

## **The Role of Marketing Information System on Decision Making "An Applied study on Royal Jordanian Air Lines (RJA)"**

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### **Abstract**

**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.*

**Design-methodology-approach-***The study shows the roles of each parts of MKIS for developing marketing strategy, which present a real challenge to individuals and institutions in a an era characterized by uncertainty. And clarifying the importance of each part separately, depending on decision type and the nature of the situation. The empirical research method was evaluated by specialized experts, conducted by means of questionnaires. Correlation analysis were employed to test the validity of the procedure.*

**Findings-***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 organisation with a competitive advantage as it allows the organisation to solve problems.*

**Originality/value-***The study offer better understanding of performance- increasing market share as an organizational decision making based on marketing information system.*

**Keywords:** Data Base (Internal Records), marketing Research, marketing Intelligence, decision support system, decision-making.

### **1. Introduction**

Marketing activities are directed toward planning, promoting, and selling goods and services to satisfy the needs of customers and the objectives of the organizations; marketing information systems (MKIS) support decision making regarding to these activities (Harmon, 2003). (MKIS) is a continuing and interacting structure consist of people, equipment and procedures designed to gather, sort, analyze, evaluate and distribute needed, timely and accurate information to marketing decision makers; it begins and end with information users- marketing managers, internal external partners, and others who need marketing information. (Kotler and Armstrong, 2008). A good marketing information system balances the information users would like to have against what they really need and what is feasible to offer. James A. (1998) defined marketing information system 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 bases for decision making. Boone and Kurtz (2007) defined marketing information system as " a planned computer- based system designed to provide managers with continuous flow of information relevant to their specific decisions and areas of responsibility.

Marketing information system is efficient tool providing past, present and projected information relating to internal operations and external intelligence (Armstrong and Kotler, 2007). It supports the planning, control, and operational function in an organization by furnishing uniform information in the proper time frame to assist the decision maker. Appelgate *et al.* (1988) commented that earlier generations of managers tended to 'adopt technology first and then try to figure out what to do with it'; they add, 'that approach is now grossly inadequate'. This statement remains applicable today as the intensity of both present and future competition is likely to encourage senior management to replicate the IT interventions of leading MKIS companies. Matching information technology to the organization in terms of its ability to shape the organization is central to success. Part of that matching process rests with understanding the value of the collection, application and management of marketing information generated by information technology applications such as Data Base Marketing. We speculate that under time pressure senior management in 'second mover' firms are likely to make *ad hoc* adoption decisions without fully considering the match between the technology and the overall value orientation of their organization.

Such adoption decisions are unlikely to secure competitive advantage. Decision-making is a course of action about what must or must not be done. Three aspects of human behaviour are involved in decision making: (i) cognition, activities of the mind associated with knowledge; (ii) the action of the mind implied by such words as willing, desire, and a version, and (iii) the aspect of mind associated with emotion, feeling, mood and temperament. All these factors go into decision-making (Jobber and Fahy, 2006).

The research focus on highlighting the elements of MKIS, and why MKIS is important to decision makers? Moreover, the purpose of the current study is to:- Present an overview of the components of MKIS as well as Decision Making.

## **2. Theoretical Background**

To help managers to foresee the changes in markets or customer's preferences, you need sound information system, which known as (MKIS) marketing information system. MKIS collect the relevant data; organize it into some thing meaningful, make recommendations based on these figures and then stock it up for future use (King, 2010). MKIS is a computerized system that designed to provide an organized flow of information to enable and support the marketing activities of an organization; Which serves collaborative, analytical and operational needs, designed to be comprehensive and flexible in nature and to integrate with each other (Harmon, 2003). MKIS consist of four integrated sub systems, which serves the company's marketing and other managers, begins and ends with information users. So 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). The marketing information systems increases the number of options available to decision maker and support every element of marketing strategy; MKIS affects marketing interfaces with customers, suppliers, and other partners (Harmon, 2003). The primary benefits of the MKIS impact in the areas of functional integration, market monitoring, strategy development and strategy implementation. The art of decision-making provide us a variety of approaches, methods and techniques helpful and useful for making high quality of decision. A decision maker, as an individual, or as a member of formal organization with his own philosophy and perception of the organization, selects for optimising values within the constraints imposed by the organization (Varshney, 1997).

