

# THE ROLE OF MARKETING INFORMATION SYSTEM IN MARKETING DECISION-MAKING IN JORDANIAN SHAREHOLDING MEDICINES PRODUCTION COMPANIES

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## ABSTRACT

The purpose of this study was to reveal the relationship between the major components of marketing information system, and the decision-making in Jordanian shareholding medicines production companies. It also aimed at introducing the concept, elements, and components of marketing information system.

The researcher adopted two types of data: the data gleaned from books, net, studies and previous research, while the second was a field study included: the design and distribution of a questionnaire to collect data from managers and staff concerned about the variables of the study. Questionnaires have been distributed to (56) of marketing managers and marketing information system staff working in the companies, and (48) was recovered with a percentage of (86%). The questionnaire consisted of sets of questions, included: the relationship between the main components of marketing information system and decision making in companies mentioned. Reliability test was conducted (Cronbach's Alpha) to determine the reliability of the data collection tool (questionnaire). The reliability test ratio of both the independent and dependent variables were (87%).The population of the study were (7) Jordanian shareholding medicines production companies. The unit of analysis in this study was manager, and staff, and data were collected from: marketing managers, and marketing information system staff working in each of the seventh companies. The main results of the study were as follows:

1. There is a statistically significant relation between each of the following marketing information system components: (internal records, marketing research, marketing intelligence)and decision-making.
2. There is a tendency in Jordanian shareholding medicines producing companies to appoint persons who has: Universities qualifications, suitable scientific specialization, and high years of experience, for their making information system jobs.
3. Some of the companies included in the study haven't a specialized unit responsible for the functions of marketing information system in their marketing departments.

**Key words:** *marketing information system, internal records, marketing research, marketing intelligence, marketing decision-making.*

## 1. INTRODUCTION

Marketing information is the lifeblood of marketing process, marketing decision won't be taken in the absence of marketing information. Marketing decisions are affected by many internal and external environmental variables, so the marketing decision maker needs a great deal of information related to these variables, to predict their directions and their expected effects on the internal activities of the organization and the market, in order to make the rational marketing decisions in an uncertainty environment facing the marketing administration. The marketing success in the organization depends basically on the availability and the accuracy of marketing information from its multiple sources.

All marketing organizations trying to find out and determine the nature of the markets and their trends, needs and changes that occur in these markets, as well as trying to know the competitors, prices, options and other marketing information which is the key to success for any marketing decision.

The components of marketing information system (internal records, marketing research, and marketing intelligence) are the most important sources in obtaining marketing information.

## 2. THE CONCEPT OF MARKETING INFORMATION SYSTEM

Marketing information system plays an important role in raising the efficiency of economic performance to the companies in highly competitive markets, through providing the necessary information for the various administrative levels. The success of the marketing process depends to a large extent on the marketing information system and the success in each elements of this system.

Marketing information system has been needed by marketing management for the purpose of identifying, measuring, and forecasting marketing opportunities, besides, analyzing of market segments.

Marketing information system consists of people, facilities, and integrated procedures that used to provide management with accurate and regulated information about the environment-related marketing, which helps decision makers to hunt opportunities and build strategies and marketing plans.

Kotler realizes that marketing information system is a compound network, composed of interrelated-relations between people, machines, and procedures to provide a flow of structured information, relying on the internal and external sources of the institution that directed mainly to the formation of marketing decisions base [12].

Despite the fact, that there are large and variety numbers of marketing information system definitions, but all of them are focused in one sense which is: the marketing information system is a structure composed of personnel, equipment, that ensuring the flow of internal and external information, which allows the spread and control of the organization's external environment, and the rationalization of marketing decisions.

Marketing information system consists of:

**2.1 Internal records:** The data collected in the form of database about the daily operations of the companies that produce medicines (under study), and includes the necessary data records to obtain information regarding the scale of activity and the current performance in sales, cost, inventory and cash flow.... etc.

**2.2 Marketing intelligence:** is the means by which management can keep in contact with new knowledge of competitors emerging conditions.

