Reality of Use of Electronic Management and its Impact on Job Performance in Tafila Technical University

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Abstract   *This study aims to identify reality of use of electronic management and its impact on job performance in Tafila Technical University (TTU). To achieve the objective of the study, a questionnaire has been designed and developed to collect data, which distributed to the sampling units; (260) employees working at TTU. The study concludes that the application level of e-management is high according to perceptions of the sampling units where the arithmetic mean is (4.10), and the relative importance is (82%). The study shows that there is a statistically significant effect of use of e-management in job performance; and that e-management dimensions explain (58.3%) of variation in job performance. The study recommends that the current applicable legislation and regulations should be developed so that they keep pace with the electronic transactions resulting from e-management, material, human and technical potentials necessary for supporting the application of e-management in all administrative works in TTU should be provided.*

Key words   E-Management, Job Performance, TTU

1. Introduction

The rapid developments in information technology and internet have driven business organizations to start thinking of making the fullest possible use of modern systems in all types of businesses and activities. E-management is one of the most important modern systems, which is considered a contemporary entrance to develop and update business methods and procedures (Eshtaiwi, 2013). The contents of the administrative process, like planning, organization, control, coordination, and decision-making, have no longer been performed in the traditional paper form, but electronically, which increased productivity, facilitated work procedure and provided services that exceed user's expectations, and increase effective decisions (Masood, 2008).

Since the enormous technological revolution, including e-management has become must to upgrade the desired administrative reform. We have nothing to do in the future without such developments. All organizations must reshape the administrative organization so that it is able to keep pace with the technological developments and effectively deal with the changes experienced by the present era (Khalouf, 2010). Thus, organizations have continued to use e-management in all administrative processes, like planning, organization, coordination, direction and control. Improvement of efficient productivity requires effective management that organizes their activities and coordinates their efforts to achieve the desired goals and transform documentary paper work into electronic work, which is called an electronic work, or paperless management (Abu Ashour and Nemri, 2013). Accordingly, this study attempts to identity the reality of the use of e-management and its impact on improvement of job performance in TTU.

2. Problem of the study

At present, the most dominant feature in our organizations is reliance on modern e-systems in carrying out various activities and tasks wishing to achieve a competitive advantage (Mahamid, 2012). While the use of e-management in TTU is an important and critical factor improving efficient productivity, facilitating work procedures, providing excellent services to beneficiaries, and shifting the administrative

work from the traditional method (paper management) into the e-management (paperless management). This study attempts to identify the reality of the use of e-management and its impact on improving performance of employees of TTU.

3. Objectives of the study

This study aims to identify reality of use of e-management in TTU and to identify impact of use of the e-management on employee job performance in TTU.

4. Significance of the study

This study is significant since:

1. It will hopefully provide information and data to TTU Management about e-management application level by employees and the impact of this application on job performance in order to develop plans that would improve these applications.

2. To highlight strengths and weaknesses in e-management application process with the aim of addressing deficiencies which help to improve the application.

5. Question and hypotheses of the study

5.1. Question of the study

To what extent is e-management at TTU used from employee's perspective?

5.2. Hypotheses of the study

Main Hypothesis 1: there is no statistically significant effect at significance level ($\alpha \leq 0.05$) of e-management dimensions: (e-planning, e-organizing, e-implementation, and e-control) on job performance dimensions (workload, job creativity, and quality of work) of employees of TTU.

The following sub-hypotheses are derived from the main hypothesis 1:

Sub-hypothesis 1: there is no statistically significant effect at significance level ($\alpha \leq 0.05$) of e-management in workload of employees of TTU.

Sub-hypothesis 2: there is no statistically significant effect at significance level ($\alpha \leq 0.05$) of e-management in job creativity of employees of TTU.

Sub-hypothesis 3: there is no statistically significant effect at significance level ($\alpha \leq 0.05$) of e-management in quality of work of employees of TTU.

