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HexaTimes, USA

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ABSTRACT

This study aims to identify the extent to which the management information systems affect the strategy implementation in the Libyan commercial banks. A descriptive analysis approach is used to analyse the collected data. In this study a set of results was reached to determine the statistically significant relationship between the implementation of the strategy and the requirements of management information systems (human, software, physical, organizational). From the results we determined that there is a statistically significant impact of the requirements of computerized management information systems on the strategy implementation in the Libyan commercial banks. There are no statistically significant relationship between the sample study opinions about the effects of management information systems on the strategy implementation in Libya n commercial banks considering gender and the educational level, while there is a significant relationship between the sample study opinions about the effects of management information systems on strategy implementation in Libyan commercial banks with regards to the age, job title, and the years of experience.

1. INTRODUCTION

The service and industrial organizations seek to develop an integrated work strategy that covers all the work activities of the organization and all its departments. Nowadays most organizations face difficult challenges in implementing these strategies to the organizations work environment in the framework of developing planning systems, allocation of physical and human resources, incentive and reward systems, organizational structure, prevailing organization policies, information systems, communications, leadership, and the Strategic Performance Assessment System (SPAS).

Nowadays the world witnessing rapid growth in all fields including economic, political, technological and social aspects, and this rapid growth has affect the sustainability of organizations of all kinds, and forces them to resort to use new methods and technologies in order to absorb these huge and rapid demand. The information that the organizations have is one of the most important resources to help these organizations to direct their efforts in the right direction to achieve their mission and objectives, but this is not enough to solve all the organization problems they may face. The Information, especially with its magnitude size, must be placed in a system to

Information systems represent a strategic tool for organizations to address the challenges they may face by adopting them as a technical tool for providing information for strategic planning and implementation, as well as their prominent role in achieving added value through their contribution to providing information that helps organizations to innovate, create knowledge and to strengthen their competitive position. Therefore, the information systems are considered as a competitive advantage for organizations to help them survive in the face of different environmental challenges.

The banks are one of the most needed organizations to use and apply the management information systems because they are found in a complex and rapidly changing environment. Therefore the Libyan banks have become increasingly required to improve the quality of their banking services to cope with the great development in the business field internally and externally.

2. LITERATURE REVIEW

According to study of Radomska (2014), "linking the main obstacles to the strategy implementation with the company's performance" that aims to analyse the relationship between the main obstacles to the implementation of the strategy and the company's revenues. The study targeted 200 Polish companies among the companies that occupied the advanced positions in the Polish marketplace. The researcher used the interview and the questionnaire as a tool for collecting the data and information. The study found that the companies involved in the survey do not have significant problems with the implementation of the company's strategies and are able to provide effective solutions that aim to eliminate potential obstacles. The study has also concluded that the best criterion for knowing the company's performance is the growth rate of return and revenue.

Based on the study of (Dandira, 2011) under the title "involvement of implementers: missing element in strategy formulation". That aims to identify the role of the implementers of the strategic plans and their participation extent in the process of formulating strategic plans and to provide the necessary recommendations to the managers to help them achieve their objectives better. The analytical descriptive method has been used in this research. The information and data of study were collected from the official documents published on the official websites, regular interviews, and previous studies and researches. The study

2

found that the process of formulating the organizations strategies plans are done only by the top management, and the normal employees implement these strategies without participation and preparing them, will lead to difficulties implementing these strategies successfully.

A study for (Lesile, 2008) under the title "from the strategic planning to strategy implementation in the hotel industry in South Africa" aims to identify the process of moving from strategic planning to the strategy implementation in the hotel industry in South Africa, as well as to identify the gap between strategic planning and the strategy implementation. The descriptive analysis approach has been used in this research and the study reached a set of results such as the lack of participation of different administrative levels in the strategy formulation, the process of strategy implementation less formal than the strategic planning process, and the lack of ability to convert the strategy into operational activities, due to the lack of sufficient skills of employees.

A research study of (Supattra, 2007) under the title "the influence of management information systems and information technology on management performance and satisfaction" used the descriptive analysis approach to analyse the data of study. The research concludes that management information systems and information technology increase the effectiveness of the organization, improve the strategic work, and increase the performance efficiency.

According to study of (Loukis and Sapounas, 2005) under the title "the impact of information systems investment and management on business performance in Greece" three different scales were used to measure the performance of organizations which are the sales revenue, employee productivity and revenue on assets (as a financial scale). The study assumed that there is a positive impact of information systems on the three scales. The study ends up with different important results, firstly it was found that there is a significant positive impact of information systems on production scale as well as on the workers performance. Secondly, the impact of information systems on revenue on assets was lower. Lastly, it was found that there is an integration relationship between the investment in information systems and management information systems factors represented in the number of information system staff, size of training and other factors, and that this integration relationship supports the increase in the size of production in the organization as well as the efficiency of employees' production.

