IMPACT OF APPLICATION OF BUSINESS PROCESS REENGINEERING IN IMPROVEMENT THE EFFICIENCY AND EFFECTIVENESS OF THE ISLAMIC BANKS IN JORDAN A CASE STUDY OF THE INTERNATIONAL ISLAMIC ARAB BANK

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Abstract- This study aimed to identify the applying degree of Business Process Reengineering (BPR) in the Islamic Banks in Jordan and the impact of this application in improvement the efficiency and effectiveness of the Islamic Banks in Jordan: A case study of the International Islamic Arab Bank. The study population consists of all employees of (300) in the International Islamic Arab Bank. To achieve the study objectives, a questionnaire has been prepared with (30) item. The validity of the tool has been examined by being presented to a set of referees. The reliability of the tool has been examined by using Cronbach's Alpha Coefficient; the overall reliability coefficient of the tool has been (0.83). The study findings a number of results, including:
1.. The applying degree of (BPR) and it's dimensions in the International Islamic Arab Bank between (high & middle) from the respondents' perspective.
2. There exist a statistically significant impact at the significance level ($\alpha = 0.05$), in general for the (BPR) dimensions (process redesign, innovation and renovation, and offering of new products) in improvement the efficiency and effectiveness of the Islamic Banks in Jordan.
Upon the foregoing results, the study reached to a number of recommendations and suggestions.

Keywords- Business process reengineering (BPR), Efficiency, Effectiveness, Islamic Banks, International Islamic Arab Bank, Jordan.

I. INTRODUCTION

The conception of business process reengineering (BPR) came to light for the first time in 1990 by the American scholar Michael Hammer in your article published in Harvard Business Review.
This conception is based on abandoning and changing the concepts, rules, and assumptions upon which the management builds its decisions, and searching for new rules, assumptions and concepts for the management thought that match with requirements of the twenty-first century.

Afterwards, this conception has spread out remarkably and rapidly in the governmental, academic and business sectors due its importance in improving the organizations' performance effectiveness which provides these organizations with a great benefit.

The (BPR) focuses on satisfying and meeting the customer needs, basis on the quality and high speed and providing the necessary information to make decisions and facilitate getting such information at the lowest possible cost. This can be achieved by invalidating the processes that are no longer necessary and focusing on the valuable processes in order to help an organization achieve the competitive advantage to outperform competitors, reduce costs, and increase the value of the product through improving utilization of available resources.

II. METHODOLOGY

2.1. The Study Problem and its questions

Therefore, the problem of this study is represented in the following questions:
a. To what extent (BPR) and it's dimensions are applying in the International Islamic Arab Bank?
b. Is there a statistically significant impact for applying the (BPR) and it's dimensions in improvement the efficiency and effectiveness of the Islamic Banks in Jordan?

2.2. The Study Importance

This study is important since it deals with a very important subject, namely, conception of business process reengineering (BPR) which is considered a modern concept applying in the business organizations and the impact of such conception in improvement the efficiency and effectiveness of the Islamic Banks in Jordan of these organizations. On the other hand, the results and recommendations of this study can help the decision-makers develop the plans and procedures that contribute to increase the interest level in (BPR) as to the decision-makers which in turn will positively reflect to improvement the efficiency and effectiveness of the Islamic Banks in Jordan.

2.3. The Study Objectives

The main objective of this study is to analyze the impact of applying the (BPR) in improvement the efficiency and effectiveness of the Islamic Banks in

Jordan. This main objective will be achieved through achievement of the following sub-objectives:

a. To identify the concept of (BPR) and it's dimensions, and review the most theories that dealt with this subject.

b. To discover to what extent the International Islamic Arab Bank applying the (BPR) dimensions.

c. To measure the impact of applying the (BPR) and it's dimensions in improvement the efficiency and effectiveness of the Islamic Banks in Jordan.

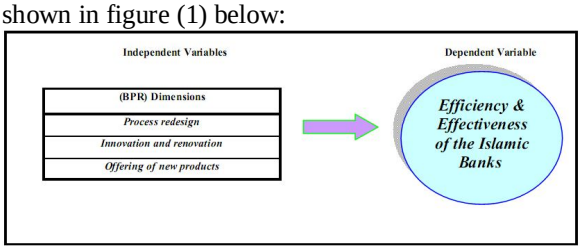
2.4. The Study Hypothesis

To achieve the study objectives, the study hypothesis has bee suggested to be a null hypothesis, as follows:

$H_{0:}$ There is no statistically significant impact at the significance level ($\alpha = 0.05$), for applying the (BPR) dimensions (process redesign, innovation and renovation, and offering of new products) in improvement the efficiency and effectiveness of the Islamic Banks in Jordan.