Main Hypothesis 2: there are no statistically significant differences at significance level ($\alpha \leq 0.05$) of perceptions of respondents attributed to the demographic variables (gender, marital status, academic certificate, and experience).

6. Literature review

There are several definitions of e-management. According to Salmi (2006), "it is the management process that is based on distinct potentials of internet and business networks in unrestricted planning, directing and controlling core resources and potentials of a company and others in order to achieve goals of a company". Dayni (2010) defined the e-management the ability to use information and communication technology and modern techniques to electronically carry out administrative activities via internet and automated computer networks. Nemri and Abu Ashour (2013), also mentioned that the positive investment of information and communication technology in all functions of management process that is based on planning, organizing, implementation, control, follow-up and evaluation with the aim of improving an organization's performance and competitive position".

E-management is a paperless management and it is not restricted by place, time or inactive regulations (Mukhtar, 2007). Badawi (2013) asserts that e-management is dynamic, advanced, and interactive system with highly connected productivity that exceeds limits of an organization to include the whole world. Mugheira (2010) suggests that e-management is important since it saves time, effort and money and it improves the relationship between an organization and clients, where exchange of information is performed faster with cheaper cost. Further, Sakarneh, (2009) adds that the most important

benefit of e-management application is the immediate response to requests of clients and beneficiaries compared to paper transactions. It allows clients and beneficiaries to benefit from services rendered by an organization around the clock. Abd Al-Karim (2009) suggests that the most important features of e-management are increased proficiency, accuracy and visibility in completion of transactions, decreased cost, simple procedure and transparency. Use of e-management resolves the problems of accumulation of paper and congestion before employees' offices (Agha *et al.,* 2012).

E-management includes all components of management including planning, implementation, follow-up and stimulation. However, it provides continuous knowledge to be used to achieve goals (Maani, et al, 2016). Having reviewed the theoretical literature in connection with this subject, it has been found that there are some studies that could be used to discuss results of the present study, including:

- Juwaie (2016) highly agrees with the sample as to contribution of e-transactions to improvement of performance of members of Border Guard Institute, Riyadh.

-Sharihan (2016 concludes that there is a statistically significant effect of e-management on improving job performance in Algeria Telecommunications Corporation.

-utair (2015) shows that application of e-management in Palestine Technical University is high according to the sample, and that its application domains are in the following order: e-direction, e-implementation, e-control, e-organizing and e- planning respectively.

-Rawahneh (2013 shows that there is an evident effect of quality of HR e-management systems on efficiency of performance of employees of Jordan Telecom.

-Isra' (2013) founds that the e-management has a great effect on employee's performance in Université Mohamed Khider de Biskra, where it is found that e-management explains (10.7) of variance in the dependent variable.

-Badawi (2013) revealed that use of e-management leads to increase the efficiency of employees working in the private institutes in Egypt, as well as upgrade their productivity, and decrease error rate in work.

-Nemri and Ashour (2013) shows that e-management application in Yarmouk University is high, where e-implementation ranks first, followed by e-regulation, e-control and e-planning respectively.

- Arabi (2012) shows that there is a statistically significant relationship between IT and job performance level including its various dimensions (performance size, performance quality, performance efficiency, and simple procedures) of employees working in local and government agencies in Algeria.

-Bakri (2012) Founds that there is a very great effect of e-management on development of employees working in Faculty of Economy and Management in King Abdulaziz University. It increases productivity and improves performance.

-Fleck (2010) shows that use of e-management helps to alleviate the workload, reduce errors in the implementation and increase the speed in completion of work in universities.

-Jackson (2006) mentioned that e-management is important since it saves time and effort, expands e-management work and increases administrative and technological efficiency so that work is effectively carried out in University of Texas.

-Russel (2004), founds that e-management contributes to: increasing productivity, reducing cost, increasing worker satisfaction, fast work completion, and saving time and effort of advisors of students with special needs in Ohio.

