

**DESIGNING AN APPROACH TO STRATEGIC IMPROVISATION AND ITS ROLE IN  
TECHNOLOGICAL AWAKENING EVENTS: AN EXPLORATORY STUDY AT THE  
COLLEGE OF SCIENCE - UNIVERSITY OF BASRA**

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**ABSTRACT**

This research sought to determine the level of the reliability of both strategic improvisation and technological vigilance in the College of Science, University of Basra, in addition to determining the extent of the differences inferred from the answers of the sample members. The research community consisted of (112) teaching staff working in the College of Science/University of Basra. The research relied on the descriptive analytical method, and field data was collected through a questionnaire that was built and developed to measure the research objectives and test hypotheses, which consisted of two parts; the first part represented the strategic improvisation, and the second part contained the dimensions of technological vigilance. The (SPSS) program was used in the analysis of statistical data using the package program for social sciences, and the descriptive statistical methods were utilized to describe the research data as well as the statistical inferential method was employed to measure the objectives of the research and test its hypotheses. The research reached a set of results, the most important of which is that the strategic improvisation is a relatively recent concept and is still in the process of thinking and development, and with regard to its dimensions (micro-structures, resource recruitment, and organizational memory), it is characterized by being an inevitable and cumulative state at the same time for organizations wishing to compete strongly in market. The reality of technological awakening at the University of Basra is generally high, all the paragraphs of this measurement have a high relative importance, and the University of Basra continuously monitors the developments that occur in modern technology in addition to its ability to seize the available opportunities. This acquisition came as a result of the university's possession of the material and human capabilities that help it on technological vigilance. While the researcher presented a set of recommendations, the importance of which is centered: On the University of Basra in general and the College of Science in particular, the need to give strategic improvisation great importance because of its effective role in overcoming the problems it faces. And, the need for those in charge of the administration of the Faculty of Science at the university is

to pay attention to training the middle and executive management on strategic improvisation in order to keep pace with the changes that occur in the technological environment.

**Keywords:** Improvisation, Strategic migration, Strategy, Technology vigilance, Technology

## INTRODUCTION

Since the nineties of the last century, Iraqi organizations have been working in a complex, constantly changing, and uncertain environment as a result of the circumstances that Iraq was going through at the time. However, after the transformations that occurred after 2003 and Iraq opened widely to the countries of the world, this led to the introduction of technology in a profound way. This demonstrated experienced business processes, which contributed to successful innovations that helped seize available opportunities. The traditional and routine methods that were used in the past have become inappropriate, and today we need more advanced methods that contribute to work and focus on addressing sudden problems that arise in the environment. Thus, work is necessary to create a structure represented by the name of technological alertness, so that the organizations can keep pace with the rapid changes that occur in the two surrounding environments, and this requires strategic improvisation by the leaders of the organizations. The study was structured into four sections: In the first section, the researchers reviewed the study methodology: It included (the problem of study, the importance of study, the objectives of study, the hypotheses of study, the hypothetical plan of study, the limitations of study, and previous studies). While, in the second section, the researchers touched on: The framework, theoretical, and intellectual, and it included two axes. The first axis dealt with strategic improvisation in terms of concept, importance, and dimensions, whereas the second axis dealt with technological vigilance in terms of its concept, role, and dimensions. In order to continue in the course of the present research, the third section is represented by data and working to analyze it and test its hypotheses. The researchers also presented in the fourth section the most important findings reached and the proposals that constitute solutions to the problems facing the College of Science at the University of Basra.

**The first section: Study methodology and previous studies:**

**First: The problem of study:**

The organizations' increased interest in competitive advantage is what prompted them to pay attention to technology as a means through which they can achieve competition and excellence. The pressures and challenges, which the organizations are exposed to, are represented by globalization and the acceleration of technological and information development. Here, the organizations have become exposed to threats, and from here, the need for strategic improvisation has emerged as one of the mechanisms that obliges organizations. To adopt it to enable them to

continuously move towards new entrepreneurial opportunities that appear in the surrounding environment, and in order for organizations to be able to benefit from technological alertness here, they must employ their strategies towards that, and the problem of study can be crystallized more clearly, by asking the following main question:

Does strategic improvisation have an impact on the technological alertness?