2.5. The Study Model

Based on the study problem and objectives, the study model has been developed showing the impact of applying the (BPR)) in improvement the efficiency and effectiveness of the Islamic Banks in Jordan. As shown in figure (1) below:



Source: Prepared by the researchers.
Figure 1. The Study Model

III. THEORETICAL FRAMEWORK AND LITERATURE REVIEW

3.1. Business Process Reengineering (BPR) Concept

The concept of business process reengineering (BPR) came to light for the first time in an article published in 1990 in Harvard Business Review by the American scholar Michael Hammer. This concept is based on abandoning and changing the concepts, rules, and assumptions upon which the management builds it's decisions, and searching for new rules, assumptions and concepts for the management thought that match with requirements of the twenty-first century.

This concept has spread out remarkably and rapidly in the governmental, academic and business sectors due it's importance in improving the performance effectiveness for the organizations which provides these organizations with a great benefit, Afterwards, in 1995, Hammer and Chamby published the first book in reengineering entitled "Reengineering the Corporation".

In their book, Hammer and Chamby defines the (Business Process Reengineering) as: to radically review and redesign the work procedures in order to increase performance and efficiency and reduce the costs of completion the work and offering the services.

Hammer and Chamby also defined BPR as: "the fundamental and basic rethinking and radical redesign of the management processes to achieve dramatic and central (not marginal) improvements in the critical performance standards such as the cost, quality, service and speed" (Hammer and Chamby, 1995: 114).

According to (Paul & Cespedes, 1995: 36), defines (BPR) as: "a method to achieve the radical development in the organization's performance in a relatively short time", According to (Al-Lawzi, 1999: 113), define as: " the sharp and careful attention in the organizational gap among the existing organizations regarding performance and production levels through working on developing and updating the methods of work in a way that help create leap in performance during a short period of time".

Parker (1993:29) define BPR as "use of tools and instruments in the scope of benefiting from the modern technology in order to create the best possible combination of these tools and instruments which leads to the radical change in all parts of the organization in order to meet the customer needs".

According to (Hamal & Barahaled), refers to (BPR) as "the radical change in the work performance method where the management processes to be designed from scratch without depending on the system currently in place provided that the information system should be part of the new system not mere an assistant tool in work and it suggests termination of work in management functions and conversion to the management processes" (Al-Qusimi, 2009).

Based on the above, BPR is a process of transformation by events through making radical changes in the core of the organizational processes by increasing the efficiency and effectiveness in the organization which in turn will directly and stunningly reflect to the quality and improvement the performance effectiveness in the organization.

Angus & et al, (1996: 73) determine a number of features that characterize BPR, including:

a. Redesigning the management processes radically.

b. Focusing on achievement the objectives and strategic results.

The organizations that working to implement the reengineering program scientifically and properly seek to create a radical change in performance by changing method and the work tools through empowerment all employees in the organization to perform the correct and useful works by using the creative thinking rule that requests the employees to get rid of the iterative restrictions. Also, the reengineering focuses on satisfying the customer needs on basis of quality and high speed and providing the necessary information to make decisions and facilitate getting such information at

the lowest possible cost. This can be achieved by invalidating the processes that are no longer necessary and focusing on the valuable processes in order to help the organization to achieve the competitive advantage to outperform competitors, reduce costs, and increase value of the product through improving the utilization of available resources.

The reengineering process is implemented in many steps where scientific differ how to classify them. (Hall & et al, 1993: 125) divides the reengineering steps into four basic steps:

a. Analysis: To analyze the organization as a set of processes and procedures and mechanism of their sequence along with determining the important and fundamental processes.

b. Redesign on a sound basis: Through rearranging and redesigning the work procedures in a manner that meets the customer needs perfectly.

c. Preparation for change: To prepare the necessary requirements through the physiological preparation for individuals and provision the material requirements.

d. Replacement: To replace the procedures and designs in place of the new procedures and determine the implementation date.

3.2. Literature Review

- Awn (2011), "Impact of Reengineering on Development of Undergraduate Education".