Tan's (2004) research titled "barriers to strategy implementation: a case study of Air New Zealand" used the analytical descriptive approach as well as the field study method to obtain information and data for his study. Data were obtained from official documents published on official websites and through operational cases by interviewing 28 workers from the networks management department of the New Zealand Airlines. The study reached a set of results and one of the findings includes the participation of all levels of management in the organization creates a unique perception of the process of strategy implementation. Another major

finding is that there are many obstacles to the implementation of the Strategy, such as: the formulation of the strategy, the conditions of environmental uncertainty, the structure and culture of the organization, the allocation of resources, individuals and control. The research also showed that good leadership play very important role in the successful of strategy implementation.

3. RESEARCH PROBLEM

Many problems have been noticed in the Libyan commercial banks regarding employees while carrying out their work which can lead to delaying the delivery of services in the required time. Among these problems are the constant congestion in the banks, which leads to the delay of customers in obtaining their needed service, increase the chaos in the bank. In addition, the employees are not familiar with the latest technological methods that can facilitate the work in the bank and use time to accomplish another additional tasks. On the other hand, some banks rely on traditional manual methods at work, which make it difficult, considering the large amount of work and information which need to be managed and maintained by secure IT systems.

Management Information Systems have provided business organizations with a great opportunity to improve their implementation of the strategic plans by relying on modern and sophisticated technology that provides organizations with real information and data to help them shape their policies and strategies correctly. The management information systems minimize the existence of obstacles or crises that prevent the feasibility of implementing strategic plans in the working environment. So based on that the research problem can be formulated in the following question:

"What are The Role of Management Information Systems in the Strategy Implementation in the Libyan Commercial Banks?"

4. RESEARCH OBJECTIVES

The current research seeks to achieve a number of objectives which are firstly to identify the role of management information systems in the strategy implementation in the Libyan commercial banks, secondly to identify the availability of management information systems requirements (Physical- Software - Human – Organizational) in the Libyan commercial banks, highlight the main obstacles that face the optimal use of management information systems in the implementation of the strategy, achieve practical results and recommendations that can be used to develop and enhance the role of management information systems in the implementation of the strategy, determine the relationship of management information systems to the implementation of the strategy, and finally identify the impact of management information systems on the implementation of the strategy.

5. RESEARCH HYPOTHESES

H1: There's a significant relation between the strategy implementation and the computerized management information systems application in the Libyan commercial banks.

H1.a: There's a significant relation between the strategy implementation and the physical requirements in the Libyan commercial banks.

H1.b: There's a ssignificant relation between the strategy implementation and the programing requirements in the Libyan commercial banks.

H1.c: There's a significant relation between the strategy implementation and the human requirements in the Libyan commercial banks.

H1.d: There's a significant relation between the strategy implementation and the organizational requirements in the Libyan commercial banks.

H2: There's a significant relation between the computerized management information systems application requirements on the strategy implementation in the Libyan commercial banks.

H3: There are significant differences between the study sample opinions on the role of management information systems in strategy implementation at the Libyan commercial banks due to the demographical variables (Gender, Age, Educational level, Job title, Years of experience).

6. RESEARCH METHODOLOGY

In order to achieve the objectives of the study, the researcher used the descriptive approach method as it tries to describe the phenomenon of the study area, analyzing its data, shows the relationship between its components and the opinions that are raised around it, the processes it contains, and there effects.

Descriptive research is known as a statement of affairs as they are at present with the researcher having no control over variable. Moreover, "descriptive studies may be characterised as simply the attempt to determine, describe or identify what is, while analytical research attempts to establish why it is that way or how it came to be" (Ethridge, 2004).

Based on the study problem and its objectives, the study sample consists all the top management employees in the Libyan commercial banks.

The random sample method have been used in this research where 30 questionnaires sample were distributed to test the internal consistency and structural validity of the questionnaire after verifying the validity and reliability of the questionnaires, a number of 63 questionnaires have been distributed to the study sample and all the questionnaires were retrieved without any missing one.

7. RESULTS AND DISCUSSIONS

7.1 Structural Validity

Structural validity measures the extent to which the tools can achieve its objectives, as well as to shows how closely related each area of study to the total amount of the questionnaire paragraphs (Banerjee et. al., 2007 & Messick, 1995 & Schotte et. al.,1997).

The following table shows that all correlation coefficients in all questionnaire areas are statistically significant at a

significant level $(0.05 \geq \alpha)$. Thus, all the questionnaire areas are considered valid areas for the measurement.

