

# THE IMPACT OF TECHNICAL INNOVATION IN EXCELLENCE MANAGEMENT IN BUSINESS ORGANIZATIONS AN APPLIED STUDY ON COMMERCIAL BANKS IN TABUK REGION

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**ABSTRACT:** *The purpose of this study is to evaluate The Impact of Technical Innovation in excellence management in Business Organizations an applied Study on commercial banks in Tabuk region. To achieve the goal of this study used the descriptive and analytical approach. The questionnaire initial data were distributed and (148) responses were obtained from the sample members, (managers from the top management level and middle management), working in 15 banks in the Tabuk region. The study revealed an impact of Technical Innovation on excellence management in commercial banks. The study recommended that The necessity of urging the management of the targeted commercial banks to pay more attention to the types of technical innovation, since it is considered as one of the basic instruments that contribute to introducing new products, and improving the current products, in addition to designing new processes and improving the existing ones in order to be able to cope with the outcomes of technical development and the conditions of increased competition in markets.*

**Keywords:** Technical Innovation, excellence management, Business Organizations

## INTRODUCTION

Nowadays, international markets witness a considerable competition between organizations in general, where there is a continuous competition to stand in the face of competition to maintain the current customers and attract new ones by achieving the competitive advantage. When reviewing some literature studies in the domains of production management, culture management and others, we found that the technical innovation (e.g. producer's innovation and process innovation) is considered as one of the basic factors that helps organizations, particularly the industrial ones to achieve the competitive advantage. This competitive advantage comes by increasing the value of the product (customer direction), such as the quick response to customer's needs or the highest quality products that gives the industrial company its competitive advantage [1].

When an organization gains the competitive advantage, its competitors will do their best to obtain such an advantage or mimic it. Therefore, the organization should develop this advantage by creating suitable ways for that, especially those related to the role of technological innovation in achieving the competitive advantage and promoting it in the organization, particularly in relation to the establishment, opportunities and atmosphere of business.

Researchers agree that, in the domain of business, organizations face great challenges to achieve the competitive advantage, where it is difficult to deal with such challenges using the conventional methods; therefore, we have to reconsider current systems, policies and programs in order to achieve the desired adjustment with those challenges.

Undoubtedly, the industrial sector is proactive in considering what science has achieved in the domain of technological and administrative thought, in terms of depending on innovation in order to support all the domains of its business and ensure the continuous progress in the various domains. Innovation also helps organizations to do their vital tasks, considering them as basic elements in the stability of the Jordanian economy; therefore, this sector should provide the supportive administrative environment to be innovative in the various domains in order to cope with the accelerating developments and satisfy the needs of all the sectors [2].

Innovation in the industrial companies is embodied in their ability to satisfy customers and provide services that go beyond their expectations; indeed, this can be achieved through the programs that support innovation and creativity among workers and take customer's needs into consideration. Accordingly, the economic superiority of business organizations can only be achieved by relying on the economic power that is based on the optimal utilization of the available economic resources, either as human, financial or technological ones as well as the ability to innovate new productive and marketing methods to be able to manage effectively and achieve the distinctive performance to reach finally to the competitive advantage. Achieving the competitive advantage has the potential of promoting the organization's competitive position in the global markets, and thus ensures its survival in the market, especially as these markets are more active in the light of complex competitive environment. This research is an attempt to determine the relationship between technical innovation elements in managing excellence in business organizations based on an applied study on commercial banks in Tabuk region [3].

### The study objectives:

This study aimed at demonstrating the role of technical innovation on achieving excellence management in business organizations based on an applied study on commercial banks in Tabuk region. The study mainly aimed to:

- 1- Identify the perceptions of those working in commercial banks in Tabuk region toward innovation.
- 2- Identify the perceptions of those working in commercial banks in Tabuk region toward excellence management.
- 3- Determine and analyze the relationship (correlation and effect relationship) between technical innovation and excellence management in the targeted commercial banks.
- 4- Demonstrate the necessary recommendations to activate the role of technical innovation in achieving excellence management in business organizations.

### The study Importance:

The domains of importance include the following:

1. The organization's dealing with Technical Innovation is no more recreation or rejected option, but it has been a necessity and the organization's acceptance of it as a strategic option will be a start

in the right direction in terms of innovation, creativity, novelty and change.