The study aimed to identify the impact of reengineering on development the undergraduate education in the light of the academic accreditation from perspective of graduates in Faculty of Education /King Saud University, and identify the relationship between the reengineering and the graduates' satisfaction as to quality of outputs of Faculty of Education and their harmony with the labor market needs. The researcher depends on the descriptive method. The study population included (50) female graduates from Faculty of Education / King Saud University.

The study ended with a set of results, including:

a- The university should get female students to participate in evaluating performance of the staff in the faculty.

b. The reengineering has a direct role in the undergraduate education quality.

c. The reengineering increases the productivity average and the efficiency of the staff in the faculty.

d. The lack of management processes contributes to simplifying the procedures of work at the university.

e. The reengineering contributes to reengineering the scientific research and it's supporting management processes.

- Tarawneh, and Khater (2011), "Applying Degree of the Management Process Reengineering Items on Development the Employee's Performance in Education Directorate / Amman Fourth".

The study aimed to identify applying degree of the management process reengineering items in development the employee's performance in Education Directorate/Amman Fourth. The study population consisted of (150) employees working in Education Directorate / Amman Fourth. The study concluded a number of results:

a. In general, the applying degree of the management process reengineering items was (middle) in total.

b. There were no statistically significant differences between means for applying degree of the management process reengineering items in development of performance of employees Performance in Education Directorate /Amman Fourth attributed to the (gender) in all areas, and the total degree of all areas.

c. There were no statistically significant differences between means for applying degree of the management process reengineering items in development of performance of employees Performance in Education Directorate /Amman Fourth attributed to the (academic qualification) in all areas, except for the total degree of all areas and (application area) where the differences were statistically significant in favor of holders the (postgraduate) certificates.

d. There were no statistically significant differences between means for applying degree of the management process reengineering items in development of performance of employees Performance in Education Directorate /Amman Fourth attributed to the (nature of work) in all areas, and the total degree of all areas.

e. There were no statistically significant differences between means for applying degree of the management process reengineering items in development of performance of employees Performance in Education Directorate /Amman Fourth attributed to the (experience years) in all areas, except for (evaluation area).

The study ended with some recommendations, including: to hold training courses for administrative officers and technicians in Education Directorate /Amman Fourth on management process reengineering as to its concepts and processes and that Ministry of Education should spread out culture of change and development among its employees.

- Derdsawy (2010), "Affect of Critical Success Factors on Business Process Reengineering".

This study aimed to identify effect of critical success factors (information technology, administrative empowerment, commitment of high management, and strategy) on Business Process Reengineering in Greater Amman Municipality. The study population included (5047) employees. The study concluded a set of results, including:

a. The overall mean of the respondents' conceptions toward use of information technology was (high), and that the overall mean for all variables

(support of high management, administrative empowerment, strategy and reengineering) was (middle).

b. There was a statistically significant impact for the critical success factors (information technology, administrative empowerment, support of high management, and strategy) on reengineering in Amman Greater Municipality.

The study ended with a set of recommendations, including: the high management should continuously support reengineering efforts and that the reengineering program should be connected with vision, mission, and strategic objectives of Amman Greater Municipality.

- Al-Qusaimi (2009), "Activating Business Reengineering Tasks from Perspective of Information and Communication Technology (ICT) (Integral Introduction)".

The study aimed to identify activating business reengineering tasks from perspective of information technology and communications. The researcher used the descriptive method to reach for theoretical and rational signs and clarifications that show this contribution depending on basic themes; the theoretical dimensions related to reengineering and Information and Communication Technology, and their role in the reengineering model. The study concluded a number of results, including:

a. The information is the central and basic theme around which the processes revolve. Accordingly, ICT is considered a instrument for development of business reengineering programs.

b. The Information and Communication Technology helps on empowerment the management working in the reengineering program, to work independently and benefit from advantage of centralization through connecting all managements with a unified communications network.

The study ended with a number of recommendations, including: if the reengineering team wants to ensure achievement of its objectives, it should use the suitable technology in a line with nature of the process to be reengineered, Business reengineering should consider Information Technology (IT) as a competitive tool.

IV. METHOD AND PROCEDURES

4.1. The Study Methodology

In the light of the study problem and objectives, the study uses the descriptive method to describe the respondents' responses and estimates on applying degree the (BPR) dimensions and to describe level of evaluation the efficiency and effectiveness of the International Islamic Arab Bank. Further, the analytical method is used to measure impact of application of BPR in improvement the efficiency and effectiveness of the Islamic Banks in Jordan.

