


THE IMPACT OF APPLYING RE-ENGINEERING APPLICATION PROCESS ON CRITICAL PERFORMANCE CRITERIA IN JORDANIAN ISLAMIC BANKS

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ARTICLE INFO	ABSTRACT
<p>Article history:</p> <p>Received 17 March 2023</p> <p>Accepted 13 June 2023</p>	<p>Purpose: The importance of the study is that it provides an understanding of the management approach to re-engineering the application process in the banking industry to deal with significant and quick changes in the environment by implementing superior and radical changes that aid it in increasing its efficiency and lowering costs as well as in shifting the focus of employees to meet the needs and desires of customers by redesigning banking processes based on customer perceptions and needs, during the period 2019.</p>
<p>Keywords:</p> <p>Re-Engineering Application; Critical Performance Criteria; Financial Performance; Islamic Banks; Jordan.</p>	<p>Theoretical Framework: The Study of the management method in re-engineering the application process in the banking sector to face the large and rapid changes in the environment is critical, as is shifting the focus of employees to meet the needs and desires of customers by redesigning the banking process based on customer perceptions and needs.</p> <p>Design/methodology/approach: All three Jordanian Islamic banks comprise the study's study community, and the study's sample includes sixty-three (63) members of these banks' managerial ranks. The study used a questionnaire to gather data and analytical methodology, which helped explain the study problem.</p>
	<p>Findings: After conducting the analysis process of the study data and hypotheses, Findings show There is a statistically significant influence of the application of the re-engineering process (redesigning jobs, redesigning process, reducing control levels, using new technology, empowering employees) on performance criteria (costs, quality, speed) in Jordanian Islamic banks.</p> <p>Research, Practical & Social implications: To identify and analyze the re-engineering application process in Jordanian Islamic banks. The following elements are part of the study methodology: Cost, Quality, and Speed are the dependent variables in the crucial performance criteria; the study relied on choosing the dependent variables according to the objectives that re-engineering the application process can accomplish. Application re-engineering process dimensions, such as redesigning jobs and processes redesign, reducing control levels, using new technology, and empowering employees act as independent variables.</p> <p>Originality/value: The Study recommends additional future research that could involve all levels of bank management in the re-engineering process and create an effective technology infrastructure and communication system that effectively contributes to the success of the re-engineering process.</p> <p>Doi: https://doi.org/10.26668/businessreview/2023.v8i6.2457</p>

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O IMPACTO DA APLICAÇÃO DO PROCESSO DE APLICAÇÃO DE REENGENHARIA NOS CRITÉRIOS CRÍTICOS DE DESEMPENHO DOS BANCOS ISLÂMICOS DA JORDÂNIA

RESUMO

Objetivo: A importância do estudo é que ele fornece uma compreensão da abordagem de gestão para a reengenharia do processo de aplicação no setor bancário para lidar com mudanças significativas e rápidas no ambiente, implementando mudanças superiores e radicais que ajudam a aumentar sua eficiência e reduzir os custos, bem como mudar o foco dos funcionários para atender às necessidades e desejos dos clientes, redesenhando os processos bancários com base nas percepções e necessidades dos clientes, durante o período de 2019.

Estrutura teórica: O estudo do método de gestão na reengenharia do processo de aplicação no setor bancário para enfrentar as grandes e rápidas mudanças no ambiente é fundamental, assim como a mudança do foco dos funcionários para atender às necessidades e aos desejos dos clientes, redesenhando o processo bancário com base nas percepções e necessidades dos clientes.

Projeto/metodologia/abordagem: Todos os três bancos islâmicos jordanianos constituem a comunidade de estudo, e a amostra do estudo inclui sessenta e três (63) membros dos níveis gerenciais desses bancos. O estudo usou um questionário para coletar dados e metodologia analítica, o que ajudou a explicar o problema do estudo.

Resultados: Após a realização do processo de análise dos dados e das hipóteses do estudo, os resultados mostram que há uma influência estatisticamente significativa da aplicação do processo de reengenharia (redesenho de cargos, redesenho de processos, redução dos níveis de controle, uso de novas tecnologias, capacitação dos funcionários) sobre os critérios de desempenho (custos, qualidade, velocidade) nos bancos islâmicos jordanianos.

Implicações sociais, práticas e de pesquisa: Identificar e analisar o processo de aplicação da reengenharia nos bancos islâmicos da Jordânia. Os seguintes elementos fazem parte da metodologia do estudo: Custo, qualidade e velocidade são as variáveis dependentes nos critérios cruciais de desempenho; o estudo baseou-se na escolha das variáveis dependentes de acordo com os objetivos que a reengenharia do processo de aplicação pode atingir. As dimensões do processo de reengenharia de aplicativos, como o redesenho de cargos e processos, a redução dos níveis de controle, o uso de novas tecnologias e a capacitação dos funcionários, atuam como variáveis independentes.

Originalidade/valor: O estudo recomenda pesquisas futuras adicionais que possam envolver todos os níveis da administração do banco no processo de reengenharia e criar uma infraestrutura tecnológica eficaz e um sistema de comunicação que contribua efetivamente para o sucesso do processo de reengenharia.

Palavras-chave: Aplicativos de Reengenharia, Critérios Críticos de Desempenho, Desempenho Financeiro, Bancos Islâmicos, Jordânia.

