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EVALUATE THE IMPACT OF CONTEMPORARY INFORMATION SYSTEMS AND THE INTERNET ON IMPROVING BANKING PERFORMANCE

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ABSTRACT

This paper examines the affects of information technology (IT) on the Jordanian banking industry for the period of 2003-2007.

The research examine the level of using IT by 15 Jordanian Banks for a period of five years, then explore the impression on improving the performance of two forms of matrix. The first is matrix of financial performance which comprises Market Value-Added (MVA), Return on Investment (ROI) and Earning per Share (EPR) and the second is matrix of operational performance, which includes the Net Profit Margin (NPM), Operating Return on Assets (ORA) and Profitability of Employee (PE). Utilizing IT by Jordanian banks will be measured by testing the level of investment in Hardware, Software, Internet Banking, Phone banking, number of ATMs, use of Cyber branches and Banking via SMS.

The results of our measurements indicated that there is an impact on the use of MIS in Jordanian banks in the market value added (MVA), Earnings Per Share (EPS), Return on Assets (ROA), Net Profit Margin (NMP).

JEL CLASSIFICATION & KEYWORDS

■ M15 ■ Banking ■ Information Systems ■ Internet

INTRODUCTION

In recent years, the utilization of information technology has been magnificently increased in service industries, particularly, the banking industry, which by using Information Technology related products such as internet banking, electronic payments, security investments, information exchanges (Berger, 2003), financial organizations can deliver high quality services to client with less effort.

Whitten et al. (2004, p.12.), stated that "information is an arrangement of people, data, process, and information technology that interact to collect, process, store and provide as output the information needed to support an organization," which indicates that information system is an arrangements of groups, data, processes and technology that act together to accumulate, process, store and provide information output needed to enhance and speed up the process of decision making.

During last decade, high percentage of financial organizations are frequently utilize computers technology to facilitate provides services; and that the speed of adoption is expected to grow further as the technology expands. The introduction of electronic indicates of data accumulation, accessing and manipulation assisting the process of banking decision making.

In a Bank's information system, there are always potentials of crisis which make the bank endure an insufficiency; thus, advanced information system supported by a superior mechanism control is required to make certain that an information system has achieved the required processes.

Surprisingly, some literatures defense the idea of Solow Paradox in concluding that Information Technology may essentially affect negatively on banks efficiency and may reduce productivity. This notion was noted by Solow (1987), "you can see the computer age everywhere these days, but in the productivity statistics".

The paradox has been defined by E. Turban, et al. (2008) as the "discrepancy between measures of investment in information technology and measures of output at the national level." Since 1970s to the time Solow was claiming that there was a huge decelerates in growth as the technologies were becoming ubiquitous.

In an article by Shu and Strassmann (2005), a survey was conducted on 12 banks in the US for the period of 1989-1997. They noticed that even though Information Technology has been one of the most essential dynamic factors relating all efforts, it cannot improve banks' earnings.

However, conversely, there are many literatures approving the positive impacts of Information Technology expenses to business value. Kozak (2005) investigates the influence of the evolution in Information Technology on the profit and cost effectiveness of the banking zone during the period of 1992-2003. The study indicates optimistic relationship among the executed Information Technology and together productivity and cost savings.

Brynjolfsson and Hitt (2000) indicates that "Information Technology contribute significantly to firm level output." They determine that Information Technology capital contributes an 81% marginal increase in output, whereas non Information Technology capital contributes 6%. Likewise they illustrate that Information System professionals are more than twice as productive as non- Information System professionals.

Ordinarily, recent literatures showed that the relationship concerning Information technology and banks' performance have two encouraging outcomes.

Firstly, Information technology can bring down the operational costs of the banks (the cost advantage). For instance, internet technology facilitates and speeds up banks procedures to accomplish standardized and low value-added transactions such as bill payments and balance inquiries processes via online network. Consequently, this technology will helps banks concentrating their capitals on exceptional, high-value added transactions such as personal trust services and investment banking via branches.

The second encouraging outcome is that Information Technology can promote transactions between customers within the same network (the network effect) (Farrell and Saloner, 1985; Economides and Salop, 1992).

In an article by Saloner and Shepard (1995), data for United States commercial banks for the period 1971-1979 was conducted and illustrated that the interest of network effect is significant in utilizing an Automated Teller Machines

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(ATMs). Milne 2006 also encourages the notion of the above authors.

