Full Length Research Paper

An empirical study on the effect of marketing information systems on the market share of Jordanian hotels

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The aim of this study is to explore the effect of marketing information systems usage on market share through exploring internal records, marketing intelligence, market research and marketing decision support system on the overall market share. The population of the study consisted of tourism hotels operating in Jordan totaling 24 hotels categorized as five stars hotels. The researcher distributed 120 questionnaires (five for each hotel), of which 85 questionnaires were retrieved with a percentage of 74.2%. The study concluded the following findings. There is a strong positive effect between internal records and served market share, and a moderate positive effect between internal records and overall market share. There was no positive effect between relative market share and internal records. There is a moderate positive effect between marketing intelligence and overall market share. Moreover, in a weak degree between marketing intelligence and served market share, there was no positive effect between relative market share and marketing intelligence. There was a moderate positive effect between marketing researches and overall market share. There was no positive effect between served market share and relative market share. There was a moderate positive effect between marketing decision support systems and the overall market share and in a weak degree with served market share, there was no positive effect with relative market share. Based on the findings of the study the researcher presented several recommendations.

Key words: Marketing information systems, five stars hotels, Jordan.

INTRODUCTION

Information systems had become one of the important means used in marketing nowadays, it is the most effective tool in marketing through helping in decision making as well as solving all marketing problems. Additionally, information systems can link the organizations' policy and organize them in order to facilitate the marketing decision towards product or customer (Pride, 1989).

The success of marketing administration in planning and identifying marketing opportunities is based highly on the availability of internal and external information. Therefore, every organization must organize and distribute the flow of information for marketing managers and study their needs to provide them with the needed information (Wober, 2006). Today, it is necessary to obtain successful marketing information systems to be able to execute many marketing activities such as attracting customers, evaluating services as well as advertisement and promotion (Abu-qahf, 2002).

Marketing information system is a "system in which marketing data is formally gathered, stored, analyzed and distributed to managers in accordance with their informational needs on a regular basis" (Kotler and Keller, 2006). In addition, the online business dictionary defines Marketing Information System as "a system that analyzes and assesses marketing information, gathered continuously from sources inside and outside an organization (Pride, 1989). Thus, the current study is seeking to investigate the effect of marketing information systems usage on market share through exploring internal records, marketing intelligence, market research and marketing decision support system on the overall market share.

Statement of purpose

Because of the severe competition which resulted due to the rapid changes of our world today, it became a

necessity to obtain an information marketing system to operate and organize those information for the benefit of decision making. Moreover, the field visits for many Jordanian hotels showed that there is a considerable interest in marketing information systems to enable decision makers from monitoring tourism activities.

However, there is a variance in employees' understanding for those systems and its effect on market share. Thus, the current study is seeking to answer the following questions:

1. What is the effect of marketing information systems on the market share of Jordanian hotels? This question has four sub-questions:

- What is the role of internal records and its effect on the market share (total and the share of the served market)?
- What is the role of market intelligence and its effect on the market share (total and the share of the served market)?
- What is the role of market research and its effect on the market share (total and the share of the served market)?
- What is the role of marketing decisions support systems and its effect on the market share (total and the share of the served market)?

2. Are there any significant statistical differences between the market share and demographic variables (gender, age, educational level, experience and post)?

Significance of the study

The importance of this study emerged from its purpose as it seeks to reach several findings benefiting researchers on both practical and scientifically levels. This can be summarized as follows:

- Scientific importance: The scientific importance of this study is represented from its goal of rooting an important issue regarding marketing in the tourism sector especially using marketing information systems.
- Practical importance: The practical importance is emerged from the goal of this study which is investigating effect of marketing information systems usage on market share through exploring internal records, marketing intelligence, market research and marketing decision support system on the overall market share.

Definition of terms

Marketing Information Systems

A continuous organized process to record, categorize, store and analysis of past, current and future information related to hotels business and the factors affecting it in order to obtain accurate marketing decisions to achieve the aim of the hotels - the sample of this study. The components of those systems are:
- Internal records: It is the data collected as a database about the daily processes of the hotels - study sample.

These records include the needed data to acquire information related to the measurement of the current performance in sales, costs, storage, cash flow, debts and credits.
- Marketing intelligence: The means of the administration to see and know the recent circumstances inside and outside the hotel.
- Marketing Research: Data collection and analysis to determine the problems as well as opportunities and threats facing the hotels - sample of the study.
- Marketing decisions support systems: Systems explaining information in order to make marketing decisions as those systems allow decision makers to connect directly to the database consisting of computers and communication networks.

