

Organizational ingenuity among the employees of the Ministry of Education
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This paper aims to identify: "genuity among the employees of the Ministry of Education

1- Organizational ingenuity of the employees at the Ministry of Education according to the gender and academic qualification variables.

In order to achieve the research objectives, two researchers constructed a scale called "organizational ingenuity" consisting of 15 items. The standard characteristics of the scale were verified before it was applied to a sample of 400 employees at the Ministry of Education, comprising 244 males and 156 females. The researchers used statistical methods and the computer program SPSS to process the data collected from the respondents' answers to the scale items. The results of the analysis showed the following:

First Objective: The Ministry of Education's staff exhibits a notable degree of organizational creativity.

Second Objective: The study found no discernible differences in Organizational ingenuity based on gender (male-female). However, the findings indicated that there exist variations in the correlation between psychological engineering and academic qualification across two distinct categories: postgraduate-degree holders and high-school graduates, with the former exhibiting a more favorable outcome. Similarly, the second category, comprising Bachelor degree holders and high-school graduates, also showed a preference for bachelor's degree holders.

Keywords (ingenuity - educational institution - organizational agility).

البراعة التنظيمية لدى موظفي وزارة التربية

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الملخص:

يهدف البحث الحالي التعرف على:

أولاً: البراعة التنظيمية عند موظفي وزارة التربية وتبعاً لمتغيري الجنس والتحصيل الدراسي.

ولتحقيق أهداف البحث تم بناء مقياس (البراعة التنظيمية)، والذي تضمن (١٥) فقرة، وبعد التحقق من الخصائص القياسية للمقياس، طبق على عينة من موظفي وزارة التربية في بغداد، والبالغ عددها (٤٠٠) موظف وموظفة وبواقع (٢٤٤) موظفاً و(١٥٦) موظفة، وبعد المعالجة الإحصائية للبيانات المجتمع من إجابات المستجيبين لفقرات المقياس احصائياً من خلال استخدام الوسائل الإحصائية التي استخدمت في البحث الحالي والتي حسبت بواسطة برنامج الحاسوب الآلي (SPSS) أظهرت النتائج ما يأتي:

الهدف الأول: تمتع موظفي وزارة التربية بمستوى عالي من البراعة التنظيمية.

الهدف الثاني: لا توجد فروق في البراعة التنظيمية تبعاً للجنس (ذكور - اناث) في حين أظهرت النتائج وجود فروق في البراعة التنظيمية تبعاً للتحصيل الدراسي بين فئتين (حملة الدراسات العليا وخريجي الإعدادية) ولصالح حملة الدراسات العليا، والثانية بين حاملي (شهادة البكالوريوس وخريجي الإعدادية) ولصالح البكالوريوس.

الكلمات المفتاحية (البراعة - المؤسسة التربوية - الرشاقة التنظيمية).

First: Statement of the research problem:

The possession of performance skills, whether behavioral or emotional, by employees is a crucial prerequisite for the success of any government institution. The performance of employees is influenced by various factors,

such as personal, organizational, administrative, or work environment conditions. Deficiencies in certain aspects of job performance can also impact employee performance. The deficient competencies and aptitudes of employees can result in adverse impacts on the successful execution of assigned tasks, necessitating ongoing intervention and evaluation by the organization (Mcawn & Hassan, 2022, p. 3).

Achieving goals and success in educational institutions is heavily dependent on administrative and technical skills, the effectiveness of the methods used in their activities, and the skill of the workforce within the institution. Most studies have shown that some employees are unable to follow up on the application of modern intellectual and practical techniques, as well as a lack of performance, skills, and experience in many incompatible problems and conflicts in the field of educational functionality (Al-Khuzai, 2001: 9).

Based on the foregoing, the problem of the current research lies in answering the following questions:

Do educational institutions incorporate the principles of organizational prowess and its dimensions in their employee training programs to enhance individuals' efficiency and control over their thoughts, emotions, and behaviors?

What is the extent to which organizational ingenuity, as measured by its various dimensions, is present among employees of the Ministry of Education? This enhances their ability to accomplish objectives.

Second: the importance of research

The group of employees, particularly those working for the Ministry of Education, hold a significant role in society due to their importance in both social and economic aspects. According to Al-Tikriti (2006: 14), this group is highly capable of work and activity, and possesses a well-developed

psychological and cultural structure that enables it to interact, integrate, adapt, and contribute to its own self-building with maximum energy.

Organizational ingenuity plays a crucial role in educational institutions as it involves actively seeking and engaging in educational skills, activities, and levels. The educational administration's ability to achieve employee satisfaction within the institution is influenced by its leadership style and its efforts to continuously improve educational outcomes while efficiently and effectively achieving its goals. Organizational ingenuity is essential because it enables contemporary institutions to effectively navigate the constantly changing external environment. This allows institutions to remain dynamic and adaptable in order to meet environmental challenges and explore new opportunities in the future (Hussein and Al-Ani, 2018: 297).