In order to answer the main question, the sub-questions must be answered:

1. What is strategic improvisation?
2. What is technological awakening?
3. What is the relationship between strategic improvisation and technological alertness?

### **Second: The importance of the study:**

The importance of the study lies in the following points:

1. Shedding light on the dimensions of strategic improvisation followed in the College of Science, University of Basra.
2. The results of the study stimulate decision makers at the College of Science, University of Basra, with the importance of applying strategic improvisation practices.
3. Motivating the researchers to expand the study of strategic improvisation and technological vigilance because of their importance in the current time.
4. Contributing to supplying the university library with a study that sheds light on the most important topics of present time, including technology and strategy topics.

### **Third: Objectives of the study:**

This study seeks to achieve a set of objectives, the most important of which are:

1. Providing a theoretical and field framework for the management of the organization under study around the concepts of (strategic improvisation and technological vigilance).
2. Determining the level of adoption of both strategic improvisation and technological vigilance in the College of Science, University of Basra.
3. Constructing a hypothetical diagram that explains the relationship between strategic improvisation and technological vigilance
4. Presenting the proposals that will be reached in the researched organization, which being considered solutions to the problems it suffers from.

### **Fourth: Study hypotheses:**

The study hypotheses are based on the following hypotheses:

The first hypothesis: Is there a statistically significant correlation at the 1% significance level between the dimensions of strategic improvisation and technological alertness?



The second hypothesis: Is there a significant relationship at a 1% significance level between the dimensions of strategic improvisation and technological alertness?

## **The second section: The theoretical and intellectual foundations of the study:**

### **The first axis: Strategic improvisation:**

First: The concept of strategic improvisation:

For decades, strategic planning was considered the only and best way to ensure competitive advantage by organizational leaders in the late sixties. However, organizations that struggle to survive and that need to adapt to today's rapidly changing environment are turning to improvisation. (Antunes, 2018, p. 65) defined improvisation as the process of overcoming the turbulent conditions that the organizations face by using the available information and structure at their disposal. Improvisation is also defined as the deliberate and objective convergence of the design and implementation process.

(Freedman, 2013, p. 98) defined strategy as: It is a general plan to achieve one or more long-term or comprehensive goals under the conditions of uncertainty.

The concept of SI is an emerging field of study in management science that deals with providing solutions on how organizations adapt to the dynamism of today's environment. Besides, strict adherence to strategic planning has been identified as an obstacle to creativity, flexibility, and developing an appropriate plan for the organization. In this light, social intelligence is viewed, as a new model for rapid learning, adaptation, and strategic renewal (2017; p. 29: Cunha).

The rapid rate at which changes occur within the environment cannot be overemphasized, making it difficult for organizations to always have time to plan. These employees are often forced to act before they can fully analyze the all available options. Consequently, leaders improvise when faced with complex and dynamic situations that cannot be managed using available routines. The ability of leaders to improvise not only to solve a problem, but will also give them the ability to take the advantage of opportunities that will move organizations forward, as a result of their new start-up decisions (Darwina: 2019; p. 143).

Strategic improvisation is also defined as: Action taken in real-time situations that includes a great deal of spontaneity and creativity. Social intelligence is activated as the ability of leaders to respond to unexpected circumstances intelligently and effectively to solve a problem or exploit an opportunity. It involves making a decision or creative action outside the formal organizational structure. Social intelligence is viewed as a behavioral strategy used by leaders on behalf of their organizations to respond to uncertainty, time pressure, and lack of resources (Farook: 2019; p. 89).