**2.3 Market Research:** Is the process of collecting and analyzing of data for the purposes of identifying and resolving problems related to companies marketing services and marketing opportunities, it's a planned and managed activity on a scientific basis to ensure efficiency in dealing with those problems and opportunities. Marketing information system is designed properly to solve many information problems facing the administration, like the wrong kind information, in the wrong location, at the wrong time, and the insufficient correct type of information, in the correct location, at the right time [19].

Marketing information system can support managers in their marketing decision making by providing them with internal linking and operational integration between departments or sections. It also can increase the ability to respond to the Organizational dynamic system environment, allows the most efficient handling, and organize and store data.

Effective marketing information system helps in directly developing and improving the work service as a part of the product itself, or indirectly through increased responsiveness to the needs of the client.

Organizations could benefit greatly from the analysis of customer data to determine their preferences to improve marketing support decision.

Managers face environmental variables and fast competition, which requires them to be more competitive through better decision-making. The decision can be regarded as an outcome of the production activity; its input includes the individual's intellectual efforts or marketing group. The modern developments in computer technology have provided computer-based techniques to manipulate the development of decision support systems (DSS) that can play an important role in the progress of the company [2].

There are many opportunities for the applications of information systems in the field of marketing. Information systems help the company to manage the increased flow of information, and improved their quality. There is an increasing interest in the use of marketing decision support systems, which designed for the use in complex marketing decision-making problems [18].

The marketing information system is the system that includes individuals, equipment, and procedures for the collection, classification, conservation, analysis, evaluation, and distribution, the accurate and timely required information to marketing decision-makers. It also defined as a set of procedures and methods for the analysis of the planned and systematic information for the use in decision-making. This definition has been developed in 1969 through the division of marketing information to planning, control, and research information [13].

There is a considerable interest in the marketing information system comparing with the other information systems in other fields such as production, finance, and personnel; it is based on the exceptional attention which related to two key properties of the marketing function: the importance of marketing function and its complexity. Marketing information system has been viewed as the main step towards the integrated marketing as a result of the lack of control over the elements of the marketing environment, and the problems of marketing [15].

Marketing information systems can provide information in the form of aggregated and different ranges from crude marketing data to the assortment on the periods of time, such as product / the market [13].

The use of information technology dramatically increases the benefits of companies in their attempts to gain the fundamental competitive advantage, also, information technology, which supports marketing function has become the most important because the most of the other information technology applications which highlight through marketing function has been doubled [14].

### 3. THE REASONS FOR THE NEED OF MARKETING INFORMATION SYSTEM

The reasons for the need of marketing information system Can be summarized in the following points:

- Competitive pressures: they require the Organizations to have the ability to compete, to produce, and to market developed products more quickly than before[5].
- The steady increase in consumer expectations and what they expect of products, in terms of its ability to satisfy their needs, and the consequences of less serious or inaccurate decision taking due to the lack or inaccuracy of the information upon which the decision will be built, and its impact on the organization's success and sustainability.
- The emergence of large markets: the widespread production and distribution contributed to the emergence of large markets, and their requirements of a large number of intermediaries between producers and final consumers, these intermediaries become a barrier to the flow of data that can guide the development of marketing decisions related to the consumers needs and desires, as a result the widening gap between producers and final consumers reinforce the importance of marketing information system in bridging this gap [1].
- The information revolution: Each organization has more than one source of information, but the problem lies in how to use and manage this information, with the development of computers and other operating data equipment, it has become quick and inexpensive for management to run and analyze vast amounts of marketing data and provide information necessary for effective decisions[4].

### 4. PROBLEMS FACING THE USE OF MARKETING INFORMATION SYSTEM

The application of marketing information system in organizations, faces some problems, the most important of them are [8]:

- The system depends basically, on individuals in the supply, summary, generation, and dissemination, and interpretation of data. The possibility of bias of the system in terms of providing data that support preferred actions, rather than evaluating all possible actions has been raised. Analysts have drew attention to the inaccuracy of the organizations research for the use of information, the goals of individuals may be a particularly important factor for the objectiveness of marketing information system in managing the operation of providing the information to choose among alternatives, and making planning decisions. Managers who use the marketing information system data may impose their private choice on the information, as well as on the ways of manipulating them. It should be noted that there are many obstacles that prevent the free of flow of information, such as fear of the implementation, and personal reasons, mainly from the standpoint of self-protection within the organization.