Based on the foregoing, the importance of the research is represented in the following:

- 1- Enriching the Arab library in general and the Iraqi library in particular with a recent study. This study could be a valuable contribution to the field of knowledge and add to the scientific library.
- 2- Provide researchers with measures of psychometric characteristics in relation to organizational ingenuity.
- 3- The variable of organizational ingenuity holds significant importance in benefiting both employees in general and specifically those working in the Ministry of Education. The implementation of its techniques enables individuals to enhance their self-control and management skills, while also allowing them to modify any undesirable behaviors. Additionally, it facilitates the establishment of relationships characterized by psychological dialogue and behavioral flexibility with colleagues and partners within the work environment.

Research objectives:

The current research aims to identify:

- 1- Organizational ingenuity among the employees of the Ministry of Education, according to the variables of gender and academic achievement.

Research limits:

The Office of the Ministry of Education in Baghdad Governorate has initiated research for the academic year (2022-2023), which is being conducted by employees of both genders.

Defining terms: Organizational ingenuity

- ❖ (Raisch & Brikinshaw, 2008): The process of balancing between (exploration, investment) and their use at the same time. The institution is completed through the development of mechanisms with flexible organizational structures to achieve harmonization and the ability to adapt (Raisch & Brikinshaw, 2008:375).
- ❖ (Tempelaar, 2010): The ability of team members to find creative solutions to problems in the context of a shared vision and mutual trust, as well as the integration of their activities with limited resources and creative problem solving. (Tempelaar, 2010: 75).

Theoretical definition of organizational ingenuity:

The researcher formulated a theoretical definition of organizational ingenuity after conducting a thorough review of relevant literature and previous studies on the topic. The term refers to an individual's capacity to perform both exploration and exploitation activities simultaneously, while maintaining a balance between them. This involves investing in a manner that enhances and aligns their activities with a flexible organizational structure, capable of achieving success and adapting to changing environmental requirements.

The procedural definition of organizational ingenuity: It is the total score obtained by the respondents through their response to the paragraphs of the organizational ingenuity scale that was built in the current research.

Theoretical framework:

First: Organizational ingenuity:

The word ingenuity, also known as ambidexterity, has its roots in Latin and dates back to 1976. It refers to the ability of an individual to use both hands simultaneously. Duncan was the first to introduce this term after reviewing previous studies conducted by researchers like Burns and Stalker (1961) and Thompson (1967). These studies highlighted the importance of organizations and institutions adopting various organizational structures to effectively implement current innovations and assess new ones (Rashid and Jaber 2014: 13).

The importance of organizational ingenuity is evident in **three** aspects of its concepts:

The first orientation: Organizational ingenuity shows the ability of individuals working in the organization to perform different tasks simultaneously.

The second orientation: Organizational ingenuity is a valuable tool that organizations and government institutions can use to effectively manage contradictions and tensions in their current and future endeavors.

The third orientation: Organizational ingenuity controls both alignment and adaptation, which is one of its characteristics.

Types of organizational ingenuity:

The first type: (sequential ingenuity): This ingenuity involves a time management system that allows organizations to switch between extended periods of maximizing opportunities and brief periods of exploring new opportunities. Organizations can foster ingenuity by restructuring their internal frameworks to better align with evolving environmental conditions or strategic objectives. (Al-Sarhani, 2019: 55).

The second type: Structural ingenuity: This process involves achieving a balance between exploration and exploitation by actively utilizing both approaches within the main and independent sub-units simultaneously. Structural ingenuity is achieved within an organization or institution by developing structural mechanisms that align with the competitive demands they face. This enables them to achieve compatibility and adaptability. (Raisch & Brikinshaw, 2008: 375).

The third type: Contextual ingenuity: Contextual ingenuity refers to the behavioral capacity of an organization to achieve alignment, adaptation, and coordination simultaneously throughout the entire organization. And it is achieved through a set of systems that encourage individuals to make their judgments about how to divide their time better for exploration, exploitation, and the ability to adapt in general to environmental variables. Contextual ingenuity refers to the capacity to effectively manage the competing demands of exploitation and exploration activities, as well as the ability of individuals to allocate their time and resources between these two types of activities. (Al-Ziyadi, 2017: 20).