The definition of strategic improvisation can be summarized as an action taken in real-time situations that includes a great deal of spontaneity and creativity. This study focuses closely on the management personnel who are involved in strategic decision making and have the ability to simultaneously formulate (plan) and implement (execute) actions when pursuing improvisational activities in an

organization. It is assumed that the lessons learned from improvisational activities can help provide better and greater innovative solutions as well as provide faster cycle times (Leybourne, 2105, p. 71).

Second: The importance of strategic improvisation:

Hadida (2014; p. 65) identified the importance of strategic improvisation with the following points:

1. Strategic improvisation is a methodology for creating the best strategies to deal with the changes that occur in the surrounding environment.
2. Strategic improvisation contributes to the speed of obtaining information.
3. Strategic improvisation is the best way to make rational decisions.

Third: Dimensions of strategic improvisation:

1. Microstructures:

The success of the organization in highly dynamic environments depends on the way it adopts the configuration of elements that facilitate the process of rapid response to unexpected circumstances, or what are called open or micro-structural structures, as such structures are built through a clear strategy, the presence of a number of simple rules, and a large extent of individual freedom. The strategic intention here helps provide a way in which the strategic leaders can control the strategic direction of the organization in a way that their control is not far from the center through thick structures, while the simple rules provide a space for discovery and stimulate the improvisational methods necessary to deal with high uncertainty situations in dynamic markets (Najaf, 2017, p. 49). In this context, (Best, 2019, p. 94) identifies five types of simple rules, which are:

- Boundary rules: Identifying the opportunities that fall within the scope of the organization.
- Rules of precedence: The order of those opportunities that have been identified and that fall within the scope of the organizations.
- How-to rules for establishing procedures to implement opportunities.
- Timing rules: Determine the period for implementing opportunities.
- Exit rules: Determine when to stop opportunities.

2. Employing of resources:

Employing of resources is about solving the problem in an innovative way with the available resources, or building structures to solve the problem by relying on the available resources (Moorman, 2019, p. 30). It is a skill that depends on the experience that occurs during the problem, i.e. it occurs when the improvisation takes place, and it can be noted that there is a convergence between the meaning of the terms improvisation and the employment of resources (they occur together or for the same reason, and both require speed in implementation). However, the employment of resources occurs for improvisation to take place, and improvisation does not occur without the employment of resources, and this is what Ibrahim:

2020; p. 99) expressed that the employing of resources increases the value of improvisation and its realism.

### 3. Organizational memory:

Organizational memory is defined as the declarative and procedural memory maintained by the organization and it can be used in making decisions. The strategic improvisation benefits from these memories, as the procedural memory is characterized by the presence of a large number of diverse procedures. These procedures and rules can form the necessary “foundation” for strategic leaders to begin the process of reshaping capabilities and improving effectively. However, re-designing capabilities may not be innovative or new in the light of this memory, because it is based on existing routines and patterns only. On the other hand, Declarative memory refers to the most general knowledge without allocating this memory to an activity or process itself. Because of the relative generalization of this type of memory, capacity-building processes are limited within the framework of documented evidence, and they are slower to occur (2016; p. 79: Mahmood)

### **The second axis: Technological awakening:**

First: The concept of technological awakening:

Science and technology are considered essential tools in the great pursuit of development and progress in a country. According to (Andrade, 2017, p. 243), the current social, economic, and environmental scenarios have forced organizations to innovate, manage change, and generate new activities and products. Thus, according to (Nadege, 2015, p. 51), an organization's ability to innovate is not only a differentiating factor, but also an essential factor for its survival.

Vigilant Technology manufactures the surveillance and security systems, such as digital recording systems, video content analysis, and control centers. Vigilant supports tens of thousands of cameras at airports, government sites, financial institutions, correctional facilities, casinos and city centers.

(Huesemann, 2011, p. 67) believes that the technology is the sum of techniques, skills, methods and processes used in the production of goods or services or in achieving goals, such as scientific research. Technology can be the knowledge of techniques, processes, and the like.