The modernization of IT has set the stage for extraordinary improve in banking procedures throughout the world. For instance the development of worldwide networks has considerably decreased the cost of global funds transfer.

The task of Information Technology in the community, restricted and foreign sector banks is to evaluate and measure the observation of the Bank Employees towards the Implementation of Information Technology in the Banks also to assist the awareness and fulfillment of the clients with the banks. Information Technology has been giving clarification to financial organization to take care of their accounting and back office requirements. It also facilitates and speeds up the automation of modern supply controls, such as Automated Teller Machines, Net Banking, Mobile Banking and the akin to.

Since organizational performance cannot be shaped only by IS applications, other factors such as business strategies and organizational culture should also be taken into consideration while measuring the impact of IT on overall performance

This study aims to explore the extent of utilizing Information Technology by Jordanian banks in their banking management and then search the impact on improving the performance of the matrix, which is divided into a matrix of financial performance, which includes the Market Value-Added (MVA), Return On Investment (ROI) and Earning Per Share (EPR), and a matrix of operational performance, which includes the Net Profit Margin (NPM), Operating Return on Assets (ORA) and Profitability of Employee (PE).

The extent of utilizing banks of information technology will be measured by the volume of investment in equipment, and the volume of investment in the software and the use of Internet Banking, Phone Internet, the number of ATM, the use of Cyber Branch and Banking via SMS.

The collection of data on a sample study of Jordanian banks in all 15 of the Banks over a period of five years from 2003-2007 will be collected. Since the study sample is a group of banks which is the nature of scan data via a set of past data, appropriate regression model to measure this relationship is the Pooled Data Regression.

This paper is structured as follow; in the next section (II. Methodology) describes the methodology used to reach the best solution for the research under the study, followed by testing hypothesis and result analysis of the current challenge in section (III). Finally the conclusion reached from this research paper will be discussed in section (IV).

Methodology

Determining the methodology of the study is the most important stages of scientific research due to its great impact on the validity and accuracy of the results that are reached, having been talking about the problem of the study, objectives, and then discuss the most important previous studies that examined the same subject;

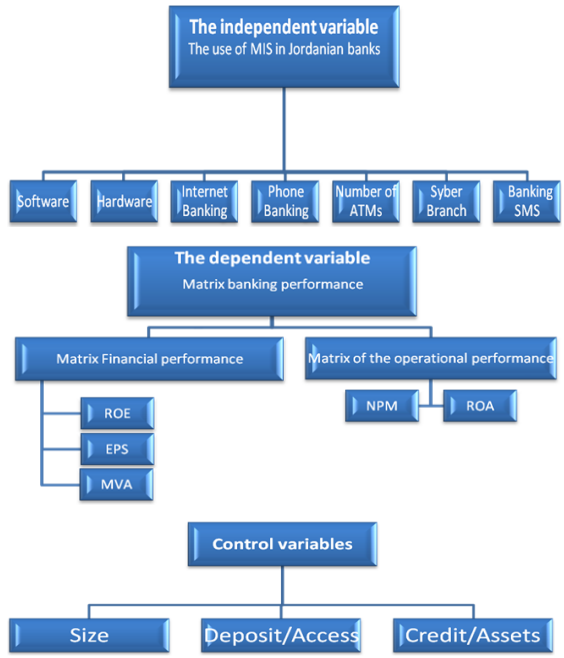
In this part of the study, we build the methodology of the study, which is characterized in terms of tools, and method of measurement and testing to the problem of the study, taking advantage of methods and tools of previous studies, in order to ensure access to the methodology to obtain the most accurate and best results.

Key variables will be measured in an attempt to practice identifying dependent and independent variables and to explain how the independent variable affects the dependent variable.

Research Model

Fig (1) detailed structural variables of the independent and dependent variables and the control study, which forms the model of this study:

Figure 1. Detailed structure of variables



Source: Authors

The mathematical model of the study is developed as follows:

$$\begin{aligned} Perf.Matrix_i = {} & \alpha + \beta_1 Software_i + \beta_2 Hardware_i + \beta_3 InBank_i \\ & + \beta_4 PhBank_i + \beta_5 ATM_i + \beta_6 CyBranch_i \\ & + \beta_7 SMS_i + \beta_8 Size_i + \beta_9 Deposits_i + \beta_{10} Credit_i + \ell_i \end{aligned}$$

Where:

Perf. Matrix (the dependent variable): the banking performance of the proposed matrix is subdivided into five financial indicators.