7. Methodology of research

This study uses the descriptive approach such the statistical analysis methods as office survey and field survey for collection of information through the study tool, to be statistically analyzed in order to test the hypotheses and answer the question.

7.1. Population and sample of the study

The study population is composed of all members at administrative staff in TTU; (295) members, after excluding the exploratory sample which contains (35) items. (260) questionnaires have been distributed, where (204) of which have been recovered by a recovery rate of (78.46%). (26) Questionnaires have been excluded for invalidity for analysis. Thus, (178) questionnaires have been analyzed; which form

(87.25%) of the recovered questionnaires, and (67.16%) of sample of the study; which is an acceptable rate for the purposes of scientific research. Table 1 shows sample of the study distributed according to levels of the study variables (gender, marital status, academic certificate and years of experience).

Table 1. Distribution of sample of the study according to personal and job variables

Variable	Categories	Frequency	Percentage
Gender	Male	90	50.56%
	Female	88	%49.44
Marital status	Single	50	%28.09
	Married	128	%71.91
Academic certificate	Diploma	53	%29.77
	Bachelor	93	%52.25
	Master degree and over	32	%17.98
Years of experience	Less than 5 years	38	%21.35
	5-10 years	48	%26.97
	10 years and over	92	%51.68

7.2. The study tool

Having reviewed the literature as to use of e-management and job performance, and in line with objectives of the study, and for the purpose of collecting information, answering the study questions, and testing hypotheses, a three-part questionnaire has been developed:

1. Part 1: It contains information about characteristics of the study sample according to personal and job variables (gender, marital status, academic certificate and experience).

2. Part 2: e-management use level. Items of this variable have been designed and formed by reference to (Abu Ashour and Nemri, 2012), (Mir, 2007), (Areshi, 2008), (Badawi, 2013), (Abu Maayed, 2004), (Qahtani, 2006), and (Eshteiwi, 2013). This varible consists of forty items distributed to four domains: e- planning (10 items e-organizing (10 items), e-implementation (9 items), and e-control (11 items).

3. Part 3: job performance. Items of this variable have been designed and formed by reference to (Atawi, 2008) and (Sukar, 2012). This variable consists of three domains: workload, job creativity, and quality of work, where each domain is composed of six items. The answer to second part and third part relied on Likert scale, ranging from strongly disagree (1), disagree(2), moderately agree(3), agree(4) and strongly agree(5).

7.3. Validity and reliability of the tool

Tool validity has been verified where it has been presented to a set of referees, specialized in management, to make sure of formulation of items and their relationship with the dimension. Some items have been deleted while have been adjusted. Thus, the tool has been composed of (58) items distributed to the study dimensions. The tool reliability has been verified using test and re-test methods, and internal consistency method (Cronbach's alpha). This has been done by applying the tool to an exploratory sample (35 sampling units) other than the study sample. The same sample has been retested within two weeks. Table 2 shows reliability coefficients, test and re-test methods, and internal consistency.

7.4. Statistical treatment

To answer questions of the study and test the study hypotheses, the following statistical methods have been used using (spss.10):

1. Descriptive Statistic Measures: To describe characteristics of the study sample depending on frequencies and percentages and to answer the study questions using arithmetic averages and standard deviations.

2. Multiple Regression Analysis: to test validity of the study hypotheses.

3. Variance Inflation Factor-VIF and Tolerance Test: to make sure that there is no Multicolinearity among independent variables.
4. Skewness Test: to verify normal distribution of data.

Table 2. Reliability coefficients test and re-test methods, and internal consistency of the study dimensions

Variable	Dimension	Test-re-test method	Internal consistency (Cronbach's alpha)
e-management	e-planning	**91.3**	**90.6**
	e-organizing	**92.1**	**91.1**
	e-implementation	**88.5**	**87.4**
	e-control	**93.7**	**92.4**
e-management as a whole		**95.6**	**94.1**
Job performance	workload	**95.1**	**94.1**
	Creativity in work	**91.5**	**90.1**
	Work equality	**90.9**	**90.0**
Job performance as a whole		**95.3**	**94.7**
Tool as a whole		**97.4**	**96.3**

8. Discussion of Results

8.1. Discussing the results related to the question of the study: To what extent is e-management at TTU used from employees perspective?

