

The Impact of the Application of E-Management on Organizational Excellence: Case Study on King Abdulaziz University

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Abstract

Background/Objectives: This study aims to recognize the impact of E-Management on Organizational Excellence. **Methods/Statistical Analysis:** The Descriptive approach for the case study and the questionnaire has been used as a tool to collect the main data, which may help to achieve the objectives of the study by answering its questions. Study Population shall cover all management staff (6000 employee) in all colleges, managements, sections of King Abdulaziz University in Jeddah, Saudi Arabia. Given the difficulty of conducting the study on all university employees, the study will be applied only on a limited sample of management staff of King Abdulaziz University in Jeddah; the sample shall be 10% of the management staff of University from both genders. **Findings:** The findings of the study showed that 38% of Organizational Excellence on King Abdulaziz University in Jeddah is due to the application of E-Management methods in the university, while 62% of Organizational Excellence is attributed to other elements. In addition, the findings of the study revealed that there were no statistically significance differences on the significant level among the answers of the sample on the impact of E-Management on Organizational Excellence in King Abdulaziz University attribute to the variable of (gender). And the findings of the study revealed also that there were no statistically significance differences on (the arithmetic means) in the answers of the sample attribute to the variable of (age). The values of significance level of all four E-Management fields were greater than (0.05), which has turned out to be ($F > 0.05$). Furthermore, the findings of the study revealed that there were no statistically significance differences on (arithmetic means) in the answers of the sample, which attribute to the variable of (educational qualifications). Whereas the significance of (F) test was greater than presumed, significance level of this study (0.05) and it has turned out to be ($F > 0.05$). The findings of the study revealed that there were no statistically significance differences on (arithmetic means) in the answers of the sample, which attribute to the variable of (years of experience). Also, the values of significance level (Sig) of all four E-Management fields were greater than (0.05). Eventually, the findings of the study revealed that there were no statistically significance differences on (arithmetic means) in the answers of the sample, which attribute to the variable of (job rank). The values of significance level of all four E-Management fields were greater than (0.05). **Improvements/Applications:** The study recommended working on spreading the culture of excellence among employees in the university, and drew their attention towards internal and external university customer service, considering that excellence is mainly based on this aspect, which can only be achieved by creating positive difference and creative ideas, and providing adequate infrastructure for the application of E-Management throughout supplying all necessary material, human and technical resources for the application of E-Management on all management works provided by the University.

Keywords: Arithmetic Means, Educational Qualifications, E-Management, King Abdulaziz University, Organizational Excellence

1. Introduction

All types of organizations and fields of work face a lot of problems and challenges resulted by the successive developments in the contemporary business environment, and major shifts of E-Management and knowledge management, thus, the organization survival depends on its ability to achieve excellence, and its success also shall be measured by its application of means of Excellence Management.

Excellence Management has been one of the most important modern concepts in Modern Management thanks to the huge technical development in digital communication, increasing of competition between productive and service organizations. Thus, having the elements Excellence Management and activating it is the only way for organizations to survive and continue in today's rapid moving world and continuous development, in addition to the control of clients' desires and having multiple alternatives, opening markets and eliminating barriers.

This research will discuss the concept of Excellence Management, its development and the evolution of its concept and basics of the intellectual construction, characteristics and features, requirements, keys, and modals of the Excellence Management and reasons of weakness of excellence in providing services in the public sectors, in order to give a clear image of this concept from various dimensions of its characteristics, strategy and pillars to depend on in achieving its objectives.

2. Study Problems

Information and Communication Technology Revolution affected all areas of contemporary human life either the economic side or the social side, so several societies have turned gradually to be information societies especially Arab Societies. Computer Technology as well as Information Network has entered different fields of life. Information Technology became an important part in the curriculum and education. It goes deeply in Management Relations Network as well as service and production

processes. Various institutions of Saudi society were not isolated from these rapid developments. Saudi society has joined computerized business as well as Information Technology world. Saudi State leadership put the E-Management, application of Electronic-Governance Programs, and achieving organizational excellence on its list of priorities to develop state-society Institutions.

