their p-values for Number of employees

No	Field	Test Value	Sig.
1.	The Availability of hardware used in the system	0.724	0.488
2.	The Availability of the Software Components	1.949	0.148
3.	Marketing Information System Technology	1.194	0.308
4.	Internal Records	0.065	0.937
5.	Marketing Intelligence System	1.627	0.202
6.	Marketing Research System	0.039	0.962
7.	Marketing Decision Support System (MDSS)	0.182	0.834
8.	All independent variables together	0.026	0.975
9.	Decision Making Process	0.699	0.500

3-c There are no significant statistical differences at significant level (α=0.05) among the respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process due to Workplace.

Table (4.42) shows that the p-value (Sig.) is smaller than the level of significance α = 0.05 for the field "The Availability of the Software Components", then there is significant difference among respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward these fields due to Workplace. We conclude that the personal trait Workplace has an effect on this field. Since the sign of the test for each of this field is negative, then the workplace group "Local and International" respondents' is significantly higher than those for the "Local" group.

Table (4.42) shows that the p-value (Sig.) is greater than the level of significance α = 0.05 for the other fields, then there is insignificant difference among respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward these fields due to Workplace. We conclude that the personal trait Workplace has no effect on these fields.

Table (4.42): Independent Samples-Test of the fields and their p-values for each field for Workplace

No	Field	Mean		Test value	P-value (Sig.)
		Local	Local and International		
1.	The Availability of hardware used in the system	8.79	8.89	-0.481	0.316
2.	The Availability of the Software Components	8.35	8.80	-1.992	0.025*
3.	Marketing Information System Technology	8.57	8.84	-1.341	0.092
4.	Internal Records	7.95	8.26	-1.346	0.091
5.	Marketing Intelligence System	7.77	7.98	-0.849	0.199
6.	Marketing Research System	7.59	7.85	-0.945	0.174
7.	Marketing Decision Support System (MDSS)	7.81	7.95	-0.643	0.261
8.	All independent variables together	7.97	8.21	-1.270	0.104
9.	Decision Making Process	7.92	8.21	-1.218	0.113

***** The mean difference is significant a 0.05 level

3-d There are no significant statistical differences at significant level (α=0.05) among the respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process due to Type of the bank "Branch/Main".

Table (4.43) shows that the p-value (Sig.) is smaller than the level of significance $\alpha = 0.05$ for the fields "The Availability of hardware used in the system, The Availability of the Software Components, Marketing Information System Technology, Marketing Research System and All independent variables together", then there is significant difference among respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward these fields due to Type of the bank. We conclude that the personal trait Type of the bank has an effect on these fields. Since the sign of the test for each of these fields is positive, then the bank branches respondents' is significantly higher than those for main banks.

Table (4.43) shows that the p-value (Sig.) is greater than the level of significance $\alpha = 0.05$ for the other fields, then there is insignificant difference among respondents' answers regarding the Role of Marketing Information Systems Technology in the Decision Making Process toward these fields due to Type of the bank. We conclude that the personal trait Type of the bank has no effect on these fields.

The researcher divided the respondents into two groups the bank branches and the main bank. The results show that there are significant differences among the answers of the branches' management and the main management regarding the technology as a whole, and all the independent variables together. The differences can be justified, because the people in top management positions always try to get the best out of their employees and their directors. At the same time, when new technology is added or more concentration on the research is recognized by branch management, they consider their work good enough.

Table (4.43): Independent Samples-Test of the fields and their p-values for each field for Type of the bank

No	Field	Mean		Test value	P-value (Sig.)
		Bank Branches	Main Banks		
1.	The Availability of hardware used in the system	8.93	8.16	2.931	0.002*
2.	The Availability of the Software Components	8.60	7.81	2.678	0.004*
3.	Marketing Information System Technology	8.77	7.99	3.036	0.002*
4.	Internal Records	8.06	7.99	0.343	0.367
5.	Marketing Intelligence System	7.83	7.89	-0.192	0.424
6.	Marketing Research System	7.74	7.27	2.025	0.026*
7.	Marketing Decision Support System (MDSS)	7.91	7.56	1.205	0.116
8.	All independent variables together	8.10	7.74	2.286	0.015*
9.	Decision Making Process	8.06	7.67	1.234	0.110