Market share

The part of the market dominated by the hotels as this market consumes services through the number of customers. The share can be measured through the total shares of the market and the share of the served market as well as the relative share of the market (Kotler and Keller, 2006: 120)

Previous studies

Here, several previous studies related to the issue of this study were presented directly and indirectly.

Al-qatameen (1995) studied the nature and direction of the relationship between the market share and the performance of insurance organizations in Jordan. The study drew ten linear models and used descriptive statistics to conclude that there is a positive significant effect between the market share and the performance of insurance organizations in for casual models and six different models and there is a strong relation between the two variables.

Chung (2000) examines pricing strategies and business performances of super deluxe hotels in Seoul. To achieve this purpose, empirical research is conducted on the basis of data from 1989, when the formation of the present product life cycle stage and the market structure began, to 1996. Through quick cluster and regression analysis, a separation of the price competition between groups of hotels is identified. By ANOVA, pricing strategies and market shares of selected leading hotels are compared. As a longitudinal study, the same research design is applied based on four two-year periods. The final part of the paper evaluates the results of the statistical analysis and discusses important findings and implications of the four two-year periods, respectively.

Abu-ramadan (2000) evaluated the role of administrative information systems in administrative decision making in the University of Jordan. The sample of the study consisted of 186 individuals representing 79.1% of the population, while the valid questionnaires

were only 86. The findings of the study showed that there is an average to high use of those systems and there is a strong to very strong relationship between the accuracy of information and the process of decision making among managers.

West and Hess (2004) stated that marketing information systems (MKIS) are decision support systems targeted at marketing-specific decisions. One of the most widely disseminated MKIS models divides the marketing decision universe into four domains and links these domains to each other and to other marketing activities. Unfortunately, there is little guidance on the construction of specific MKIS targeted at problems in these domains or to the construction of integrated MKIS that span domains. This paper 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. It is seen that 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.

Berardinucci (2005) investigated the external exporting barriers that Jordanian's SMEs face when engaging in international environment and to concentrate on the issue of export performance and its determinants among indigenous firms in Jordan. Based on the aim of this study, a questionnaire based survey method was conducted among 250 Jordanians manufacturing SMEs using random sampling method with usable response rate of 54%. Data were analyzed using relevant statistical tests ranging from t test to regression analysis. Governmental, economic, political, and legal barriers were identified as being significantly important. Also, the results show that exporters and non exporters largely agree in their views of the various barriers. Moreover, it was found that SMEs' performance is strongly related to the external exporting barriers with negative relationship considered by way of their level of export activities. The study was carried out on companies operating in Jordan. Hence, caution should be taken when generalization across cultures is considered. However, the findings of the study provide public and company policy makers with valuable guidelines for the formulation of suitable export marketing strategies and national export assistance programs.

In another study, Wober (2006) clarified that the accurate information is a needed requirement for the efficiency of the marketing process among Austrian tourism companies and the continuous access of those information will enhance the market share of those companies.

To conclude, the current study differs from previous studies in its goal and procedures as there were no studies especially in Jordan about the effect of marketing information systems on the market share of Jordanian tourism hotels.

The study of Wober (2003) aimed to identify the role of modern technology and the importance of information in forecasting and identifying customer needs and the role of the DSS in decision-making in tourism marketing organizations process. The results of this study are as follows:

-The importance of information and efficient management of information has been steadily increasing due to the development of modern technology and high capacity storage media which result to the dynamic growth of the market.

-The marketing decision support system may be important in supporting organizations in the collection, storage, processing and dissemination of information, and in the decision-making process of the forecasts and models.

-This study can be used as a successful application for marketing decision support systems (MDSS) in tourist organizations.

METHODOLOGY

Here, the sample of the current study, study tool, validity and reliability procedures are described. It also presents the statistics that are used in the analysis of data, and extract the results. This study belongs to a type of descriptive research survey aimed to analyze and evaluate the characteristics of a particular group, or a certain position dominated by the recipe selection.

Study population and sample

The population of this study is all five stars hotels totaling 24 hotels. The researcher selected all the hotels through comprehensive survey. The researcher administrated the questionnaire on the marketing staff in all those hotels (n=120) and retrieved 89 valid questionnaires with a rate of 74.2%. Table 1 presents the distribution of the sample according to the study variables.

Study tool

The researcher reviewed the related literature and as well as previous Arabic and foreign studies to develop a questionnaire. The questionnaire was administered on all marketing managers, sales managers and all people working in marketing. The questionnaire consisted of three parts: the first contains the demographic information of the respondent, the second contained the domains of marketing systems within 14 indicators measuring marketing information systems as described by Kotler, and the third consisted of Kotler's indicators for the market share.