Despite many studies discussed E-Management applications in the kingdom especially in higher education institutions, there is scarcity in the studies that take care of knowing the real impacts of E-Management application in different fields especially the social, economic, management, educational, cultural impacts. So the study problem is summarized in the next main question: what is the impact of the application of E-Management on Organizational Excellence at King Abdulaziz University? And there are two sub-questions that branched from this main question: what is the impact of the application of E-Management on Organizational Excellence at King Abdulaziz University? What is the extent of significant differences ($0.05 \geq \alpha$) between the responses of the study sample on the impact of E-Management on Organizational Excellence in King Abdulaziz University which attribute to personal characteristics (gender, age, educational qualification, job rank and years of experience)?

3. Literature Survey

Study¹ aimed at identifying the relationship between some organizational variables and the E-Management application in the Palestinian universities in Gaza Strip. The analytical descriptive approach was used, a questionnaire was carried out as a key instrument to gather the main data of the study and was applied upon a random sample that reached 177 individuals. The study used several statistic techniques to process data and hypotheses testing, most importantly (Pearson correlation coefficient and arithmetic means). The study resulted in several outcomes. Most importantly there is a positive relationship between the prevailing organizational cultures in the Palestinian universities in Gaza Strip and E-Management

application in these universities. There is a positive relationship between the prevailing management leadership patterns in the Palestinian universities in Gaza Strip and E- Management application in these universities. There is a clear difference in the Palestinian universities in Gaza Strip concern in providing the requirements of E-Management application. Whereas a large deficiency in its concern with necessary legislation, developing electronic regulation and training the employees on E-Management application.

Study² aimed at identifying E-Management application in Saudi universities and its relationship with the level of organizational effectiveness from the leading academics point of view. The study also aimed at comparing between public universities and private universities by the E-Management application. The study sample formed of 373 professors from academic staff members. The researcher used the descriptive approach in his study. A questionnaire was carried out formed of 70 distributed paragraphs on two parts, the first measures E-Management application and the other measures the level of organizational effectiveness in Saudi universities. The study findings showed E-Management application in Saudi public and private universities; that resulted average assessment, and that the level of organizational effectiveness was average. The study came to the absence of difference that indicates statistically to the strength of correlation relation between E- Management application and organizational effectiveness attribute to the effect of the university type.

Study³ aimed at identifying the importance of E-Management in organizations, and its effect upon employees' performances, at identifying employees' awareness of the benefits and advantages of E-Management. The researcher used complete census whereas the research sample reached 200 individual and 169 individual were examined i.e. what is equivalent to 85% of the study population. The researcher came to several findings through this study, most importantly E-Management contribution to raise the level of performance and improve the skills effectively for the employees.

Also, a directly proportional relationship emerged between E-Management application and employees' performance whereas that whenever the employees turned to use E-Management whenever the employee skills improved, that assists in the productivity increase and raise the level of performance, and upon the study findings its main recommendations obliging all public and private organizations with E-Management in all sectors, making the best of the youth potential in order to spread the electronic awareness among employees, confirming the usage of electronic methods to complete the work and the usage of non-traditional ways, constantly improving the infrastructure whereas it constantly fits with the advanced technology, studying the effect of E-Management on the level of service quality in managements, also the necessity of following up the studies in E-Management field and learning the extent of the actual effect upon the improvement and raise the level of performance.

Study⁴ aimed to reveal the impact of organization characteristics which remarked to achieve the organizational excellence for Higher Education and Scientific Research Ministry in Jordan. The sample for the research study consists of 194 ministerial employees, who were granted Baccalaureate degrees at least. The study concluded several findings, notably: the level of applying the dimensions of organizational excellence, among the ministerial employees, was average.

Study⁵ aimed to demonstrate the nature of the relation between employees' performance level and set of variables which concern the (economic, management, social, technical and security) impact of the application of electronic government. Therefore, the researcher used the descriptive correlative approach to identify the views of King Abdulaziz University employees about the impact of the application of electronic government on their work performance through circulation of 1589 forms. The number of returns, which are valid to be statically analyzed, is 393 individuals. Furthermore, she used spearman correlation, to determine the relation between the independent variables and the outcome variable from the application of Statistical Package for Social Sciences program. Thus,

the study concluded to several findings. Firstly, there is a positive relation between the economic impact of the application of electronic government and employees' performance level. Secondly, there is a positive relation between the management impact of the application of electronic government and employees' performance level. Thirdly, there is a positive relation between the social impact of the application of electronic government and employees' performance level. Fourthly, there is a positive relation between the technical impact of the application of electronic government and employees' performance level. Finally, there is a positive relation between the security impact of the application of electronic government and employees' performance level.