***** The mean difference is significant a 0.05 level

Chapter Five
Conclusions & Recommendations

5.1 Conclusions:

The research investigates the role of Marketing Information Systems Technology in the decision making process and summarizes the following conclusions based on the data analysis and findings:

- 86.6% of the respondents agree that the technology is available in the MkIS in the bank, and that its availability affect the decision making process, depending on the following results. All the banks are depending on computers on all transactions and processes. Moreover, the banks have top of the line hardware such as input and output units. In addition, the new hardware has the ability to store, access, and retrieve more data faster and more efficient. The software used by the banks minimizes the over use of papers between the banks' departments due to the present of automated communication processes such as e-mail. In addition, the new software ease the retrieval of stores information, and with the presence of high secures systems the banks' management is not afraid to store all kind of information on the system. The banks also depend on computers to execute the transactions because the new software improves the flexibility of the system, and perform in a more efficient way.
- There is a strong positive relationship (0.384) between the technology used in the MkIS and the decision making process.
- The availability of new technology and its' effect on decision making in addition to the positive relationship between new technology and the decision making process, the study conclude that new technology has a positive role in the decision making process.
- 77.6% of the respondents agree that the internal records are available in the banks, and they affect the decision making process, depending on the results. The internal records are easy and cheap source of information, and they are considered accurate, and fit with the purpose that records are being used for; moreover, the internal records contain up to date information that help in making better decisions. Each department in the bank keeps information in the database to make it easier for them and for other departments to access this information when needed.
- There is a strong positive relationship (0.510) between the internal records and the decision making process.

- The availability of internal records and their effect on decision making in addition to the positive relationship between internal records and the decision making process, the study conclude that internal records has a positive role in the decision making process.
- 80.1% of the respondents agree that marketing intelligence is available in the banks, and contributes to the decision making process, depending on following results. Marketing intelligence in all the banks rely on internal sources of information, and the banks use Marketing Intelligence in regular basis in gathering information. The respondents agree that Marketing Intelligence provide sufficient and useful information about customers and competitors, and they also agree that Marketing Intelligence help in the early warning of threats and opportunities. In addition, the findings show that marketing intelligence is useful also in understanding the market requirements and the market changes.
- There is a strong positive relationship (0.398) between the marketing intelligence and the decision making process.
- The availability of marketing intelligence and its' effect on decision making in addition to the positive relationship between marketing intelligence and the decision making process, the study conclude that marketing intelligence has a positive role in the decision making process.
- 78.2% of the respondents agree that marketing research is available and affects the decision making process in the bank, depending on the following results. Marketing Research provides the needed information for the decision makers in a timely manner. In addition, Marketing Research can identify the opportunities and threats, and reduces the risk of uncertainty. Marketing Research help in assessing the current market, understanding consumer behavior, and provide adequate solutions to the problems facing the banks.
- There is a strong positive relationship (0.615) between the marketing research and the decision making process.
- The availability of marketing research and its' effect on decision making in addition to the positive relationship between marketing research and the decision making process, the study conclude that marketing research has a positive role in the decision making process.

- 78.1% of the respondents agree that the banks rely on MDSS and it has effects on the decision making process, depending on the following results. Computer programs reduce the employees' time, effort, and cost. In addition, the survey shows that the output of the Marketing Decision Support System determine the good customers and the ones affecting the sales, identify the bottlenecks affecting the daily work, and measure the effectiveness of the marketing activities. Marketing Decision Support System analyze the information gathered from research, intelligence, and internal records. MDSS identify the strengths and weaknesses, the bottlenecks affecting daily work, and the opportunities and threats.
- There is a strong positive relationship (0.723) between MDSS and the decision making process.
- The availability of MDSS and its' effect on decision making in addition to the positive relationship between MDSS and the decision making process, the study conclude that MDSS has a positive role in the decision making process.
- There is a strong positive relationship (0.662) between the all the components of MkIS technology and the decision making process, which means that MkIS has a major role in the decision making process.
- The analysis shows that there are no significant differences among the respondents' answers due to the personal traits.
- The analysis shows that there are no significant differences among the respondents' answers due to the organizational traits.
- 82.5% of the respondents benefit from MkIS on decision making.
- 82.3% of the respondents trust the decisions taken based on MkIS.
- 80.1% of the respondents agree that MkIS is a great help in identifying the alternatives and provide better information for decision making.