1. Software: It is the net investment bank in the software during the period i. It is one of the independent variables.
2. Hardware: It is the net investment bank in the computer hardware and equipment in the period i. It is one of the independent variables.
3. InBank: It is how the Internet used frequently by the Bank from a variable i. It is dummy variable, so that if the bank applies this property in the period i give (1), otherwise gives (0). It is one of the independent variables.
4. PhBank: It is how the idea of Bank answers phone frequently used by the banks. It is a dummy variable, so that if the bank applies this property in the period i give (1), otherwise it gives (0). It is one of the independent variables.
5. ATM: The number of ATMs owned by the bank in the period i. It is one of the independent variables.

6. CyBranch: Is the possibility of utilizing the bank branches electronic property in the period i. It is a dummy variable, so that if the bank applies this property in the period i give (1), otherwise (0). It is one of the independent variables.
7. SMS: It is how to use the bank to bank messaging feature. It is a dummy variable, so that if the bank applies this property in the period i gives (1), otherwise (0).
8. Size: It is referred to the size of the bank, measured by total assets in the period i. It is a control variable.
9. Deposits: It is a ratio of deposits to assets in the period i. It is a control variable.
10. Credit: Is the proportion of credit facilities to the assets in the period i. It is a control variable.

However, this model will also divide into five sub-models concerned with measuring the impact of independent factors of each of the indicators of performance matrix:

1. The first Model is the Market Value-Added (MVA) :

$$MVA_i \int_1^{10} \begin{matrix} Software, Hardware, InBank, PhBank \\ ATM, CyBranch, SMS, Size, Deposits, Credit \end{matrix}$$

2. The second model is the Return on enquiry (ROE):

$$ROE_i \int_1^{10} \begin{matrix} Software, Hardware, InBank, PhBank \\ ATM, CyBranch, SMS, Size, Deposits, Credit \end{matrix}$$

3. The third model is the Earning Per Share (EPR):

$$EPS_i \int_1^{10} \begin{matrix} Software, Hardware, InBank, PhBank \\ ATM, CyBranch, SMS, Size, Deposits, Credit \end{matrix}$$

4. The fourth model is the Net Profit Margin (NPM):

$$NPM_i \int_1^{10} \begin{matrix} Software, Hardware, InBank, PhBank \\ ATM, CyBranch, SMS, Size, Deposits, Credit \end{matrix}$$

5. The fifth model is the Operating Return on Assets (ROA):

$$ROA_i \int_1^{10} \begin{matrix} Software, Hardware, InBank, PhBank \\ ATM, CyBranch, SMS, Size, Deposits, Credit \end{matrix}$$

Hypotheses Development

The main Hypotheses

There is no statistically significant impact on the use of MIS to improve the matrix performance in Jordanian banks.

H01: There is no statistically significant impact on the use of MIS in Jordanian banks in the MVA.

H02: There is no statistically significant impact on the use of MIS in Jordanian banks in the ROE.

H03: There is no statistically significant impact on the use of MIS in Jordanian banks in the EPS

H04: There is no statistically significant impact on the use of MIS in Jordanian banks in the NPM

H05: There is no statistically significant impact on the use of MIS in Jordanian banks in the ROA

Research Society and Sample

The study population consists of all Jordanian banks listed on the Amman Financial Market, which is about (15) Banks, which constitute the study sample, so that the study data were collected for the period from 2003 and until 200 therefore it is a Cross-Sectional Data in nature (CSD) for a range of years. It is also a Time-Series Data (TSD); therefore the data used for this research is a Pooled Data.

Testing Hypotheses and Results Analysis

This Section includes three main topics, the first is concerning in testing the reliability of statistical analysis for the data by identifying how this data is close to normal distribution, if the data did not have normal distribution, then it should be a subject to necessary treatment so we could use it correctly to test the hypothesis, since the study aims to examine the effect of many independent variables on dependent variable. Which means using regression model, therefore the reliability of the used model should be examined, by testing the study model to make sure that this model is free from Multicollinearity between the same independent variables and also the Autocorrelation which will appear in the model if the near observations are connected with each others, since that would affect the reliability of the study model as that would create unspecified effect to the independent variables over the dependent variable .