The dimensions of organizational ingenuity:

March observed that organizations face a fundamental challenge of adapting to changes in their environment. They must balance the need to utilize their existing capabilities while also conducting exploration and research to avoid becoming stagnant. There are varying opinions on the dimensions of

organizational ingenuity and how to prepare for it. These opinions are influenced by the philosophy of the sponsors and the goals they aim to achieve. These dimensions are then incorporated into the concept of organizational ingenuity. The researcher conducted a survey to identify the dimensions, and three specific ones were selected. These dimensions are widely used and referenced by researchers in their studies. (Owais, 2015), (Al-Bashqali, 2015), (Luu, 2016), (Al-Banna', 2016). (Ibrahim, 2017), (Vario, 2017), (Hussein, 2018), (Al-Sultani, et al., 2019), (Acevedo & Molina, 2019), (Shawani, 2020), (Al-Obaidi, 2020), (Heidenreich & Schnellbacher, 2020), (Al-Jubouri, 2021) and through the studies presented on organizational prowess, we can identify its dimensions, which include:

The first dimension: Exploration: This refers to a behavior in education that involves consistently striving for improvement, making thoughtful choices, creating quality work, and ensuring that others are satisfied with the results of one's efforts within the context of their own work. One can maximize their investment opportunities by utilizing the resources available in their environment to the fullest extent. Exploration encompasses various activities such as research, experimentation, discovery, creativity, independence, and difference. These activities are all related to the acquisition of knowledge through processes that involve contrast, coordinated differences, and planned experiments. (Wang & Ahmed, 2002:41).

It can be concluded that improving an organization's ability to identify and pursue new opportunities through organizational ingenuity is a key aspect of successful strategic management. This approach prioritizes activities that enhance flexibility and adaptability in response to changes in the environment. Organizations that can effectively explore and pursue new opportunities tend to achieve better performance in the short term and enhance their chances of survival in the long run.

The second dimension: Investing in opportunities: This behavior encompasses refinement, selection, production, efficiency, implementation, and achievement. It involves investing in opportunities and addressing the challenges that individuals face in their work. There are several investment opportunities available to both institutions and individuals associated with them. These opportunities include:

Continuous training for the organization's personnel and employees to develop their skills.

- ❖ Presenting promotional programs that influence customers' decisions regarding products.
- ❖ The ability to diversify products and services.
- ❖ New and modern technologies that will increase quality or raise productivity.

The third dimension: a flexible organizational structure (reconfiguration): A non-hierarchical system of work procedures within an individual's department can provide greater flexibility in completing daily job tasks and enable quick responses to shifts and changes in the work environment. It is important to absorb various modifications without making fundamental changes that could cause the collapse of the system. The organizational structure is crucial for achieving the institution's objectives with maximum efficiency. It serves as a framework that outlines the relationships between different departments and functional units, facilitating coordination and cooperation towards the common goal. The relationships within the organization can be observed through the interactions between its personnel and officials, as well as the communication methods they use to interact with each other. (Al-Maadidi, 2011: 19).

Research methodology and procedures:

First research methodology:

The study relied on the descriptive approach, which is defined as the method of studying events, phenomena, and characteristics that exist and are available for observation and measurement without any interference from the researcher. The researcher can interact with them, accurately describe them, and analyze them. (Dawood and Abdel-Rahman, 1990: 163).

Second research procedures:

1- Research community:

The current research community is comprised of the employees of the Ministry of Education's Office for the academic year 2022-2023. There are 3001 male and female employees in their organization. Table (1) displays the number of males and females working in the Ministry of Education office, with 1825 males and 1176 females.

Table 1 for the number of employees of the Ministry of Education for the academic year (2022-2023)

Gender	
Male	Female
1825	1176
3001	

2- Research sample:

The sample is a subset of the community being studied, carefully selected by the researcher according to specific criteria to conduct their study. (Al-Azzawi, 2008: 12).

To meet the research objectives, a random sample of 400 male and female employees from the Ministry of Education was selected based on the variables of gender and academic achievement. This sample represents 13.3% of the research community, with 244 males (61%) and 156 females (39%), as indicated in Table 2.

Table (2) the research sample according to the variable of gender and academic achievement

Gender		Academic Achievement		
Male	Female	High School	undergraduate	Postgraduate
244	156	131	204	65
400		400		

3- Research tool:

The nature and objectives of the research play a crucial role in determining the appropriate form of the scale that will measure the characteristic. Each property being studied requires a specific tool to be effectively measured. Measurement is a crucial process that aids in statistical analysis of data and organizing information. (Jaber, 1983: 38). Questionnaires or scales are essential tools for researchers in the fields of education and psychology. They provide valuable information about the responses of the research sample on the characteristics being studied. In fact, they are considered the fundamental means of obtaining such information. (Van Dalen, 1985: 372).