Table 1: the correlation coefficient between the degree of each area of the questionnaire and the total score of the questionnaire.

Areas	Pearson correlation coefficient	Sig.
Physical requirements	0.834	*0.000
Organizational requirements	0.937	*0.000
Human requirements	0.852	*0.000
Programing requirements	0.933	*0.000
The computerized management information systems implementation requirements.	0.985	*0.000
The mechanisms of strategy implementation.	0.963	*0.000

Table 2: Alpha Cronbach coefficient for measuring the questionnaire reliability.

Areas	Items No.	Cronbach Alpha
Physical requirements	7	0.953
Organizational requirements	7	0.908
Human requirements	7	0.914
Programing requirements	7	0.949
The computerized management information systems implementation requirements.	28	0.971
The mechanisms of strategy implementation.	19	0.964
All paragraphs	**47**	**0.982**

It is clear from the above table that the value of the Alpha Cronbach Coefficient is high for each field where they range between (908.0) and (971.0), and it reached (982.0) for all questionnaire paragraphs, which means the reliability is high and statistically significant.

7.2 The Normality Distribution Test

The Kolmogorov Smirnov Test (K-S) test was used to make sure that the data followed the normal distribution, and the results were as the following table shows:

Table 3: The normality distribution

Areas	Sig.
The computerized management information systems implementation requirements.	0.069
The mechanisms of strategy implementation.	0.323
All areas	**0.125**

It is clear from the above table that the probability value Sig. for all areas of study is greater than the level of significant (0.05). Therefore, the data distribution for these areas follow the natural distribution so the parametric tests will be using to answer the researches hypotheses.

7.3 The Statistical Description Of The Study Sample

The characteristics of the study sample according to personal information are shown in the following table.

Table 4: The demographical data

Demographical information	No.	Percent %
Gender		
Male	56	88.9
Female	7	11.1
Age		
From 25 to less than 30	7	11.1
From 30 to less than 35	6	9.5
From 35 to less than 40	17	27.0
From 40 and more	33	52.4
Educational level		
Vocational	2	3.2
Bachelor	49	77.8
Master	11	17.5
Ph.D.	1	1.6
Job title		
Branch Manager	15	23.8
Deputy General Manager	1	1.6
Deputy Branch Manager	13	20.6
Bank supervisor	14	22.2
Other	20	31.7
Years of experience		
Less than 5 years	8	12.7
From 5 to less than 10 years	3	4.8
From 10 to less than 15 years	16	25.4
From 15 years and more	36	57.1
Total	**63**	**100.0**

8. THE RESEARCH HYPOTHESES RESULTS

This section shows the test result for all the research hypotheses.

If the Sig. (P-value) is greater than the level of significant $0.05 >= \alpha$ then the null hypothesis cannot be rejected, which means there is no statistically significant relationship between the two variables. But if Sig. (P-value) is less than the $0.05 >= \alpha$ then the null hypothesis will be rejected and the alternative hypothesis will be accepted, which means there is statistically significant relationship between the two variables.

Table 5: The hypotheses results

Hypotheses	Pearson correlation coefficient	Sig.	The result
H1: There's a significant relation between the strategy implementation and the computerized management information systems application in the Libyan commercial banks.	0.903	0.000*	The correlation coefficient equal (0.903) and the (Sig.) value equal (0.000) which is less than the significant level $0.05 >= \alpha$ (accepted).
H1.a: There's a significant relation between the strategy implementation and the physical requirements in the Libyan commercial banks.	0.744	0.000*	The correlation coefficient equal (0.744) and the (Sig.) value equal (0.000) which is less than the significant level $0.05 >= \alpha$ (accepted).
H1.b: There's a significant relation between the strategy implementation and the programing requirements in the Libyan commercial banks.	0.817	0.000*	The correlation coefficient equal (0.817) and the (Sig.) value equal (0.000) which is less than the significant level $0.05 >= \alpha$ (accepted).
H1.c: There's a significant relation between the strategy implementation and the human requirements in the Libyan commercial banks.	0.824	0.000*	The correlation coefficient equal (0.824) and the (Sig.) value equal (0.000) which is less than the significant level $0.05 >= \alpha$ (accepted).
H1.d: There's a significant relation between the strategy implementation and the organizational requirements in the Libyan commercial banks.	0.835	0.000*	The correlation coefficient equal (0.8235) and the (Sig.) value equal (0.000) which is less than the significant level

* The correlation is statistically significant at significant level $0.05 >= \alpha$.

systems in the strategy implementation at the Libyan commercial banks due to the gender.

Table 8: results of the One- Way Anova test – Age

H2: There's a significant relationship between the computerized management information systems application requirements on the strategy implementation in the Libyan commercial banks.