EL IMPACTO DE LA APLICACIÓN DE PROCESOS DE REINGENIERÍA EN LOS CRITERIOS CRÍTICOS DE RENDIMIENTO DE LOS BANCOS ISLÁMICOS DE JORDANIA

RESUMEN

Propósito: La importancia del estudio es que proporciona una comprensión del método de gestión en la reingeniería del proceso de aplicación en el sector bancario para hacer frente a los cambios significativos y rápidos en el medio ambiente, la aplicación de cambios superiores y radicales que ayudan a aumentar su eficiencia y reducir los costos, así como cambiar el enfoque de los empleados para satisfacer las necesidades y deseos de los clientes mediante el rediseño de los procesos bancarios sobre la base de las percepciones y necesidades de los clientes, durante el período de 2019.

Marco teórico: El estudio del método de gestión en la reingeniería del proceso de aplicación en la industria bancaria para hacer frente a los grandes y rápidos cambios en el entorno es esencial, así como cambiar el enfoque de los empleados para satisfacer las necesidades y deseos de los clientes mediante el rediseño del proceso bancario basado en las percepciones y necesidades de los clientes.

Diseño/metodología/enfoque: Los tres bancos islámicos jordanos constituyen la comunidad de estudio, y la muestra del estudio incluye a sesenta y tres (63) miembros de los niveles directivos de estos bancos. El estudio utilizó un cuestionario para recoger datos y una metodología analítica, que ayudó a explicar el problema del estudio.

Resultados: Tras llevar a cabo el proceso de análisis de los datos y las hipótesis del estudio, los resultados muestran que existe una influencia estadísticamente significativa de la aplicación del proceso de reingeniería (rediseño de puestos, rediseño de procesos, reducción de los niveles de control, uso de nuevas tecnologías, formación de empleados) sobre los criterios de rendimiento (costes, calidad, rapidez) en los bancos islámicos jordanos.

Implicaciones sociales, prácticas y de investigación: Identificar y analizar el proceso de aplicación de la reingeniería en los bancos islámicos jordanos. Los siguientes elementos forman parte de la metodología del

estudio: El coste, la calidad y la velocidad son las variables dependientes en los criterios de rendimiento cruciales; el estudio se basó en la elección de las variables dependientes en función de los objetivos que puede alcanzar la reingeniería del proceso de aplicación. Las dimensiones de la reingeniería de los procesos de aplicación, como el rediseño de puestos y procesos, la reducción de los niveles de control, el uso de nuevas tecnologías y la formación de los empleados, actúan como variables independientes.

Originalidad/valor: El estudio recomienda futuras investigaciones que puedan implicar a todos los niveles de la dirección del banco en el proceso de reingeniería y crear una infraestructura tecnológica y un sistema de comunicación eficaces que contribuyan efectivamente al éxito del proceso de reingeniería.

Palabras clave: Aplicaciones de la Reingeniería, Criterios Críticos de Rendimiento, Rendimiento Financiero, Bancos Islámicos, Jordania.

INTRODUCTION

Organizations in the new era seek to establish their presence in light of the large and rapid technological development that, in turn, has led to a difference in the needs and diversity of organizations which added many challenges that hinder those organizations from the possibility of achieving their goals and of gaining a competitive advantage that enables them to achieve survival and continuity and this motivated organizations to rethink their management style by seeking to adopt a new management approach that enables them to make optimal use of their resources and gain competitive advantage (Malahim, 2023; Soumadi & Smadi, 2023; Khatib et al., 2023).

The re-engineering application process emerged in the early 1990s when two American writers "Michael Hammer and James Shambi" wrote the well-known book "Business Re-engineering," published in 1989. this concept revolutionized the natural world in new management with unconventional ideas (Hamza, 2015).

Jones (2013) believes that re-engineering the application process is the change that requires managers to rethink all steps of the process to arrive at the best way to achieve coordination and integration between the essential and necessary activities to provide goods and services to clients.

The definition of re-engineering application process contains the essential elements of this process, which focus on the re-engineering application process rather than organizational units, which are the initial and essential rethinking and radical redesign of administrative processes to achieve extremely substantial improvements in necessary operational standards, such as cost, quality, service, and speed.

The study aims to analyze the re-engineering application process in Jordanian Islamic banks to identify the process's level of implementation and the dimensions of the re-engineering application process (empowering employees, using new technology,

redesigning jobs, processes Redesign, reducing control levels) and the impact of these dimensions on critical performance criteria. Therefore, the study's significance is to clarify the management style of re-engineering application processes in the banking sector to confront large and rapid changes in the environment by creating superior and radical changes that help it to raise its efficiency and reduce costs and in shifting the focus of workers to meet the needs and desires of customers by redesigning banking process based on customer perceptions and needs (Al Shobaki, 2022).

LITERATURE REVIEW

The earlier literature framework discussed the re-engineering process at production facilities due to the apparent impact in reducing cost and improving performance (Sujová & Marcinekóvá , 2019). In later works of literature, the concept includes the service facilities that have a direct relationship with customers, enhancing competitive advantages for these facilities and providing high-speed and good-quality services in public and private facilities (Duby & Bansal, 2012; Noad, 2019).

Although the studies that discuss the Bank's re-engineering are not extensive, which may refer to solid standardized banks procedures and central banks' procedures and laws (Harry & Roger, 2013), the banks demanded to adopt a re-engineering process due to the highly competitive environment, accelerating in technology tools and applications, to minimize its operational expenses, (Acharya, 2015) and to earn more customers and improve services quality (Amanquah & Adjei, 2013).

For the variable degree of progress of the banking system, the result of studies across borders finds out there is no significant impact between studies at the local level (Muhammad, 2012), regional level (Aga, 2006), or international level (Topala & Postolache, 2018; Ringim et al., 2013).