Measure of organizational ingenuity:

Due to the absence of a tool to assess organizational ingenuity in the Iraqi context, specifically for the Ministry of Education employees who are the focus of this research, the researchers developed a new measure to evaluate organizational ingenuity. The following steps were taken to construct this measure:

1- Determining the concept of organizational ingenuity: (The capacity and ability of an individual to simultaneously engage in exploration and exploitation endeavors, while effectively managing the allocation of resources towards these pursuits in a manner that enhances their coherence and alignment with a flexible organizational framework that can facilitate

successful outcomes and adapt to environmental shifts). The measure of organizational prowess may consist of three areas:

- ❖ **Exploration:** Continuous improvement, selection, production, and satisfying others within the scope of one's own work are the defining characteristics of an educational behavior. An investor can maximize their benefits by taking advantage of the opportunities and resources available in their environment.
- ❖ **Investing in opportunities:** refinement, selection, production, efficiency, implementation, and achievement, all of which are related to investing in opportunities and connecting with today's challenges confronting the individual in the scope of his work.
- ❖ **Flexible organizational structure:** A non-hierarchical system of work procedures within an individual's department can provide greater flexibility in completing daily job tasks and enable quick responses to shifts and changes in the work environment.

2 - Formulating the paragraphs in their initial form: The scale's paragraphs were created using a self-report method. Each paragraph or phrase is designed to have a clear meaning and is followed by a range of graduated alternatives. The respondent is then asked to select the alternative that best applies to them. Fifteen paragraphs were created and divided into three categories. Each paragraph included five progressive options, ranging from very high to weak, as illustrated in Table 3.

Table 3: The number of items on the organizational ingenuity scale according to each area

Areas	Number of items
The first area: exploration	5
The second area: investing in opportunities	5
The third area: a flexible organizational structure	5

Total	15
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Preparation of organizational ingenuity scale instructions:

The instructions for the organizational ingenuity scale have been prepared to provide clarity on how to answer the paragraphs. An example has been included to illustrate the process, and respondents are encouraged to answer accurately and not leave any paragraph unanswered. The instructions provided some basic details about the participant, such as their gender and academic performance.

Logical analysis of the paragraphs of the organizational ingenuity scale:

The aim of this presentation is to provide a comprehensive measure of organizational ingenuity to a panel of twelve arbitrators who possess specialized knowledge in the fields of educational and psychological sciences. The measure will be accompanied by detailed instructions, definitions, and paragraphs that assess each of its fields. The participants were instructed to conduct a logical examination of the scale with respect to its instructions and paragraphs, and evaluate their validity in relation to the intended measurement. Following the arbitrators' viewpoints, it was mutually decided to approve all sections subsequent to their alteration on the designated specimen. Following consultation with the supervising professor, the researcher incorporated feedback from suggested arbitrators to revise select paragraphs and enhance their applicability to the research sample.

Exploratory application experience (clarity of instructions and paragraphs):

A random sample of 20 employees from the Ministry of Education was selected to apply the organizational ingenuity scale. The purpose of this was to verify the clarity of the scale's instructions and

paragraphs, identify any difficulties encountered during the application process, and calculate the time it takes to answer the scale.

Correction of organizational ingenuity scale:

Correcting the scale by assigning the individual a degree or rating and interpreting it is an important step, though it is only the first step toward achieving a practical decision or a scientific interpretation of the individual or group of individuals' subject to the scale (Al-Ansari, 2000: 245). A paragraph, with (5) alternatives in front of each paragraph, and they apply to me to a degree (very large, large, medium, few, weak), and the grades are taken (5, 4, 3, 2, 1), respectively, when correcting, and thus the highest degree can be obtained. With a theoretical mean of 45, the respondent should receive 75 degrees and the lowest score of 15.

Statistical analysis of the paragraphs of the organizational ingenuity scale.

According to Thorndike and Hegin's (1989) perspective, the statistical analysis of the vertebrae is a method that aims to identify the paragraph's capacity to differentiate between effective and ineffective responses (Thorndike and Hegen, 1989: 79).

The process of selecting paragraphs with suitable psychometric characteristics has resulted in the development of a tool that exhibits good standard characteristics. To ensure the quality of the tool, it was necessary to verify the psychometric characteristics of the paragraphs and either select appropriate ones or modify and exclude unsuitable ones. (Ghiselli & et al, 1981: 412).

A statistical analysis was conducted on the items of the organizational proficiency scale. The scale, which consists of 15 items, was administered to a sample of 400 male and female employees. The total scores were calculated for each member of the sample and for each paragraph of the scale to represent the degree of the employee, after the scale had been applied. The

researcher conducted a statistical analysis of the paragraphs according to the following:

1. Statistical indicators of the measure of organizational ingenuity:

The basic research sample was evaluated using the organizational proficiency scale and then adjusted. Standard statistical indicators were then calculated to determine the similarity of the distribution shape, standard deviations, variance, and arithmetic averages. Additionally, the coefficients of skewness and kurtosis were calculated to identify the proximity of the sample degrees from the scale to the distribution. These calculations provide sufficient information about the sample. Table (4) shows this:

Table (4) Statistical indicators of the measure of organizational ingenuity

Statistical indicators	organizational ingenuity
Mean	63.90
Median	65
Mode	68
Std. Deviation	5.82
Variance	33.89
Sleekness	0.598-
Kurtosis	0.252

Minimum	43
Maximum	75
Range	32

Upon examining the statistical indicators of the organizational proficiency scale, it is evident that these indicators align with the majority of scientific tests. Specifically, the scores and frequency of the organizational proficiency scale are relatively similar to those of the moderation distribution.