The second topic is about descriptive statistics of the study variables through various descriptive statistical measures, such as: Central tendency measures, Dispersion measures, Mean, Median, Range and Standard Deviation; to describe the study variables. The third topic represents testing the study hypotheses, and computing the regression model information.

First stage: test the validity of data for statistical analysis:

Before data analysis and hypothesis testing, we must first identify the characteristics of data to make sure of the appropriation of the model by making the following test:

Normal-Distribution Test:

In order to test the data if it`s subject to normal distribution therefore it is required to select the suitable statistical procedures to test the hypotheses. In order to achieve that, the (Jarque-Bera) test within the package of E-views program was used, the decision about if the data is subject to normal distribution if the (J-B) test is greater than 0.05 (Gujarati, 2003). And the proximity of the testing data from the normal distribution for all variables related to the study (MVA, ROI, EPS, NPM, ROA, Software, Hardware), the remaining variables, are (Dummy Variables) they are not subject to the normal distribution.

Table 1. Tests for normal distribution for the study variables

Variables	Jarque-Bera Test	
	J-B	Sig
MVA	2669,9	0
ROI	24,1	0
EPS	5489,7	0
NPM	1742,2	0
ROA	171,3	0
Software	437,1	0
Hardware	74,1	0
ATM's	16	0
Size	447,3	0
Deposits to Assets	212,9	0
Credit Facilities to Assets	3,4	0,183

Source: Authors

From previous table (1) which is related to the normal distribution to the study variables, we find from Jarque-Bera Test that the statistical value is high and significant value is

Table 2. Correlation matrix between the independent variables

Independent Variables	Software	Hardware	Internet Bank	Phone Bank	ATM's	Cyber Branch	SMS Bank	Size	Deposits to Assets	Credit to Assets
Software	1									
Hardware	0,821	1								
Internet Bank	0,366	0,371	1							
Phone Bank	0,355	0,504	0,375	1						
ATM's	0,647	0,907	0,281	0,473	1					
Cyber Branch	0,104	0,165	0,343	0,317	0,192	1				
SMS Bank	0,534	0,497	0,655	0,377	0,38	0,112	1			
Size	0,816	0,798	0,426	0,476	0,71	0,19	0,515	1		
Deposits to Assets	0,207	0,29	0,238	0,126	0,393	0,058	0,218	0,388	1	
Credit to Assets	0,171	0,028	0,184	0,158	0,03	0,144	0,146	-0,103	-0,489	1

Source: Authors

less than 5% for all independent variables which means that it's not close from its normal distribution, Except (credit facilities to total Assets); so in order to avoid this problem we will use the (Ln) for these variables so it will be close from its normal distribution.

Multicollinearity test:

The strength General Linear Model (G.L.M) is depends on the independence of each independent variable among each other and if this condition is not found the variable will lose its independency and in this case the variable won't be valid since that would means there is a Multicollinearity problem, but the final test to find out the problem of the Multicollinearity is the measurement of (Collinearity Diagnostics) to each variable of the independent variables ,then to find Variance Inflation Factor coefficient (VIF).

Correlation matrix between independent variables

Table (2) shows the results of Pearson correlation matrix between each pair of independent variables of the sample, and we note from this, this indicates that there is no Multicollinearity between these variables, the correlation between them is very weak and have no significant statistically association relationship and its value do not exceed (0.60) which means that the study model is effective in explain and determine the effect on the dependent variable.

Except in the relationship between: (Software, Hardware), (Hardware, ATM's) and (Software, ATM's), (Software, Size), (Size, Hardware) (Internet Bank, SMS Bank), (Size, ATM's) as the value of the relationship between them is more than (0.60).