To answer this question, arithmetic means and standard deviations of e-management application level from perspective of employees of TTU have been extracted as shown in Table 3.

Table 3. Arithmetic means and standard deviations of e-management use level from perspective of employees of TTU in descending order according to their arithmetic means

Dimension	Arithmetic mean	Standard deviation	Significance	Level	Rank
e-control	**4.13**	**0.620**	**%82.6**	High	**1**
e-planning	**4.12**	**0.619**	**%82.4**	High	**2**
e-organizing	**4.09**	**0.651**	**%81.8**	High	**3**
e-implementation	**4.07**	**0.819**	**%81.4**	High	**4**
Total	**4.10**	**0.580**	**%82**	High	**-**

Table 3 shows that the arithmetic means of e-management application level from perspective of employees of TTU range between (4.07) and (4.13) with a total average of (4.10). The table shows that e-control ranks first with a high arithmetic mean of (4.13), while e-implementation ranks last with a high arithmetic mean of (4.07). This is due to nature of TTU that has committed from the beginning to upgrade applications of e-management in all aspects of administrative work with the aim of achieving excellence and providing high quality services to save time, effort and cost in its various administrative processes. Results of the present study agree with results of (Abu Ashour and Nemri, 2013), where the results show that level of e-management practice by the faculty members and the governing body members is high. Further, results of the present study match with (Utair, 2015), where the results show that e-management application level in Palestine Technical University is high.

8.2. Hypotheses testing

Before conducting Regression Analysis to test the study hypotheses, variance Inflation Factor-VIF and Tolerance Test have been performed for each independent variable of the study, and to verify assumption of Normal Distribution of data. Skewness has been performed for variable as shown in Table 4.

Table 4 shows that VIF for all variables ranges between (1.314 and 2.160) where it does not exceed (10), and Tolerance value for all variables is greater than (0.05). Thus, it could be said that there is no real problem in connection with existence of multicolinearity among independent variables. Further, the Table

shows that Skewness is less than (1). Thus, it could be said that there is no real problem in connection with Normal Distribution of data.

Table 4. Testing of variance Inflation Factor-VIF, Tolerance and Skewness

Variables	Tolerance	VIF	Skewness
e-planning	0.313	1.404	0.370
e-organizing	0.464	2.156	0.210
e-implementation	0.561	1.314	0.266
e-control	0.463	2.160	0.337

To identify effect of e-management on improvement of job performance, Multiple Regression Analysis has been performed to make sure of validity of the model used to test hypotheses.

Main Hypothesis 1: there is no statistically significant effect at significance level ($α≤0.05$) of e-management dimensions (e-planning e-organizing, e-implementation, and e-control) on job performance dimensions (workload, creative management , and quality of work) of employees of TTU.

Results of Analysis of Variance have been used to verify validity of the model in testing Hypothesis 1.

Table 5. Results of Analysis of Variance to verify validity of the model in testing Hypothesis 1

Model	Degrees of freedom	Sum of squares	Mean of squares	F value	Significance Level F
Regression	4	40.341	10.085	60.450	0.000
Residual	173	28.863	0.167		
Total	177	69.204			

*The coefficient of determination (R) = 0.583
**predictors: (constant), e-planning e-organizing, e-implementation, and e-control
***dependent variable: job performance

Table 5 shows that the model is valid to test the main hypothesis according to (F) value which is (60.450) and statistically significant at significance level ($α≤0.05$). The Table also shows the independent variables in this model explain (58.3) of variance in the dependent variable (job performance), which is relatively an acceptable explanatory power. This shows that there is a statistically significant effect of independent variables on the dependent variable; and according to validity of the model, the Main Hypothesis 1 can be tested.