Most studies exclusively discuss the re-engineering process in commercial banks. Studies about Islamic banks were rare. Islamic banks differ substantively from conventional banks in organizational structure, nature of investment activity, type of customers, and performance standards (Islam & Ashrafuzzaman, 2015).

Jordan is one of the countries that allowed for mixed bank systems, "conventional and Islamic" Hari's (2018) papers find out the effect of organizational structure and bank activity on the re-engineering process.

MATERIAL AND METHODOLOGY

The study used analytical methodology to identify and analyze the re-engineering application process in Jordanian Islamic banks, and the issue was explained. The study methodology contains the following factors:

The dependent variables for the crucial performance criteria are (Cost, Quality, and Speed), whereby the study relied on selecting the dependent variables for the goals that the re-engineering application process can achieve, as mentioned in (Horengren, Foster & Datar, 2000; Krajewzki & Ritzman, 1996).

As for the independent variables, they are the dimensions of re-engineering application process that include (redesigning jobs and processes redesign, reducing control levels, using new technology, and empowering employees) where the Current Study relied on selecting independent variables into a study (Mahmoud, 2007; Rifai, 2006; Stamatis, 2002).

Study hypotheses. The main hypotheses of the study are formulated as follows:

Ho1- There is no impact of applying the re-engineering implication process at the level of significant ($\alpha \leq 0.05$) on the critical performance criteria in Jordanian Islamic banks. From this primary hypothesis, the following sub-hypotheses are derived:

- 1- There is no impact of job redesign at the level of significant ($\alpha \leq 0.05$) on performance criteria.
- 2- There is no impact of process redesign at the level of significant ($\alpha \leq 0.05$) on performance criteria.
- 3- There is no impact of reduced control levels at the significance level ($\alpha \leq 0.05$) on performance criteria.
- 4- There is no impact of using new technology at the level of significant ($\alpha \leq 0.05$) on performance criteria.
- 5- There is no impact of empowering employees at the level of significant ($\alpha \leq 0.05$) on performance criteria.

The study community consists of all (3) Jordanian Islamic banks employees, where the sample size reached (63) employees representing top management (managers and their deputies and department heads) targeted. The study tool is represented in a questionnaire consisting of two parts: one related to independent variables and the second related to the dependent variables and their dimensions. The variables were measured using the Likert scale.

Statistical Result

Statistical processing method and data analysis, Normal distribution test: The regular data distribution test (One-Sample Kolmogorov-Smirnov Test) was performed. The data indicates that the distribution was normal, the value of the test to process re-engineering was (1.002) at a significant level (0.172), and it is higher than the specified value (0.05). The value of the performance criteria was (1.642) at the significance level (0.067), which is higher than the specified value (0.05).

The stability of the study tool: Using Cronbach's Alpha coefficient, the internal consistency of the study instrument was evaluated for stability. The total index reached (89.48%), an excellent percentage, greater than the acceptable percentage of (60%).

Honesty from the coefficient of stability: Calculating the stability factor of the current questionnaire (Alpha) and its value ($\sqrt{87.29}$ %), its reliability (87.7%), which is a high validity factor (Aiken, 2007).

Data analysis and hypothesis testing: Before starting the hypothesis test, the Variance inflation factor test use, it will be ensured that the independent variables' dimensions do not have a strong correlation with one another, in addition to meeting the data for the normal distribution condition.

The data indicates that the allowable variance coefficient for the dimensions of independent variables was less than (1) and greater than (0.01). The values of the contrast inflation coefficient are less than (10) because this suggests that there is not a strong correlation between the study model's strength and the dimensions of the independent variables.

RESULTS AND DISCUSSION

Description of the Dimensions of the Independent Variable

The first dimension: Job redesign. The result in Table 1 shows the medium importance of the study sample opinions about job redesign, the overall index was (3.4146) and a standard deviation (of 0.7734), the sample trends are positive and arithmetic averages are greater than the average measuring instrument Value (3).

Paragraph (2) was also found to be the most agreeable and highly important, with a standard deviation of (0.7287) and an arithmetic mean of (3.6004).

According to the researcher's belief that respondents desire to obtain more powers that contribute to the completion of the service provided to clients. The second-ranked

paragraph (1), which had an arithmetic mean of 3.421 and a standard deviation of 0.7559, and the third-ranked paragraph (3), which had an arithmetic mean of 3.22 and a standard deviation of 0.835, both performed moderately well.

Table 1. Descriptive statistics, Job redesign.

Order	Degree of agreement	Standard deviation	Arithmetic average	Paragraph	Paragraph No.
2	Medium	0.7559	3.4215	Management seeks to integrate several functions with one function that handles the process	1
1	High	0.7287	3.6004	The Bank's management seeks to reconcile centralism and decentralization	2
3	Medium	0.8356	3.2220	Management seeks to identify management that represents one entity that is accountable to senior management	3
Medium		0.7734	3.4146	Total indicator	

Source: Prepared by the authors

The second dimension: Processes Redesign. Table 2 shows the high importance of study sample opinions about processes Redesign. The overall index was (3.9344) and the standard deviation (was 0.7729). The sample trends are positive in the above paragraphs because the arithmetic mean is greater than the average value measuring instrument (3). It was found that paragraph (5) is the most relevant and highly important paragraph, containing a standard deviation of (0.7258) and an arithmetic mean of (3.9845) .

According to the researcher, the administration desires to shorten the time lost when the Bank carries out its banking processes consecutively. Paragraph (6) came in second place among the paragraphs and with a high degree of importance with a standard deviation of (0.7966) and a mean of (3.9215).

