The Effect of Applying Neural Network Information Systems in Achieving Parallel Processing of Decisions and Streamlining Smart Solutions for Human Resources: An Applied study of a Sample of Educational Leaders at Al-Mustansiriyah University[1]

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ABSTRACT

The research is based on the idea that the use of neural network information system applications with the digital dimension of artificial intelligence has an important and distinctive role in preparing new digital business models for thinking that work to achieve parallel and intensive processing of administrative, financial and scientific decisions that help streamline problems and solutions by adopting digital intelligence. Where many educational administrative leaders suffer from the momentum in their decisions that operate under the conditions of the turbulent work environment, which need to manage time in a scientific and able way to solve the package of problems and dismantle their connections and complexities, which afflict educational institutions with a kind of intellectual paralysis through which they move away from optimal solutions for their decisions, which It calls for the use of electronic digitization and its applications for immediate treatments. Where they expressed the problem with a set of questions about the possibility of synchronization between them, and the researcher used the applied study and the questionnaire form to explain the philosophical and scientific connection between them and their significance, and to find the effect of adopting the applications of neural network information systems in achieving parallel processors of decisions and streamlining smart solutions for human resources according to the five-point Likert scale, where a sample of " Deans, assistants and heads of scientific departments" from Al-Mustansiriyah University as a sample of (100) individuals to answer it. The researcher used the descriptive and statistical analytical method to address the quantitative aspect. And he reached the most important conclusion, "There is an impact of the applications of neural network information systems in achieving parallel processing of decisions and streamlining smart solutions for human resources".

Keywords: - *neural network information systems; parallel processors for decisions; streamlining smart solutions for human resources*

THE INTRODUCTION

Today's world, in light of the crowding of new, updated and accelerating global changes and the weakness in dealing with dense and parallel decisions, relies on the digitization of achievement, application, and streamlining to keep pace with the movement of development in it, and the human mind resorts to requesting mutual support from the electronic

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digitization system, which called for the need to use new information systems in use and developed in The results, including the Neural Networks Information System (NNIS), to prepare new models for thinking, processing, and alignment, in which it achieves compatibility between the human mind and the electronic mind, and builds an intelligence system that helps to make continuous decisions and guides them with processors that rely on feedback to achieve dense parallel treatments for problems and build an advanced mental image for leadership transactions according to the principles of digitization modern. Where the research aims to build a digital system capable of bringing about a comprehensive change in capabilities and application by adopting philosophical and statistical methods within the principles of scientific research. The research is based on a structure commensurate with the treatment of the problem from the research methodology and the theoretical side in explaining the research variables, then the practical side, and finally the conclusions and recommendations.

RESEARCH METHODOLOGY

Research problem.. Iraqi educational institutions in general and Al-Mustansiriyah University, which represents the research community in particular, suffer from the adoption of intensive decisions that need parallel treatments and grace to ensure timely management of the time of issuance of the decision, which human thinking may be unable to contain this huge amount of them and compare them. Which forces it to resort to the digital system for processing and streamlining, and here the role of neural network information systems emerged as one of the smart solutions for human resources, which is certainly the clear negligence of the educational institution from its use. Accordingly, the following questions were raised:

1. Is there a societal, organizational and digital awareness of the application of the artificial intelligence system to the information system of neural networks?

2. Do the administrative and educational leaders use the applications of information systems of neural networks to develop their skills and abilities to rethink the methods of dense parallel processing and the intelligent streamlining of decisions?

3. Do educational institutions have the capabilities and infrastructure for the process of using and applying artificial intelligence technology?

4. Is there an actual need to achieve harmonization between the human and electronic mind and to promote new models of business and thinking to develop skills in intensive parallel treatments of problems?

5. Is there a correlation between the use of the application of neural network information systems and the achievement of parallel processing of decisions and streamlining smart solutions for human resources?

6. Is there an effect of applying neural network information systems in achieving parallel processing of decisions and streamlining smart solutions for human resources?

The Importance of The Research.. It is noted that finding advanced systems for work and the use of information technology and dealing with its outputs under conditions characterized by incompleteness, certainty and lack of accuracy in the use of information needed by administrative and educational leaders in light of the crowd of modern and renewable variables and their need to achieve harmonization to address the continuing problems in the flow Sometimes narrow and wide in other areas of the necessities of growth and sustainability, through which the importance of research emerged to demonstrate the important and effective role played by applications of neural network information systems in achieving parallel and immediate processing of decisions and streamlining smart solutions for human resources and redesigning those decisions.