Table 3. Variance Inflation Factor test

Independent Variables	Collinearity Statistics	
	Tolerance	VIF
Software	0,167	5,983
Hardware	0,086	11,629
Internet Bank	0,495	2,018
Phone Bank	0,594	1,685
ATM's	0,129	7,77
Cyber Branch	0,628	1,593
SMS Bank	0,475	2,107
Size	0,218	4,585
Deposits to Assets	0,398	2,511
Credit Facilities to Assets	0,498	2,01

Source: Authors

Variance Inflation Factor test (VIF)

To test the previous result, we will use (Collinearity Diagnostics) test to support the credibility of the results, as we will test that there is no problem of Variance Inflation Factor test between variables, if the value of VIF is less than (10), (Gujarati, 2003). From table No. (3) We note that the factor (VIF) (Variance Inflation Factor) of all independent variables is under (10), except (Hardware) as the value of (VIF) is more than (10); so in order to avoid this problem we will delete this variable.

The results shows that VIF, which support the previous correlation matrix which shows that there is weak correlation between the explanatory variables and the independent variables; therefore we consider that there is no effect of Variance Inflation Factor problem on the reliability of the study model.

Autocorrelation Test:

To examine the existence of this problem in the models we use some tests as (Durbin Watson Test), this test considered one of the most frequently used methods of economics, and by testing the Autocorrelation problem of in the model it reveals the results shows in the following table (4).

Table 4: Autocorrelation Test

Model	D-W test
1	1,46
2	1,29
3	1,06
4	0,969
5	1,426

Minimum (DL) = 1.369
Maximum (DU) = 1.901
Number of observation (N) = 75
Number of variables (K) = 9

Source: Authors

From the above table we note that the D-W for model No. 1 and 5, located between maximum and minimum of the scheduled limits. Also it`s near to (2) (Basher, 2003) which means that there is no Autocorrelation problem in the study model. The rest of the models do not, so in order to avoid this problem we used (Lag. -1).

Heteroskedasticity Test.

We found Heteroskedasticity problem in models, In order to test the Heteroskedasticity, and avoid this problem we used to (White test) within the package of E-views.

Second Stage, Descriptive Statistics.
Dependent Variable.
Table (5) reports descriptive statistics for Performance Matrix of the Jordanian banks.

Table 5. Performance Matrix of the Jordanian banks.

Years	Financial Performance				Operational Performance
	Mean				
	MVA	ROE	EPS	NPM	ROA
2003	30	8,373	1,051	2,195	0,901
2004	106	13,255	0,773	4,323	1,585
2005	372	19,461	0,481	3,356	2,805
2006	119	13,552	0,289	2,121	2,02
2007	231	11,638	0,281	3,592	1,853
	Standard Deviation				
	MVA	ROE	EPS	NPM	ROA
2003	60	6,602	3,491	2,302	1,02
2004	199	5,686	2,057	7,433	0,841
2005	839	6,951	0,283	2,744	1,825
2006	295	3,154	0,159	3,146	1,111
2007	614	4,627	0,234	3,865	1,441
	Maximum				
	MVA	ROE	EPS	NPM	ROA
2003	228	20,37	13,66	7,42	2,63
2004	806	22,38	8,19	30,41	3,44
2005	3	39,84	1,14	12,37	8,1
2006	1	20,85	0,74	6,79	5,74
2007	2	20,46	0,94	17,3	6,74
	Minimum				
	MVA	ROE	EPS	NPM	ROA
2003	-42	-2,24	-0,03	-0,01	-1,01
2004	8	5,68	0,08	0	0,3
2005	13	10,51	0,09	0	0,99
2006	3	8,51	0,12	-7,75	1,06
2007	1	5,5	0,07	1,51	0,55

Source: Authors

Table number 5 showed that the economic value added of Jordanian banks reached the highest value in the years 2005 and 2007 while the lowest value was in the year 2003. The year 2005 was the most deviation in the data which reaching the largest value (3,380,000,000) among all years, and less value was 13,122,096.

Return on equity (ROE) was marked by the year 2005 the highest revenue between the years of the sample, as it reaches the highest return 39,840% but the standard deviation was great. The year 2003 marked the lowest return on equity, amounting to (-2,240%).

Either with regard to revenue per share (EPS) was characterized in years 2004 and 2005 as biggest earnings per share during the study period for all companies, while the highest value was in the year 2003 as well as the lowest value, indicating a high dispersion and high standard deviation of this year.

As well as the year 2004, is the largest in terms of average Net Profit Margin (NPM). It is the same year which has the largest value and the highest standard deviation, while the least (NPM) of the share was in year 2006.