Table 6. Results of Multiple Regression Analysis in Testing Effect of E-management on Improvement of Job Performance

Dimension	B	Standard error	Beta	Calculated (t)	Significance Level (t)
e-planning	0.167	0.055	0.183	3.009	0.003
e-organizing	0.125	0.044	0.151	2.837	0.005
e-implementation	0.228	0.052	0.300	4.352	0.000
e-control	0.307	0.069	0.304	4.417	0.000

*Statistically significant at significance level ($α≤0.05$)
**dependent variable: job performance

The statistical results in Table 6 show that the variables (e-planning, e-organizing, e-implementation, and e-control) have an effect on job performance, where Beta coefficients of these variables are (0.183, 0.151, 0.300 and 0.304) respectively, and (T) values are (3.009, 2.837, 4.352 and 4.417) respectively. These values are statistically significant at significance level ($α≤0.05$). Thus, the null hypothesis assume (there is no statistically significant effect e-management dimensions (e-planning, e-organizing, e-implementation, and e-control) on job performance dimensions (workload, job creativity, and quality of work) is rejected. The alternative hypothesis which assumes (there is a statistically significant effect of e-management

dimensions (e-planning, e-organizing, e-implementation, and e-control) on job performance dimensions (workload, job creativity, and quality of work) is accepted. This is a normal result, where good planning, well-advised regulation and proper implementation, as planned, help to improve performance in order to ensure increased workload, perfection, and quality, and increase management creativity potentials, especially if evaluation process is fair and realistic. Results of the present study agree with results of (Jweiei, 2016), (Sharihan, 2016), (Rawahneh, 2013), (Isra', 2013) and (Bakri, 2010), where results of these studies show that there is an effect of e-management on improvement of job performance. Also, results of the present study agree with results of (Fleck, 2010) which find that the use of e-management alleviates the workload, reduces errors in the implementation and increases the speed of work completion.

Table 7. Results of Stepwise Multiple Regression to Predict Job Performance Improvement through Dimensions of E-management as Independent Variables

Order of independent components in the prediction equation	(R) value Coefficient of determination	(t) Calculated value	Significance level (t)
e-control	0.443	4.417	0.000
e-implementation	0.531	4.352	0.000
e-planning	0.564	3.009	0.003
e-organizing	0.583	2.837	0.005

The above table shows that variable of e-control ranks first. It explains (44.3%) of variance in the dependent variable according to coefficient of determination. Also, it shows that the variable of e-organizing ranks last where it explains (58.3%) of variance in job performance. Further, sub-hypotheses have been tested as follows:

Sub-hypothesis 1: there is no statistically significant effect at significance level (α≤0.05) of e-management in workload of employees of TTU. Results of Analysis of Variance have been used to verify the validity of the model used to test sub- hypothesis 1.

Table 8. Results of Analysis of Variance to verify validity of the model in testing sub- hypothesis 1

Model	Degrees of freedom	Sum of squares	Mean of squares	F value	Significance Level F
Regression	4	42.197	10.549	46.054	0.000
Residual	173	39.628	0.229		
Total	177	81.825			

*The coefficient of determination (R) = 0.5**16**
**predictors: (constant), e-planning e-organizing, e-implementation, and e-control
***dependent variable: workload

Table 8 shows that the model is valid to test sub-hypothesis 1 according to (F) value which is (46.54) and statistically significant at significance level (α≤0.05). The Table also shows the independent variables in this model explain (51.6) of variance in the dependent variable (workload), which is a relatively acceptable explanatory power. This shows that there is a statistically significant effect of independent variables on the dependent variable. According the validity of the model hypothesis 1 can be tested.