Decision making is the point at which plans, policies and objectives are translated into concrete actions. Planning leads to sound decision-making and that implies the selection from alternatives course of actions. Decision-making is the core of planning, for instance, choosing of objectives, policies, procedures, programmes, rules, strategies and tactics etc., require the entire process of decision-making. Therefore, the quality of marketing management decision is linked with the quality, quantity, adequacy and speedy availability of data (Delone and Mclean, 1992). The purpose of decision making as well as a planning is to direct human behaviour and effort towards future objectives. In the entire process of marketing activities, making decisions is always essential (Tripalhi, 1997). Managerial function is exercised through decision-making. Decision-making spreads through all elements of marketing management. e.g., production, marketing, finance, personnel, administration. Whatever marketing managers do, he does it through a decision making after considering thoroughly the available alternative course of action (Sherleker and Sherleker, 1996).

Generally, development of marketing strategy is difficult and complex. They require both systematic analysis and a synthesis of relevant information. They are usually dealing with experience and judgment, often in a fast-changing environment. (McDonald, 1996) Decision making always involves risk since it is concerned with assessment of future revenues, costs, outcomes and events, none of which can be known. Information reduces uncertainty and helps marketing manager to see the likely effects of various decisions but the information system does not make the actual decisions – that is a MKIS function. The function of MKIS is to provide decision makers with timely and accurate data to allow making and implementing the necessary decisions to optimise the interrelationships of men, materials, machines, and money to most effectively reach the organizations predetermined goals.

The conceptual framework advocated by Kotler and Armstrong (2003) is presented in [Figure \(1\)](#). The framework examines the influence of the effective design of MKIS, on organizational design and behavioral decision-making.

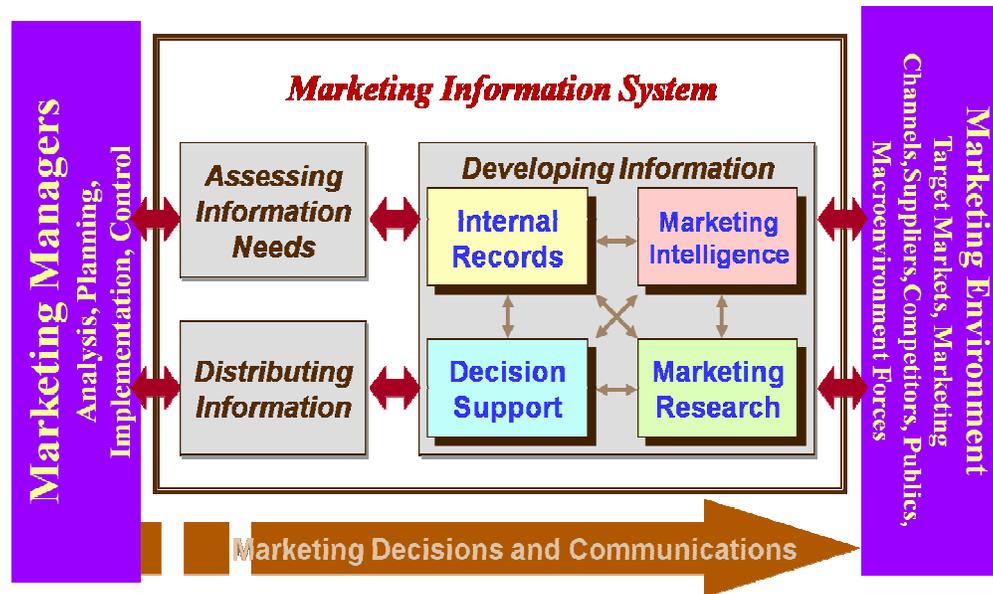


Figure (1)

Source: Kotler & Armstrong, 2003.