Table 1. The distribution of the sample according to the study variables.

Variable	Category	Frequency	Rate
Gender	Male	35	39.3
	Female	54	60.7
Age	20 to 30-years	50	56.1
	30 to 40-years	24	27.0
	40 to 50-years	15	16.9
Educational level	Diploma	18	20.2
	Undergraduate	59	66.3
	Graduate	12	13.5
Total experience	1 to 5-years	30	33.7
	5 to 10-years	29	32.6
	10 to 15-years	9	10.1
	15 to 20-years	15	16.9
	20 years +	6	6.7
Post	Sales manager	17	19.2
	Marketing manager	22	24.7
	Quality manager	14	15.7
	Other	36	40.4
Experience in recent job	Less than 5 years	44	49.4
	5 to 10- years	24	27.0
	10 to 15- years	9	10.1
	15 years +	12	13.5
Level	Top management	5	5.6
	Middle management	69	77.5
	Low management	15	16.9
Total		89	100.0

Instrument validity

Validity was established through content and face validity, and the instrument was standardized on the response of an expert's group in Jordanian universities.
The raters canceled items and modified other items. The researcher modified the tool as mentioned by the raters.

Instrument reliability

Reliability of the instrument was determined through a pilot study; a sample of 20 respondents formed the study population. The reliability coefficient was 0.84 for marketing information systems and 0.85 for the tool as a whole, and it seemed to be reliable for use a Jordanian population.

Statistical measures

Data were processed through SPSS software by coding the variables in a clear way as well as recording each variable and its symbol as in the list. Then data were processed in the computer according to certain measures such as reliability measures, simple regression, F-test, correlation coefficient, ANOVA and multiple regressions. The data were processed in the computer according to the following method: 1 - 2.49 represents weak positive degree, 2.5 - 3.49 represents average positive degree and 3.5 - 5.00 represents high positive degrees.

STUDY FINDINGS

The first question: What is the effect of marketing information system on the market share of Jordanian hotels?

To answer this question, means and standard deviations were calculated for all domains as follows:
Means and standard deviations for the role of study domains and its effect on the market share were calculated as shown in Table 2. Table 2 shows that the

Table 2. Means and standard deviations for the role of study domains and its effect on the market share.

Degree	SD	M	Domain	Rank
High	0.49	4.36	Internal records	1
High	0.58	4.12	Marketing researches	2
High	0.36	4.10	Marketing intelligence	3
High	0.51	3.96	Systems of supporting marketing decisions	4

Table 3. Simple regression analysis for the effect of internal records on the market share of Jordanian hotels.

Variable	R	R^2	Beta	F	Sig.
Total market share	0.371	0.138	0.371	13.904	0.000
Share of served market	0.570	0.325	0.570	41.862	0.000
Relative market share	0.039	0.002	-0.039	0.135	0.714

Table 4. Simple regression analysis for the effect of marketing intelligences on the market share of Jordanian hotels.

Variable	R	R^2	Beta	F	Sig.
Total market share	0.309	0.095	0.309	9.167	0.003
Share of served market	0.278	0.077	0.278	7.288	0.008
Relative market share	0.022	0.000	0.022	0.041	0.840

Table 5. Simple regression analysis for the effect of marketing researches on the market share of Jordanian hotels.

Variable	R	R^2	Beta	F	Sig.
Total market share	0.484	0.235	0.484	26.655	0.000
Share of served market	0.081	0.007	-0.081	0.572	0.452
Relative market share	0.110	0.012	0.110	1.058	0.306

Table 6. Simple regression analysis for the effect of marketing information support systems on the market share of Jordanian hotels.

Variable	R	R^2	Beta	F	Sig.
Total market share	0.422	0.178	0.422	18.879	0.000
Share of served market	0.212	0.045	0.212	4.079	0.047
Relative market share	0.163	0.027	0.163	2.389	0.126

means of study domains ranged between 4.36 and 3.96, showing high positive effect on market share. Internal records came in the first rank with a mean of 4.36, while systems of supporting marketing decisions came in the last rank but in a high positive degree.

For the relationship between marketing information systems and market share, the researcher used the simple regression to calculate this relationship as shown in Tables 3 to 6.

Table 3 shows that there is a positive effect between all marketing information systems and the market share in all its domains. Table 4 shows that there is a positive effect between all marketing intelligence and the market share except in the relative market share. Table 5 shows

Table 7. Pearson coefficient of the relationship between marketing information systems and the market share.