- The perception of marketing information system as an innovation:

Interactions problems faces marketing information system especially in the stages of creation and developments of the system, in addition to other problems related to planning and control, there is the problem of the degree of change resistance that can be directed to this change in different kinds of circumstances, which is the result of the new entity existence or evolution as an innovation. Change is one of the main causes of organizational conflict in terms of creating tension and anxiety which lead to resistance and then the struggle to avoid or change the direction of change.

- The nature of the organizational environment used marketing information systems:

One of the problems facing the use of marketing information system, is the way in which institutional relations hinder the use of marketing information systems. Kotler described 23 cases of potential conflict between sections resulting from the various assertions placed on certain matters by the various departments in a way that reflect personal approaches of individuals, as well as differences in goals between departments [11].

For the system of marketing information, there are areas in which to reduce the flow of information, if there is a conflict and disagreement or inconsistency, in the interests of the sections with the interests of the marketing department it has been reflected negatively on the quality and volume of information that is provided to the marketing information system and thus, adversely affected the efficiency of the system.

### 5. THE IMPACT OF INFORMATION TECHNOLOGY ON ORGANIZATION

One aspect of the IT impact on the organization is the use of new organizational structures which leads to the reduction of the number of administrative levels, and expand the scope of supervision and control, supervision in this way is based on staff confidence and less direct contact between supervisors and subordinates and relies on e-mail and software in achieving coordination between the individuals who perform common tasks, and increase managers delegation of decision-making responsibilities to lower levels, making the organization more responsive to its customers and its competitors [5].

## 6. THE PROBLEM OF THE STUDY

The Problem of the study is centered on the extent to which marketing information system has the ability to collect, analyze and process data, and converts them into information that facilitate the task of marketing managers in marketing decision-making.

In general, the problem of the study can be developed by introducing the following questions:

1. Is there a statistically significant relationship between the components of marketing information system (the internal records, the marketing research, the marketing intelligence) and marketing decision-making in Jordanian shareholding medicines producing companies?
2. Is there a statistically significant relationship between the internal records as a component of the marketing information system and marketing decision-making in Jordanian shareholding medicines producing companies?
3. Is there a statistically significant relationship between the marketing research as a component of the marketing information system and marketing decision-making in Jordanian shareholding medicines Producing companies?
4. Is there a statistically significant relationship between the marketing intelligence as a component of the marketing information system and marketing decision-making in Jordanian shareholding medicines producing companies?

## 7. IMPORTANCE OF THE STUDY, BENEFITS AND JUSTIFICATION FOR CONDUCTING

Through his survey to previous studies, the researcher didn't find any conducted study in Jordan regarding the role of marketing information system in marketing decision-making In Jordanian shareholding medicines production Companies. Hence, the importance of this study addressed a great importance for the following points: Marketing information has a special significance importance in providing assistant information in marketing decision-making, availability of sufficient and accurate information helps to achieve the best results in planning, implementation and control of marketing activities. Speed, accuracy, cost, and at the right time decisions, are all standards and measures to the effectiveness and efficiency of marketing administration, as marketing information system helps to achieve these standards. Marketing information system helps to answer the questions about the customer, goods, services and salesmen, as well as the possibility of using this information to evaluate the efficiency of marketing policies. The need for information about markets, types of goods and competitors becomes indispensable necessity, because of significant trend towards globalization, besides, the opening of markets on each other, which led to intense competition due to the removal of restrictions on the movement of products between countries.

## 8. OBJECTIVES OF THE STUDY

This study aimed at:

1. Reveal the relationship between the major components of marketing information system, and marketing decision-making.
2. Introduce the concept, elements, and components of marketing information system.
3. Deduce a number of recommendations with respect to the research subject.