Research Objectives.. In light of this, the aim of the research is to build a society aware first of the uses of systems and their belief in them and the actual need to deal with them and to build an advanced system to deal with the rapid movement of change in the business world. With an indication of the extent to which the educational institution possesses the infrastructure of information and communication technology and systems to sustain application and use. Measuring and testing the correlation and influence relationships between the research variables.

The Research Community and Sample .. It represents the research community in one of the educational institutions of the Iraqi Ministry of Higher Education and Scientific Research (Al-Mustansiriyah University). As for the research

sample, it was an intentional sample that included the educational administrative leaders in the presidency of the university and the colleges and scientific departments affiliated to it, and the number was (100) affiliated.

Methods of Data Collection and Analysis.. The researcher relied on collecting his data for the theoretical side on books, letters, dissertations and scientific journals. As for the practical side, it relied on a questionnaire and a five-point Likert scale. For the data analysis, it relied on a descriptive analysis using measures of central tendency (arithmetic mean, standard deviation, and relative importance) and on statistical analysis of the correlation statement (Spearman's rank correlation coefficient - Z test) and the effect on (determination coefficient - F test).

Research Assumes..

•The first main hypothesis (There is a statistically significant correlation between the application of information systems of neural networks, parallel processors of decisions, and the streamlining of smart solutions for human resources).

•The second main hypothesis (there is a statistically significant effect of applying neural network information systems in parallel processing of decisions and streamlining smart solutions for human resources).

RESEARCH HYPOTHESIS.
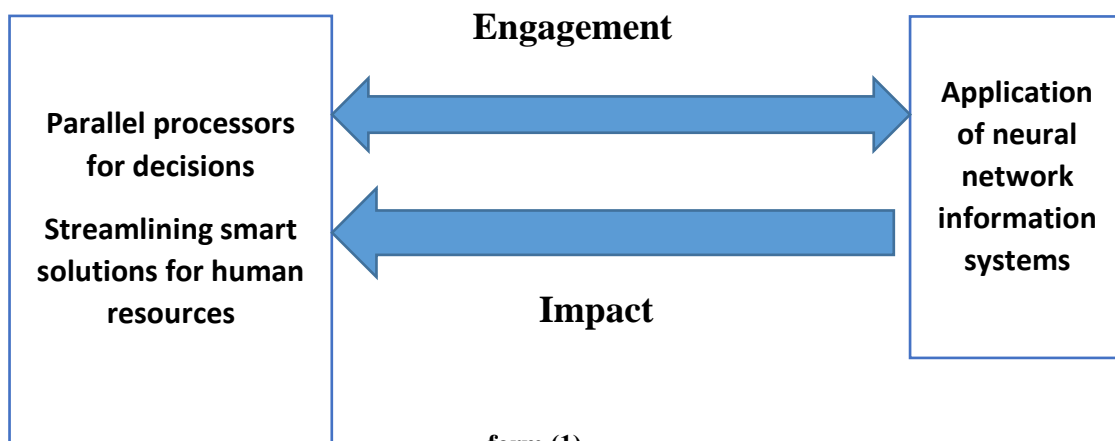
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Research hypothesis

THE FIRST TOPIC.. THE THEORETICAL SIDE

First.. The Neural Network Information System (NNIS)

The neural network information system, as one of the types of artificial intelligence systems, was based on thinking models based on the functions of the human mind, specifically (the brain), which is a complex dynamic system that adopts continuous feedback to achieve intensive parallel processing of problems to reach the optimal solution within the scope of non-linear, but structural and networked treatments in same time.

The artificial neural network is a modest simulation in form and content of the neural network in the human brain. This is the brain that occupied the thinking of researchers, so they put algorithms and hypotheses as the basis for its work. As we know that the human brain consists of vital neurons that are connected to each other through neural connections, and the number of neurons is fixed after a certain period in childhood and does not increase in number, and what changes with the passage of time is the number of connections. Increase or decrease, and scientists are still on a long-term journey to try to uncover the mysteries of the brain and its secrets. As for what serves our topic,

scientists put hypotheses and algorithms to try to simulate this function. Hence, it was necessary to link between the dynamic neural network and the artificial neural network .