2. Focus on the topics of Technical Innovation and excellence management", in a manner that expresses the alertness of the strategic organizational mind, in terms of monitoring, thinking and response, and achieves strategic effectiveness, reputation and survival for business organizations.
3. Directing the management thinking towards adopting and stimulating Technical Innovation, considering it as one of the basic elements of the stimulating atmosphere towards innovation in the organization.
4. Attracting the attention of researchers in all the educational institutions, universities and research centers to pay more attention to the study topics, and make advantage of them in introducing instruments and mechanisms that instruct the Arabic organizations about the risks of ignoring these topics.

#### **The theoretical framework and previous studies:**

[4]. suggested that technical innovation refers to a series of industrial and technical steps that contribute to providing new products in the market [5]. argued that technical innovation refers to discovering and developing products (goods and services) or processes, where discovering and developing the new products are essential components for developing the new knowledge and changing it into commercial applications. Therefore, we may suggest that technical innovation is the process through which the company can achieve coordination and cooperation between the company's activities, such as production, marketing, searching and development in order to adopt the new methods and ideas and change them, within business domain, into a new product (new item or a new service), develop a current product, use a new production process or develop a current production process that satisfies customer's needs of products. Doing so, we make the better than others in the market of competition.

#### **The types of technical innovation:**

[6] suggested that, according to the criteria of outputs, technical innovation can be classified as producer's innovation and process innovation. Based on the researcher's review for the perspectives of some scholars concerning the types of technical innovation since the beginning of the 1990s as well as the first decade of the 21<sup>st</sup> century (e.g. [7, 8]; and [9-10] he concluded that technical innovation is related to: The producer's innovation: this innovation includes (providing a good-quality product, improving the current product (existing product).

The process innovation: it includes designing or using a new process, improving an existing process (the current process). Accordingly, the researcher agrees with the opinions of the previous researchers relating to the types of technical innovation, which were used for the purposes of the current study.

Several studies addressed technical innovation with regard to competitive advantage, where [11]. suggested that there is a significant correlation relationship between innovative direction and organizational performance, and that companies

with high innovative direction are positively correlated with growth and customer's satisfaction. He studies also suggested that there is a correlation relationship between return on investment and innovative direction [12]. suggested that innovative direction affects the development of products which is, in turn, reflected on the organizational performance on the long run [13]. suggested that adopting social activities affects organizations through elements that are reflected on their competitive advantage. These elements include the public social issues, which are too important for the community; however, they often affect the processes of the organization without affecting the long-term competition [14]. suggested that both market direction and innovative direction significantly improve the directions of workers' employment, such as job satisfaction, organizational commitment, and confidence about the levels of companies' performance) [15]. suggested that knowledge is an important element and has an important role in innovation. The results revealed that organizations realize the importance of innovation in achieving the competitive advantage. The results also revealed that knowledge is considered as a very important component in the process of innovation, since it does not only represent the important inputs, but also the products of transformation process. [16]. conducted a study which aimed at designing a mode for an innovation network based on resource integration by studying the case of A Chinese power company and how the ability of technical innovation can bring about the competitive superiority of companies. The results revealed that the basis of technical innovation is manifested in the integration between internal and external resources of the company; the traditional concept of the company's resources mainly depends on its internal resources. However, during the time of competition, both internal and external resources are important for the company, since obtaining the external resources is important for the company and a way towards innovation.

#### **The study hypotheses:**

There is a significant relationship between the types of technical innovation and the dimensions of excellence management in commercial banks in Tabuk region. The following sub-hypotheses are derived from this main hypothesis:

1. There is a significant relationship between the product's innovation and the dimensions of excellence management in commercial banks in Tabuk region.
2. There is a significant relationship between the innovation of production process and the dimensions of excellence management in commercial banks in Tabuk region.

#### **The study methodology:**

Based on the study nature and its objectives, the researcher used the analytical descriptive approach that is based on studying the phenomenon as it exists, where the phenomenon is described accurately and expresses it quantitatively and qualitatively. This approach does not only collect the relevant information about the phenomenon to investigate its various manifestations and relationships, but also analyzes and correlates them in order to reach conclusions upon which

the proposed perception is built and adds to the existing knowledge about the topic.