2. Calculating the psychometric characteristics of the vertebrae:

The researchers calculated the psychometric characteristics of the paragraphs represented by discriminatory power and internal consistency (paragraph validity), as follows:

a) Discrimination Power of Items:

The discriminatory power of a paragraph refers to how effectively a scale item can differentiate between the various levels of a trait being measured among respondents. (Allam, 2001: 211).

The sample of 400 male and female employees was subjected to the scale, and the answer forms were corrected. The discriminatory power of the scale items was then extracted by arranging the scores of the sample members from the highest total score to the lowest total score. The two extreme groups were identified based on the total score, with a rate of 27% from each group. There are (108) male and female employees in both the upper and lower groups.

The researcher utilized the t-test for two independent samples to determine the significance of the variations between the mean scores of two groups for each paragraph of the scale. The calculated t-value was used to measure the discriminatory power of the paragraph within the context of the scale paragraphs. (Edwards, 1957: 153-154),

It has been determined that all of the paragraphs are statistically significant, as the calculated t-value exceeds the tabular t-value of 1.96 with 214 degrees of freedom and a significance level of 0.05. Table 5 displays the results obtained from the calculation of the discriminatory power of the paragraphs.

Table (5) Discrimination coefficients for items of organizational ingenuity scale

No NO	The higher group		The lower group		The calculated t-value	significance level ٠,٠٥
	average	standard deviation	average	standard deviation		
1	4.852	0.470	4.269	0.744	6.988	Satisfied
2	4.648	0.535	3.870	0.810	8.446	Satisfied
3	4.694	0.502	3.704	0.788	11.176	Satisfied
4	4.620	0.591	3.556	0.900	10.422	Satisfied
5	4.704	0.479	3.556	0.879	12.092	Satisfied
6	4.750	0.456	3.796	0.873	10.208	Satisfied
7	4.843	0.366	3.602	0.966	12.659	Satisfied
8	4.787	0.494	4.028	0.690	7.906	Satisfied
9	4.713	0.512	3.750	0.844	8.469	Satisfied
10	4.667	0.493	3.713	0.798	10.720	Satisfied
11	4.685	0.505	3.611	0.818	11.772	Satisfied
12	4.667	0.474	3.509	0.837	12.684	Satisfied
13	4.787	0.411	4.130	0.786	7.808	Satisfied
14	4.824	0.450	4.037	0.760	9.391	Satisfied
15	4.241	0.830	3.324	1.126	6.907	Satisfied

b) Internal consistency (paragraph validity): Paragraph validity was calculated as follows:

- The relationship of the paragraph score with the total score:

The researcher used the "Person correlation" coefficient to determine the accuracy of the paragraph. This was because the paragraph scores were gradual and continuous, as stated by Dbois in 1962 (p. 144). In the current research, the validity of the paragraphs was tested using a sample of 400 male and female employees. The results showed that all correlation coefficients were statistically significant at the 0.05 level of significance. The correlation coefficients for the total degree were also found to be greater than the tabular value of 0.098, with a degree of freedom of 398 and a significance level of 0.05. Table 6 displays the information.

Table (6): Correlation coefficients between the score of each item and the total score of the scale

Pearson correlation coefficient	Paragraph number	Pearson correlation coefficient	Paragraph number	Pearson correlation coefficient	Paragraph number
0.544	11	0.557	6	0.405	1
0.590	12	0.569	7	0.427	2
0.376	13	0.496	8	0.592	3
0.514	14	0.484	9	0.555	4
0.277	15	0.514	10	0.568	5

- **The relationship of the degree of the paragraph with the degree of the field to which it belongs:**

The researcher utilized a method to determine the correlation coefficient between the degree of each paragraph and the degree of its corresponding field. This was done to validate the paragraphs of the organizational proficiency measure in each field. The total degree of the field was used as an internal criterion. Upon utilizing the Pearson correlation coefficient, it was evident that all correlation coefficients were statistically significant in comparison to the critical value of 0.098, with a degree of freedom of 398 and at a significance level of 0.05. This indicator reveals that each paragraph in the scale represents a distinct field, in Table 7.