## 9. THE HYPOTHESES OF THE STUDY

The field study was designed to test a main hypothesis and a number of subsidiary assumptions, as follows:

### 9.1 The main hypothesis:

H0: There is no statistically significant relationship between the components of making information system (the internal records, the marketing research, the marketing intelligence) and marketing decision-making in Jordanian shareholding medicines producing companies.

### 9.2 The First sub- hypothesis:

H01: there is no statistically significant relationship between the internal records as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies

### 9.3 The Second sub-hypothesis:

H02: there is no statistically significant relationship between the marketing research as a component of the making information system and marketing decision-making in Jordanian shareholding medicines.

### 9.4 The Third sub-hypothesis:

H03: there is no statistically significant relationship between the marketing intelligence as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies.

## 10. METHODOLOGY OF THE STUDY

### 10.1 Population and Sample

The population of the study is composed of the (7) Jordanian shareholding medicines production Companies. Comprehensive survey is used to obtain data from the population. The researcher adopted a purposeful sample of 56 managers and staff in these companies to obtain data for the study, they are: marketing managers, and marketing information systems sections staff. Hence, managers and staff referred to earlier, Can be regarded as the unit of analysis for this study.

### 10.2 Data collection tools

To collect data for the current study and its variables, the researcher used a questionnaire, it included two parts: the first: contained some of the characteristics of companies and sample have been covered in the study. The second: measured the extent of the relationship between the components of the marketing information system (internal records, marketing research, marketing intelligence) and marketing decision-making in Companies have been covered in the study.

### 10.3 Sources for obtaining data

The researcher adopted two sources to collect data for this study:

#### 1- Secondary data sources:

Included, references, literature, and periodicals relevant to the study in order to clarify basic concepts related to the study, its various dimensions, and to identify the most important studies on the subject.

#### 2- Primary data sources:

Questionnaire was designed for collecting data from the managers and staff responsible for marketing decision making, and marketing data collection in the companies have been covered in the study, for their assessment to the extent of the relationship between the components of the marketing information system (internal records, marketing research, marketing intelligence) and marketing decision-making in Jordanian shareholding medicines producing companies.

### 10.4 The statistical analysis methods used:

Since the study is descriptive, and analytical, the researcher employed the most appropriate statistical methods to the nature of the data available, for the purpose of analyzing variables and testing hypotheses of the study, ranging from descriptive statistics and inferential statistics, as follows:

1- Descriptive statistics (frequencies, percentages, mean, and standard deviations) to describe the characteristics of the members of the sample included in the study.

2- The correlation coefficient to indicate the extent and the degree of the correlation between the dependent variable and each independent one, as well as the direction and the power of this relation.

### 10.5 Validity and reliability

1. (Validity) means the ability of the instrument to measure the variables that are designed to measure. Questionnaire has been introduced to a number of specialists in marketing studies to ascertain the validity of the instrument.

2. The reliability of the tool: refers to the possibility of obtaining the same results if the measurement re- evaluated under the availability of similar circumstances and by using the same tool for the measurement tool. (Cronbach's Alpha) is used to determine the degree of reliability of the tool. The test result was (.87) which is higher than the acceptable limit (.60).

## 11. PREVIOUS RESEARCH

The following is a review of the most important previous studies:

1. The purpose of this study was to determine the importance of using marketing information systems in the five-star hotels operating in Jordan. The most important findings of the study were: marketing information systems had great importance and role in the hotels included in the study, which in turn led to the growth of the five-star hotels market share for the period (2004-2007), the growth of the five-star hotels market share is attributed to the effectiveness of marketing tourism activities, and the effect of each element of the marketing information systems and their role in improving services offered, based on marketing studies, database marketing, and marketing planning, which in turn impact positively on the increasing rate of accommodation for tourists, and the increasing in sales volume, and thus increasing market share[6].

2. This study aimed at identifying the role of marketing information systems in improving the marketing performance of the Jordanian shareholding companies. The most important findings of the study were: There is a statistically significant relationship between the availability of marketing information system and the design of marketing strategies in a scientific manner. There is a statistically significant relationship between the availability of marketing information system and marketing performance in Jordanian shareholding companies. There is a statistically significant relationship between the design of marketing strategies in a scientific manner and the dimensions of marketing performance in Jordanian shareholding companies [8].