Study⁶ aimed to reveal the effectiveness of the application of E-Management and the barriers to its application in Iranian universities. In this study, the questionnaire was used in addition to the interview to collect the data. The study sample consisted of (239) academic and management members. The findings of the study revealed the existence of management barriers that limit the application of E-Management, which was due to the lack of technological awareness, lack of experience, lack of motivation and desire, in addition to cultural and technological barriers. The sample of the study also pointed to the effectiveness of applying E-Management in reducing time and effort and that their effectiveness is better achieved if the barriers to their application are removed.

Study⁷ aimed to determine the degree of application of E-Management in the Western universities in Hong Kong, which follow the Western pattern in the performance of its work, and the effectiveness of the recruitment of E-Management in improving and upgrading the level of management work. The sample of the study consisted of (136) academic members, employees and students.

To achieve the objectives of the study, the direct interview method was used to express their perceptions about the degree of application of E-Management and the effectiveness of its employment. The findings showed that Western universities in Hong Kong applied E-Management to a medium degree in all operations, except for improving the internal procedures for student

registration and the system of payrolls and promotions for the academic staff and employees. The findings showed that the efficiency of employing E-Management in improving management work came to a medium degree due to the lack of full employment of E-Management in the fields of management work. The findings of the study also showed a weakness in the publications and lectures on awareness of beneficiaries, and the importance of using electronic software produced by the university in the field of academic and management work.

4. Study Methodology

Based on the questions and objectives of the study, the descriptive approach was chosen for the case study. The researcher chose to rely on the descriptive approach because it is consistent with the nature of the study. The study population consists of all management staff working in different faculties, managements and departments at King Abdulaziz University in Jeddah, Saudi Arabia, and they are (6000) employees of both genders.

In view of the difficulty of conducting the study on all university staff, therefore, the study will be limited to the selection of a limited sample of management staff at King Abdul Aziz University in Jeddah, and the size of the sample of the study is (10%) of the management staff of the university from students of both genders. This ratio was chosen because of the similarity of the characteristics of the study population, and the fact that 10% could provide a higher representation of the characteristics of such community and thus a more accurate generalization of the research findings. The sample members of the study are selected using a simple random sampling method. The questionnaire will be used as a tool for collecting key data that will help achieve the objectives of this study.

5. Digital Findings

Analysis of the findings of the first sub-question of the study (What is the impact of the application of E-Management on Organizational Excellence at King Abdul Aziz University?).

Table 1. Findings of regression analysis to test the impact of the application of E-Management on Organizational Excellence at King Abdulaziz University in Jeddah

Source	Total squares	Degrees of freedom	Mean squares	Calculated value (F)	Tabular value (F)	Level of significance	Selection coefficient (R ²)	Correlation coefficient (R)
Regression	0.999	3	0.333	149.632	2.718	0.001	0.383	0.618
Error	0.952	476	0.002					
Total	1.951	479						

* Function at the level of significance (0.01)

To measure the impact of the application of E-Management (X) on Organizational Excellence at King Abdulaziz University in Jeddah (Y), regression analysis was used, table no. (1-4) shows the findings of regression analysis. The calculated value of (F) (149.632) is greater than its tabular value (2.718) at a significant level (0.01) and with confidence limits (0.99). Since the calculated value of F is greater than the tabular value at the level of significance (0.01), we reject the null hypothesis (H_0) which states (there is no impact of the application of E-Management on Organizational Excellence at King Abdulaziz University in Jeddah) we accept the alternative hypothesis (H_1), which states (there is an impact of the application of E-Management on Organizational Excellence at King Abdulaziz University in Jeddah) Table (1).