Technological vigilance is an organized, selective and permanent process of collecting information from outside and within the organization about science and technology, selecting, analyzing, disseminating and communicating it, to transform it into knowledge to make decisions with the least risks and be able to accomplish tasks (Dawood, 2018, p. 198)

It can be said that the technological vigilance is the process of observing and analyzing the surrounding conditions, followed by other processes of focused transmission of information that has been selected and processed until it becomes of valuable importance and can be used in making decisions. This definition focused on three points that require time for investigation and comment (Gómez, 2014, p. 85):



- Observing the surrounding environment: To know what is going on in it.
- Analyzing data obtained from the surrounding environment.
- Broadcasting information after processing data obtained from the surrounding environment.

Technological vigilance has a very important role in organizations, whether they are governmental, civil, service, or production. Observation, for example, can be unfocused, which makes it a simple purpose. As for the process of analyzing data, it concerns the surrounding environment, whether social, political, economic, or cultural, etc. As for the process of disseminating information, this information is considered important for the organization in order to make rational decisions.

Second: The role of technological awakening:

Its role: Through technological vigilance, the organizations can answer the following questions:

1. What technology is used by organizations operating in the same sector?
2. What are the modern devices, equipment and modern technology?
3. Which organizations are the most developed in the sector in which our organization operates? (Andrade, 2017, p. 54)

After answering the above questions, the role of technological vigilance can be summarized:

1. Knowledge of technology used by competitors.
2. Providing appropriate technology in the field of communications in order to facilitate the delivery of information to beneficiaries.
3. Developing the manufacturing through modern software control.
4. Monitoring the developments in the field of technology that affect the organization.
5. Seizing the opportunities and trying to invest in them.
6. Identify the patents that can be benefited from (Stearman, 2016, p87).

From everything mentioned above, the role of technological vigilance can be concluded in three areas:

1. Production Engineering: An attempt to develop the various production processes that take place in the organization, whether equipment or means of production.
2. Organizing information: Improving and developing methods for delivering information quickly to those who need it, meaning that the appropriate information arrives at the right time.
3. Products and services: Innovating new products and services according to the technological superiority (Khalid, 2021, p. 99).

Third: Dimensions of technological awakening:

1. Market technological vigilance: According to this vigilance, the organization is concerned with the developments that occur in the market in which it operates, and the global technological developments are monitored. The organizations must track the developments that occur in the sector in which they operate and monitor

new competitors entering and exiting, in addition to reducing the surprises related to the technological development of competitors (Khalid, 2021, p. 681).

2. Information technology vigilance: The organization is concerned with the information technology developments, and ensures the collection of scientific, technical and technological information up to date. The organization must support research and studies related to constantly improving the databases, in addition to the organization's ability to conduct the regular ongoing analysis of patents. Attention must also be paid to the scientific discoveries (Stearman, 2016, p. 54).

3. Competitive technological alertness: The organization is interested in the developments related to the technology used by competitors, which are represented in the tools and mechanisms for predicting the behavior and capabilities of competitors. The organization must collect the variables that occur in competitors' markets to provide the most distinguished technology, and adopt the principle of precedence in providing technology before competitors. The organization seizes the available opportunities in order to confront competitors (Dawood, 2018, p. 192).

### **The third section: The practical framework**

Introduction: This section deals with the practical framework of how to build the study tool to collect the information necessary for research and the scientific procedures used to ensure the validity and reliability of the study tool, and shows the procedures for applying the field study and the appropriate statistical methods to analyze the data obtained.

### **The first axis: The study population:**

The College of Science was established at the University of Basra in 1964 as one of the four ancient colleges included in the then-established University of Basra. It was located at the time of its founding on the eastern bank of the Shatt al-Arab in the Tanuma area in the Shatt al-Arab District. In 1987, when the Iraq-Iran war was at its height, the colleges of the University of Basra moved to the other side of the Shatt al-Arab, where the Faculty of Science was stationed in the northern sector of the university, which is located on the western bank of the Shatt al-Arab in the Karma Ali area, which is about 15 kilometers from the city center of Basra.