3. The purpose of this study was to determine the level of using the integrated marketing communication sample in the major Saudi companies, which is one of the recent applications that have emerged in the nineties of the previous century to overcome money and business programs marketing communications companies obstacles, in the United States as a result of the enormous developments in the communications and marketing environment. The study has been successful in developing a scientific scale measures the levels of integration in the major Saudi companies marketing communications [3].

4. This study aimed at describing and analyzing the marketing information systems strategic role played in Algerian organizations, and the need to provide as a prerequisite and as an important source of the organization resources. The study found: Although the organizational structure power of status of the marketing management, but it suffers from a centralized decision-making. The application of marketing information systems in most Algerian organizations is still limited and include the replacement of data processing manual system for automated system. and a clear ignorance of marketing information systems concept [9].

5. This study aimed 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 in work. 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 [17].

6. The purpose of this study was to determine the role of marketing intelligence system in marketing decisions making. The most important findings of the study were: The degree of marketing decision accuracy corresponds to high extent to the level of appropriate, important, and accurate information available to the decision maker, the degree of marketing decisions need for the external information is more than its level in other administrative areas, because the latter can be taken without relying on external information, while the marketing decisions are rarely taken without relying on external information [7].

7. This study aimed at improving the efficiency of marketing Information Access and Use by tourism organizations. The database used in the study is a collection of tourism statistics that has been created by the Austrian National Tourist Office in close collaboration with the Vienna University for Economics. Economics. The online hypertext database is called Tour MIS and is implemented on the World Wide Web and used by 256 European tourism managers. Analyzes of the server’s log file shows a significant correlation between different presentation styles and the usability of the system. Exploring content and quantity of requested information by user groups also lead to results which will contribute to a more efficient architecture of marketing information systems in tourism [10].

8. The purpose of this study was to advocates the use of geographic information systems (GIS) as a DSS generator for constructing MKIS. The paper reviews the technical capabilities of GIS and shows how these capabilities align with accepted elements of MKIS. The most important findings of the study were: A unique advantage of GIS over other MKIS technologies is its ability to integrate information from disparate sources and spanning multiple decision domains when a single decision requires this capability. The paper then uses a decision making resource-based approach and the four elements of the marketing mix to propose a research agenda for increasing the understanding of GIS as an MKIS technology [16].

## 12. RESULTS OF THE STUDY

In this part of the study, the main hypotheses, and sub- hypotheses emanated from, have been discussed and analyzed. The statistical analysis has been done in the context of Jordanian shareholding medicines production Companies. The following table shows this data:

*Table (1) Distributed and recovered questionnaires*

NO	Name of the companies surveyed	distributed questionnaire NO	recovered questionnaire NO
1	Dar Al Dawa for Development and Investment	8	8
2	The Arab Center for Pharmaceutical and Chemical Industries	8	6
3	Arab Pharmaceutical Manufacturing	8	8
4	Al –kindy for Pharmaceutical Industries	8	7
5	Middle East for Pharmaceutical Industries	8	5
6	Jordan for the production of medicines	8	6
7	The life for the Pharmaceutical Industry	8	8
	Total	56	48

### 12.1 Characteristics of the sample, and the companies included in the study.

In this part of the study, the major characteristics of the sample and companies surveyed reviewed in terms of: qualifications, scientific specialization, Years of experience, the existence of the organizational unit responsible for the functions of marketing information system in marketing department.

#### 1. Qualification

Qualifications of managers and staff in Jordanian shareholding medicines production companies involved in the study is identified. The following table illustrates the results:

2.

*Table (2) Distribution of the sample according to qualifications*

qualification	Frequencies	Percentage
Less than High School	-	-
High school	-	-
Diploma	11	23%
Bachelor	27	56%
Graduate	10	21%
total	48	100%

It's clear from the data in the above table that the rate of (56%) of the sample have bachelor degrees, while (21%) of them have Graduate degrees, and (23%) of them have Diploma degrees.