1. The concept of Neural Network Information System (NNIS)...

Neural networks are systems with interconnected nodes consisting of several layers: the input layer, the hidden layers, and the output layer. Neural networks perform their tasks like neurons in the human brain by certain algorithms, and those algorithms recognize hidden patterns in the raw data and divide them into groups and classify them. Over time, these networks learn and gradually improve.

From here came the concept of neural network information systems as "one of the artificial intelligence systems capable of finding and distinguishing patterns by learning the mind and distinguishing how to think about many unified and complex factors in an accelerated, dynamic manner that works on the basis of parallel processing of dense and huge problems and works in light of information characterized by uncertainty." and low accuracy and its analysis of nonlinear relationships in it. An example of this is its use in many educational institutions in the developed world. (Baltzan, 2008)

2. Characteristics of Neural Network Information Systems (NNIS)...

To know the value of the system and the effectiveness of its outputs, and this is due to its remarkable ability to extract meaning from complex and inaccurate data, which gives it the ability to understand patterns and notice tendencies that neither humans nor other computing technologies can notice. For this reason, it helps humans to solve complex problems in their daily lives. Hence, it is necessary to address the advantages that it enjoys, which can be summarized as follows:- (Abdul Rahman, 2019)

A- Learning, acquiring knowledge and adapting to new circumstances on its own.
B- Neural networks, with their information system, are compatible with massive parallel processing.
C-The NNIS adopts work without complete information in light of uncertainty or well-organized.
D- (NNIS) uses huge amounts of data that it works to process and with many variables that are dealt with in the rapidly changing business arena.
E- Analyzing the non-linear relationships of information using multiple regression analysis systems.
F- Contribute to (NNIS) analysis of financial markets and their use in banks and financial institutions.
G- (NNIS) adopts advanced technology and information systems that coincide with the development of the human mind.
H- It is used within non-linear processing logic as well as structural and networking at the same time.
I- It learns from experience and acquires her experiences and knowledge through training and scientific practices.

3. Characteristics of the Neural Network Information System (NNIS)...

Neural network information systems rely on a number of characteristics that distinguish it from other advanced information systems, as it is considered as one of the artificial intelligence systems, which can be summarized as follows:- (Yassin, 2005)

A- Possibility of research and access to optimal solutions.
b- His ability to distinguish patterns and self-learning.
C - The ability to provide solutions to problems that require non-algorithmic solutions and their interpretation.
D- The NNIS adopts the exploratory approach.
E- The possibility of improving the proposed solution through training, education and experience.
F- His extensive contribution to predicting the behavior of nonlinear phenomena.
G - Works on the principle of dynamism in work and dealing with variables.
H- His ability to interpret incomplete entries.
I- Possibility of abstraction and generalization.

Second, Parallel Processors for Decisions

Parallel decision processors and these neural networks can learn and model complex, nonlinear relationships between data inputs and data outputs. In addition, it makes generalizations and inferences to reveal hidden relationships

between inputs and outputs and uncover patterns and predictions. It creates models for highly volatile data, such as time series forecasting. As a result, neural networks can improve decision-making processes.

1. The concept of parallel processing of decisions.

The human brain is in fact a complex dynamic information system with continuous feedback, a system that works on the basis of dense parallel processors and within a non-linear processing logic, but structural and networked at the same time. In light of this, the concept of parallel processors for decisions can be defined as "one of the methods used in computer artificial neural networks to distinguish patterns, learning, classification, generalization, abstraction, and interpretation of non-integrated inputs, which are used within neural networks to address dense, complex, and interlocking problems that are difficult to simulate in a dynamic manner to analyze non-linear relationships in them".

2. The importance of parallel processors for decisions.

The importance of balanced instant processors for decisions lies through the benefit they provide in their digital format to find the optimal decision from a group of interlocking and complex decisions in a dynamic manner capable of solving dense and huge problems by adopting neural network information systems as a digital system capable of analyzing non-linear, structural and network relationships. Where neural networks, with their information system, are compatible with massive parallel processing, as they operate without complete information under conditions of uncertainty or well-organization, as well as to support the process of choosing the optimal decision, especially as they work with a huge amount of data that needs processors.

Third: Streamlining smart solutions for human resources.