Table (7): Correlation coefficients between each paragraph and the areas to which it belongs for the measure of organizational ingenuity

The third area: a flexible organizational structure		The second area: investing in opportunities		The first area: The exploration	
correlation coefficient	Paragraph number	correlation coefficient	Paragraph number	correlation coefficient	Paragraph number
0.560	11	0.632	6	609, 0	1

0.635	12	0.735	7	0.654	2
0.610	13	0.586	8	0.712	3
0.655	14	0.676	9	0.717	4
0.583	15	0.605	10	0.683	5

- **The internal correlation matrix of domain independence:**

To determine the level of independence among the primary domains in measuring organizational proficiency, we calculated internal correlation coefficients between the overall score of the organizational proficiency scale and the total scores of the subdomains. The correlations of the components with the overall score of the scale are fundamental indicators of homogeneity. They aid in determining the scope of behavior that needs to be assessed. (Anastasia, 1976, 155).

In order to obtain these results, a statistical analysis was conducted on a sample of 400 male and female employees. The findings revealed that all correlation coefficients between each domain, as well as the total score, were statistically significant. The results suggest that the domains solely measure organizational ingenuity. All of the calculated correlation coefficients were higher than the critical value of 0.098 at a level of significance of 0.05, with a degree of freedom of 398. This indicates that the scale is valid, as demonstrated in Table 8.

Table (8) Matrix of internal correlations for the organizational ingenuity scale

The third area: a flexible organizational structure	The second area: investing in opportunities	The first area: The exploration	Total degree	Areas
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0.734	0.807	0.758	1	Total degree
0.283	0.444	1		The first area: The exploration
0.415	1			The second area: investing in opportunities
1				The third area: a flexible organizational structure

Standard characteristics of the scale:

For the scale to be considered usable, the scale must have validity and reliability. Validity and consistency are among the most important aspects of the measurement (Rust, 1989: 69).

Therefore, the researcher verified these characteristics as follows:

1- Validity of the Scale:

When constructing psychological scales, it is crucial to consider the trait of honesty. A reliable scale is one that has been well-developed and is capable of achieving its intended purpose and specific goals. (Allam, 281: 2000).

A) The current scale has demonstrated validity through two indicators: virtual validity and constructive validity. Here is an explanation of how to verify each indicator:

B) Virtual validity:

The validity of the measure of organizational prowess was confirmed by experts in educational and psychological sciences who agreed on the validity of the items used to measure organizational ingenuity.

C) Construct Validity

The term "sincerity of the construction" refers to the psychological traits that are indicated by the results of a test or measurement. These traits cannot be directly observed, but are inferred based on the behaviors associated with them. This definition was provided by Melhem in 2002 (p. 269).

The researcher verified the validity of the construction through four indicators:

- Extract the discriminatory power of the paragraphs.
- The relationship of the paragraph score with the total score.
- The relationship of the paragraph score to the field to which it belongs.
- Internal correlation matrix and table.

2- Scales Reliability:

Stability refers to the ability of a measurement tool to provide consistent and reliable estimates when the measurement process is repeated. It is important to note that both random and systematic errors can affect the interpretation of scores. Although regular measurement errors do not cause heterogeneity in measurement, they still significantly contribute to the inaccuracy of the test or scale. As a result, the practical applications of the test or scale are reduced. (Crocker and Gina, 2009: 148).

Random errors can occur during testing due to various factors. Some of these factors are related to the test itself, such as unclear instructions or ambiguous paragraphs. Other factors may be related to environmental conditions or the characteristics of the individuals being tested (Allam, 2000: 131).

Therefore, stability was calculated using the following retest and Cronbach's alpha methods:

A) Test-Retest

To use this method, the test must be administered to the same group of individuals at two different points in time. After an appropriate period has passed, the scores obtained by each individual on both occasions are used to calculate the correlation coefficient. The stability coefficient is the correlation coefficient obtained through this method. (Al-Ajili. 2001:81).

To assess stability, a sample of 30 male and female employees was selected and the scale was reapplied after a 14-day interval from the first application. The Pearson correlation coefficient was then calculated between the scores

obtained from the first and second application. The results showed a high correlation coefficient of 0.90 for the scale. The value mentioned here serves as a reliable indicator of the consistency of an individual's responses on the scale over a period of time. According to Al-Issawy, if the correlation coefficient between the first and second applications is 0.70 or higher, it is a positive sign of the stability of tests in the fields of education and psychology. (Al-Issawy, 1985: 58).

B) Cronbach's Alpha

The method used in this study relies on the consistency of responses from individuals across test items to estimate the reliability coefficient. The stability was determined from the scores of 400 basic sample questionnaires using the Crow-Nabach equation, resulting in an alpha coefficient of 0.88, which indicates a good stability coefficient (Allam, 2014: 101).

▪ Description of the scale in its final form:

The final measure of organizational prowess is comprised of 15 items divided into three categories: exploration, investment in opportunities, and flexible organizational structure. Each category has five options, ranging from very strong to very weak, that apply to the individual being evaluated. These options are then assigned a numerical grade of 5, 4, 3, 2, or 1, depending on the level of proficiency demonstrated. To calculate the total score for the scale, add up the scores obtained by the respondent for each alternative chosen from each paragraph of the scale. The maximum score that the respondent can achieve is 75, while the minimum score they can receive is 15. The degree that represents the lowest possible score on the scale is 45 degrees, which is also the theoretical average of the scale.