Table 9. Results of Multiple Regression Analysis in Testing Effect of E-management on Workload

Dimension	B	Standard error	Beta	Calculated (t)	Significance level (t)
e-planning	0.151	0.065	0.153	2.333	0.021
e-organizing	0.110	0.052	0.130	2.122	0.035
e-implementation	0.131	0.061	0.158	2.130	0.035
e-control	0.473	0.081	0.432	5.811	0.000

*Statistically significant at significance level (α≤0.05)
**dependent variable: workload

The statistical results in Table 9 show that the variables (e-planning, e-organizing, e-implementation, and e-control) have an effect on workload, where Beta coefficients of these variables are (0.153, 0.130, 0.158, and 0.432) respectively; and (T) values are (2.333, 2.122, 2.130 and 5.811) respectively. These values are statistically significant at significance level ($\alpha \leq 0.05$). Thus, the null hypothesis there is no statistically significant effect of e-management dimensions (e-planning, e-organizing, e-implementation, and e-control) on workload is rejected; and the alternative hypothesis (there is a statistically significant effect of e-management dimensions (e-planning, e-organizing, e-implementation, and e-control) on workload is accepted. This is a normal result, where planning, organizing, implementation and evaluation from an integrated system in order to upgrade the workload. It ensures that employees do their jobs in a sound and evident manner within the official working hours determined according to established job performance, so that the response to changes in the required workload is met. Results of this dimension agree with (Badawi, 2013) which suggests that use of e-management contributes to increasing size of productivity and decreasing error rates in work. Further, results of this dimension agree with results of (Russel, 2004) which suggest that use of e-management contributes to increasing productivity and speed in the completion of work of advisors and students in Ohio University.

Table 10. Results of Stepwise Multiple Regression to Predict Workload through Dimensions of E-management as Independent Variables

Order of independent components in the prediction equation	(R) value Coefficient of determination	(t) calculated value	Significance level (t)
e-control	0.449	5.811	0.000
e-implementation	0.487	2.333	0.021
e-planning	0.503	2.130	0.035
e-organizing	0.516	2.122	0.035

The above table shows that variable of e-control ranks first and explains (44.9%) of variance in the dependent variable according to coefficient of determination. Also, it is shows that the variable of e-organizing ranks last and explains (51.6%) of variance in workload.

Sub-hypothesis 2: there is no statistically significant effect at significance level ($\alpha \leq 0.05$) of e-management in job creativity of employees of TTU. Results of analysis of variance have been used to verify the validity of model to test sub- hypothesis 2.

Table **11** shows that the model is valid to test sub-hypothesis **2** according to (F) value which is (30.112) and statistically significant at significance level ($\alpha \leq 0.05$). The Table also shows the independent variables in this model explain (0.41) of variance in the dependent variable (job performance), which is a relatively acceptable explanatory power. This shows that there is a statistically significant effect of independent variables on the dependent variable; and according to the validity of the model, hypothesis 2 can be tested.

Table 11. Results of analysis of variance to verify validity of model to test sub-hypothesis 2

Model	Degrees of freedom	Sum of squares	Mean of squares	F value	Significance Level F
Regression	4	39.908	9.977	30.112	0.000
Residual	173	57.319	0.331		
Total	177	97.227			

*The coefficient of determination (R) = 0.**41**
**predictors: (constant), e-planning e-organizing, e-implementation, and e-control
***dependent variable job creativity

The statistical results in Table 12 show that the variables (e-planning, e-organizing, e-implementation, and e-control) have an effect on management creativity, where Beta coefficients of these variables are (0.159, 156, 0.272, and 0.214) respectively; and (T) values are (2.204, 2.309, 3.324 and 2.204) respectively, these values are statistically significant at significance level ($\alpha \leq 0.05$).