### 3. MKIS Components

MKIS design is important since the quality of marketing information system has been shown to affect the effectiveness of decision-making (Jobber and Fahy, 2006). The MKIS comprises the following four elements:

#### 3.1. Internal Records (Data Bases)

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, 2006).

#### 3.2. Marketing Intelligence

Marketing intelligence (MI) systems increasingly provide the data that drives both strategic and tactical decision for enterprise. Many businesses have already invested heavily to aggregate data from diverse system and applications in order to create a whole-enterprise view to fully reflect the daily state of business, as well as support more effective, informed decisions (Jazdtech, 2010, pride and Ferrell, 2006). A marketing intelligence system is a set of procedures and data sources used by marketing managers to sift information from the economic and business environment that they can use in their decision making (Fao.Org., 2010).

#### 3.3. Marketing Research

Marketing research is a proactive search for information to solve a perceived marketing problem; Marketing research is the systematic and objective identification, collection, analysis, dissemination, and use of information and solution of problems and opportunities in marketing (Malhotra N. K, 2007). The American Marketing Association formally defined marketing research as a function that links the consumer, customer, and public to the marketer through information- information used to identify and define marketing opportunities and problems; generate, refine, and evaluate marketing actions; monitor marketing performance; and improve understanding of marketing as a process.

Organizations engage in marketing research for two reasons: (1) to identify and (2) to solve marketing problems. This distinction serves as a basis for classifying marketing research into two main parts. The **first** one is problem identification research; market potential research, market share research, image research, market characteristics research, sales analysis research, forecasting research, and business trends research.

The second one is problem-solving research; segmentation research, product research, pricing research, promotion research, and distribution research (Malhotra N. K, 2007).

### **3. 4. Analyzing Marketing Information: (Decision Support System)**

A decision support system (DSS) is an integrated set of computer tools allowing a decision maker to interact directly with computer to retrieve information useful in making semi structured and unstructured decisions (Power, 2002,. Ezine, 2010,. James, 1998).

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. While DSSs may differ in their emphases on data-access and modeling functions, there is an overriding emphasis in all such systems on user accessibility to data for decision-making (Power, 2002,. Ezine, 2010). This decision-making applicability permits managers to simulate problems using formal mathematical models and to test the outcomes of various alternatives for reaching the best possible decision (Bernard, 1985). The term decision support system refers to a class of systems, which support the process of making decision DSS allow the decision maker to retrieve data and test alternative solutions during the process of problem solving (Ezine, 2010). The meaning of DSS is based on following assumptions about the role of the computer in effective decision-making (Power, 2002,. Ezine, 2010,. James, 1998). :

The DSS can provide analytical models for forecasting, simulation, and optimization. DSS tools include simple spreadsheets such as Excel, statistical analysis packages such as SPSS and SAS, on-line analytical processing (OLAP) tools, data mining applications, and neural networks. The DSS provides the user with the ability to explore multiple options. Typical DSS functions include models and tools for: (Harmon, 2003).

1. Sensitivity analysis. Decision-makers can explore changes in a strategic variable such as price and model its impact on demand or competitive behavior.
2. What-if analysis. Can be easily accomplished with a spreadsheet. Revenues and costs can be manipulated to show the impact of each variable on profits and cash flows.
3. *Goal setting*. Analysis focuses on the desired result and builds the resource base necessary to accomplish the goal.
4. Exception reporting. Analysis looks for results that exceed or fall short of stated goals or benchmarks. Which products or segments exceeded sales forecasts? Sometimes called gap analysis.
5. Pareto analysis. Analysis looks for activities that generate disproportionate results. For instance, the top 20 percent of customers may account for 80 percent of sales revenues.
6. Forecasting models. Econometric models are used to analyze time series data for the purpose of predicting future sales and market share levels.
7. Simulation models. Monte Carlo simulations address marketing decision making under conditions of uncertainty. Variables such as the market price, unit variable cost, and quantity sold are not known ahead of the product investment decision. Simulation models allow the marketer to analyze risk and assess the probabilities of likely outcomes of their decisions.
8. Scorecards and dashboards. Scorecard systems can present a consistent framework for tracking the effectiveness of marketing activities.