4- Statistical means:

Most of the statistical methods used in the current research were calculated by the automated computer program (SPSS) are:

1. One-sample t-test: to identify the level of variables in the sample.
2. The T-test for two independent samples to calculate the discriminatory power of items of the organizational proficiency scale.
3. Pearson's Person Correlation Coefficient.
4. The alpha-Cro Nabach equation for internal consistency was used to extract the stability using the alpha method for the internal consistency of the research tools.

5- Final application:

The researchers first ensured the validity of the organizational prowess scale and analyzed its paragraphs logically and statistically to extract standard characteristics. They then applied the scale to a research sample of 400 male and female employees in the Ministry of Education, as shown in Table (1), after obtaining the necessary approvals. The data was analyzed using appropriate statistical methods in line with the research objectives.

Presentation and discussion of results:

The researchers achieved their objectives and interpreted and discussed the results according to the theoretical framework. They then drew conclusions, made recommendations, and proposed further actions. The results can be summarized as follows:

The first objective: to identify the organizational ingenuity of the employees of the Ministry of Education for the sample as a whole and according to the variables of gender and academic achievement.

In order to attain this objective, we utilized the measure of organizational prowess on a research sample comprising of 400 male and female employees. According to the research findings, the arithmetic mean score of the sample on the scale was 63.905 degrees, and the standard deviation was 5.822 degrees. A t-test was conducted to determine the significance of the difference

between the arithmetic mean and the hypothetical mean of 45 degrees. The results showed that the difference is statistically significant at a significance level of 0.05, as the calculated t-value of 64.943 is greater than the tabular t-value of 1.96, with 399 degrees of freedom. This suggests that the research sample exhibits a high level of organizational ingenuity, as illustrated in Table 9.

Table (9) The results of the t-test for one sample of the organizational ingenuity scale

variable	Number	Average	standard deviation	Hypothetical average	The calculated t-value		Satisfied (0,05)
					calculated	Tabular	
organizational ingenuity	400	63.905	5.822	45	64.943	1.96	Satisfied

Then the two researchers conducted another procedure, which is to identify the organizational ingenuity according to the variables of gender and academic achievement, as follows:

A) By gender (male - female):

The researchers analyzed the responses of both males and females on the organizational ingenuity scale separately. To identify any differences between the arithmetic mean and the hypothetical mean, the researcher used a one-sample t-test. The analysis showed that there is a statistically significant difference between males and females in terms of organizational ingenuity. This was determined by calculating the t-values for both groups, which were found to be greater than the tabular t-value of 1.96, with a degree of freedom of 243 and 155. This indicates that the research sample of both genders

possesses a high degree of organizational ingenuity, as demonstrated in Table 10.

Table (10) The results of the t-test for one sample of the organizational ingenuity scale according to the gender variable

Gender	Number	Average	standard deviation	Hypothetical average	The calculated t-value		Satisfied (, .٥)
					calculated	Tabular	
Male	244	63.930	6.009	45	49.211	1.96	Satisfied
Female	156	63.865	5.536	45	42.564	1.96	Satisfied

B) Depending on the educational achievement (postgraduate studies - bachelor's degree – High School)

The researcher separated the sample's responses based on their academic achievement on the organizational proficiency scale. They then used a t-test for one sample to identify any differences between the arithmetic mean and the hypothetical mean. A statistically significant difference was observed at the 0.05 level of significance. This was determined by comparing the calculated t-values to the tabular t-value of 1.96, with degrees of freedom of 64, 204, and 129. This indicates that the research sample is characterized by high organizational ingenuity based on academic achievement, as illustrated in Table 11.

Table (11) The results of the t-test for one sample of the measure of organizational ingenuity according to the variable of academic achievement

Educational achievement	Number	Average	standard deviation	Hypothetical average	The calculated t-value	Satisfied (, .٥)
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					calculated	Tabular	
postgraduate studies	65	62.154	5.199	45	26.597	1.96	Satisfied
bachelor's degree	205	64.273	6.141	45	44.931	1.96	Satisfied
High School	130	64.200	5.471	45	40.016	1.96	Satisfied

The findings of the initial objective suggest that the employees at the Ministry of Education exhibit a high level of organizational ingenuity, both overall and across different variables such as gender and academic achievement. According to the researchers, the employees of the Ministry of Education exhibit a high level of organizational ingenuity. This can be attributed to their ability to effectively carry out assigned tasks, think creatively, enhance daily job strategies, and overcome obstacles that require coordination across different levels of the organization. Effective leadership style demonstrates a high level of organizational ingenuity. This suggests that a strong dedication to applying the dimensions of organizational ingenuity would enhance the quality of career planning and the concepts and foundations necessary to carry out work and responsibilities. To achieve continuous and advanced production, organizations must focus on satisfying human needs and meeting social desires. This requires a shift from ideas to scientific practices and a thorough understanding of the organization's systems and laws. Additionally, optimal use of resources (human, natural, financial) is crucial.