The last paragraphs agree with a high degree of importance, paragraph (4) containing a standard deviation of (0.7258) and an arithmetic mean of 3.8974.

Table 2. Descriptive statistics, Processes Redesign

Order	Degree of agreement	Standard deviation	Arithmetic average	Paragraph	Paragraph No.
3	High	0.7258	3.8974	Management seeks to integrate several functions with one function that handles the process	4
1	High	0.8152	3.9845	Management seeks to modify the scheduling of some operations to be performed in a balanced, not sequential, manner.	5
2	High	0.7966	3.9215	The department uses teams to carry out an integrated operation	6
High		0.7792	3.9344	Total indicator	

Source: Prepared by the authors

The third dimension: Reducing levels of control. Table 3 shows the average importance of the study sample's opinions about reducing levels of censorship. The overall index was (3.2344) and the standard deviation (was 0.8123). We note that the sample trends are negative towards paragraphs (7).

While paragraph (9) is considered positive due to the pressure imposed on Islamic banks by the Central Bank for the need to raise the levels of supervision and scrutiny due to the nature of the banking business, paragraph (9) has also been found to be the most agreeable and highly important paragraph, with an arithmetic mean (3.4941) and a standard deviation (0.8264). This is due to the administration's interest in using new techniques in the field of control that contribute to reducing the levels of control in a way that does not conflict with the requirements of the Central Bank, allowing the provision of speed in the performance of the banking service.

Paragraph (8) came in second place with a medium degree of importance among the paragraphs, with an arithmetic mean (3.3871) and a standard deviation (0.8454).

Paragraph (7) is the least agreeable paragraph of a medium degree of importance, with an arithmetic mean (2.8220) and a standard deviation (0.7651). This is due to the nature of the work of Islamic banks that require awareness of cash transactions with customers and because raising levels of control and scrutiny provides a sense of security for customers.

Table 3. Descriptive statistics, reducing levels of control

Order	Degree of agreement	Standard deviation	Arithmetic average	Paragraph	Paragraph No.
2	Medium	0.7651	2.8220	Management seeks to reduce levels of oversight and reference	7
3	Medium	0.8454	3.3871	Management seeks to reduce internal audits	8
1	High	0.8264	3.4941	Management seeks to use new technologies In the field of control to provide speed in performance	9
Medium		0.8123	3.2344	Total indicator	

Source: Prepared by the authors

The fourth dimension: The use of new technology. Table 4 shows the high importance of the study sample's opinions on the use of new technology. The overall index was (3.9679) and the standard deviation (was 0.7802), and we note that the sample trends are positive towards the above paragraphs.

Paragraph (13) has also been found to be the most agreeable and highly important paragraph, with an arithmetic mean (4.1654) and a standard deviation (0.6834).

This is due to the facilities obtained when using new technology, which in turn helps to reduce the cost and effort and improve the quality of the banking service; paragraph (11) came in second place with a high degree of importance between paragraphs with an arithmetic mean (4.0120) and a standard deviation (0.7856).

Paragraph (10) carried the third order with an arithmetic mean (3.8782) and a standard deviation (0.7541). The lowest and most important paragraphs –Paragraph (12) with arithmetic mean (3.8161) and a standard deviation (0.8978).

This is due to the facilities obtained when using new technology, which in turn contributes to the provision of electronic banking products and services to customers without the need to be in the Bank, which will save costs, improve quality and reduce time and effort.

Table 4. Descriptive statistics, the use of new technology

Order	Degree of agreement	Standard deviation	Arithmetic average	Paragraph	Paragraph No.
2	High	0.7541	3,8782	The Bank reduces the stages of its banking operations through the use of information technology	10
3	High	0.7856	4.0120	The Bank uses IT systems to check multiple banking operations in a single transaction	11
4	High	0.8978	3,8161	Technology contributes to reducing regulatory processes	12
1	High	0.6834	4.1654	It contributes to the successful redesign of banking operations	13
High		0.7802	3.9679	Total indicator	

Source: Prepared by the authors

The fifth dimension: Empowering employees. Table 5 shows the importance of the study sample's opinions on worker empowerment. The overall index was (3.5838) and the standard deviation (was 0.5484); we note that the sample trends are positive in the above paragraphs.

Paragraph (16) was also found to be the most agreeable and highly important paragraph, with an arithmetic mean (3.8641) and a standard deviation (0.7224). This is due to the Bank's interest in being part of the management process in a way that gives employees an active contribution to the redesign of banking processes as the first line of customer service and closest to knowing the needs and desires of customers and the problems they face when performing the service.

Paragraph (15) ranked second among the paragraphs, and it is of high importance, with an arithmetic mean (3.5210) and a standard deviation (0.6541). Paragraph (14) is the least approved and medium-important paragraph, with an arithmetic mean (3.3665) and a standard deviation (0.2687).

Table 5. Descriptive statistics, empowering employees

Order	Degree of agreement	Standard deviation	Arithmetic average	Paragraph	Paragraph No.
2	High	0.2687	3.3665	Senior management encourages workers to work as a team	14
3	High	0.6541	3.5210	The Bank gives its employees the necessary powers to perform their work better	15
1	High	0.7224	3.8641	Employees contribute to the redesign of banking operations	16
High		0.5484	3.5838	Total indicator	

Source: Prepared by the authors

Description of Variable Dimensions -Performance Criteria

The first dimension: Costs. Table 6 represents the high importance of the study sample's cost views. The overall index was (4.0598), and the standard deviation was (0.7778). The sample trends are positive towards the above paragraphs, as it turns out that paragraph (18) is the most agreeable and highly important paragraph with an arithmetic mean (4.2358) and a standard deviation (0.8365).