The value of (R^2), which is a descriptive measure, is used to explain the usefulness of the regression equation in estimating the values. The percentage of decrease in errors in the regression equation was (0.383). This means that (0.38) of the variance in Organizational Excellence (Y) is an explanatory variation due to the application of E-Management (X), which entered the model, and that (0.62) is a variance explained by factors that did not enter the regression model. In other words, 38% of the Organizational Excellence in King

Abdulaziz University in Jeddah is due to the application of E-Management methods in the university, while 62% of the Organizational Excellence is attributed to other factors.

Analysis of the findings of the second sub-question of the study: (What is the extent of the existence of significant differences of statistical significance at the level of significance (0.05 %) among the responses of the individuals of the study sample on the impact of E-Management on the Organizational Excellence in King Abdul Aziz University due to personal characteristics (gender, age, educational qualification, job rank, and years of experience)?

First: To find the findings of the answer to the fifth question about the existence of significant differences of statistical significance between the responses of the study sample attributed to the personal characteristics (gender, age, educational qualification, job rank and years of experience). The researcher used the T-test for independent samples to illustrate the significance of the differences in the responses of the sample members of the study according to the (gender) variable. The findings are shown in Table (2).

Table (2) shows that there are no statistically significant differences at the level of significance ($0.05 \geq \alpha$) between the arithmetic means of the responses of the sample members of the study to the impact of the applica-

Table 2. Findings of T-test analysis of the differences between the arithmetic means of the responses of the study sample members towards the impact of the application of E-Management on the Organizational Excellence in King Abdulaziz University attributed to the gender variable.

Field	Gender	Arithmetic mean	Standard deviation	Value (T)	Level of significance
Electronic planning	Male	3.86	0.78	0.411	0.676
	Female	3.63	0.82		
Electronic regulation	Male	3.91	0.68	0.086	0.483
	Female	3.86	0.59		
Electronic implementation	Male	4.12	0.77	0.307	0.582
	Female	4.05	0.51		
Electronic control	Male	4.34	0.66	0.208	0.723
	Female	4.67	0.71		

tion of E-Management on the Organizational Excellence in King Abdul Aziz University attributed to the gender variable, where the level of statistical significance reached ($0.582 > 0.05$). Hence, we conclude from this result that there are no statistically significant differences at the level of significance ($0.05 \geq \alpha$) between the arithmetical means of the responses of the study sample members towards the impact of the application of the E-Management on the Organizational Excellence in King Abdul Aziz University attributed to the (gender) variable.

Second: To determine the extent of significant differences at the level of significance ($0.05 \geq \alpha$) between the responses of the sample members of the study on the impact of the E-Management on the Organizational Excellence in King Abdul Aziz University due to the variable (age), the researcher used the F ONE-WAY ANOVA test to illustrate the significance of the differences in the responses of the sample members of the study according to the variable (age). The findings are as shown in Table (3).

Table (3) shows the findings of the one-way analysis of variance test which indicate that there are no statistically significant differences among the study sample members regarding the four domains of E-Management due to the variable (age). Where the significance of the test (F) was greater than the value of the level of significance of this study (0.05), where it was found that ($F > 0.05$). Hence, we conclude that there are no statistically significant differences in the level of significance (0.05) in the responses of the sample members of the study axes due to the difference in age variable.

This is due to the fact that members of the sample of different ages are fully aware of the importance of implementing E-Management, or perhaps it is due to the relevance of the application of quality at all levels of functionality, as its application includes the organizational structure of the university as a whole, not limited to the level without the other, or that all members of the sample are close to knowledge and experience of the requirements of E-Management and its benefits.

Table 3. Findings of the one-way analysis of variance F of the differences in the means of the responses of the sample members of the study of all four main areas of E-Management according to the variable (age)

Serial No.	Fields	Source of variance	Sum of squares	Degree of freedom (Df.)	Mean squares	Value F	Level of significance (Sig.)
1	Electronic planning	Among Groups	1,458	3	0.729	1,287	0.273
		With Groups	106,862	476	0.238		
		Total	108,832	479			
2	Electronic regulation	Among Groups	1,174	3	0.587	0.822	0.331
		With Groups	93,841	476	0.209		
		Total	95,015	479			
3	Electronic implementation	Among Groups	1,226	3	0.613	2,011	0.445
		With Groups	43,553	476	0.097		
		Total	44,779	479			
4	Electronic Control	Among Groups	0.5666	3	0.283	0.489	0.731
		With Groups	288,990	476	0.051		
		Total	229,556	479			
		Sig :0.01		Sig :0.05		N = 480	