5.2 Recommendations:

1. The banks should improve the quality of exchanging information among the different users in the bank.
2. The banks have to record all the information gathered from intelligence and research in the database.
3. The banks have to rely on other sources of information than internal sources for marketing intelligence.

4. The banks have to increase the budget allocated for marketing research.
5. The banks should work on marketing research constantly.
6. The banks have to train the employees on using the analytical programs available to them.
7. More sophisticated programs and newer technology must be added to the current systems in the banks.
8. The banks have to track the competitors' moves using marketing intelligence.
9. The banks should use marketing intelligence in a regular basis to assess their market share.
10. The banks have to use the gathered information to decide on the promotion options.
11. Market research should be used to price the banks' services.
12. Internal records should be used to design database marketing for the bank.
13. The banks have to differentiate between management decisions regarding the bank and the marketing decisions.

5.3 Suggestions for future research:

Due to the importance of the MkIS, further research can be carried on:

1. The role of MkIS on the performance of the employees.
2. The effect of MkIS on strategic decisions of the firms.
3. The use of MDSS in determining the marketing mix.
4. The effect of database marketing on the firm's market share.
5. The effect of MkIS on product and service development.

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Appendices

Appendix (1)

Refereeing and refining

After designing and revising the questionnaire several times, it was refereed and refined by university Professors, Doctors, Statisticians, and bank managers. Finally the final copy was ready to be distributed to the study population.

Referees:

1. Prof. Majed El Farra — Islamic University - Gaza
2. Profr. Yousef Ashour — Islamic University - Gaza
3. Dr. Sami Abo Ross — Islamic University - Gaza
4. Dr. Maher Dorgham — Islamic University - Gaza
5. Dr. Sameer Safi — Islamic University - Gaza
6. Dr. Faris Abu Mouamer — Islamic University - Gaza
7. Mr. Rami Hussien — Arab Islamic Bank – Khan Younis

Appendix (2)

Bank Name	# Of West Bank Branches	# Of Gaza Strip Branches	Total
Bank of Palestine P.L.C	24	10	34
Palestine Investment Bank	9	1	10
Palestine Commercial Bank	3	1	4
Al-Quds Bank	11	2	13
Al Rafah Microfinance Bank	6	0	6
Arab Palestinian Investment Bank	1	0	1
Arab Islamic Bank	7	2	9
Palestine Islamic Bank	9	6	15
Cairo Amman Bank	15	5	20
Arab Bank	21	1	22
Jordan Kuwait Bank	2	0	2
Jordan Ahli Bank	5	0	5
Bank of Jordan	11	2	13
HSBC Bank Middle East Limited	1	0	1
Egyptian Arab Land Bank	4	2	6
Union Bank	1	0	1
The Housing Bank for Trade & Finance	10	2	12
Jordan Commercial Bank	3	0	3
TOTAL	**143**	**34**	**177**

Appendix (3)

بسم الله الرحمن الرحيم

الأخ الكريم .. الأخت الكريمة ،،،،،،،،،،،،،،

تحية طيبة وبعد ،،،،،،،،،،،،،،

يقوم الباحث محمد يوسف بهلول بعمل دراسة بعنوان " **دور تكنولوجيا نظم المعلومات التسويقية في عملية صنع القرار، دراسة حالة على القطاع المصرفي في فلسطين** ".