#### 2. Scientific specialization

Scientific specialization of managers and staff in Jordanian shareholding medicines production companies involved in the study is identified. The following table illustrates the results:

*Table (3) Distribution of the sample according to scientific specialization*

Scientific specialization	Frequencies	Percentage
Management information systems	9	19%
Marketing information systems	-	-
Management	8	17%
Marketing	22	45%
other	9	19%
total	48	100%

It's clear from the data in the above table that the rate of (45%) of the sample have marketing specialization, while (36%) of them have management information systems, management specializations, and (19%) of them have others specializations.

### 3. Years of Experience

Years of managers and staff experience in Jordanian shareholding medicines production Companies involved in the study are identified. The following table illustrates the results:

*Table (4) Distribution of the sample according to Years of Experience*

Years of Experience	Frequencies	Percentage
less than 5 years	3	5%
5 - less than 10 years	7	15%
10 - less than 15 years	19	40%
15 - less than 20 years	12	25%
20 years and more	7	15%
total	48	100%

It's clear from the data in the above table that the rate of (80%) of the sample have more than 10 years of experiences, while only (20%) of them have less than 10 years of experiences.

### 4. The existence of organizational marketing information system unit

The existence of the organizational unit responsible for the functions of marketing information system in marketing department in companies included in the study is identified. The following table illustrates the results:

*Table (5) Distribution of the companies according to the existence of organizational marketing information system unit*

Existence of marketing information system unit	Frequencies	Percentage
yes	42	88%
No	6	12%
total	48	100%

It's clear from the data in the above table that (88%) of the companies have an organizational unit responsible for the functions of marketing information system in marketing department. while only (12%) of them haven't this organizational unit.

## 12.2. Hypotheses Testing

### The main hypothesis:

H0: There is no statistically significant relationship between the making information system and marketing decision-making in Jordanian shareholding medicines producing companies.

Ha: There is a statistically significant relationship between the making information system and marketing decision-making in Jordanian shareholding medicines producing companies. The correlation coefficient has been used to test this hypothesis; the results are shown in the table (6) below:

*Table (6) the results of the correlation coefficient for the main hypothesis*

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.837	.773	.770	.37220	.832	432.633	1	98	.000	2.431

It's clear from the data in the above table that the correlation coefficient (Adjusted R Square ) of model (1) was (0.770) which indicates a strong and positive statistically significant correlation at the level of less than (0.001), also, the validity and the acceptance of this model has been confirmed by examining the value of (F) which was (432.633)and the level of significance (.000), which requires rejection of the null hypothesis (H0) which states that there is no statistically significant relationship between the making information system and marketing decision-



making in Jordanian shareholding medicines producing companies, and accept the alternative hypothesis (Ha), which indicates a statistically significant relationship between the making information system and marketing decision-making in Jordanian shareholding medicines producing companies. The results also, showed that the proposed statistical model doesn't include any problems related to self-association through checking the value of Durbin-Watson statistical.

#### The First sub- hypothesis:

H01: There is no statistically significant relationship between the internal records as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies.

Ha1: There is a statistically significant relationship between the internal records as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies.

The correlation coefficient has been used to test this hypothesis; the results are shown in the table (7) below:

Table (7) the results of the correlation coefficient for the First sub- hypothesis

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
2	.912	.832	.830	.37220	.832	484.388	1	98	.000	2.506

It's clear from the data in the above table that the correlation coefficient (Adjusted R Square ) of model (2) was (0.830) which indicates a strong and positive statistically significant correlation at the level of less than (0.001), also, the validity and the acceptance of this model has been confirmed by examining the value of (F) which was (484.388)and the level of significance (.000), which requires rejection of the null hypothesis (H01) which states that there is no statistically significant relationship between the internal records as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies, and accept the alternative hypothesis (Ha1), which indicates a statistically significant relationship between the internal records as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies. The results also, showed that the proposed statistical model doesn't include any problems related to self-association through checking the value of Durbin-Watson statistical.