Table (4) shows the findings of the one-way analysis of variance test which indicate that there are no statistically significant differences among the study sample members regarding the four domains of E-Management due to the variable (educational qualification). Where the significance of the test (F) was greater than the value of

the level of significance of this study (0.05), where it was found that ($F > 0.05$). Hence, we conclude that there are no statistically significant differences in the level of significance (0.05) in the responses of the sample members of the study axes due to the difference in educational qualification variable. These findings confirm that there

Table 4. The findings of the one-way analysis of variance test F of the differences in the means of responses of the sample members of the study for all four main areas of E-Management according to the variable (educational qualification)

S.	Fields	Source of variance	Sum of squares	Degree of freedom (Df.)	Mean squares	Value F	Level of significance (Sig.)
1	Electronic planning	Among Groups	1,452	3	0.484	0.827	0.339
		With Groups	49,504	476	0.104		
		Total	50,956	479			
2	Electronic regulation	Among Groups	0.933	3	0.311	0.602	0.624
		With Groups	106,148	476	0.223		
		Total	107,081	479			
3	Electronic implementation	Among Groups	6,186	3	2.062	0.537	0.011
		With Groups	258,944	476	0.544		
		Total	265,13	479			
4	Electronic control	Among Groups	1,869	3	0.623	0.303	0.513
		With Groups	61,404	476	0.129		
		Total	63,273	479			
		Sig :0.01		Sig :0.05		N = 480	

are no statistically significant differences in the (arithmetic means) of the responses of the sample members of the study due to the variable (educational qualification).

Table (5) shows the findings of the one-way analysis of variance test which indicate that there are no statistically significant differences among the study sample members

Table 5. The findings of the one-way analysis of variance test F of the differences in the means of responses of the sample members of the study for all four main areas of E-Management according to the variable (years of experience)

S.	Fields	Source of variance	Sum of squares	Degree of freedom (Df.)	Mean squares	Value F	Level of significance (Sig.)
1	Electronic planning	Among Groups	8,415	3	2,805	3,068	0.422
		With Groups	66,64	476	0.140		
		Total	75,055	479			
2	Electronic regulation	Among Groups	0.861	3	0.287	0.376	0.531
		With Groups	338.436	476	0.711		
		Total	339,297	479			
3	Electronic implementation	Among Groups	0.417	3	0.139	1,003	0.682
		With Groups	216.104	476	0.454		
		Total	216,521	479			
4	Electronic control	Among Groups	0.339	3	0.113	0.917	0.793
		With Groups	180,404	476	0.379		
		Total	180,473	479			
		Sig :0.01	Sig :0.05	N = 480			

regarding the four domains of E-Management due to the variable (years of experience). Where the significance of the test (F) was greater than the value of the level of significance of this study (0.05), where it was found that (F

> 0.05). Hence, we conclude that there are no statistically significant differences in the level of significance (0.05) in the responses of the sample members of the study axes due to the difference in variable (years of experience).

Table 6. The findings of the one-way analysis of variance test F of the differences in the means of responses of the sample members of the study for all four main areas of E-Management according to the variable (job rank)

S.	Fields	Source of variance	Sum of squares	Degree of freedom (Df.)	Mean squares	Value F	Level of significance (Sig.)
1	Electronic planning	Among Groups	9,057	3	3,019	2,558	0.078
		With Groups	888,216	476	1,866		
		Total	897,273	479			
2	Electronic regulation	Among Groups	7,056	3	2,352	1,729	0.348
		With Groups	857,752	476	1,802		
		Total	864,808	479			
3	Electronic implementation	Among Groups	0.888	3	0.296	0.627	0.734
		With Groups	45,696	476	0.091		
		Total	46,584	479			
4	Electronic control	Among Groups	4,323	3	1,003	1,003	0.214
		With Groups	146,132	476	0.307		
		Total	150,455	479			
		Sig :0.01		Sig :0.05		N = 480	

These findings confirm that there are no statistically significant differences in the (arithmetic means) of the responses of the sample members of the study due to the variable (years of experience).