At the beginning of its formation, the college provided courses for preliminary studies only according to the annual system in the departments of chemistry, life sciences, physics, and mathematics. After the creation of the computer science branch, it was initially linked to the mathematics department, but this branch quickly developed to become the fifth scientific department in the college. In 1993, the sixth branch was created within the college's branches, which is the Department of Earth Science, followed by the Department of Environmental Science in 2012. Since 1998, the college's doors have been opened for evening studies in the specializations of life sciences and computer sciences, and in 2016 evening, the studies became comprehensive for all departments.



The college has also begun to open up to science faculties in international and regional universities for the purpose of evaluating their curricula and their compatibility with them. The College of Science contributes to knowledge openness through various scientific and technical consultations and studies, according to the requirements of the labor market. The College of Science includes about (112) teachers and employees in its various departments.

#### **The second axis: Design of the study tool:**

The researchers relied on the questionnaire method as a basic tool for collecting data, and as a basis for knowing the opinions and trends of the study sample, as the questionnaire is considered one of the important and basic tools for collecting data in the field study. This is due to the researchers' ability to control the questions and facts to be collected from the study population.

The questionnaire was divided into two parts as follows:

The first section concerned with questions related to the dimensions of strategic improvisation and included three axes:

- 1- Minor structures: It includes (5) paragraphs.
- 2- Employing of resources: It includes (5) paragraphs.
- 3- Organized memory: It includes (5) paragraphs.

The second section concerned with questions related to technological alertness and includes three axes:

- 1- Market technological awareness: It includes (5) paragraphs.
- 2- Information technology vigilance: It includes (5) paragraphs.
- 3- Competitive technological alertness: It includes (5) paragraphs.

The answers in the first and second sections were closed answers according to a five-point Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree).

The researchers calculated the weighted average of the sample's answers to the questions in a form similar to the Likert scale, which is considered one of the best methods for measuring attitudes. The weighted average is used if the variable takes values that differ in terms of their importance, so this importance must be taken into account by giving each statement the appropriate weight for its importance. The researchers gave the appropriate weight to the importance of each statement in the questionnaire, as shown in Table No. 1.

Table (1): The five-point Likert scale items

the weight	Phrase
5	Very agree
4	OK
3	I don't know
2	not agree
1	Not agree at all

Source: Prepared by the researchers based on a five-point Likert scale.

First: statistical processing methods:

Statistical analysis of the study sample's responses was conducted using the following statistical methods:

- 1- Conducting a validity and reliability test for the questionnaire questions used in collecting data, using the Cronbach Alpha coefficient.
- 2- Frequencies and percentages to describe the study individuals and determine the percentages of their answers to the questionnaire statements.
- 3- The arithmetic mean of ranking the study individuals' answers to the questionnaire statements according to the degree of agreement.
- 4- Standard deviation to measure the homogeneity of the study individuals' responses regarding their averages of agreement toward the study variables. "It indicates the efficiency of the arithmetic mean in representing the data center, so that the better the arithmetic mean is the lower the value of the standard deviation".

Second: Validity of the tool:

The validity of the study tool is defined as the extent to which the data collection tool or measurement procedures are able to measure what is being measured. This means that if the data collection tool is able to measure the purpose it was designed to measure, then it is honest. Honesty also means that the form includes all the elements that must be included in the analysis on the one hand, and the clarity of its paragraphs and vocabulary on the other hand, so that it is understandable to everyone who uses it.

The validity of the study tool was confirmed by two types of validity: Apparent validity and constructive validity.

A- Apparent validity: It is one of the types of validity of the tool that is relied upon in the measurement, as it is known as the ability of the scale to measure what should be measured by looking at it and examining the suitability of its items to measure the various dimensions of the variable.