Return on assets (ROA) was marked by the year 2005 the highest return on assets, and the largest value of 6,740% of the share of the same year, while the lowest value (-1,010%) was in the year of 2003.

From Table number (6), which illustrates the use of Jordanian banks for Information Technology, we notes that the average cost of software in Jordanian banks reached the highest average in the year 2007 and this year was the largest in the standard deviation, as well as the year that contains the largest cost for investment, which refers to the rise in investment software by Jordanian banks.

It is also noted that investment in software runs in parallel with investment in equipment and computers; for this reason a significant correlation has been appeared between them,

Table 6. Report descriptive statistics for the independent variables

Years	Mean			Years	Standard deviation		
	Software	Hardware	ATM's		Software	Hardware	ATM's
2003	2,298,528	6,385,204	46	2003	6,224,576	10,009,979	46
2004	2,458,426	6,667,136	47	2004	6,545,368	10,177,119	47
2005	2,734,913	7,478,274	48	2005	6,861,340	10,663,573	47
2006	3,098,384	8,457,107	49	2006	7,185,433	11,469,042	48
2007	3,511,784	9,151,003	51	2007	7,561,902	12,514,660	48
Years	**Maximum**			**Years**	**Minimum**		
	Software	Hardware	ATM's		Software	Hardware	ATM's
2003	24,646,833	35,209,761	160	2003	26,538	170,945	0
2004	25,944,035	37,062,907	160	2004	48,252	221,067	0
2005	27,309,510	39,013,586	163	2005	87,73	232,702	0
2006	28,746,853	41,066,932	164	2006	104,911	228,338	0
2007	30,259,845	43,228,350	164	2007	110,433	518,794	0

Table 7. Report descriptive statistics for the control variables

Years	Mean			Years	Standard deviation		
	Size	Deposits to Assets%	Credit Facilities to Assets		Size	Deposits to Assets%	Credit Facilities to Assets
2003	1	72,188	39,258	2003	3	21,773	11,863
2004	1	70,725	40,907	2004	4	21,35	11,174
2005	2	69,487	44,609	2005	4	20,755	10,923
2006	2	68,493	44,053	2006	4	20,469	15,875
2007	2	68,428	49,009	2007	5	20,184	10,45
Years	**Maximum**			**Years**	**Minimum**		
	Size	Deposits to Assets%	Credit Facilities to Assets		Size	Deposits to Assets%	Credit Facilities to Assets
2003	15	90,36	58,89	2003	66	0,26	19,43
2004	16	90,79	62,88	2004	101	0,35	23,43
2005	16	89,65	65,86	2005	115	0,26	26,41
2006	18	86,66	66,58	2006	137	0,23	0,28
2007	21	85,44	71,34	2007	130	0,19	37,13

Source of tables: Authors

thus creating the problem of Multicollinearity and this was to delete this variable from the form to solve this problem.

Regarding the number of ATMs owned by the Jordanian banks, we notice that they are on the increase from year to year and the average in the last year of the study was 51 ATMs. However, the largest number of ATMs was 164 for the Arab Bank, and notes that some banks do not have ATM, such as Industrial Development Bank.

From the previous table which illustrate the control variables that was entered, we note that the first variable (the size of the bank), which was measured by total assets, one of the factors that have proven their impact on the Bank's performance in previous studies, we note that the average size of Jordanian banks in the rise from year to other. The second variable which is the ratio of deposits to assets is in the swing from year to year and in general it refers to a decline in the ratio of deposits to assets in recent years. The net assets of the facilities are on the rise from year to year and reached the highest rate in the last year 2007.

Third Stage: Test of Hypotheses:

Since the study sample is a group of banks which were cross-sectional in nature (CSD) across a range of years (2003 to 2007) and a time-series data (TSD), then the regression model appropriate to measure this relationship is the joint regression (Pooled Data Regression) using Pooled Least Square Manner.

The table (8) shows the tests of the five study models.