Paragraph (19) was second among the paragraphs and of high importance, with an arithmetic mean (4.0870) and a standard deviation (0.8157). Paragraph (17) carried the minor approval and highly important paragraphs with an arithmetic mean (3.8566) and a standard deviation (0.6812). The researchers attribute this to the Bank's constant interest in reducing costs by eliminating processes that do not add value in a way that improves quality and increases speed.

Table 6. Variables measurements, Costs

Order	Degree of agreement	Standard deviation	Arithmetic average	Paragraph	Paragraph No.
3	High	0.6812	3.8566	Management strives to be low-cost customer service	17
2	High	0.8365	4.2358	Redesign the process From the time it was released To meet the customer's request to reduce the cost of the service provided	18
1	High	0.8157	4.0870	Re-engineering processes reduce the cost of human capital	19
High		0.7778	4.0598	Total indicator	

Source: Prepared by the authors

The second dimension: Quality. The following Table 7 represents the high importance of the study sample's views on quality with a total index (4.1332) and a standard deviation (0.7372), and we note that the sample trends are positive towards the above paragraphs. Paragraph (20) was also found to be the most agreeable and highly important paragraph, with an arithmetic mean (4.4214) and a standard deviation (0.7544).

Paragraph (21) ranked second among paragraphs and of high importance, with an arithmetic mean (4.0208) and a standard deviation (0.6852), and paragraph (22) carried the least of the paragraphs with approval. The researchers attributed this to the management's interest in quality as a key factor for excellence over competitors under intense competition.

Table 7. Variables measurements, quality

Order	Degree of agreement	Standard deviation	Arithmetic average	Paragraph	Paragraph No.
1	High	0.7544	4,4214	Redesigning operations increases the Bank's ability to satisfy customers	20
3	High	0.6852	4.0208	Re-engineering of banking operations contributes to a decrease in customer complaints	21
2	High	0.7722	3.9574	Redesigning banking processes contributes to accurate and error-free banking transactions	22
High		0.7372	4.1332	Total indicator	

Source: Prepared by the authors

The third dimension: Speed. Table 8 represents the average importance of the study sample views on speed. The overall indicator (3.7624) and a standard deviation (0.6649), and we note that the sample trends are positive towards the above paragraphs, and paragraph (25) was also found to be the most agreeable and highly important paragraph, with an arithmetic mean (3.9295) and a standard deviation (0.7041).

Paragraph (23) ranked second among paragraphs. It is of high importance, with an arithmetic mean (3.7894). A standard deviation (of 0.6251) and paragraph (24) carried the lowest approval and high score of importance, with an arithmetic mean (3.5684) and a standard deviation (0.6656). According to the researchers, this results from management's desire to shorten the length of time customers are without service, which increases the speed at which the customer's request is implemented.

Table 8. Variables measurements, speed

Order	Degree of agreement	Standard deviation	Arithmetic average	Paragraph	Paragraph No.
2	High	0.6251	3.7894	Empowering employees reduces the time needed to complete banking transactions	23

3	High	0.6656	3.5684	Redesigning operations reduces the time spent between receiving and meeting the customer's request	24
1	High	0.7041	3.9295	Management seeks to respond quickly to customer requests	25
High		0.6649	3.7624	Total indicator	

Source: Prepared by the authors

TEST HYPOTHESES

The first main hypothesis: There is no impact of applying the process re-engineering with a statistical significance at the level of ($\alpha \leq 0.05$) on the critical performance criteria in Islamic banks of Jordan.

Multiple regression tests have been used, and the results in Table 9 indicate a statistically significant impact at the level ($\alpha \leq 0.05$); the level of significance was (0.00). It was also shown by the calculated value of F (38.41), which is greater than its scheduled value, and it is the significance value of the study model for this hypothesis.

The R^2 (0.654) value showed that (65.4%) of the changes in process re-engineering of individuals working in Islamic banks were due to the change in performance criteria. While (34.6%) of the changes are due to other variables, the correlation coefficient $R = 77.3\%$ shows a significant relationship between the variables.

The results showed that the Process design had no impact, with beta (0.009-) and T (0.024-) non-significance values at $\alpha \leq 0.05$. The rest of the process engineering dimensions influence performance criteria, a result demonstrated by beta and T values for each dimension.

Based on the above, We accept an alternate hypothesis in which it has been demonstrated that implementing process re-engineering affects important performance indicators in Jordanian Islamic banks.

Table 9. Multiple regression tests

Level of significance	T Value	Beta Value	Process re-engineering variables
0.019	2.365	0.134	Job design
0.017	0.024-	0.009-	Process design
0.952	1.057	0.169	Reducing levels of oversight
0.000	7.562	0.480	The use of new technology
0.001	3.459	0.208	Empowering workers
0.773			Value R
0.654			Value R^2
38.41			Value F
167/5			Degree of Freedom DF
2.21			Table value F
0.00			Level of significance
Rejected			The result of the null hypothesis H_0

Source: Prepared by the authors

The First Sub Hypothesis

There is no impact of job redesign functions at the level ($\alpha \leq 0.05$) on performance criteria.