كلنا أمل أن تكونوا خير معين لهذه الدراسة ، وذلك من خلال الاجابة على الاستبيان المرفق مع هذا الطلب ، ولا يفوتنا أن نؤكد لسيادتكم أنه ليس لموضوع البحث أية أضرار قد تحدث لمؤسستكم ، لكن البحث سيقدم لكم رؤية عن دور تكنولوجيا نظم المعلومات التسويقية في عملية صنع القرار.

وأود أن أؤكد لكم أن البيانات أو المعلومات التي ستزودننا بها أو الاستبيان الذي ستقومون بتعبئته سيكون في إطار كامل من السرية المطلقة ولن يتم استخدام هذه المعلومات إلا لغايات البحث .

ولايفوتنا أن نؤكد أن المشاركة في البحث هي طواعية كاملة ، كما أن من حقكم عدم الإجابة عن أي سؤال في الاستبيان . كما أنه لا وجود لإجابات صواب وإجابات خاطئة لذا الرجاء الإجابة بشكل يعكس صورة الواقع في مؤسستكم.

الباحث على أتم الاستعداد للإجابة على أي استفسار على رقم 0599999920

للحصول على نسخة من نتائج البحث يرجي اعلامنا بذلك.

شاكرين لكم حسن تعاونكم معنا لما فيه من رقي لمجتمعنا،،،،

الباحث / محمد يوسف بهلول

أولاً : ويشتمل على معلومات عامة عن أفراد عينة الدراسة :

*****الرجاء التكرم بوضع إشارة (√) أمام الإجابة الصحيحة :**

1 . الفئة العمرية

☐ أقل من 25 سنة ☐ 25-أقل من 40 سنة ☐ 40-أقل من 55 سنة ☐ 55 سنة فما فوق

2 – الجنس

☐ ذكر ☐ أنثى

3 – المؤهل العلمي

☐ ثانوية عامة ☐ دبلوم متوس ☐ بكالوريوس ☐ ماجستير ☐ دكتورا ة

4 – التخصص العلمي

☐ إدارة أعمال ☐ اقتصاد ☐ محاسبة / تمويل ☐ نظم معلومات ☐ تخصص آخر حدد_____

5 – المسمي الوظيفي

☐ مدير ☐ نائب مدير ☐ مدير التسويق ☐ آخر حدد _____

6 – عدد سنوات الخبرة الكلية

☐ أقل من 5 سنوات ☐ 5- أقل من 10 سنوات ☐ 10- أقل من 15 سنة ☐ 15- أقل من20 سنة ☐ 20 سنة فأكثر

7 – عدد سنوات الخبرة كمدير / مساعد مدير .

☐ أقل من 5 سنوات ☐ 5- أقل من 10 سنوات ☐ 10- أقل من 15 سنة ☐ 15 سنة فأكثر

ثانياً : ويشتمل على معلومات عن الشركات مجتمع الدراسة وعلى النحو التالى :

1 – عمر البنك: ☐ أقل من 5 سنوات ☐ 5- 20 سنة ☐ 21 سنة فأكثر

2 – عدد العاملين: ☐ أقل من 10 موظفين ☐ 10- 20 موظف ☐ 21 موظف فأكثر

3 – مكان العمل: ☐ محلي ☐ دولي ☐ محلي ودولي

ثالثاً : النظام المستخدم

المحور الأول : مدى وفرة المكونات المادية Hardware المستخدمة في النظام

الرجاء التكرم بتحديد وكتابة درجة الموافقة من (1- 10) ***علماً بأن أعلى درجة موافقة = 10

م .	البيان	موافق بدرجة (1 – 10) أعلى درجة موافقة = 10
1	يعتمد النظام الحالي في البنك بشكل أساسي على استخدام الحاسوب.	
2	الأجهزة المستخدمة من قبل البنك تتلاءم مع طبيعة العمل.	
3	يستخدم البنك معدات متطورة ذات كفاءة وجودة عاليتين.	
4	الأجهزة التي يستخدمها البنك لها القدرة على التخزين والتعديل بكفاءة عالية.	
5	الأجهزة التي يستخدمها البنك تتسم بالمرونة ويمكن تعديلها وصيانتها.	
6	تعتبر وحدات الإدخال (الفأرة، لوحة المفاتيح، ....) التي يستخدمها البنك كافية لإدخال البيانات بكفاءة.	
7	تعتبر وحدات الإخراج (الطابعة، الشاشة، ...) التي يستخدمها البنك كافية وتساعد في عملية الإخراج.	
8	تساهم كفاءة الأجهزة المستخدمة في البنك على جودة القرار التسويقي.	