Variable	Category	Total market share	Share of served market	Relative market share
Internal records	R	0.371**	0.570**	-0.039
	Sig	0.000	0.000	0.714
	No	89	89	89
Marketing intelligences	R	0.309**	0.278**	0.022
	Sig	0.003	0.008	0.840
	No	89	89	89
Marketing research	R	0.484**	-0.081	0.110
	Sig	0.000	0.452	0.306
	No	89	89	89
Marketing supporting systems	R	0.422**	0.212*	0.163
	Sig	0.000	0.047	0.126
	No	89	89	89

Table 8. Means, standard deviation and (t) test used for the relationship between gender and market share.

Variable	Gender	No.	M	SD	T	F	Sig
Total market share	Male	35	3.90	0.638	-2.156	87	0.034
	Female	54	4.13	0.344			
Share of served market	Male	35	4.15	0.496	0.234	87	0.816
	Female	54	4.13	0.458			
Relative market share	Male	35	4.30	0.265	1.351	87	0.180
	Female	54	4.19	0.419			

that there is a positive effect between all marketing researches and total market share, while there is no effect on the rest of the domains. Table 6 shows that there is a positive effect between all marketing intelligences and the market share except in the relative market share.

With regard to the relationship between marketing information systems and the market share, the researcher used Pearson coefficient as shown in Table 7. Table 7 shows that there is significant positive relationship at the level of ($\alpha \leq 0.05$) between internal records, marketing intelligences, marketing researches and marketing information supporting systems, and both total market share and share of served market.

The second question: Are there any significant statistical differences between the market share and demographic variables (gender, age, educational level, experience and post)?

To answer this question, means, standard deviation and (t) test were used to analyze the relationship between gender, age, experience, post and market share.

First: Gender

Table 8 shows that there was no significant statistical difference at the level of ($\alpha \leq 0.05$) attributed to gender in the share of served market or relative market share except for the total market share in favor of females.

Second: Age

Table 9 shows that there are differences according to age category. Therefore, ANOVA was used to obtain those differences as shown in Table 10.

Table 10 shows that there was no significant statistical difference at the level of ($\alpha \leq 0.05$) attributed to age except between 2 to less than 30 and 40 to less than 50 in favor of the latter.

Third: Educational level

Table 11 shows that there are differences according to

Table 9. Means, standard deviation used for the relationship between age and market share.

Variable	Age	No.	M	SD
Total market share	20 to 30-years	50	4.03	0.556
	30 to 40-years	24	4.30	0.240
	40 to 50-years	15	4.04	0.491
Share of served market	20 to 30-years	50	4.19	0.469
	30 to 40-years	24	4.16	0.513
	40 to 50-years	15	3.91	0.357
Relative market share	20 to 30-years	50	4.19	0.370
	30 to 40-years	24	4.18	0.398
	40 to 50-years	15	4.46	0.217

Table 10. ANOVA analysis for the effect of age in market share.

Variable	Source	Cq	T	M	F	Sig
Total market share	Between groups	1.335	2	0.667	2.890	0.061
	In groups	19.859	86	0.231		
	Total	21.194	88			
Share of served market	Between groups	0.906	2	0.453	2.094	0.129
	In groups	18.601	86	0.216		
	Total	19.507	88			
Relative market share	Between groups	0.911	2	0.456	3.554	0.033
	In groups	11.023	86	0.128		
	Total	11.934	88			

educational level category. Therefore, ANOVA was used to obtain those differences as shown in Table 12.

Table 12 shows that there was no significant statistical difference at the level of (α ≤ 0.05) attributed to educational level.

Fourth: Experience

Table 13 shows that there was significant statistical difference at the level of (α ≤ 0.05) attributed to years of experience between 1 to less than 5 years in favor of the first and 5 to less than 10 years in favor of 1 to less than 5 years. Moreover, there were differences between 5 to less than 10 years and 15 to less than 20 years in favor of the latter. There were differences between 15 to less than 20 years and more than 20 years in favor of the latter, and for 20 years and more in the total market share.

There was significant statistical difference at the level of (α ≤ 0.05) between 1 to less than 5 years and 15 to less than 20 years in favor of the first and between 5 to

less than 10 years and 15 to less than 20 years in favor of the first; and the differences were in favor of 5 to less than 10 years in the favor of the served market share. With regard to the relative market share, the differences were too low and insignificant.

Fifth: Post

Table 14 shows that there was significant statistical difference at the level of (α ≤ 0.05) attributed to post between sales manager and other categories in favor of sales manager, and between marketing manager and quality manager in favor of marketing manager as well as quality manager and other categories.

DISCUSSION

Based on the findings, it was evident that there is a positive effect ranging from weak to strong between marketing information systems and the share of the served market. The researcher found that the hotels use

Table 11. Means, standard deviation used for the relationship between gender and market share.