#### The Second sub-hypothesis:

H02: there is no statistically significant relationship between the marketing research as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies.

Ha2: There is a statistically significant relationship between the marketing research as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies.

The correlation coefficient has been used to test this hypothesis; the results are shown in the table (8) below:

Table (8) the results of the correlation coefficient for the second sub- hypothesis

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
3	.749	.56	.56	.60128	.561	125.152	1	98	.000	2.262

It's clear from the data in the above table that the correlation coefficient (Adjusted R Square ) of model (3) was (0.56) which indicates a positive statistically significant correlation at the level of less than (0.001), also, the validity and the acceptance of this model has been confirmed by examining the value of (F) which was (125.152)and the level of significance (.000), which requires rejection of the null hypothesis (H02) which states that there is no statistically significant relationship between the marketing research as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies, and accept the alternative hypothesis (Ha2), which indicates a statistically significant relationship between the marketing research as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies. The results also, showed that the proposed statistical model doesn't include any problems related to self-association through checking the value of Durbin-Watson statistical.

**The Third sub-hypothesis:**

H03: there is no statistically significant relationship between the marketing intelligence as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies.

Ha3: There is a statistically significant relationship between the marketing intelligence as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies.

The correlation coefficient has been used to test this hypothesis; the results are shown in the table (9) below:

*Table (9) the results of the correlation coefficient for the third sub- hypothesis*

Model	R	R Square	Adjusted R Square	Std.Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
4	.946	.895	.894	.29446	.895	832.458	1	98	.000	2.571

It's clear from the data in the above table that the correlation coefficient (Adjusted R Square ) of model (4) was (0.895) which indicates a strong and positive statistically significant correlation at the level of less than (0.001), also, the validity and the acceptance of this model has been confirmed by examining the value of (F) which was (832.458) and the level of significance (.000), which requires rejection of the null hypothesis (H03) which states that there is no statistically significant relationship between the marketing intelligence as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies, and accept the alternative hypothesis (Ha3), which indicates a statistically significant relationship between the marketing intelligence as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies. The results also, showed that the proposed statistical model doesn't include any problems related to self-association through checking the value of Durbin-Watson statistical.

**13. FINDINGS AND RECOMMENDATIONS**

This section contains the main findings and recommendations of the study that can be summarized as follows:

**13.1 Findings**

1. There is a statistically significant relationship between all of the components of making information system and marketing decision-making in Jordanian shareholding medicines producing companies.
2. There is a statistically significant relation between the internal records as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies.
3. There is a statistically significant relation between the marketing research as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies.
4. There is a statistically significant relation between the marketing intelligence as a component of the making information system and marketing decision-making in Jordanian shareholding medicines producing companies.
5. There is a tendency in Jordanian shareholding medicines producing companies to appoint persons who has: Universities qualifications, suitable scientific specialization, and high years of experience, for their making information system jobs.
6. Some of the companies included in the study haven't a specialized unit responsible for the functions of marketing information system in their marketing departments.

**10.2 Recommendations**

Researcher presented a set of recommendations that can be summarized as follows:

1. Jordanian shareholding medicines producing companies must operate to increase the proportion of workers who have university degrees qualifications, suitable scientific specialization, and higher years of experience, for their making information system jobs, because of their effect in collecting the required and accurate data from different sources, processing and presenting the required data at the right time to the marketing decision makers, to get rational marketing decisions.
2. Jordanian shareholding medicines producing companies must work to make the marketing information system unit, administratively and financially separate and independent from marketing department, and give it a prominent place in the organizational structure, to be able to perform its functions without association with the marketing management or other administrations in the company.

3. Regularly and continuously training programs in and out of the company must be conducted for the marketing information system companies employees in the areas of collecting, processing and manipulating of data, in order to benefit from the experiences of others, exchange of experiences, expand their knowledge, and increase their competences in the performance of their jobs.
4. Top management in Jordanian shareholding medicines producing companies must Increase their interests in marketing information system through the provision of all essential supplies, and the introducing of modern methods and techniques in data processing, which increase the speed of rational decision-making.

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