Table (6) shows the findings of the one-way analysis of variance test which indicate that there are no statistically significant differences among the study sample members regarding the four domains of E-Management due

to the variable (job rank). Where the significance of the test (F) was greater than the value of the level of significance of this study (0.05), where it was found that ($F > 0.05$). Hence, we conclude that there are no statistically significant differences in the level of significance (0.05) in the responses of the sample members of the study axes due to the difference in variable (job rank). These findings confirm that there are no statistically significant differences in the (arithmetic means) of the responses of the sample members of the study due to the variable (job rank). Thus, there are no statistically significant differences in the responses of the sample members due to different personal variables (gender, age, educational qualification, years of experience, and job rank).

6. Findings and Recommendations

The findings of the study showed that (0.38) of the variation in the Organizational Excellence at King Abdul Aziz University (Y) is an explanatory variance due to the application of E-Management (X), which entered the model and that (0.62) is an explanatory variance explained by factors that did not enter the regression model. In other words, 38% of the Organizational Excellence in King Abdul Aziz University in Jeddah is attributed to the application of E-Management methods in the university, while 62% of the Organizational Excellence is attributed to other factors. The findings of the study also revealed that there were no statistically significant differences at the level of significance (0.05) among respondents of the study sample on the impact of E-Management on Organizational Excellence at King Abdul Aziz University due to the variable of (gender).

The study also revealed that there were no statistically significant differences on (the arithmetic means) in the answers of the sample which attribute to the variable of (age). The values of the significance level of all four E-Management fields were greater than (0.05), which has turned out to be ($F > 0.05$). Furthermore, the find-

ings of the study revealed that there was no statistically significant differences on (the arithmetic means) in the answers of the sample attribute to the variable of (educational qualifications). Whereas the significance of (f) test was greater than supposed significance value of this study (0.05), and it has turned out to be ($F > 0.05$). The findings of the study revealed that there was no statistically significant differences on (arithmetic means) in the answers of the sample attribute to the variable of (years of experience). Also, the values of the significance level of all four E-Management fields were greater than (0.05). Eventually, the findings of the study revealed that there was no statistically significance differences on (arithmetic means) in the answers of the sample attribute to the variable of (job rank). The values of significance level of all four E-Management fields were greater than (0.05). The study recommends working on spreading the culture of excellence among employees in the university and draw their attention to internal and external university customer service, considering that excellence is mainly based on this aspect which can only be achieved by creating positive difference and creative ideas and providing adequate infrastructure for the application of E-Management throughout supplying all necessary material, human and technical resources for the application of E-Management on all management works provided by the university.

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8. References

1. Aga MS. The relationship between some organizational variables and the application of E-Management in the Palestinian Universities in Gaza Strip. Research published in the Journal of Al Azhar University in Gaza, Humanities Sciences. 2012; (14)1:73-102.

2. Kenani MM. The Reality of Electronic Management Application at Saudi Universities and its relation to Organizational Effectiveness as perceived by Academic Leaders unpublished doctoral dissertation, Yarmouk University, Irbid, Jordan. 2010.
3. Bakri BS. The Role of Electronic Management in Improving Employees Performance (An applied study on faculty of Economics and Administration, King Abdulaziz University, Jeddah) Unpublished master thesis, faculty of Economics And Administration, King Abdulaziz University, Jeddah). 2010.
4. Otaibi MMA. The Impact of Applying Electronic Government on Employee's Performance Level: A Civil Study on King Abdul Aziz University, Unpublished master thesis, faculty of Economics And Administration, King Abdulaziz University, Jeddah). 2008.
5. Asmaa AN. The Impact of Learning Organization Characteristics in Achieving Organizational Excellence, Applied Study in the Ministry of Higher Education in Jordan, Unpublished master thesis, Middle East University, Amman, Jordan. 2012.
6. Seresht H. E-Management: Barriers and challenges in Iran. 2009.
7. Mellivell L. British University E-Management in Hong Kong Setting. Higher Education in Hong Kong. 2007; 6(2):32-77.