**Population and Sampling:**

[13] defines a research population as the entire group of people, events, or things of interest that the researcher wishes to investigate. The population size of this study consists of (167) managers, (managers from the top management level and middle management) in commercial banks. The most basic element of a research study is unit of analysis [14]. According to [15] a unit of analysis can be referred as “the level of aggregation of the data collected during the subsequent data analysis stage” while. Therefore, the unit of analysis is individual based, means that data was collected from (managers, assistant manager, and heads of sections) in commercial banks is the unit of analysis of the study.

This study used probability simple random sampling method. Sampling methods can be divided into probability and non-probability sampling. This study adopts the simple random sampling technique, which is a probability sampling method, for each aspect of the population to be represented in the sample[16].

The appropriate sample size for a population size of 167 is 118. According the recommended [17], as suggested by [15]. To lessen sample size error and putting into consideration the occurrence of non-response by some respondents, the sample size was increased by as suggested by [17]. Therefore, the sample size of this study had become by (118 + 30 = 148). Hence, 148 questionnaires were distributed to the sample,

there of them (8) were excluded because they were not filled completely or correctly, so (140) questionnaires were valid.

**The Methods of collecting data:**

The researcher used the following methods for collecting the data that will help them reach the results and conclusions of the research:

Making advantage of the Arabic and foreign resources, in addition to periodicals, university dissertations and the internet that are relevant to the research topic to cover the theoretical side and support the field study.

The statistical methods used in measuring and analyzing the study variables:

The study used frequencies and percentages to show the data that reflect the personal variables of the respondents.

Simple and multiple correlation coefficient was used to determine the nature of correlation relationships between the types of technical innovation and the dimensions of competitive advantage.

**The effect relationship between the study variables:**

In order to identify the effect relationships between the types of technical innovation and the dimensions of competitive advantage in the targeted commercial banks, table (1) was designed, where it revealed that there is a significant effect for the types of technical innovation, considering them as independent variables in the dimensions of excellence management.

**Table (1) The impact of the types of technical innovation in excellence management on the level of the targeted commercial banks**

Independent variable / Dependent variable	Time Based Competition		R <sup>2</sup>	F	
	B0	B1		Calculated	Tabulated
Technical innovation types	0.62	0.92 *(8.11)	0.752	*96.76	4.08

**Table (2)The impact of each type of technical innovation in excellence management on the level of the targeted commercial banks**

Independent variable / Dependent variable		β0	Time Based Competition			R <sup>2</sup>	F	
			Administrative and organizational requirements	Decision making information requirements	Requirements of excellence assessment feasibility		calculated	Tabulated
		β1	B2	B3				
Technical innovation types	Producer's innovation	0.44	0.50 *(2.45)	0.47 *(2.11)	0.38 *(1.96)	0.773	*49.53	3.24
	Production process innovation	0.36	0.35 *(2.11)	0.41 *(2.41)	0.23 n <sup>s</sup> (1.41)	0.694	*42.72	3.25

It is evident from Table (1) that there is a significant impact for the types of technical innovation on the dimensions of excellence management, where the (f-calculated) value was (\*96.76), which is higher than the tabulated value of (4.06) at the significance level of (0.05). The determination coefficient

(R<sup>2</sup>) was (0.752), which means that (75.2%) of the explained differences (variance) in the dimensions of excellence

management are attributed to the types of technical innovation, while the rest of variance is attributed to random variables that are uncontrollable or not included in the

regression model. Based on ( $\beta$ ) coefficient and (t-test), the (T) calculated value was (\*8.11), which is a significant value and higher than the tabulated value of (1.67) at a significance level of (0.05). Therefore, the second hypothesis stating " there is a significant effect for the types of technical innovation on excellence management in the targeted commercial banks, is confirmed.

To determine the detailed effect relationships between each type of technical innovation and the dimensions of excellence management, table (2) was designed.