To ensure the apparent validity of the questionnaire and that it measured what it was designed for, the questionnaire was presented in its initial form to a number of experienced and specialized arbitrators from among the faculty members. They graciously offered their comments and suggestions about the contents of the questionnaire and then made the amendments and additions recommended by the arbitrators.

B- Constructive validity: After confirming the apparent validity of the study tool by applying it to an exploratory sample of (65) individuals from the study population.

Third: Stability of the study tool:

Reliability is defined as "consistency in the results of the tool, and it means the ability of the measure to obtain the same results if the same tool is reused again." The stability of the study tool was confirmed by applying it in its final form to (65) items from the study population, and after several days of its distribution, it was retrieved, its data was transcribed, and it was analyzed using the Statistical Software Package for the Social Sciences (SPSS.v22) for the purpose of calculating

its reliability rate using Cronbach's alpha reliability coefficient. Table No. 2 depicts the tool's reliability coefficient.

Table (2): Cronbach's alpha coefficient to measure the reliability of the study axis

Stability coefficient	Number of phrases	the hub	
0.883	5	Microstructures	1
0.843	5	Recruitment of resources	2
0.782	5	Organizational memory	3
0.826	5	Market technological awakening	4
0.845	5	Information technology awakening	
0.804	5	Competitive technological alertness	

Source: Prepared by the researchers using the SPSS program

It is clear from Table (2) that the values of the reliability coefficients are all positive, with their values being close from one axis to another, as their highest limit was for the first axis (0.826), and only the lowest for the first axis (0.883), and all of them are high reliability coefficients, which reassures the availability of a high degree of reliability for the questionnaire in addition. to its validity, while the values of the reliability coefficients for the items on market technological alertness reached (0.826), while the lowest limit of the coefficients for reliability was technological competitive alertness (0.804).

#### **The third axis: Presentation, analysis, and interpretation of the study results**

In this axis, the opinions of the study are diagnosed by extracting the weighted arithmetic mean, coefficients of variation, and relative importance.

#### **The third axis: Analyzing and testing the correlations between the study variables:**

This research aims to test the correlation relationship between the study variables using the simple correlation coefficient and then test the significance of the correlation coefficients using the (t) test, where there is a significant relationship if the calculated (t) value is greater or equal to the tabulated (t) value, but if it is smaller than its tabulated value, then the relationship is not significant at the level of significance (1%). To achieve this goal, it is necessary to verify the extent of the possibility of accepting or rejecting the first main hypothesis and the hypotheses emerging from each of them. See Table 3.



Table (3): Results of correlations between the dimensions of strategic improvisation and the technological vigilance with (t) values

Tabular (t) value	Technological awakening Y	Correlation coefficient and value (t)	Dependent variable The independent subvariable
0.059	0.038	Correlation coefficient	Microstructures X <sub>1</sub>
	0.065	Calculated t value	
	0.177	Correlation coefficient	Recruitment of resources X <sub>2</sub>
	0.312	Calculated t value	
	0.816	Correlation coefficient	Organizational memory X <sub>3</sub>
	2.393	Calculated t value	
There is a positive and significant correlation at the 1% level.			Relationship type

Source: Prepared by the researchers according to the results of the electronic calculator N=(85)

Testing the first main hypothesis: (There is a significant correlation between the dimensions of strategic improvisation and the technological alertness)

Testing the first sub-hypothesis: (There is a significant correlation between microstructures and technological alertness).

Table (3) indicates that there is a positive correlation between the microstructures (X<sub>1</sub>) and the variable (y), as the value of the simple correlation coefficient reached (0.038) and that this relationship is significant at the 1% level, as well as this is reflected in the calculated t value, where It reached 0.065, which is greater than its tabular value of 0.059.

The results also manifested the presence of strong, positive correlations between microstructures and technological alertness, and this is what was indicated by the value of the correlation coefficient, which was 0.038. These relationships were significant at the 1% level, and this is what was indicated by the calculated t value, which was 0.065.