The business world tends, in light of the turbulent environmental conditions, to address the inflation occurring in the problems that surround educational institutions, the latest of which is the health, economic, social and behavioral crises, to rebuild the educational system according to new foundations that work on electronic integration in procedures, transactions, educational methods and administrative work methods, which necessitated the need to issue decisions In order to solve those problems that were characterized by complexity, density and intertwining, and that streamlining those decisions became one of the priorities of the work to fix the important decisions and then the less important ones through choosing the optimal decision and to reduce the time, effort and cost, I resorted to the digital system to find smart solutions for human resources and streamline them.

1. The concept of streamlining smart solutions for human resources.

The word "lithe" means a set of procedures and methods that aim to study all decisions and choose the best ones among them in order to save time and effort and eliminate waste and waste. As for streamlining smart solutions for human resources, it is a scientific study with a digital orientation for all alternatives using artificial intelligence systems and neural networks to search and reach optimal solutions. (Abdul Rahman, 2019)

2. The importance of streamlining smart solutions for human resources.

The importance of streamlining smart solutions for human resources lies through improving the decision-making process after an intensive study of all decisions, choosing the optimal decision and monitoring the quality of the performance of this decision, which came as a result of providing accurate and reliable data that can be relied upon in timely decision-making and facilitating access. Adopting the digital system and artificial intelligence systems in the process of streamlining solutions will reduce the risk in adopting the decision. In addition, smart systems and decision support systems will decipher and analyze the tangle and complexity of decisions and find paths of solutions for each problem and the appropriate decision for it.

3. Objectives of streamlining smart solutions for human resources.

The process of streamlining smart solutions for human resources aims to restructure decisions and solve problems in a manner commensurate with the actual need for them in the new variables that operate under the conditions of the turbulent environment and can be summarized as follows: (Stephen, 2007)

A- Working to collect data from different and multiple sources on the phenomenon or problems that deal with it.

B- Work on analyzing and processing data, classifying, arranging and streamlining them to keep the appropriate ones.

T - Identifying problems and decisions to solve them according to a specific order, so that they are familiar with all the phenomena they deal with.

D - Determine the software and systems that deal with streamlining smart solutions for human resources and parallel processors of artificial intelligence systems as a system (genetic algorithms - neural networks - expert systems - strategic information systems).

C - Supporting the administrative and educational leaders in sorting out the decisions related to a specific phenomenon and operating these systems to analyze them and trying to choose the best ones and the survival of the fittest.

H - Attempting to reach the optimal solution by reducing time, effort and cost.

Fourth: The theoretical and philosophical correlation between the research variables.

In order to enhance and stimulate the skillful capabilities of educational administrative leaders in educational institutions, it is necessary to transfer administrative and educational thought to the developed world in terms of the use and application of new global variables to create a new generation of scientific and logical thinking that coincides with the movement of variables, requirements and the actual need for change. And artificial neural networks to play an important role in achieving balance in thought and logic. Which generates dense and complex problems that accompanies the educational process, necessitates various, different, and many decisions that need immediate and future-oriented treatments that achieve continuity and sustainability in competition between them to choose the best. Scientific principles that take into account the digital system at work. In order to obtain the optimal decision, smart solutions for human resources must be analyzed and streamlined to achieve the survival of the fittest by adopting an electronic system with advanced software and systems such as neural network information systems that provide and analyze data on interlocking and dense decisions and solutions, untangle their complexities, and identify new paths of action that represent optimal solutions that bear the characteristic of artificial intelligence. in use and application.

THE SECOND TOPIC.. THE PRACTICAL SIDE

The researchers relied on the descriptive and statistical analysis to analyze the results of the research based on the matrix of the strength of the response of the sample members and testing the hypotheses of correlation and influence through (20) paragraphs distributed to the research sample of (100) individuals from the education leaders at Al-Mustansiriyah University as follows:

First: the level and nature of the research variables.

Response Strength Matrix

Wilted	The Strength of the answer to the paragraphs of the questionnaire	Level (direction of response)
1 - 1.8	Completely disagree	Very Low
1.8 - 2.6	Disagree	Low
2.6 - 3.4	Neutral	Moderate
3.4 – 4.2	Agree	High
4.2 - 5	Completely agree	Very High
Where lcaloulected the length of the class, According to the following rate:4/5 = 0.8		

Tabel : (1)The Level and Nature of Research Variables

No.	paragraphs	Arithmetic mean	standard deviation	Relative importance
	First: Neural network information systems			
1	Educational leaders possess intellectual and technical awareness of the importance of NNIS as a model of thinking on which the balance between the electronic mind and the human mind is built and supported.	4.033	0.654	80.66%