المحور الثاني : مدى وفرة البرمجيات Software المستخدمة في النظام

1	تساهم البرامج المستخدمة من قبل البنك في تفعيل عملية الاتصال بين المستخدمين .	
2	يمنع نظام حماية قاعدة البيانات التسويقية الأشخاص غير المخولين من دخول النظام.	
3	يعطي النظام مرونة في تبادل المعلومات التسويقية داخل البنك.	
4	تتميز البرامج المستخدمة داخل البنك بالقدرة على التخزين، التبويب، التلخيص واستخراج المعلومات.	
5	تساهم البرمجيات التي يستخدمها البنك في تقليل الوقت والجهد من خلال عدم إستخدام الورق في المراسلات بين الأقسام.	
6	تعتمد البرمجيات المستخدمة داخل البنك على استخدام الشبكة العنكبوتية (الانترنت).	
7	تصف البرمجيات المستخدمة في البنك بأنها كافية وفعالة.	
8	تؤثر وفرة وكفاءة البرمجيات في البنك على جودة القرار التسويقي.	

رابعاً : السجلات الداخلية

م .	البيان	
1	تصف السجلات التسويقية داخل البنك بأنها متعددة وشاملة.	
2	يحتفظ كل قسم من البنك بالمعلومات في السجلات الداخلية.	
3	توفر السجلات الداخلية في البنك معلومات مهمة عن أداء الزبائن.	
4	توفر السجلات الداخلية في البنك معلومات مهمة عن المبيعات والمشتريات.	
5	تتسم المعلومات التسويقية في السجلات الداخلية للبنك بالدقة الكافية.	
6	تتلاءم المعلومات التسويقية في السجلات الداخلية للبنك مع الغرض المستخدمة من أجله.	
7	يحتفظ البنك بجميع المعلومات الواردة من الإستخبارات والبحوث التسويقية في السجلات الداخلية.	
8	يقوم البنك بتحديث السجلات الداخلية بإستمرار.	
9	يعتمد البنك على السجلات الداخلية لتحديد المشكلات.	
10	تعتبر قاعدة السجلات الداخلية للبنك أقل تكلفة من المصادر الأخرى للمعلومات(البحث، الزبائن، الموردين).	
11	تؤثر السجلات والتقارير الداخلية المحوسبة في البنك على عملية صنع القرار.	

خامساً : الاستخبارات التسويقية

(وهي الوسيلة التي بواسطتها تمكن من الإطلاع الدائم والمعرفة المستمرة بالظروف المستجدة داخل المنظمة وخارجها)

م .	البيان	موافق بدرجة (1 – 10) أعلى درجة موافقة = 10
1	يستفيد البنك من تقنيات الاستخبارات التسويقية في الإطلاع الدائم والمعرفة المستمرة بالظروف التسويقية المستجدة.	
2	يستخدم البنك الإستخبارات التسويقية بشكل دوري في جمع المعلومات حول منافسيه.	
3	يعتمد البنك على وسائل الإعلام في الحصول على المعلومات.	
4	يوفر زبائن البنك معلومات مفيدة عن السوق والمنافسين.	
5	يعتمد البنك على مصادر داخلية للمعلومات (المدراء، المستشارين، مندوبين المبيعات، مندوبين الشراء).	
6	تعتبر الاستخبارات التسويقية في البنك من المصادر الحيوية والعاملة في فهم طبيعة متطلبات السوق.	
7	توفر الاستخبارات التسويقية في البنك معلومات كافية ومفيدة عن زبائن المؤسسة.	
8	تساهم الاستخبارات التسويقية للبنك في الحصول على المعلومات اللازمة عن الخدمات.	
9	تساهم الاستخبارات التسويقية للبنك في عملية تتبع وتقييم أداء المنافسين التسويقي بإستمرار.	
10	تساعد الاستخبارات التسويقية للبنك في التنبيه المبكر للتهديدات والفرص.	
11	تنعكس فعالية الاستخبارات التسويقية في البنك ايجابيا على الأداء التسويقي لموظفي المؤسسة.	
12	تساهم المعلومات الناتجة عن الاستخبارات التسويقية في البنك على عملية صنع القرار.	