4.2. The Study Population and its Sample:

a. The Study Population:

The study population includes all employees of (300) in the International Islamic Arab Bank.

b. The Study Sample:

The study sample consists of (75) employees selected according to the stratified random sampling method by (25%) of the population size. Then (75) questionnaire forms were distributed to the respondents. (72) questionnaires were collected with recovery percentage (96%). After reviewing the recovered questionnaires, (2) questionnaires were excluded due to invalidity since a number of items were not answered in some of these questionnaires and because of inaccurate information found there. Therefore, there were (70) questionnaires valid for the statistical analysis. The percentage of valid questionnaires from the recovered number was (93%). After determination of the final study sample that included (70) employees, the respondents were distributed according to their personality and functional features.

4.3. The Study Tool:

To achieve the study objectives and after reviewing the management literature in connection with probability of application of (BPR) dimensions, a tool was developed to measure extent of application and its impact in improvement of the efficiency and effectiveness of the Islamic Banks in Jordan. The tools consisted of three parts. The first one contained the personal and job information (gender, academic qualification, years of experience, and management type). The second one dealt with (BPR) dimensions (process redesign, innovation and renovation, and offering of new products) distributed in (15) items. While the third one dealt with efficiency and effectiveness of the Islamic Banks in Jordan (15) items. Likert Scale was used to measure degree of application of BPR dimensions and the evaluation level of efficiency and effectiveness of the Islamic Banks in Jordan. A scale was used for BPR dimensions and evaluation level of the efficiency and effectiveness of the Islamic Banks in Jordan divided into three levels, where cut degree was calculated by divided the difference of the higher value of scale (5) and the lowest value (1) into three levels, i.e. cut degree was (1-5 / 3 = 1.33). The validity and reliability of the tool were measured as follows:

a. Tool Validity:

The apparent validity of the study tool was verified by being presented to a set of experts and referees from Zarqa University who are experienced in total equality management and production and operations management in the industrial projects. This was made in order to verify the degree of appropriateness of linguistic formulation of items and to what extent the items belong to the study variables. The experts and referee's notices were taken into account, and accordingly formulation of some items was modified and some items were excluded in order to produce the final draft of the questionnaire.

b. Tool Reliability:

To verify the questionnaire reliability, reliability coefficient of the tool (measurement of internal consistency of the questionnaire items) was measured by Cronbach's Coefficient Alpha; the overall reliability coefficient of the tool was (0.83), as shown in table (1) below:

Table 1. Results of tool reliability (internal consistency of the questionnaire items)

Variables and dimensions	Number of items	Cronbach's Alpha
Business process reengineering:	15	0.75
Process redesign	5	0.81
innovation and renovation	5	0.74
offering of new products	5	0.63
efficiency and effectiveness	15	0.78
Overall Tool	30	0.83

V. DATA ANALYSIS AND DISCUSSION THE RESULTS

5.1. Results of answering the study questions and testing the study hypothesis:

Before starting to answer the study questions and test the study hypothesis, some tests to be made on the study data must be verified. These tests are:

a. Variance Inflation Factors -VIF:

This test was used to verify whether Multicollinearity existed between the independent variables or not. Table (2) shows the results of (VIF):

Table 2. The results of (VIF) to verify Multicollinearity between the (BPR) dimensions

No.	(BPR) dimensions	Tolerance	VIF
1	Process redesign	0.441	2.268
2	Innovation and renovation	0.568	1.761
3	Offering of new products	0.713	1.403

The results listed in table (2) show that there is no Multicollinearity between the independent variables. This is asserted by the values of (VIF) for (BPR) dimensions (process redesign, innovation and renovation, and offering of new products) which are (2.268, 1.761, 1.403) respectively, where all these values are lower than the critical value of the test which is (5). Therefore, measurement of impact of these dimensions (process redesign, innovation and renovation, and offering of new products) in improvement the efficiency and effectiveness of the Islamic Banks in Jordan.

b. One-Sample Kolmogorov-Smirnov Test:

This test was used to verify whether data of the study variables are followed the normal distribution or not, through the following statistical hypothesis:

H_0: data of the study variables are followed the normal distribution.

H_1: data of the study variables are not followed the normal distribution.