Table 10. Simple linear regression tests, the first sub hypothesis

the result of the null hypothesis	R2	R	Degree of Freedom DF	SIG	T Table schedule	T Calculated
Rejected	0.178	0.451	172	0.00	1.9111	3.415

Source: Prepared by the authors

The following Table 10 represents after using a simple linear regression analysis, the value of the R correlation coefficient was (45.1%), and the R² factor was also (0.178), which means that (17.8%) of the change in job design is due to the change in performance criteria.

The calculated T value equals (3.415) and is greater than its scheduled value. Since the indication level is equal to (0.00), below the indication level adopted, we accept the alternative hypothesis.

The Second Sub Hypothesis

There is no impact of process redesign at the level ($\alpha \leq 0.05$) on performance criteria.

Table 11. Simple linear regression tests, the second sub hypothesis

The result of the null hypothesis	R2	R	Degree of Freedom DF	SIG	T Table schedule	T Calculated
Rejected	0.318	0.585	172	0.00	1.9111	4.612

Source: Prepared by the authors

The following Table 11 represents, after using a simple linear regression showed that the value of the R coefficient was (58.5%) and the R² selection factor was also (0.318), which means that (31.8%) of the change in process redesign is due to the change in performance criteria.

The calculated T value equals (4.612) and is a greater scheduled value. Since the significance level is equal to (0.00), below the indicative level (0.05), we accept the alternative hypothesis.

The Third Sub Hypothesis

There is no impact of reducing control levels at the level ($\alpha \leq 0.05$) on performance criteria.

Table 12. Simple linear regression tests, the third sub hypothesis

the result of the null hypothesis	R2	R	Degree of Freedom DF	SIG	T Table schedule	T Calculated
Rejected	0.113	0.281	172	0.001	1.9111	5.974

Source: Prepared by the authors

The following Table 12 represents, after using a simple linear regression showed that the value of the R coefficient was (28.1%) and the R² selection factor was also (0.113), which means that (11.3%) of the change in control levels is due to the change in performance criteria.

The calculated T value equals (5.974), greater than its scheduled value. Since the significance level equals (0.001), we accept the alternative hypothesis below the indication level adopted.

The Fourth Sub Hypothesis

There is no impact of using new technology at the level ($\alpha \leq 0.05$) on performance criteria.

Table 13. Simple linear regression tests, the fourth sub hypothesis

the result of the null hypothesis	R2	R	Degree of Freedom DF	SIG	T Table schedule	T Calculated
Rejected	0.516	0.742	172	0.00	1.9111	6.154

Source: Prepared by the authors

After using simple linear regression, Table 13 showed that the value of the R coefficient was (74%) and the R² selection factor was also (0.516), which means that (51.6%) of the change in the use of new technology is due to the change in performance criteria.

The calculated T is equal to (6.154) and is greater than its scheduled value, so the significance level is equal to (0.00), below the indication level adopted; we accept the alternative hypothesis.

The Fifth Sub Hypothesis

There is no impact on empowering employees at the level ($\alpha \leq 0.05$) on performance criteria.

Table 14. Simple linear regression tests, the fifth sub hypothesis

the result of the null hypothesis	R2	R	Degree of Freedom DF	SIG	T Table schedule	T Calculated
Rejected	0.398	0.562	172	0.00	1.9111	4.219

Source: Prepared by the authors

After using simple linear regression, Table 14 showed that the value of the R coefficient was (56.2%) and the R² selection factor was also (0.398), which means that (39.8%) The change in employee empowerment is due to the change in performance criteria.

The calculated T is equal to (4.219), which is greater than its scheduled value, and since the significance level is equal to (0.00), it is lower than the indicative level adopted. We accept the alternative hypothesis.

CONCLUSION

The results showed that the re-engineering application process explains (65.4%) the variation in the critical performance criteria in the Jordanian Islamic banks. New technology uses ranked first, accounting for (51.6%) of the dependent variable. This is evidence of the main role of new technology in applying re-engineering. In addition to the facilities provided by new technology that reduce costs and effort, increase the speed of processes, and improve the outputs of banking services and products.

Therefore, Islamic banks can achieve their goals by focusing on the use of new technology when applying re-engineering application processes to improve quality, increase speed, and reduce costs, followed by empowering employees, explaining 39.8%) of the variance in the dependent variable, and this is evidence that Jordanian Islamic banks seek to give workers the necessary powers to complete the banking service without consulting their superiors when providing the banking service, then processes redesigning, explaining (31.8%) of the variance in the dependent variable.

This is evidence that Jordanian Islamic banks are redesigning the processes in a manner that leads to the disposal of secondary processes that do not provide substantial value to shorten costs and lost time while improving the quality of banking services. Then,

the job redesign came to explain (17.8%) of the variance in the dependent variable, and this indicates that Islamic banks need to increase attention and focus on redesigning jobs by working on merging several jobs into a job that carries out the banking process to save time and effort on customers. Finally, the reduction in control levels explained (11.3%) of the performance criteria as a dependent variable, and this indicates that Islamic banks adhere to the criteria of the Central Bank of Jordan in the necessity of raising levels of control and auditing. However, they seek to use new technology that contributes to controlling work and powers, leading to reduced control and audit.

The variables related to performance criteria (Costs, quality, speed). The study results show that the arrangement of the goals of Jordanian Islamic banks, from applying re-engineering application processes to improving quality, is followed by increasing the speed of processes and reducing costs.

The arithmetic average of the quality variable has reached (4.1332), and this is evidence that Islamic banks strive to provide a banking service that meets customers' needs and that the re-engineering application process contributed to improving banking services and products.