سادساً : بحوث التسويق

(وهي البحوث والدراسات الرسمية والمنهجية لتوفير البيانات التسويقية الخاصة لأغراض معينة)

م .	البيان	
1	الميزانية المخصصة لقسم البحوث التسويقية في البنك كافية لأداء العمل بكفاءة.	
2	يقوم البنك بعمل دوري ومنتظم في مجال البحوث التسويقية.	
3	تقوم إدارة البنك بالتطوير المستمر لخطة البحوث.	
4	يعتمد البنك على البيانات الأولية (المقابلات، البحث، المراقبة) في الحصول على المعلومات.	
5	تعتبر البيانات الثانوية (السجلات الداخلية، مؤسسات البحث، الأبحاث الحكومية) الأساس في جمع المعلومات.	
6	تتناسب بحوث التسويق في البنك مع الأوضاع التسويقية التي تواجهها المؤسسة.	
7	بحوث التسويق المتعلقة بالبنك تساعد في كشف ، جمع ، وتتبع المشكلات وتوفير الحلول الكافية لها.	
8	تساهم البحوث التسويقية للبنك في تقييم السوق الحالي بدقة.	
9	تساهم بحوث التسويق للبنك في فهم سلوك المستهلك.	
10	تنعكس فعالية البحوث التسويقية ايجابيا على الأداء التسويقي لموظفين البنك.	
11	تقلل البحوث التسويقية في البنك من مخاطر عدم التأكد.	
12	تساهم البحوث التسويقية للبنك في الوقوف على فرص جديدة.	
13	توفر البحوث التسويقية للبنك المعلومات اللازمة لإتخاذ القرار في الوقت المناسب .	
14	تساهم نتائج وتوصيات وإقتراحات البحوث التسويقية في عملية صنع القرار.	

سابعاً : نظام دعم القرارت التسويقية

(برامج حاسوب تستخدم في تحليل البيانات ودعم القرار وتوقع النتائج)

م .	البيان	موافق بدرجة (1 – 10) أعلى درجة موافقة = 10
1	توفر برامج الحاسوب المستخدمة معلومات مفيدة لتحقيق الأهداف التسويقية بكفاءة.	
2	تتمكن برامج الحاسوب من التنبؤ بالتغيير الذي قد يطرأ على أحد المتغيرات التسويقية الاستراتيجية للبنك.	
3	توضح برامج الحاسوب العواقب الناتجة عن التغيير في أحد المتغيرات التسويقية.	
4	تستطيع برامج الحاسوب تحليل وتعريف المشاكل التسويقية.	
5	تقلل برامج الحاسوب المستخدمة المجهود والوقت والتكلفة.	
6	تقيس برامج الحاسوب فعالية الأنشطة التسويقية.	
7	تحدد البرامج حجم العملاء المؤثرين في مبيعات المؤسسة.	
8	تشير برامج الحاسوب إلى المعوقات والاختناقات المؤثرة في سير العمل اليومي.	
9	تساعد برامج الحاسوب المؤسسة من اقتناص الفرص وتجنب التهديدات.	
10	تستطيع برامج الحاسوب تحديد نقاط القوة والضعف التسويقية في المؤسسة.	
11	يحسن البرنامج التدريبي لاستخدام برامج الحاسوب من كفاءة الأداء التسويقي.	
12	يعتمد البنك على تحليل المعلومات الناتج من برامج دعم القرار المحوسب في عملية صنع القرار.	