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2	Educational institutions have the hardware, software, communications and knowledge workers infrastructure to sustain the use and application of NNIS.	3.533	0.900	70.66%
3	She believes that NNIS has the ability to find and discern patterns by learning the mind how to think and developing its abilities.	4.300	0.589	86.00%
4	NNIS relies on learning and adapting to turbulent environment conditions on its own and is able to renew and survive.	4.066	0.671	81.32%
5	NNIS helps analyze nonlinear relationships about the internal and external environment to build a balanced mind picture.	3.733	0.753	74.66%
6	NNIS operates in the absence of complete information, uncertainty, and organization to support strategic and probabilistic brainpower.	4.266	0.592	85.33%
7	NNIS works to redraw the paths of solutions to problems by balancing the human and artificial minds.	3.923	0.722	78.46%
8	NNIS helps train educational and administrative skills to discover and predict phenomena to gain new experiences and knowledge.	4.233	0.599	84.66%
9	NNIS operates under dynamic trajectories and dealing with variables.	3.650	0.899	73.00%
10	NNIS is characterized by its ability to abstract and generalize.	3.420	1.022	68.4%
	TOTAL	**3.915**	**0.748**	**78.31%**
	Second: Parallel processors for decisions			
1	Educational leaders have the awareness and awareness of the need to work on parallel solutions to decisions.	4.110	0.621	82.20%
2	It believes that the adoption of artificial intelligence systems, with its dynamics and continuous feedback, achieves intensive parallel processing of problems.	3.966	0.701	79.33%
3	It believes that the high ability to analyze, arrange and index problems and decisions increases its ability to confront and parallel treatment.	4.330	0.511	86.60%
4	It believes in the possibility of providing the infrastructure for compatibility between mental and digital abilities that helps to employ processors in parallel at the same time.	4.005	0.588	80.10%
5	Parallel decision processing systems help solve dense, large and complex problems.	4.102	0.570	82.04%
	TOTAL	**4.102**	**0.575**	**82.04%**
	Third: Streamlining smart solutions for human resources			
1	The educational institution has the ability to search and reach smart solutions for optimal human resources to problems based on artificial intelligence systems.	3.523	1.02	70.46%
2	Educational leaders believe that the balance between artificial intelligence systems and human intelligence in light of non-algorithmic solutions and their interpretation is one of the patterns of smart solutions to problems.	3.890	0.987	77.80%
3	You believe that solutions and choosing the optimal solution from among the dense and complex problems need to streamline solutions and decisions based on the digital system.	3.877	0.966	77.54%

4	It believes that the success of streamlining solutions and decisions is linked to her ability to interpret incomplete inputs in a turbulent environment.	3.770	0.990	75.40%
5	It believes in the existence of educational and administrative capabilities and skills that are capable of facilitating solutions. It needs specialized training programs that achieve the sustainability of the strategic dimension of decisions and solutions.	4.044	0.622	80.88%
	TOTAL	**3.821**	**0.972**	**76.42%**

1. The level and nature of the variable (neural network information systems).

The results of the descriptive analysis in Table (1) related to paragraph (First) indicate that the value of the total arithmetic mean for the variable of neural network information systems has reached (3.915), and this value is located in the matrix of the respondents' response strength within (agreed) and at a level (high) and indicates that the leaders In educational institutions, they have a relatively good intellectual and technical awareness of the importance of adopting neural network information systems as a model for thinking to harmonize between analyzing the outputs of the human mind and digital minds, and believe in their ability to find and distinguish patterns by learning the mind how to think in the conditions of the turbulent environment on its own and be able to renew and continue on Despite the absence of complete information, it helps in preparing and training educational leaders on electronic integration in solving problems and making decisions. It shows the medium importance and simple negligence in the possession of the educational institution the infrastructure that helps it to digital change and sustain the process of using and applying the system, which may affect its ability to analyze non-linear relations about the internal and external environment and mark the appropriate paths for solutions, problems and decisions, and move away from flexibility and dynamism in dealing with variables to reflect on the possibility Generalization and abstraction. And a total standard deviation of (0.748), indicating a relatively high dispersion in the respondents' answers. With a relative importance of.(%78.31)