As for reducing costs in Jordanian Islamic banks, the arithmetic average reached (4.0598). This is evidence that Jordanian Islamic banks can use their resources optimally to reduce costs by eliminating excess processes that do not provide substantial value.

The speed increase variable came third with an arithmetic mean (3,7624); this shows that re-engineering reduces waste in the time it takes to provide the service, which contributes to increasing the speed of service delivery to customers.

In light of previous studies that dealt with this topic, the researchers reached to prove his first hypothesis regarding the existence of an impact of applying re-engineering on performance criteria (costs, quality, speed) in Jordanian Islamic banks, and this is in line with (2014 Kumar & Mishra) Study, which found that operating expenses were halved after re-engineering was applied. The quality of goods and services has improved dramatically, especially after the development of services and products based on new technology, and the speed of delivery of services has increased, and there is a feeling of satisfaction with the clients who were interviewed for the services provided after applying the re-engineering application process.

A study (Kuhil, 2013) showed that the application re-engineering application process has an impact on (increasing service speed, reducing costs, and improving customer satisfaction) by working on redesigning processes and empowering employees.

In a study by (Sungau, Ndunguru, and Kimeme, 2013), one of its results was that the application of a re-engineering application process resulted in improvements in Speed, Quality in the first place and thus cost, efficiency, and productivity, which led to improved performance and increased customer satisfaction, as well as reducing work pressure and reducing the time needed to complete services, and to enable employees and easy access to the information needed to do the services. The rewards and incentives system has yet to receive any change after applying to re-engineer.

A study by (Nisar, Ahmad, and Ahmad, 2014) concluded that re-engineering has a main and positive impact on the organization's performance and that information technology has a major and positive impact on the organization's performance. The banks that re-engineered their processes, particularly the operational ones, were able to improve the efficiency and imp activeness of their services provided. Employee empowerment is one of the key elements in successfully implementing process re-engineering, supporting senior management, adapting new jobs, and providing new technological capabilities.

The Study (Mohammed, 2012) agreed with the study, which indicated that the process re-engineering achieved the goal of reducing costs. As well as a study (Sangau at el., 2013) found that re-engineering has a clear impact in reducing service delivery time, which improves the speed of service delivery to the customer,

Furthermore, a study (Murad, 2012) showed that process re-engineering with the employment of IT capabilities is one of the main supporting tools for the success of the decisions and strategic variables of the organizations.

According to the study's findings, Islamic banks' performance criteria are primarily impacted by their use of new technology, and thus the findings of the study (Mujahid, 2011), which results that there is a relationship between variables (organizational structure design, processes, operating activities, use of application Technology, increased capacity to develop and improve performance) and re-engineering application process. There is a relationship between the productive operating cycle and the re-engineering application process.

The Study (Al-Shobaki, 2010) showed that the use of information technology contributed to the increased ability to coordinate processes in different similar departments and departments, resulting in the performance of the work quickly and accurately.

(Aga, 2006), the most important finding is a correlation between processes re-engineering and (rebuilding organizational structures, high-tech capabilities, the health and imp activeness of the banking process, a change in customer expectations, and improvement of overall quality criteria.

The results related to the hypotheses are as follows: The use of the application process for re-engineering has an effect at a statistically significant level ($\alpha \leq 0.05$) on the critical performance criteria in Jordanian Islamic banks.

There is also an impact for (job redesign, process design, reduced levels of control, and use of new technology, to empower employees with statistically significant at $\alpha \leq 0.05$ on performance criteria.

Conclusions and Recommendations for Further Research: The study finds that Jordanian Islamic bank managers know the benefits and impacts of re-engineering to enhance the organization's performance. Also, Spending can be decreased due to the impact of applying re-engineering at the crucial performance criteria and time and improving the competitive advantages and quality of services provided, empowering employees and customers satisfaction.

Therefore, further research should take into consideration two issues. First, the Re-engineering process should involve and participation of all bank managerial level .sThe second one, a good communication system and technological infrastructure contribute efficiently to the re-engineering process' success.

REFERENCES

- Acharya, D. T. A. (2015). Business Process Re-engineering in Commercial Banks—A case study of Andhra Bank. *International Journal of Multidisciplinary Advanced Research Trends*, 2(2), 3.
- Aiken, Louis R. (2007). Tests and Examinations Measuring Capacity and Performance, Translated by Farah Al-Sarraj, *Al-Abikan Research and Publishing Company*, Saudi Arabia.
- Al Shobaki, M. (2022). The Reality of Process Re-Engineering In Palestinian Relief Organizations. *International Journal of Academic Management Science Research (IJAMSR)* 6 (8):137-161.

Al-Aga, M. (2006). Applied Study of Re-Engineering of Administrative Processes in Banks in the Gaza Strip. Unpublished Master Thesis, Islamic University, Palestine.

Amanquah, B., & Adjei, K. S. (2013). Business process re-engineering (BPR) in the financial services sector: A Case study of Ghana commercial bank (GCB) Limited. *European Journal of Business and Management*, 5(29), 59-66.

Bhaskar, H. L. (2018). Business process re-engineering framework and methodology: a critical study. *International Journal of Services and Operations Management*, 29(4), 527-556.

Dubey, S. K., & Bansal, S. (2013). Critical success factors in implementing BPR in a government manufacturing unit-an empirical study. *International Journal of Business and Management*, 8(2), 107.

Hamza, M. (2015). Studying the Attitudes of the Industrial Companies towards the Implementation of Business Process Re-Engineering (A Field Study). *Research Journal of Finance and Accounting*, 6(8), 121–134.