The current research results indicate that there is no significant difference between male and female employees of the Ministry of Education. This text is incomplete and lacks context. Please provide more information or clarify what you are trying to say. Job work imposes the same determinants on employees regardless of their gender, ensuring consistency of experiences related to work. Both male and female employees are exposed to the same variables during their work.

The researchers have concluded that the absence of gender-based differences in the sample can be attributed to the positive relationship between male and female employees within the ministry. This relationship is based on acceptance, mutual respect, and the provision of opportunities to express opinions, which fosters a spirit of intimacy, cooperation, and mutual trust. The adoption of flexible behavior by both genders indicates that they were able to apply what they learned in the study to their job situations and social life, resulting in a positive impact on the development of organizational dexterity for both sexes.

Regarding the second objective, there are differences in organizational ingenuity based on academic achievement in two comparisons. The first comparison is between postgraduate studies and high school, with postgraduate studies showing greater ingenuity. The second comparison is between a bachelor's degree and high school, with the bachelor's degree showing greater ingenuity.

According to the researchers, employees who have completed postgraduate studies possess a high degree of organizational ingenuity. This can be attributed to the fact that organizational ingenuity comprises three types - structural, contextual, and leadership - which require experience, cognitive abilities, emotional intelligence, and skill competencies. It is evident that individuals with the highest level of education possess these qualities, with some exceptions. As we are dealing with the most intricate living organism, namely humans. Individuals with strong organizational skills tend to be highly adaptable to both their own needs and those of others. The challenges and stress that students and professionals encounter while pursuing their education and career development have led them to develop problem-solving strategies. These strategies include collaborating with others, sharing ideas, seizing available opportunities, and balancing work-related responsibilities. As a result, they have gained an advantage and achieved a higher level of success. Regarding the interpretation of differences in organizational

ingenuity between individuals with a Bachelor's degree and those with a High School degree, it appears that those with a Bachelor's degree exhibit greater ingenuity. The researchers believe that the employees in the research sample have a higher level of education compared to those who only possess a high school certificate. The reason for this is the psychological maturity that an individual gain through years of studying and absorbing knowledge. This maturity is a result of the expansion of the thinking spaces in the human brain, which is the anatomical and physiological center of complexity. It is where neurological processes occur. Starting with perception, followed by analysis and absorption of information, and storage in memory, individuals can develop accelerated learning strategies. These skills help them detect patterns that can be applied in the work environment. Combining these skills with organizational ingenuity techniques is often considered an important aspect of broad cognition. Improving the level of techniques among the employees in the research sample enhances their overall proficiency. Organizational ingenuity allows us to identify successful methods and utilize them to develop our talents. By understanding how the mind works, we can eliminate self-imposed limitations, regulate our thinking patterns, manage our emotions, and overcome bad habits and fears more efficiently.

Conclusions:

In the light of the research results, the researchers reached the following conclusions:

Organizational ingenuity has a positive and strong impact on the performance of Ministry of Education employees. This is because the attributes of investment and exploration contribute to the development and growth of individuals who work within a flexible organizational structure. Applying their skills to all functional activities can incentivize individuals to generate creative ideas and organize their work effectively. This, in turn, can enhance

their knowledge building and contribute to the growth and success of the institution.

Recommendations:

Based on the findings of the research results, the researchers recommend the following:

- 1- Encouraging the development of programs that work in accordance with the entrances of organizational ingenuity to work on advancing and assisting educational institutions in developing and upgrading employee work and increasing administrative and technical efficiency.
- 2- Carrying out a process of continuous evaluation of Ministry of Education employees in preparation for increasing their competencies and selecting modern technologies that are appropriate for their personality traits.
- 3- The need to pay attention to and improve the dimensions of organizational ingenuity, as well as to create a suitable environment for individuals to achieve creativity in exploring opportunities and investing them optimally, which is accomplished through structural ingenuity.
- 4- The (educational) institutions (the research sample) should use and invest their internal capabilities and capabilities, as well as explore opportunities that improve organizational ingenuity through the use of internal and external environmental analysis based on sound scientific foundations.

Suggestions:

Complementing the results of the current research, the following studies were proposed:

- 1- A study of organizational ingenuity and its relationship to strategic thinking among the employees of the Ministry of Education.
- 2- Self-acceptance and self-confidence and their relationship to organizational ingenuity among the employees of the Ministry of Education.

3- Organizational ingenuity of department heads and its relationship to psychological engineering from the employees' point of view.

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