The regression analysis test has been used to test this hypothesis:

The variables that affect the strategy implementation in the Libyan commercial banks are the organizational, human, physical requirements, while the programing requirement has a weak effect. The determination coefficient equal (0.823), and the adjusted coefficient of determination equal (0.814).

Table 6: The multiple regression analysis.

Independent variables	Regression coefficients	t	Sig.
Constant value	0.939	1.901	0.062
The organizational requirements	0.241	3.040	0.004
The human requirements	0.397	4.996	0.000
The physical requirements	0.255	3.815	0.000
The determination coefficient = 0.823		The adjusted coefficient of determination =0.814	

Based on table 6 results we accept the hypothesis: there's a significant relation between the computerized management information systems application requirements on the strategy implementation in the Libyan commercial banks.

H3: There are significant differences between the study sample opinions on the role of management information systems in the strategy implementation at the Libyan commercial banks due to the demographical variables (Gender, Age, Educational level, Job title, Years of experience).

H3.a : There are significant differences between the study sample opinions on the role of management information systems in the strategy implementation at the Libyan commercial banks due to the gender.

Table 7: results of the (T-Test) for two independent samples – Gender.

The Areas	Means		t	Sig.
	Male	Female		
All Areas Together	8.78	8.46	0.736	0.464

Table 7 shows that the probability value (Sig.) corresponding to the (T-Test) for the two independent samples is greater than the significant level (0.05) for all areas, so there are no statistically significant differences between the means of the sample study due to the gender.

H3.b: There are significant differences between the study sample opinions on the role of management information

The areas	Means			Value	Sig.
	Less than 35	From 35 to less than 40	40 and more		
All Areas Together	7.74	8.59	9.22	12.124	*0.000

Table 8 shows that the probability value (Sig.) corresponding to the (One-Way Anova) is less than the significant level (0.05) for all areas, so there are statistically significant differences between the means of the sample study of these areas due to the age.

H3.c: There are significant differences between the study sample opinions on the role of management information systems in the strategy implementation at the Libyan commercial banks due to the education level.

Table 9: results of the (T-Test) for two independent samples- Educational level

The area	Means		value	Sig.
	Bachelor and less	Higher studies		
All Areas Together	8.81	8.47	0.981	0.330

Table 9 shows that the probability value (Sig.) corresponding to the (T-test) for two independent samples is greater than the significant level (0.05) for all areas, so there are no statistically significant differences between the means of the sample study of these areas due to the education level.

H3.d: There are significant differences between the study sample opinions on the role of management information systems in the strategy implementation at the Libyan commercial banks due to the job title.

Table 10: results of the "One- Way Anova" test- Job title

The area	Mean				Value	Sig.
	Deputy general manager	Deputy branch manager	Bank Supervisor	Other		
All Areas Together	9.48	8.97	8.93	7.89	9.867	*0.000

Table 10 shows that the probability value (Sig.) corresponding to the (One-Way Anova) is less than the significant level (0.05) for all areas, so there are statistically significant differences between the means of the sample study of these areas due to the job title for the job titles Deputy general manager / Branch Manager.

H3.e: There are significant differences between the study sample opinions on the role of management information

systems in the strategy implementation at the Libyan commercial banks due to the years of experience.

Table 11: Results of the "One- Way Anova" test - years of experience.

The area	Means			Value	Sig.
	Less than 10	From 10 to less than 15	15 and more		
All Areas Together	7.94	8.39	9.15	7.685	*0.001

Table 11 shows that the probability value (Sig.) corresponding to the (One-Way Anova) is greater than the significant level (0.05) for all areas, so there are no statistically significant differences between the means of the sample study of these areas due to the years of experience.

9. RECOMMENDATIONS

There are a number of recommendations that increase the positive role of management information systems with all its requirements on the strategy implementation at all the Libyan organizations in general and banks particularly. These recommendations are, the continued provision of the latest equipment and devices to complete the banks work and keep up with technology developments, use advanced technologies to store and retrieve information when needed, the permanent and continuous testing of the networks used to avoid any sudden failures that would impede the work, facilitate the communication process with the IT department to solve any problem or emergency that may face the employees; conducting training courses on an ongoing basis in order to cope with the rapid developments in information technology, selection of qualified personnel to work in the IT department, and provision of comprehensive programs for more than one activity in the bank with its ease of use. The study results suggest several topics for future research. First, this study looks at the role of management information systems in the strategy implementation at the Libyan commercial banks, and the challenges facing the development of the application of management information systems in Libyan banks. Further studies can be done to evaluate the impact of management information systems on the primary stages of the management strategy at the Libyan commercial banks, and other studies can be done to evaluate the challenges that face the successful implementation of the management information systems at the Libyan commercial banks.

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