ثامناً : عملية صنع القرار

م .	البيان	
1	يتفهم موظفين البنك أهداف وغايات نظام المعلومات التسويقي المحوسب في البنك.	
2	توجد استفادة ملموسة من نظام المعلومات المحوسب للبنك في اتخاذك للقرارات في مجال عملك.	
3	تثق بالقرارات التي تتخذ بالاعتماد على نظم المعلومات المحوسب للبنك.	
4	تساهم نظم المعلومات التسويقية المحوسبة للبنك في تحديد المشكلة الحقيقية.	
5	توفر نظم المعلومات التسويقية المحوسبة للبنك بدائل حلول كافية للمشكلات المطروحة.	
6	توفر نظم المعلومات التسويقية المحوسبة للبنك المعلومات الكافية المتعلقة بجميع البدائل لمتخذ القرار.	
7	توفر نظم المعلومات التسويقية المحوسبة للبنك المعلومات الكافية في الوقت المناسب.	

شكراً لحسن تعاونكم معنا ،،،،،،،،،،،،

الباحث : محمد يوسف بهلول

I: General information about the members of the study sample

*****Please put out the signal (√) in front of the correct answer**

1: Age Group

☐ Less than 25 years ☐ 25- less than 40 years ☐ 40- less than 55 years ☐ 55 years & above

2: Gender

☐ Male ☐ Female

3: Educational Attainment

☐ High School ☐ Diploma ☐ Bachelor degree ☐ Master degree ☐ P.H.D

4: Field of Specialization

☐ Business Admin. ☐ Economics ☐ Accounting ☐ IT ☐ Other Specify ____

5: Job Title

☐ Manager ☐ Deputy ☐ Marketing Manager ☐ Other Specify ____

6: Years of experience

☐ Less than 5 years ☐ 5-10 years ☐ 10-15 years ☐ 15-20 years ☐ 20 years and more

7: Years of experience as a manager / deputy

☐ Less than 5 years ☐ 5-10 years ☐ 10-15 years ☐ 15 years and more

II: General Information about the banks in the study population

1: Bank establishment

☐ Less than 5 years ☐ 5-20 years ☐ 21 years and more

2: Number Of employees

☐ Less than 10 employees ☐ 10-20 employees ☐ 21 employees and more

3: Workplace

☐ Local ☐ International ☐ Local and International

III: The used system

A: The Availability of hardware used in the system

#	Title	Agree on scale 1-10
1	Current marketing information system your bank utilizes, is based primarily on the computer	
2	The devices your bank use commensurate with the nature of work	
3	Your bank uses sophisticated equipment with efficiency and high quality	
4	The devices used have the capacity of storage/ conservation efficiently	
5	Your bank use equipments which is flexible and can be adjusted & maintained	
6	Input Units(mouse, keyboard and ,....) is sufficient, and help in the process of entering data efficiently	
7	Directing units (screen, printer ,.....) sufficient, and help in the process of directing	
8	The efficiency of the devices used in the bank contribute to the quality of marketing decision.	

B: The Availability of the Software Components

#	Title	Agree on scale 1-10
1	Your bank uses programs which facilitate the communication process among different users at the same time.	
2	There is protection system for marketing database to prevent it from nonauthorized person to access the system	
3	There is flexibility of exchanging marketing information among system's users in your bank.	
4	The programs used by your bank have the ability of storage, summarizing, retrieval and modification the marketing information.	
5	The software your bank uses, contributes in minimizing the over usage of papers among sections.	
6	The software used by your bank facilitates emails utilization.	
7	The software package your bank use is efficient and effective.	
8	The abundance and efficiency of the software in the bank affect the quality of marketing decision.	

IV: Internal database

#	Title	Agree on scale 1-10
1	Your bank has multiple and comprehensive internal marketing database.	
2	Each department in the bank keeps the information in the internal database.	
3	The internal records of the bank provide important information on the performance of customers.	
4	The internal records of the bank provide important information on sales and purchases.	
5	The marketing information in the bank's internal records is considered accurate enough	

6	The marketing information in the bank's internal records fit with the purpose of being used for.	
7	The Bank maintains all the information received from the Intelligence and Market Research in the internal records.	
8	The Bank is constantly updating internal records.	
9	The bank depends on the internal records to identify problems.	
10	Internal marketing database is less expensive than other information sources	
11	The computerized records and internal reports of the bank affect the decision-making process.	