The DSS must provide ease of access to the database containing relevant data and interactive testing of solution. The computer must support the manager but not replace his judgment. It should therefore neither try to provide the answers nor impose a predefined sequence of analysis. The main advantage of computer support is for semi-structured problems, where parts of the analysis can be systematized for the computer, but where the decision makers' insight and judgment are needed to control and process. Effective problem solving is interactive and is enhanced by a dialog between the user and the system.

### **4. Decision-Making**

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 (Fremount, et, al., 1970), 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 behavioural activity from among one or more alternatives with the intention of moving toward some desired state of affairs".

It represents a course of behaviour or action about what must or must not be done (Herbert, 1960). decision-making is the selecting of action from among alternatives to achieve a specific objective or solve specific problem (Donald, 1963). The art of decision-making provide us a variety of approaches, methods and techniques helpful and useful for making high quality of decision. A decision maker, as an individual, or as a member of formal organization with his own philosophy and perception of the organization, selects for optimising values within the constraints imposed by the organization (Varshney, 1997).

#### **4.1. Types of decision**

There are different types of decision. According to Drucker, there are four basic criteria, which determine the nature of decision and the level of authority that should decided: There are (i) future times involved; (ii) the qualitative factors; (iii) whether a decision is rare or routine and repetitive; (iv) whether the impact of a decision is on other function, areas or on the businessman as a whole ( James, 1998). Decisions are typically characterized as unstructured, semi-structured and structured.

##### **4.1.1. Unstructured Decisions**

The unstructured decision involves decision situations where it is not possible or desirable to specify in advance most of the decision procedures to follow. Many decision situations in the real world are unstructured because they are subjected to too many random or changeable events or involve too many unknown factors or relationships (James, 1998). It is occurs when the relevant parameters as well as the influencing relationships are unknown. The manager does not know the information required. The information system can be of no help to the manager under this type of situation. For unstructured decisions cost system, sales and production R&D planning etc., techniques can be used.

##### **4.1.2. Semi Structured Decisions**

Semi-structured decisions occur in an environment where the relevant parameters are mostly known and where influencing relationships are suspected or are approximately known. In such cases the MIS can provide assistance to the decision maker through provision of information. For semi-structured decisions, e.g., production, scheduling, cash management, overall budget, new product planning, etc., techniques can be used.

##### **4.1.3. Structured Decisions**

Structured decisions involve situations where the procedures to follow when a decision is needed can be specified in advance. Structured decisions are those where both the relevant parameters and relationships are known. Any decision process that can be defined in a procedure and issued to any organization is an example of structured process. For example account receivable inventory control, the reorder point; determination of the economic order quantity, short-term budgeting and the safety stork and stock are structure decision system provides analyses of determination to assist in decision-making. The structured decisions can be automated and can be computerized. The objectives of an MIS is to ensure that all the structured decisions are computer generated and the managers need not spend much time in making structured decisions (James, 1998) .

#### **4.2. Classification of Decisions**

##### **4.2.1. Programmed Decisions**

Programmed decisions are decisions that can be pre-specified by a set of rules or decision procedures. Programmed decisions can presumably be handled by a computer program since the rules for arriving at a decision are completely defined and only the values of variables must wait for the specific problem. In addition to a computer program, other examples of methods for implementing programmed decision are decision rulebooks, decision tables, and regulation. These programmed decision methods imply a closed decision model because all outcomes and consequences must be known (Gordon, 1974)

##### **4.2.2. Non-programmed Decisions**

Non-programmed decisions are used for unstructured, unique, ill-defined situations of a non-recurring nature. They are non-repetitive decision often with high levels of risk where many factors from inside and outside the organization have to be considered. They are handling by general problem solving processes. They involve judgement, intuition and creativity. They are made by trained and higher level manager. Non-programmed decisions are one-time or recurring decisions that which change each time they are required. Decisions in open decision system are non-programmed (Gordon, 1974).