Table 8. Test of study models

Study Models	R^2	F	Sig.
First (MVA)	0,541	8,834	0
Second (ROE)	0,061	0,473	0,87
Third (EPS)	0,422	5,289	0
Fourth (NPM)	0,641	10,09	0
Fifth (ROA)	0,291	3,714	0,04

F in (df for denominator N-β-1 = 75-9-1 = 65) and (df or nnumerator = β = 9) = 2.04

Source: Authors

Measuring the first model

As it showed in table (8), it can test the first hypothesis of which illustrate the effect of the use of MIS in Jordanian banks in the market value, where the value of R^2 is 54%, which indicates range of the change in MVA, which explained the change in the independent variables, which is acceptable and indicates the strength model. When testing the first hypothesis that can be expressed mathematically as follows: Null hypothesis H0: $\beta = 0$ against the alternative hypothesis Ha: $\beta \neq 0$ and when to test this hypothesis found that the value F is 8,834, which is the largest of its value at the scheduled value 5 % (2.04) and its tolerated (Sig.) is less than 5 % which means we reject the Null hypothesis and accept the alternative hypothesis as there is an impact on the use of MIS in Jordanian banks in the market value added (MVA).

Measuring the second model

And when we tested the second model, which examines the impact of the use of MIS in Jordanian banks in Return on Equity (ROE), it was found that $R^2 = 6\%$ which is very low, which means the weakness of this model, and test the Null hypothesis H0: $\beta = 0$ against the alternative hypothesis Ha: $\beta \neq 0$ found that the value of F is 0.473 which is less than the scheduled value at 5 % (2.04) and tolerated (Sig. = 0.870) is greater than 5 %, which means acceptance of the Null hypothesis and rejection of the alternative hypothesis where the alternative does not affect the use of MIS in Jordanian banks to improve the return on equity ROE. This is due to the increased costs of investment in information technology which might work to reduce the return on the property.

Measuring the third model

The third model, which examines the impact of the use of MIS in Jordanian banks in the earnings per share (EPS), was found to be $R^2 = 42\%$ which is good result and indicates the strength model, and by testing the Null hypothesis H0: $\beta = 0$ against the alternative hypothesis Ha: $\beta \neq 0$ found that the value F 5,289 which is the largest of its scheduled value and its tolerated is less than 5 % which it can be said that the use of MIS in Jordanian banks affect the Earnings Per Share (EPS).

Measuring the fourth model

Again, Table No. (8) can test the fourth model, which examines the impact of the use of MIS in Jordanian banks in the Net Profit Margin (NPM), where the value of R^2 is 64% which is acceptable and indicates the strength of the model, and when testing the fourth hypothesis that can be expressed mathematically as follows: Null hypothesis H0: $\beta = 0$ against the alternative hypothesis Ha: $\beta \neq 0$, and when to test this hypothesis found that the value of F is 10,090, the largest of its value at the scheduled 5 % (2.04) and its tolerated (Sig.) is less than 5 % which means reject the Null hypothesis and accept the alternative hypothesis which means there is an impact on the use of MIS in Jordanian banks in the Net Profit Margin (NMP).

Measuring the fifth model

But by testing the fifth model, which works to study the impact of the use of MIS in Jordanian banks in Return on Assets ROA, it found that the value of R^2 is 29 %, and when you test the Null hypothesis H0: $\beta = 0$ found that the value of F is 3.714, which means the largest of its value as scheduled and tolerable (Sig. = 0.040) less than 5 %, thus it can be said that the use of MIS in Jordanian banks affect the Return on Assets (ROA).

CONCLUSION

The banking industry has changed incessantly; the role of information technology applications in the World Banks is examined, together with the economic return on such investments and ways to enhance their development impact. Results indicate that information technology is now a very dynamic business area for the Bank.

It is quite apparent from our study that enhancing technology in banking industry is a must in a rapidly changing market place, as the IT revolution has set the stage for exceptional increase in financial activity across the globe.

This paper is involved with the influence of information technology on the Jordanian banking, as banks are the exhaustive consumers of IT. The research used a Pooled Data Regression using Pooled Least Square Manner to measure the level of investment in ITs on improving the matrix of financial and operational performances.

The results of our measurements using test of hypothesis showed that there is an impact on the use of MIS in Jordanian banks in the market value added (MVA), Earnings Per Share (EPS), Return on Assets (ROA), Net Profit Margin (NMP). However, the test of hypothesis also showed that there no impact of the use of MIS in Jordanian banks to improve the Return On Equity ROE. This is probably due to the increased costs of investment in information technology which might work to reduce the return on the property.

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