The results of One-Sample K-S Test are shown in table (3) below:

Table (3): The results of One-Sample Kolmogorov-Smirnov Test

The variables	N	Z - values	Sig.
Process redesign	70	1.478	0.577
Innovation and renovation	70	1.242	0.258
Offering of new products	70	1.381	0.159
Efficiency and effectiveness	70	1.176	0.207

The tabulated (Z) value is (1.96) at the significance level ($\alpha = 0.05$), and the test is (2-tailed).

The results specified in table (3), shows that all the calculated values of (Z) for the study variables are less than tabulated (Z) value which is (1.96), and that all the statistical significance values are higher than the significance level ($\alpha = 0.05$). Based on the above results, the null hypothesis (H_0) (data of the study variables are followed the normal distribution) has been accepted.

Based on the foregoing, and after it has been proven that there is no Multicollinearity between the independent variables, and that the study variables are followed the normal distribution, the study questions will be answered and the study hypothesis related to (measurement of impact) using stepwise multiple linear regression method, will be tested as follows:

5.2. Results of the study question

To what extent (BPR) and its dimensions are applied in the Islamic Banks in Jordan?

To answer the study question, the means and standard deviations of the respondent's estimates in the Islamic Banks in Jordan have been calculated for (BPR) dimensions in these banks.

The results listed in table (4) refers to increase of the general mean for the variable (Business Process Reengineering) which has been (3.85), and standard deviation (0.67), and they show that the general mean is higher than the test standard which is (3) out of (5) degrees. This result indicates that the evaluation made by the respondents to the mentioned variable has been (positive) which means that the applying degree of the variable (Business Process Reengineering) by the Islamic Banks in Jordan has been (high) for their perspective.

Table (4): Means and Standard Deviations for the (BPR) Dimensions

No.	(BPR) Dimensions	Means	Standard deviation	Rank	Applying Degree
1	Process redesign	4.02	0.64	1	High
2	Innovation and renovation	3.87	0.72	2	High
3	Offering of new products	3.65	0.83	3	Middle
-	BPR	3.85	0.67	-	High

As for each (BPR) dimension, the results in the above table show that the dimension (process redesign) is ranked first as to priorities of respondents in the Islamic Banks in Jordan with mean (4.02) and standard deviation (0.64), and the dimension (innovation and renovation) is ranked second with mean (3.87) and standard deviation (0.72). While the dimension (offering of new products) is ranked third from the respondent's perspective in these banks with mean (3.65) and standard deviation (0.83).

The results refers to all means for the three dimensions are higher than the test standard which is (3) out of (5) degrees. These indicate that the evaluation made by the respondents has been (positive) which means that the applying degree of the three dimensions in these banks has ranged between (middle & high) from their perceptive.

5.3. Testing the Study Hypothesis

$H_{0:}$ There is no statically significant impact at the significance level ($\alpha = 0.05$), for applying the (BPR) dimensions (process redesign, innovation and renovation, and offering of new products) in improvement the efficiency and effectiveness of the Islamic Banks in Jordan.

In order to verify whether the study hypothesis is true or not, was used the multiple linear regression analysis, as shown in Table No.(5) following:

Table (5): The results of multiple linear regression analysis

(BPR) Dimensions	Coeff. (β)	(t) value	Sig.	Beta
Constant ($\beta_{0)}$	1.451	2.174	0.002	-
Process redesign	0.298	4.764	0.001	0.266
Innovation and renovation	0.234	2.921	0.007	0.203
Offering of new products	0.187	2.218	0.008	0.198
Correlation coefficient (R) = 0.802		Determination coefficient (R^2) = 0.643		
(F) value = 17.6		Sig. of (F) = 0.000		

The results in the above table (5) show that:

a. Validity of multiple linear regression is proven, this is asserted by the value of calculated (F) which is (17.6), and that the statistical significance value (0.000) is lower than the significance level ($\alpha = 0.05$).

b. The Statistical significance of regression coefficients (β) of all dimensions (process redesign, innovation and renovation, and offering of new products) is proven, therefore, there exist a statistically significance impact at the significance level ($\alpha = 0.05$) for the above dimensions in improvement the efficiency and effectiveness of the Islamic Banks in Jordan. Depend on the statistical significance values (0.001, 0.007, and 0.008) respectively, and all the values lower than the significance level ($\alpha = 0.05$). This means that the null hypothesis (H_0) is rejected.

c. The value of Determination coefficient (R^2) which is (0.643) shows that the dimensions in the regression model (process redesign, innovation and renovation, and offering of new products) interpret (64.3%) of changes that happen in the efficiency and effectiveness of the Islamic Banks in Jordan.

d. The values of the standardized coefficients (Beta) calculated for the three dimensions (process redesign, innovation and renovation, and offering of new products) which are (0.266, 0.203, and 0.198) respectively, shows that increase of the mentioned dimensions by a unity standard deviation will lead to improving the (efficiency and effectiveness) of the Islamic Banks in Jordan by (26.6%, 20.3%, and 19.8%) respectively.