**Programmed and Non-Programmed Decisions**

Classification of Decision	Decision-Making	
	Old	New
Programmed Repetitive and Routine	Habit Standard operating Procedure Organization Structure Policy Etc....	Management Information System (Including Management Science Techniques and The Computer)
Non-Programmed One-shot, ill-structured	Judgment, intuition, Insight Experience Training and Learning	Systematic approach to Problem solving & Decision-making

**Source:** Murdick, R.G. Ross J.E. and Glaggett J.R., “Information Systems for Modern Management”, Prentice Hall of India Private Limited, N. D, 1995, p.190.

**4.2.3. Strategic Decision**

A strategic decision is one which is made during a current time but whose primary effect will be felt during some future time. Strategic decisions affect organizational structure and objectives. Strategic decision cannot be delegated lower than a particular level (March, 1988).

**4.2.4. Organizational Decisions**

When a manager acts formally in his expected role in an organization, he makes an organizational decision, which becomes the organization’s official decision. Organizational decision reflects company’s policies and programs. They can be delegated to others (March, 1988).

**4.2.5. Tactical Decision**

Tactical decisions are tactical in nature and called routine decision. They are important repetitive need little thoughts with few alternatives. The decision are taken up by middle and first line managers and do not involve any higher risk or uncertainty. Tactical decisions support and compliment organizational strategy. The tactical decision may be delegated to lower levels in the organization. Moreover, what might be strategies decision for one organization may be tactical decision for another? (Prasad, 1997)

**5. Royal Jordanian Airlines**

**Company Overview**

In 1963, His Majesty King Hussein of Jordan issued a Royal Decree for the setting up of a national air carrier. His words were unforgettable. "I want our national carrier to be the ambassador of goodwill and the bridge across which we exchange culture, civilization, trade, technology, friendship and better understanding with the rest of the world."

Inspired by this royal vision, Alia (later renamed Royal Jordanian) launched its operations. Royal Jordanian's role as Jordan's national carrier has now long been established. Today, under the invaluable guidance and directives of His Majesty King Abdullah II, the airline carries out its mission, while continuously modernizing and upgrading its services, renewing its fleet and expanding its route network and operations. Royal Jordanian's headquarters are located in the heart of the capital, Amman, and its flights are operated from Queen Alia International Airport (QAIA). Its modern fleet covers a network of 58 destinations on four continents. The airline owns Royal Wings, a Royal Jordanian subsidiary company dedicated to charter business, operating from Amman Civil Airport in Marka. It also owns 20% of Jordan Airline Training and Simulation Limited (JATS), 20% of Jordan Aircraft Maintenance Limited (JorAMCo), 20% of Alpha (the flight catering services company) and 6% of the Royal Jordanian Air Academy.

In view of its reputation and international level of competitiveness, the airline was honored when the prestigious oneworld airline alliance invited Royal Jordanian to join its elite membership, of which the most important are, American Airlines, British Airways, Iberia, Cathay Pacific, Japan Airlines and others. RJ is thus the first Arab and regional air carrier selected to join any of the three global airline alliances (oneworld, SkyTeam and Star Alliance), and the first airline to join oneworld in the last five years.

The airline officially joined **oneworld** on April 1, 2007, after it completed all technical and technological requirements to become part of the grouping. Royal Jordanian currently has marketing alliances, through code-sharing, with several International airlines: American Airlines, British Airways, US Airways, Iberia, Malev Hungarian Airlines, Tarom, Gulf Air, Syrian Arab Airlines, and Yemen Airways.

Royal Jordanian Airlines has an enviable reputation for quality. The services extended to all its passengers, ensures every flight is a unique travel experience. The Royal Jordanian family comprises 4,500 staff members. Its employees, who work at the head office in Amman, at Queen Alia International Airport, and at 58 stations on four continents worldwide, operate a fleet of 29 modern aircraft.

Now celebrating its 47th anniversary, It is a pioneering organization, always keen to register progress and eager to modernize its operations through the continuous enhancement of its services. The Company invests heavily in its human resources, providing incentives, training and satisfying retirement and compensation packages.