Table 12. Results of multiple regression analysis in testing effect of E-management on management creativity

Dimension	B	Standard error	Beta	Calculated (t)	Significance level (t)
e-planning	0.172	0.078	0.159	2.204	0.029
e-organizing	0.143	0.062	0.156	2.309	0.022
e-implementation	0.245	0.074	0.272	3.324	0.001
e-control	0.255	0.098	0.214	2.607	0.010

*Statistically significant at significance level ($\alpha \leq 0.05$)
**dependent variable: job creativity

Thus, the null hypothesis (there is no statistically significant of effect e-management dimensions (e-planning, e-organizing, e-implementation, and e-control) on management creativity is rejected; and the alternative hypothesis (there is a statistically significant effect e-management dimensions (e-planning e-organizing, e-implementation, and e-control) on management creativity is accepted. This is a normal result, where e-management plays a key role in encouraging employees to be creative and to follow up all developments in computing and their work environment. Results of this study, as to management creativity, agree with (Jackson, 2006) which asserts that use of e-management leads to performing administrative works more effectively.

Table 13. Results of Stepwise Multiple Regression to Predict Management Creativity through Dimensions of E-management as Independent Variables

Order of independent components in the prediction equation	(R) value Coefficient of determination	(t) Calculated value	Significance level (t)
e-implementation	0.315	3.324	0.001
e-control	0.366	2.607	0.010
e-organizing	0.394	2.309	0.022
e-planning	0.410	2.204	0.029

The above table shows that variable of e-implementation ranks first and explains (31.5%) of variance in the dependent variable according to coefficient of determination. In addition, it shows that the variable of e-planning ranks last and explains (41%) of variance in management creativity.

Sub-hypothesis 3: there is no statistically significant effect at significance level ($\alpha \leq 0.05$) of e-management in quality of work of employees at TTU.

Results of analysis of variance have been used to verify validity of model to test sub- hypothesis 3.

Table 14. Results of Analysis of Variance to verify validity of model to test Sub-hypothesis 3

Model	Degrees of freedom	Sum of squares	Mean of squares	F value	Significance Level F
Regression	4	37.233	9.306	33.231	0.000
Residual	173	48.445	0.280		
Total	177	85.677			

*The coefficient of determination (R) = 0.**435**
**predictors: (constant), e-planning e-organizing, e-implementation, and e-control
***dependent variable: quality of work

Table **14** shows that the model is valid to test sub-hypothesis **3** according to (F) value which is (33.231) and statistically significant at significance level ($\alpha \leq 0.05$). The Table also shows the independent variables in this model explain (43.5) of variance in the dependent variable (quality of work), which is a relatively acceptable explanatory power. This shows that there is a statistically significant effect of independent variables on the dependent variable; and according to validity of the model, sub-hypothesis 3 can be tested.

Table 15. Results of Multiple Regression Analysis in Testing Effect of E-management on Quality of Work

Dimension	B	Standard error	Beta	Calculated (t)	Significance level (t)
e-planning	0.172	0.072	0.169	2.398	0.018
e-organizing	0.116	.0057	0.135	2.039	0.043
e-implementation	0.292	0.068	0.346	4.308	0.000
e-control	0.184	0.090	0.164	2.049	0.042

*Statistically significant at significance level ($\alpha \leq 0.05$)
**dependent variable quality of work

The statistical results in Table 1**5** show that the variables (e-planning, e-organizing, e-implementation, and e-control) have an effect on quality of work, where Beta coefficients of these variables are (0.172, 0.116, 0.292 and 0.184) respectively; and (T) values are (2.398, 2.039, 4.308 and 2.49) respectively. These values are statistically significant at significance level ($\alpha \leq 0.05$). Thus, the null hypothesis (there is no statistically significant effect e-management dimensions (e-planning, e-organizing, e-implementation, and e-control) on quality of work is rejected; and the alternative hypothesis there is a statistically significant effect e-management dimensions (e-planning, e-organizing, e-implementation, and e-control) on quality of work is accepted. This is a normal result, where e-management enables employees to follow up improvements and developments in job performance seeking excellence and promotion in quality of work. Results of the present study agree, in this respect, with (Arabi, 2012) whose results show that there is a statistically significant relationship between IT and job performance level including its various dimensions (performance quality, performance efficiency and simple procedure).