Testing the second sub-hypothesis: (There is a significant correlation between the use of resources and technological alertness).

Table (3) elucidates that there is a positive correlation between the employment of resources (X<sub>2</sub>) and the variable (y), as the value of the simple correlation coefficient reached (0.177) and that this relationship is significant at the 1% level, as well as this is reflected in the calculated t value, where It reached 0.312), which is greater than its tabular value of 0.065. The results also evinced the presence of positive correlations between the use of resources and technological alertness, and this is what was indicated by the value of the correlation coefficient, which was 0.177. These relationships were significant at the 1% level, and this is what was indicated by the calculated t value, which amounted to 0.312.

Testing the third sub-hypothesis: (There is a significant correlation between organizational memory and technological alertness).

Table (3) portrays that there is a positive correlation between the organizational memory (X3) and the variable (y), as the value of the simple correlation coefficient reached (0.816) and that this relationship is significant at the 1% level, as well as this is reflected in the calculated t value, where It reached 2.393, which is greater than its tabular value of 0.065. The results also reflected the presence of positive and strong correlations between **the organizational memory and the technological alertness**, and this is what was indicated by the value of the correlation coefficient, which was 0.816. These relationships were significant at the 1% level, and this is what was indicated by the calculated t value, which amounted to 2.393. Based on the above, the first main hypothesis is accepted, which states there is a significant correlation between organizational memory and technological alertness.

**The fourth axis: Analyzing and testing the trends of influence among the study variables**

Introduction: This axis aims to test the relationship of the effect of the independent variable (dimensions of strategic improvisation) individually and collectively on the dependent variable (technological vigilance), based on simple regression analysis and the (F) test to determine the importance of the simple regression equation, since there is a significant effect if the calculated value (F) is greater than the tabular value (F) and there is no such effect if the calculated value (F) is smaller than the tabular value (F) at a significant level (1%). The coefficient of determination (R<sup>2</sup>) has also been used to explain the effect of variables. The independent test for the changes that occur on the dependent variable, and the (T) test have been conducted to determine the importance of influence relationships at the significant level (1%). See Table 4.

Table (4): Estimating the parameters of a simple linear regression model to measure the effect of the dimensions of strategic improvisation and technological vigilance

Technological awakening Y							Dependent variable
t value		f value		Interpretation coefficient R2	constant		
Tabulation (%1)	Calculated	Tabulation(%1)	Calculated		B	A	Independent variable Dimensions of strategic improvisation
0.065	0.065	0.003	0.004		0.001	0.122	
	0.312		0.097	0.031	0.499	1.602	Employing resources x2
	2.393		5.727	0.656	4.042	1.689	Organizational memory x3

Source: Prepared by the researchers according to the results of the electronic calculator (N=85)

Based on the above, the research objective will be achieved to test the hypothesis, as follows:

The second main hypothesis: (There is a significant influence relationship between the dimensions of strategic improvisation and the technological alertness).

First: Testing the first sub-hypothesis: (There is a significant relationship of influence between micro-structures and technological alertness). The statistical results also reflected a relationship of the positive influence of microstructures (X) on the technological alertness (Y), where the “calculated (F) value for the simple linear regression model” for small structures was (0.004), which is greater than the tabular value (F) of 0.003 at the significance level (1%). This indicates the significance of the estimated model, and the value of the regression coefficient B is 2.365 for each of the smaller structures at the mentioned level of significance, i.e. changing its magnitude by one unit of the dimension of measurement. This affects the technological alertness, and this reveals that the importance of simple linear regression model has been proven.

The results demonstrated the value of the explanation coefficient ( $R^2$ ), which was (0.332), which means that the smallest structures (X) explain a proportion of the changes that occur in technological alertness. The remaining percentage is due to the contribution of other variables not included in the current study plan. The calculated T value reached 1.220, which is greater than its tabulated value of 0.065 at 1% significance level. From the above, it becomes clear that the first hypothesis is correct.