## **6. Methodology of the Study**

### **6.1. Research Objectives**

This study attempts to Present an overview of the components of MKIS as well as Decision Making and to explore the proper role of marketing information systems; what managers do and what information they need for decision making and determining whether information systems will be a valuable tools and how they should be designed. This study is cause and effects in nature and seeks to answer the following research question:

To what extent is the well designed marketing information system support managers who deal with very complex, non- routine problems to take the right decisions?.

### **6.2 Significant of The Study**

The study is expected to make recommendations to institutions managers on the critical role of marketing information systems in doing their business in the area of decision making.

### **6.3 Problem of the Study**

Decision making always involves risk since it is concerned with assessment of future outcomes and events, none of which can be known. Information reduces uncertainly and helps marketing manager to see the likely effects of various decisions but the information system does not make the actual decisions – that is a MKIS function. The function of MKIS is to provide decision makers with timely and accurate data to allow making and implementing the necessary decisions to optimise the interrelationships most effectively reach the organizations predetermined goals.

### **6.4 Variables of the study**

**Independent Variable:** Marketing information systems; Internal Records (Data Base), Marketing Intelligence, Marketing Research and Decision Support System.

**Dependent Variable:** The level of decision making which concerned with deciding on the objectives, resources and policies of the organization.

### **6.5 Hypotheses of the Study**

In order to investigate the effectiveness and well designed marketing information system and designing many possible solutions to the problems (decision making). Related to the components of marketing information system criterion, the researcher proposed the following hypothesis:

**H<sub>1</sub>:** There is a significant relationship between the data base (internal records) and the right decision making.

**H<sub>2</sub>:** There is a significant relationship between marketing research and the right decision making.

**H<sub>3</sub>:** There is a significant relationship between marketing intelligence and the right decision making.

**H<sub>4</sub>:** There is a significant relationship between decision support system and the right decision making.

### **6.6 The Population and the sample of the study**

This study is cause and affect in nature and relies on a simple random sample to collect the required data. The population study consist of Marketing department at Royal Jordanian Airlines and its representative offices at different Jordanian governorates.

### 6.7 Data Collection

The data collected through pre- designed questionnaire which was directed to the marketing people. A self-administered questionnaire was used to collect the required data from the population of the study. Using the drop and collect method, 200 questionnaire delivered by using a comprehensive survey method, and then collected it within one month. The highly controlled data collection procedures ensured returned back 170 questionnaire with 85% response rate.

### 6.8 The Research Tool

The required data was collected by the questionnaire, which was developed for this purpose. The questionnaire was validated through a mini survey of academics and experts. Their opinions and comments were considered in the final version of the questionnaire. The author excludes these questionnaires from the final analysis.

### 6.9 Reliability Test:

The reliability correlation was examined by Cronbach alpha and found (0.63) which is considered acceptable for this research. Because it is more than accepted value (0.60) (Malhotra, N. K. 2007).

## 7 An Applied Section:

The statistical package SPSS was used to analyzed data. Descriptive analysis and one-way ANOVA were used. A Descriptive analysis for Independent and dependent variables, shows that the range means value was (3.72 – 4.49).

### 7.1. Hypothesis Testing

This study aims at exploring the effect of utilizing and adopting marketing information system components on the right decision making.

#### 7.1.1. The Main Hypothesis

There is a significant relationship between marketing information system, and the right decision making. . This was branched to four sub- hypotheses, which was:

*H<sub>11</sub>: There is a significant relationship between data base (internal records), and the right decision making.*

*H<sub>01</sub>: There is no significant relationship between data base (internal records), and the right decision making.*

To investigate this hypothesis, descriptive statistics of variables were computed, table (1):

Table (1): Descriptive statistics for adopting data base (internal records).

variable	mean	Std.deviation
Data Base (Internal Records)	04.10	0.4169
The right decision making	04.06	0.4572

Descriptive analysis for the variables of the first hypothesis, Shows that the mean value of adopting data base by Royal Jordanian Airlines was (4.10) with std. deviation value (0.4169), and the mean value for the right decision making was (4.06) with std. deviation value (0.4572).which means that there are positive relationship between data base (internal records) and the right decision making, because their means are above the mean of the scale (3). Simple regression analysis was applied, table (2) shows that:

Table (2): Regression analysis for data base (internal records) variables.