Variable	Age	No.	M	SD
Total market share	Diploma	18	4.13	0.306
	Undergraduate	59	3.98	0.554
	Graduate	12	4.19	0.326
Total		89	4.04	0.491
Share of served market	Diploma	18	4.14	0.679
	Undergraduate	59	4.10	0.372
	Graduate	12	4.29	0.548
Total		89	4.14	0.471
Relative market share	Diploma	18	4.14	0.350
	Undergraduate	59	4.22	0.386
	Graduate	12	4.43	0.236
Total		89	4.23	0.368

Table 12. ANOVA analysis for the effect of educational level in market share.

Variable	Source	Cq	T	M	F	Sig
Total market share	Between groups	0.611	2	0.305	1.276	0.284
	In groups	20.583	86	0.239		
	Total	21.194	88			
Share of served market	Between groups	0.330	2	0.165	0.739	0.480
	In groups	19.177	86	0.223		
	Total	19.507	88			
Relative market share	Between groups	0.615	2	0.307	2.335	0.103
	In groups	11.319	86	0.132		
	Total					

marketing information systems in a high degree through using databases and stored reports in internal records to plan their marketing plans as well as determining threats and strength points through information analysis. Additionally, the role of market intelligence is used in analyzing the internal and external marketing information to know the needs of customers or the market, as well as the efficiency of supporting systems to enhance marketing decisions. This result is consistent with those of previous studies such as Al-qatameen (1995) and Wober (2006).

There were no significant statistical differences between marketing information systems and relative market share. This can be attributed to the actions of the hotels that refuse any non-profitable customers in the local market and directing its efforts for the external market only. This result is consistent with that of Berardinucci (2005) study which concluded that there are no marketing plans in Jordan and Italy as the internet is

more efficient to improve marketing performance in both countries.

The findings showed that there is an average positive effect between marketing information systems and the total market share which is attributed to the strong relationship between both variables. Furthermore, the role of effective marketing efforts carried out by some hotels in the findings of new marketing directions in order to win more customers and improve the services through marketing studies and surveys to investigate their opinions and attitudes.

The findings showed different correlation degrees ranging between strong and weak for the effect of using marketing information as an independent variable and market share as a dependent variable. Those differences can be attributed to the variance in the roles of marketing information systems in affecting the market share and its effective roles in planning, analysis and linking between marketing operations to affect the market positively.

Table 13. Means, standard deviation used for the relationship between experience and market share.

Variable	Age	No.	M	SD
	1 to 5-years	30	4.18	0.249
	5 to 10-years	29	3.76	0.671
Total market share	10 to 15-years	9	3.79	0.348
	15 to 20-years	15	4.25	0.200
	20 years +	6	4.50	0.000
Total		89	4.04	0.491
	1 to 5-years	30	4.30	0.452
	5 to 10-years	29	4.20	0.468
Share of served market	10 to 15-years	9	3.95	0.635
	15 to 20-years	15	3.80	0.304
	20 years +	6	4.14	0.000
Total		89	4.14	0.471
	1 to 5-years	30	4.23	0.374
	5 to 10-years	29	4.14	0.401
Relative market share	10 to 15-years	9	4.43	0.247
	15 to 20-years	15	4.17	0.329
	20 years +	6	4.57	0.000
Total		89	4.23	0.368

Table 14. Means, standard deviation used for the relationship between post and market share.

Variable	Age	No.	M	SD
	Sales manager	17	3.88	0.402
Total market share	Marketing manager	22	4.00	0.469
	Quality manager	14	3.62	0.739
	Other	36	4.28	0.214
Total		89	4.04	0.491
	Sales manager	17	4.14	0.422
Share of served market	Marketing manager	22	4.11	0.544
	Quality manager	14	3.92	0.717
	Other	36	4.24	0.246
Total		89	4.14	0.471
	Sales manager	17	4.21	0.441
Relative market share	Marketing manager	22	4.25	0.405
	Quality manager	14	4.07	0.175
	Other	36	4.29	0.365
Total		89	4.23	0.368

RECOMMENDATIONS

Based on the findings of this study, the researcher recommends the following:

1. Calling on the hotels of this study to analyze the stored information in their internal records to determine threats and strength points to make fruitful plans and initiate positive relationships with different markets.

2. Calling on the hotels of this study to make plans to link threats and opportunities in the marketing systems with environment survey to develop marketing opportunities.

3. The continuous promotion on both local and international levels and offering competitive prices and services.

4. Conducting more studies regarding marketing information systems with other marketing variables.

5. Conducting more studies about marketing information systems.

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