Here is an explanation for the impact of each type of technical innovation in the dimensions of excellence management in the targeted commercial banks:

1- The impact of producer's innovation in the dimensions of excellence management:

Table (2) reveals that there is a significant impact for the producer's innovation in the dimensions of excellence management. This impact is supported by f-calculated value of (\*49.53), which is more than the tabulated value of (3.24) at a significance level of (0.05). The value of determination coefficient the ( $R^2$ ) was (0.773), which means that (77.3%) of explained differences (variance) in the dimensions of excellence management are attributed to the producer's innovation, while the rest is attributed to random variables that are uncontrollable or not included in the regression model. Based on ( $\beta$ ) coefficient and (t-test), we found that the highest impact for the producer's innovation in the dimensions of excellence management is focused in the dimension of administrative and organizational requirements with a value of (0.50) when the (T) calculated value was (\*2.45), which is a significant value and higher than the tabulated value of (1.68) at a significance level of (0.05). The dimension of decision-making information requirements was in the second place with a value of (0.47) when the (T) calculated value was (2.11) at a significance level of (0.05). The dimension of requirements of excellence assessment feasibility was in the third place with a value of (0.38) when the (T) calculated value was (\*1.96), which is considered as a significance value. Therefore, the first sub-hypothesis stating " there is a significant effect for the producer's innovation in the dimensions of excellence management in the targeted commercial banks" is confirmed.

2- The impact of the production process innovation in the dimensions of excellence management:

Table (2) further reveals that there is a significant impact for the production process innovation in the dimensions of excellence management. This impact is supported by f-calculated value of (\*42.79), which is more than the tabulated value of (3.25) at a significance level of (0.05). The value of determination coefficient the ( $R^2$ ) was (0.694), which means that (69.4%) of explained differences (variance) in the dimensions of excellence management are attributed to the production process innovation, while the rest is attributed to random variables that are uncontrollable or not included in the regression model. Based on ( $\beta$ ) coefficient and (t-test), we found that the highest impact for the production process innovation in the dimensions of excellence management is

focused in the dimension of administrative and organizational requirements with a value of (0.42) when the (T) calculated value was (\*2.11), which is a significant value and higher than the tabulated value of (1.68) at a significance level of (0.05). The dimension of decision-making information requirements was in the second place with a value of (0.39) when the (T) calculated value was (2.41) at a significance level of (0.05). The dimension of requirements of excellence assessment feasibility was in the third place with a value of (0.33) when the (T) calculated value was (\*1.41), which is considered as a significance value. Therefore, the second sub-hypothesis stating " there is a significant effect for the production process innovation in the dimensions of excellence management in the targeted commercial banks" is confirmed.

## CONCLUSIONS AND SUGGESTIONS:

1. Several scholars paid attention to technical innovation and the dimensions of excellence management. However, their writings didn't reflect the relationship (effect relationships) between the types of technical innovation and the dimensions of excellence management in commercial banks.
2. There is an agreement between several researchers about the types of technical innovation, these are: producer's innovation and production process innovation.
3. Several researchers agreed on the domain of the most common excellence management dimensions (administrative and organizational requirements, decision-making information requirements, requirements of excellence assessment feasibility) through which commercial banks can achieve the competitive advantage.
4. Regression results revealed that:
  - 4.1: there is a significant relationship for all the types of technical innovation in all the dimensions of excellence management in the targeted commercial banks.
  - 4.2 :there is a significant relationship for the producer's innovation in all the dimensions of excellence management in the targeted commercial banks .
  - 4.3: there is a significant relationship for all the innovation of the production process in all the dimensions of excellence management in the targeted commercial banks.
5. The results included in research content contributed to a basic conclusion, represented by accepting the main hypotheses and the sub-hypotheses about the commercial banks under study.

## Recommendations:

- 1- The necessity of urging the management of the targeted commercial banks to pay more attention to the types of technical innovation, since it is considered as one of the basic instruments that contribute to introducing new products, and improving the current products, in addition to designing new processes and improving the existing ones in order to be able to cope with the outcomes of technical development and the conditions of increased competition in markets.
- 2- The management of the targeted commercial banks should pay attention to the concept and types of technical innovation as well as the concept and dimensions of

- excellence management due to their impact on the survival and development of companies in the markets with increased competition.
- 3- Increasing the awareness among managers and employees in the targeted companies about the relationship (effect relationships) between the types of technical innovation and the dimensions of excellence management.
  - 4- Emphasizing the strengths in the commercial banks under study about the types of technical innovation as well as providing all the necessary requirements to achieve technical innovation in the domains of producer and production process.
  - 5- The necessity of increasing the interest of the commercial banks under study about the dimensions of excellence management and achieving it effectively in order to achieve superiority over other competitors in the markets of competition.
  - 6- The commercial banks under study should develop the skills, knowledge and abilities of their employees by holding training courses in the domains of technical innovation and the dimensions of excellence management to keep pace with all the new developments in these domains, in cooperation with universities.

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