Harry Maddern, and Roger Maull, School of Business and Economics, University of Exeter, 2013, 'Second Generation' Process Thinking: A Case Study from UK, Financial Services, Paper Number (03/07), UK.

Horengren, C. T., Foster, C., & Datar, S. K. M. (2000). Cost Accounting A Managerial Emphasis, 10th edition. US: Prentice Hall.

<https://philpapers.org/archive/MAZTRO-7.pdf>

<https://www.iiste.org/Journals/index.php/RJFA/article/view/21981/22421>

Islam, M. T. U., & Ashrafuzzaman, M. (2015). A comparative study of Islamic and conventional banking in Bangladesh: Camel analysis. *Journal of Business and Technology (Dhaka)*, 10(1), 73-91.

Jones, G. R. (2013). Organizational theory, design, and change. Upper Saddle River, NJ: Pearson.

Khatib, A. Y. A. ., Malahim, S. S. ., Khanji, I. M. ., & Jaradat, A. A. . (2023). Examining the causal factors of banking achievements for Islamic banks in Jordanian Islamic banks: An analytical study. *International Journal of Applied Economics, Finance, and Accounting*, 16(2), 264–273. <https://doi.org/10.33094/ijaefa.v16i2.979>

Krajewzki, J. and Ritzman, I., (1996). Operation Management Strategy and Analysis, 4ed, Addison Wesley Co, USA.

Kuhil, A. M. (2013). Business Process, Re-engineering, and Organizational Performance: A Case of Ethiopian Public Banking Sector (Doctoral dissertation, University of South Africa).

Kumar, S., & Mishra, K. (2014). Business Process Re-engineering (BPR): An Empirical Study on State Bank of India. *International Journal of Engineering and Management Research (IJEMR)*, 4(2), 95–99.

Maddern, H., & Maull, R. S. (2003). 'Second Generation' process thinking: a case study from UK financial services.

Mahmood, M. D. (2007). The impact of re-engineering to achieve competitive advantages,". Iraq, Technical Journal, 20(2), 1-24.

Malahim, S. S. (2023). The Relationship Between the Risk Disclosure and Risk Management Committee on Banks Value: Empirical Evidence From Jordan. *International Journal of Professional Business Review*, 8(3), e0572. <https://doi.org/10.26668/businessreview/2023.v8i3.572>

Mazen Al-Shobaki (2010), the relationship between decision support systems and re-engineering in Palestine universities in the Gaza strip (Master dissertation, Al-Azhar University - Gaza).

Mohammed, Zeina Fathi, 2012, the Role of Process Re-engineering in Reducing Cost and Increasing Profitability by Applying to the Housing Bank for Trade and Finance of Jordan, Tikrit Journal of Management and Economic Sciences, 8(26), 34–51.

Mohsen, Abdul Karim, and Sabah al-Najjar, (2012). Production and Operations Department, Memory for Publishing and Distribution, Baghdad.

Mujahid, Dina Hassan, (2011). Re-engineering Application Process as an Entry Point for the Development of Egyptian Companies, Unpublished, Master's Thesis, Binha University, Egypt.

Murad, M. A.T., (2012). The Impact of Re-engineering in Improving the Impactiveness of Operations under Strategic Changes, Unpublished, Master's Thesis, Virtual University of Syria, Syrian Arab Republic.

Naod Mekonnen, (2019). Implementing Business Process Re-engineering (BPR) in Government Organization, *International Journal of Advanced Research (IJAR)*, 7(8), 109–120.

Nisar, Q. A., Ahmad, S., & Ahmad, U. (2014). Exploring factors contributing to the success of business process re-engineering and impact of business process re-engineering on organizational performance: A qualitative descriptive study on banking sector at Pakistan. *Asian Journal of Multidisciplinary Studies*, 2(6), 219-224.

Rifai, Mamdouh, 2006, process Re-engineering, Ain Shams University, First Edition, Cairo.

Ringim, K. J., Osman, N. H., Hasnan, N., & Razalli, M. R. (2013). Exploring the implementation of business process re-engineering in banks. *Asian Social Science*, 9(11), 243.

Setegn, D., Ensermu, M., & Moorthy, P. K. (2013). Assessing the effect of business process re-engineering on organizational performance: A case study of Bureau of Finance and Economic Development (BOFED), Oromia Regional State, Ethiopia. *Researchers World*, 4(1), 115.

Soumadi, M. M., & Smadi, A. A. A. (2023). Islamic Banking Institutions and their Role in Economic Development of Jordan. *International Journal of Professional Business Review*, 8(5), e01679. <https://doi.org/10.26668/businessreview/2023.v8i5.1679>

Stamatis, Dean H., (2002). *Six Sigma and Beyond: Foundation of Excellent Performance*, Lucie Press, USA.

Sujová, A., Simanová, L., & Marcinekova, K. (2019). Re-engineering of production processes and their impact on the company's financial situation and business performance. *Engineering Management in Production and Services*, 11(3), 106-116.

Sungau, J. J., Ndunguru, P. C., & Kimeme, J. (2013). Business process re-engineering: the technique to improve delivering speed of service industry in Tanzania. *Independent Journal of Management & Production*, 4(1), 208-227.

Topala, P., & Postolache, V. (2018). Re-engineering of business processes as a bank efficiency method. In *Conf. Series: Materials Science and Engineering* (Vol. 400, No. 6, pp. 1-11).

Tracey, W. R., & Bronstein, D. A. (2003). *The human resources glossary: The complete desk reference for HR executives, managers, and practitioners*. CRC Press.