Table 16. Results of Stepwise Multiple Regression to Predict Quality of Work through Dimensions of E-management as Independent Variables

Order of independent components in the prediction equation	(R) value Coefficient of determination	(t) Calculated value	Significance level (t)
e-implementation	0.358	4.308	0.000
e-planning	0.401	2.398	0.018
e-control	0.421	2.049	0.042
e-organizing	0.435	2.039	0.043

The above table shows that variable of e-implementation ranks first and explains (35.8%) of variance in the dependent variable according to coefficient of determination. In addition, it shows that the variable of e-organizing ranks last and explains (43.5%) of variance in quality of work.

Main Hypothesis 2: there are no statistically significant differences at significance level ($\alpha \leq 0.05$) of perceptions of respondents attributed to the demographic variables (gender, marital status, academic certificate, and experience). To test this hypothesis, multiple variance analysis has been used, where e-management is a dependent variable, and gender, marital status, academic certificate, and experience are independent variables. This is shown in Table 17.

Table 17. Multiple Variance Analysis of Effect of (gender, marital status, academic certificate, and experience) on E-management for Employees of TTU

Source	Dependent variable	Sum squares	Degrees of freedom	Means Squares	f value	Significance level
Gender	e-management	0.532	1	0.532	1.461	0.229
Marital status	e-management	0.326	1	0.326	0.894	0.346
Academic certificate	e-management	0.052	2	0.026	0.071	0.932
Experience	e-management	0.082	2	0.041	0.113	0.893
Gender and marital status	e-management	0.107	1	0.107	0.293	0.589
Gender and academic certificate	e-management	0.358	2	0.179	0.491	0.613

Source	Dependent variable	Sum squares	Degrees of freedom	Means Squares	f value	Significance level
Gender and experience	e-management	2.326	2	1.163	3.194	0.044
Marital status and academic certificate	e-management	0.023	2	0.012	0.032	0.969
Marital status and experience	e-management	1.842	2	0.921	2.529	0.083
Academic certificate and experience	e-management	0.321	4	0.080	0.221	0.927
Gender, marital status, and academic certificate	e-management	0.000	1	0.000	0.000	0.985
Gender, marital status, and experience	e-management	0.146	2	0.073	0.201	0.818
Gender, academic certificate and experience	e-management	1.156	4	0.289	0.794	0.531
Marital status, academic certificate and experience	e-management	0.570	4	0.142	0.391	0.815
Gender, marital status, academic certificate and experience	e-management	0.247	2	0124	0.339	0.713

Table 17 shows that there is no statistically significant difference at significance level (α≤0.05) attributed to gender, marital status, academic certificate, and experience in e-management. The above table also shows that there are statistically significant differences attributable to interaction of the gender and experience in e-management. To determine the variables to which differences are referred, the arithmetic means and standard deviations have been used as shown in Table 18.

Table 18. Arithmetic Means and Standard Deviations of Interaction of (Gender and Experience) in E-management for Employees of TTU

Gender	Experience	Arithmetic mean	Standard deviation
Male	Less than 5 years	4.177	0.372
	5-10 years	3.846	0.896
	Over 10 years	4.186	0.449
Female	Less than 5 years	4.112	0.534
	5-10 years	4.187	0.698
	Over 10 years	4.053	0.532

Table 18 shows the females whose experience ranges between 5 and 10 years have got the higher arithmetic mean (4.187) with a standard deviation of (0.898), while the males whose experience ranges between 5 and 10 years have got the lowest arithmetic mean (3.846) with a standard deviation of (0.896).

9. Recommendations
Based on the results of the study, the following are the main recommendation:

1. To develop the current applicable legislation and regulations to keep pace with the e-transactions resulting from e-management,

2. To provide more material, human and technical potentials necessary for supporting application of e-management in l administrative work in TTU.

3. To support and encourage employees to excessively transform to application of e-management and to grant financial and moral incentives to those who are excellent in application and exercise of e-management.

4. To hold training workshops for employees and encourage them to follow up all new developments in e-management in order to upgrade their performance towards excellence and creativity.

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