Model	r	r <sup>2</sup>	β	t	F	Sig.	H. Result
Adopting Data Base (Internal Records).	0.198	0.039	0.217	2.613	6.828	0.010	Reject H <sub>0</sub>

The analysis shows that there is a relationship between data base (internal records), and increasing the possibility of the right decision making, despite the weak and low effect where as: r. Value reached (0.198), F. Value Reached (6.828) by significant (0.010),. Therefore hypothesis No. 1 (H<sub>11</sub>) is true and accepted and Null hypothesis (H<sub>01</sub>) was rejected.

$H_{12}$ : There is a significant relationship between marketing research, and the right decision making.

$H_{02}$ : There is no significant relationship between marketing research, and the right decision making.

To investigate this hypothesis, descriptive statistics analysis for variables were computed, table (3) shows that:

**Table (3):** Descriptive statistics for adopting marketing research

Variable	Means	Std.deviation
Adopting Marketing Research	03.98	0.8157

The mean value of adopting marketing research by the RJA was (3.98) with std. deviation value (0.8157), which means that there are positive attitudes toward marketing research because their means are above mean of the scale (3).

To investigate this hypothesis, simple regression analyses was applied; table (4) shows the following results:

**Table (4):** Regression analysis for adopting marketing research

Model	r	r <sup>2</sup>	$\beta$	t	F	Sig.	H. Result
Adopting Marketing Research for the right decision making.	0.149	0.022	8.341	1.951	3.805	0.053	Reject H1

The analysis above shows that there is no relationship between marketing research and the right decision making resulting from the value of r. which reached (0.149), and F. Value Reached (3.805) by significant (0.053), this indicate there is no relationship between utilizing and adopting dimarketing and the right decision making. Therefore ( $H_{12}$ ) was rejected, and ( $H_{02}$ ) Null hypothesis is true and accepted. which state that there is no relationship between marketing research and the right decision making.

$H_{13}$ : There is a significant relationship between marketing intelligence and the right decision making.

$H_{03}$ : There is no significant relationship between marketing intelligence and the right decision making.

To investigate the third hypothesis of the study, descriptive statistics analysis for variables were computed, table (5) shows that:

**Table (5):** Descriptive Statistics for Marketing Intelligence.

Variable	mean	Std.deviation
Marketing Intelligence and the Right Decision Making	03.99	0.4073

The mean value of adopting and utilizing marketing intelligence in taking the right decision making was (3.99) with std. deviation value (0.4073), which means that there a significant relationship and positive attitudes toward these variables because their means are above the mean of the scale (3). To investigate this hypothesis, simple regression analyses was applied; table (6) shows that:

**Table (6):** Regression Analysis for Marketing Intelligence

Model	r	r <sup>2</sup>	$\beta$	t	F	Sig.	H. Result
Marketing Intelligence and the Right Decision Making	0.438	0.191	0.491	6.308	39.791	0.00	Reject H <sub>0</sub>

The table shows that there is a relationship between marketing intelligence and the possibility of the right decision making where as: r. Value reached (0.438), F. Value Reached (39.791) by significant (0.00), this indicate that there is a significant relationship between adopting the concept of marketing intelligence and the possibility of the right decision making. Therefore the hypothesis No.3 ( $H_{13}$ ) is true and Null hypothesis ( $H_{03}$ ) was rejected.

$H_{14}$ : There is a significant relationship between decision support system (DSS) and the right decision making.

$H_{04}$ : There is no significant relationship between decision support system (DSS) and the right decision making.