Second: Testing the second sub-hypothesis: (There is a significant influence relationship between the use of resources and technological alertness).

Table (4) exhibits that there is a positive influence relationship between resource employment ( $X_2$ ) and resource employment (Y), as the “F value calculated for the simple linear regression model” was a resource employment, where the value was (0.097), which is greater than the tabular value of (F). It reached 0.003) at the level of morality (1%), which indicates the significance of the estimated model, and the value of the regression coefficient (B) was 0.499) for each of the employment of resources at the level of morale. As mentioned, i.e. changing the amount of one unit of technological alertness, this shows that the morale of the model is proven by simple linear regression. The results also reflected the value of the explanation coefficient ( $R^2$ ), which was 0.031, and this means that the employment of resources ( $X_2$ ) explains a proportion of the changes that occur in technological alertness. The “remaining percentage” is due to the contribution of other variables not included in the current study plan. The calculated T value reached 0.312, which is greater than its tabular value of 0.065 at a significance level of 0.01. This indicates the stability of the regression coefficient (B) for each of resource employment at the mentioned level of importance, and thus the importance of the simple linear regression model was confirmed. From the above, it is clear that the hypothesis (X2) is proven.

Third: Testing the third sub-hypothesis: - (There is a significant relationship of influence between organizational memory and technological alertness).



Table (5) indicates that there is a relationship of the positive influence of organizational memory (X) on the technological alertness (Y), as the “F value calculated for the simple linear regression model” for all organizational memory reached 5.727, which is greater than its tabulated value of 0.003. At a significance level (1%), which reflects the significance of the estimated model, the value of the regression coefficient ( $B = 4.042$ ) for each of the organizational memory indicators is at the mentioned significance level; that is, changing one unit of the knowledge dimension affects the technological alertness, and this depicts the great importance for the simple linear regression model. The results also reflected the value of the explanation coefficient ( $R^2$ ), which was 0.656, and this means that the organizational memory dimension ( $X_3$ ) explains a proportion of the changes that occur in the technological alertness. The “remaining percentage” is due to the contribution of other variables not included in the current study plan. The calculated value of (T) was 2.393, which is greater than its tabulated value of 0.065 at a significance level of 0.01, and this indicates the stability of the regression coefficient (B) for both technological vigilances at the aforementioned level of significance and importance of the simple linear regression model. From the above, it is clear that the hypothesis is correct.

#### Section Four: Conclusions and Recommendations:

##### The first axis: Conclusions:

1. There is an impact relationship between strategic improvisation and strategic alertness at a significance level of (1%)
2. There is a correlation between strategic improvisation and strategic alertness at a significance level of (1%)
3. Strategic improvisation is a relatively recent concept and is still in the process of thinking and development with regard to the dimensions (micro-structures, resource employment, and organizational memory) and is characterized by being an inevitable and cumulative condition at the same time for organizations wishing to compete strongly in the market.
4. The reality of technological alertness at the University of Basra is high in general, the all items of this measurement have a high relative importance, and the University of Basra continuously monitors the developments that occur in modern technology, in addition to its ability to seize the available opportunities. This came as a result of the University of Basra’s possession of the material and human capabilities, which helps it to be technologically alert.

##### The second axis: Recommendations:

After discussing and analyzing the data and testing the hypotheses, the researchers aim to present a set of recommendations to the study community:

1. The University of Basra in general and the College of Science in particular must give a great importance to strategic improvisation because of its effective role in overcoming the problems it faces.

2. The need for those in charge of managing the College of Science at the University of Basra to pay attention to training middle and lower management on strategic improvisation in order to keep pace with the changes that occur in the technological environment.
3. The necessity of granting the department heads sufficient powers to practice strategic improvisation when needed.
4. The need to focus on collecting data and information, as it plays a major role in the success of strategic improvisation.
5. It is necessary to address the weaknesses experienced by the College of Science at the University of Basra in order to raise the required technological level.

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