V: Marketing Intelligence

#	Title	Agree on scale 1-10
1	The bank benefits from the marketing intelligence techniques in knowledge and keep abreast of the ongoing marketing of emerging circumstances.	
2	The Bank uses the marketing intelligence on a regular basis in gathering information about competitors.	
3	The bank relies on the media to get information.	
4	Bank customers offer useful information about the market and competitors.	
5	Bank relies on internal sources of information (managers, consultants, sales representatives, delegates of purchase).	
6	Marketing intelligence in the bank is considered of vital resources to understand the nature of the market requirements.	
7	Marketing intelligence in the bank Provide sufficient and useful information about the customers.	
8	Marketing intelligence in the bank help in obtaining the necessary information services.	
9	Marketing intelligence for the bank help in the process of tracking and evaluating the performance of competitors catalog constantly.	
10	Marketing intelligence in the bank Help in early warning of threats and opportunities.	
11	Marketing intelligence effectiveness in the bank is positively reflected on the marketing performance of the staff of the institution.	
12	The resulting information of the marketing intelligence at the bank contribute to the decision-making process.	

VI: Marketing Research

#	Title	Agree on scale 1-10
1	The budget allocated to marketing research department in the bank sufficient to perform the work efficiently.	
2	The bank periodically and regularly work in the field of marketing research.	
3	The bank's management perform continuous improvement on the research plan.	
4	Bank relies on primary data (interviews, research, monitoring) to gather information.	

5	The secondary data (internal records, research institutions, government research) is the base in gathering information.	
6	Marketing research is relevant to marketing situations facing the bank.	
7	Marketing research in the bank help in the detection, collection, tracking problems and provide adequate solutions to them.	
8	Marketing research in the bank help in assessing the current market accurately.	
9	Marketing research in the bank help in understanding consumer behavior.	
10	Marketing research effectiveness is reflected positively on the performance of the bank 's marketing staff.	
11	Marketing research in the bank reduce the risk of uncertainty.	
12	to Marketing research in the bank contribute to stand on new opportunities.	
13	Marketing research the in the bank provides information needed for decision making in a timely manner.	
14	The marketing research findings, recommendations, and proposals contribute to the decision-making process.	

VII: Marketing Decision Support System

#	Title	Agree on scale 1-10
1	Computer programs provide useful information used to achieve marketing objectives efficiently.	
2	Computer programs are able to predict the change may occur to the marketing strategy variables for the bank.	
3	Computer programs describe the consequences of a change in marketing variables.	
4	Computer programs can analyze and identify the marketing problems.	
5	Computer programs reduce the effort, time, and cost.	
6	Computer programs measure the effectiveness of marketing activities.	
7	Computer programs determine the size of the customer influencing in the organization sales.	
8	Computer programs refer to the software constraints and bottlenecks affecting the course of daily work.	
9	Computer programs help the institution to seize opportunities and avoid threats.	
10	Computer programs can identify the marketing strengths and weaknesses in the organization.	
11	Training program for the use of computer programs improve the efficiency of the marketing performance.	
12	Bank relies on the analysis of information arising from the computerized decision- support programs in the decision-making process.	

VIII: The decision making process

#	Title	Agree on scale 1-10
1	Bank's staff understand the goals and objectives of the computerized marketing information system in the bank.	
2	Tangible benefit from computerized information system in the bank is found in the decisions you make in your field.	
3	You trust the decisions taken based on computerized information systems of the bank.	
4	Computerized marketing information systems in the bank contribute to determining the real problem.	
5	Computerized marketing information systems in the bank provide adequate alternatives solutions to the problems at hand.	
6	Computerized marketing information systems in the bank provide adequate information on all alternatives to the decision maker.	
7	Computerized marketing information systems in the bank provide adequate information in a timely manner.	