To investigate the fourth hypothesis of the study, descriptive statistics analysis for variables were computed, as shown bellow, table No. (7):

**Table (7)** Descriptive Statistics for decision support system (DSS).

Variable	mean	Std.deviation
Decision Support System (DSS)	04.09	0.4368

The mean value of adopting and utilizing decision support system (DSS) in taking the right decision making was (4.09) with std. deviation value (0.4368), which means that there a significant relationship and positive attitudes toward decision support system (DSS) variables because their means are above the mean of the scale (3). To investigate this hypothesis, simple regression analyses was applied; table (8) shows that:

**Table (8): Regression Analysis for decision support system (DSS)**

Model	r	r <sup>2</sup>	β	t	F	Sig.	H. Result
Decision Support System (DSS)	0.442	0.196	0.463	6.390	40.827	0.00	Reject H <sub>0</sub>

The table shows that there is a relationship between decision support system (DSS) and the possibility of the right decision making where as: r. Value reached (0.442), F. Value Reached (40.827) by significant (0.00), this indicate that there is a significant relationship between adopting the concept of decision support system (DSS) and the possibility of taking the right decision. Therefore the hypothesis No.4 (H<sub>14</sub>) is true and accepted, and Null hypothesis (H<sub>03</sub>) was rejected.

**Multiple Regression Analysis** were applied for All Independent Variables to Detect Its Effect on Dependent variable as shown below, table (7):

**Table (7): Regression Analysis for total model of MKIS .**

The Effect of MKIS on the Right Decision Making.	β	t	Sig.	F	Sig.	H. Result
Data Base (Internal Records).	7.305	.095	0.924	17.301	0.00	Reject H <sub>0</sub>
Marketing Research.	6.799	.179	0.858			
Marketing Intelligence and the Right Decision Making	0.369	4.620	0.00			
Decision Support System (DSS)	0.351	4.729	0.00			

Table (7) refers to the calculations of Multi Regression Analysis which measure the effect of all independent variables on dependent variable, the results concludes that (F) value reached (17.301) by sig. (0.00), this indicate that There is a significant relationship between marketing information system (MKIS) and the right decision making as a whole model.

### 8. Conclusion

The paper provides a conceptual framework for the implementation of all parts of MKIS for marketing strategy development and strategic marketing planning for (RJA). MKIS is efficient tool providing past, present and projected information relating to internal operations and external intelligence. It supports the planning, control, and operational function in (RJA) by furnishing uniform information in the proper time frame to assist the decision maker. The ultimate purpose of MKIS is to facilitate mangers mission to make decision at all levels of operations based upon the information flow. Information is the essential ingredient of management and decision-making for both external and internal factors.

A problem can be solved in several ways all the ways cannot be equally satisfying, resulting from doubt and uncertainty, Therefore, the decision maker must try to find out the various alternatives available in order to get the most satisfactory result of a decision. Identification of various alternatives only not serves the purpose of selecting the satisfactory one, but also to avoid bottleneck situation by using, probabilistic analysis, decision trees, cost/volume/profit analysis etc (Varshney, 1997). Organizational decision reflects company’s policies and programs. They can be delegated to others (March, 1988). The study found that the Royal Jordanian Airlines utilized and depend more on decision support system (DSS) in decisions making and this variable took the first priority, and the second priority was for the intelligence marketing as a main source of information, the analysis found that there is a significant relationship between them and taking the right decision. With little effect for data base (internal records). And finally the study conclude that there is no significant relationship between marketing research and the right decision making.

### 9. Recommendation

Royal Jordanian Airlines must rely more on MKIS to take the right decisions (Programmed, Non Programmed, strategic and tactical decisions) to differentiate it self and its services from other competitors, to achieve the following objectives.

1. Identify risks at each stage of RJ's operations and decide how they are to be controlled.
2. Setting strategies, policies and practices that comply with environmental laws and regulations.
3. Ensuring efficient resource utilization and energy consumption throughout the company.
4. Minimizing the risk of mismanaging travel include pollution, climate change, traffic noise and pedestrian safety.
5. Proposing solutions for waste reduction and proper waste disposal and recycling operations.
6. Promoting environmental awareness, active participation and commitment of all staff.

### **Future Research**

It is useful to replicate this research in other contexts. It is also suggested that future researchers investigate each part of MKIS separately to concentrate more on specific issues related to each part.

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