CONCLUSIONS AND RECOMMENDATIONS

6.1. CONCLUSIONS

a. The results show that the Islamic Banks in Jordan apply the variable (Business Process Reengineering) in a (high) degree, while the applying degree of the dimensions ranges between (middle & high) from the respondents' perspective.

b. The results show that the evaluation level of the (efficiency and effectiveness) of the Islamic Banks in Jordan with rank (high) from the respondents' perspective.

c. The results show that there is a statistically significant impact at the significance level ($\alpha = 0.05$), for (BPR) dimensions (process redesign, innovation and renovation, and offering of new products) in improvement the efficiency and effectiveness of the Islamic Banks in Jordan.

d. The results indicated that the dimension (process redesign) is the most influential in improvement the efficiency and effectiveness of the Islamic Banks in Jordan.

6.2. RECOMMENDATIONS

In the light of the study results, the researchers recommend that:

a. The respondents' perception of importance of applying the dimension (offering of new products) like the other dimensions of (BPR) since, it is ranked (third) and last in the respondents' scale of evaluation, and since it helps achieve the competitive advantage of these banks.

b. Training courses and workshops should be held for both managers and employees in the Islamic Banks in

Jordan, in which the most important modern concepts of (BPR) and it's dimensions to be discussed, since the results of this study show that there is a weak impact of some (BPR) dimensions.

c. The study suggests to conduct similar studies in the future in other banks or universities located in Jordan to deal with another dimensions of (BPR) that differ from those dealt with in this study taking into account to focus on measurement of impact of those dimensions in improvement the efficiency and effectiveness of the Islamic Banks in Jordan.

REFERENCES

[1] Abdelgadir N. and Abdelhafiz Elbadri, (2010). Training Practices of Poland Banks: An Appraisal and Agenda for Improvement, Journal of European Industrial Training, 25(2): 69-79.

[2] Al-Lawzi, M., (1999), Organizational Development: Modern Fundamentals and Concepts, 1st edition, Dar Wael for Printing and Publishing, Amman, Jordan.

[3] Al-Qusaimi, Mohammad, (2009), Activating Business Reengineering Tasks from Perspective of Information and Communication Technology (ICT) (Integral Introduction), a research presented to Business organizations management, modern management challenges, Applied Sciences University, Amman, Jordan.

[4] Angus, F. & et al., (1996), Reengineering for Revenue Growth, Research Technology Management, 39(2).

[5] Awn, Wafa, (2011), Impact of Reengineering on Development of Outputs of Undergraduate Education from Perspective of Female Graduates in Kind Saud University, Conference on Education of Saudi Woman, Imam Mohammad Ibn Saud Islamic University, Riyadh.

[6] Derdsawy (2010), Effect of Critical Success Factors on Business Process Reengineering, applied study on Greater Amman Municipality, Unpublished Master thesis, Mutah University, Jordan.

[7] Hammer, Michael & Chamby, James, (1995), Redesign of Work Systems in Organizations: (Reengineering), open call for a new management revolution, translated by Shams Eddin Othman, Shuaa' Company for Publishing, Cairo, Egypt.

[8] Hall, G. et al, (1993), How to Make Reengineering Really Work, H.B.R., Nov.

[9] Parker, J., (1993), An ABC Guide to Business Process Reengineering, Industrial Engineering, May.

[10] Paul, A. & Cespedes, S., (1995), Reengineering is Just A catalyst in Bank Culture Change, The Bankers Magazine, May-June.

[11] Ramdan, Reem, (2005), Impact of Change Management on the Organizational Development, Unpublished PhD, University of Damascus, Syria.

[12] Tarawneh & Khater, T., (2011), Applying Degree the Process Reengineering Items in Directorate of Education / Amman Fourth", Al-Quds Open University Journal, 24(1).

[13] Tuama H.Y. & Alqhiwi L.A., (2014), The Impact of Application of Business Process Reengineering on Improvement the Institutional Performance Effectiveness, European Journal of Scientific Research, 122(1): 81-98.

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