As for the paragraphs, paragraph (3) of (First) ranked first, as it obtained the highest value of the arithmetic mean of (4.30), which is located in the response strength matrix within (completely agree) and at a very high level to indicate the ability of the neural network information system to respond The rapid and accurate way to find and distinguish multiple patterns and their development through increasing the learning of the human mind on modern ways of thinking synchronized with digital thinking and developing its capabilities to respond to the optimal decision in light of the tangle and complexity of problems. With a standard deviation of (0.589), indicating a relatively average dispersion in the respondents' answers, with a relative importance of.(%86.00)

While Paragraph (10) of (First) ranked last, as it obtained the lowest arithmetic mean of (3.420), which falls within the response strength matrix within (agreed) and at a (high) level, indicating the apparent weakness in the possibility of abstraction and generalization. And a standard deviation of (1.022), indicating a high dispersion in the respondents' answers, with a relative importance of.(%68.40)

2. The level and nature of the variable (parallel processing of decisions).

The results of the descriptive analysis in Table (1) related to paragraph (Second) indicate that the value of the total arithmetic mean for the variable of parallel processors of decisions amounted to (4.102), and this value is located in the matrix of the respondents' response strength within (agreed) and at a level (high) to indicate that the administrative leaders Educational have awareness and awareness of the need to work according to parallel processors of decisions and their belief in the importance of adopting artificial intelligence systems and benefiting from its dynamism by working and processing and using its feedback to re-engineer the dense and complex problems in parallel to reach the appropriate decisions and benefit from its high ability to analyze, arrange and index all the problems of the phenomenon and integrate human capabilities and skills And digital and employing the methods adopted in the processors according to the full mental picture of those decisions to choose the best of them and the survival of the fittest.

As for the paragraphs, paragraph (3) of (Second) ranked first, as it obtained the highest value of the arithmetic mean of (4.330), which is located in the response strength matrix within (completely agree) and at a very high level to indicate the importance of adopting the method for its high ability to analyze and arrange And indexing problems and decisions in order to increase their ability to confront and parallel processing. With a standard deviation of (0.511), indicating a relatively average dispersion in the respondents' answers, with a relative importance of.(%86.60)

While paragraph (2) of (Second) ranked last, as it obtained the lowest arithmetic mean of (3.996), which falls within the response strength matrix within (agreed) and at a (high) level, indicating a lack of interest in artificial intelligence systems in their dynamism in work to achieve parallel processing of problems . With a standard deviation of (0.701), indicating a relatively high dispersion in the respondents' answers, with a relative importance of.(%79.33)

3. The level and nature of the variable (limiting smart solutions for human resources).

The results of the descriptive analysis in Table (1) related to paragraph (Third) indicate that the value of the total arithmetic mean for the variable of adapting smart solutions for human resources amounted to (3.821), and this value is located in the matrix of the respondents' response strength within (agreed) and at a (high) level. Most of the sample agreed on the relative weakness of the paragraphs in terms of their belief in the existence of educational and administrative capabilities and skills capable of conducting the process of streamlining solutions in the traditional manner due to their abundance, or by assigning the digital system due to the weakness of capabilities, with the need for planning and ambition to prepare specialized training programs for development, empowerment and balancing between artificial intelligence systems and human intelligence in light of Non-algorithmic solutions and their interpretation is one of the types of smart solutions to problems. However, these solutions and choosing the best among them between the dense and complex ones need intelligent streamlining by attributing the digital system in thinking and decision-making because they tend to interpret non-integrated inputs and work in an atmosphere of possibilities in a turbulent environment. The basis for success as well as ownership Weak for the ability to search and reach optimal smart solutions by taking advantage of expert and updated systems. With a standard deviation of (0.972), indicating a high dispersion in the respondents' answers, with a relative importance of.(%76.42)

As for the paragraphs level, paragraph (5) of (Third) ranked first, as it obtained the highest value of the arithmetic mean of (4.044), which is located in the response strength matrix within (agree) and at a high level, indicating a relatively good faith in the capabilities and skills of the educational and administrative leaders capable On smart slimming, you need training and development to achieve the goals and their strategic dimension. With a standard deviation of (0.622), indicating a relatively average dispersion in the answers, with a relative importance of.(%80.88)

While Paragraph (1) of (Third) ranked last, as it obtained the lowest arithmetic mean of (3.523), which falls within the matrix of response strength within (agreed) and at a level (high), but very weak, indicating the weakness in the educational institution's ability to search And access to smart solutions for human resources unless it is actually dependent on the use and application of the digital system. With a standard deviation of (1.02), indicating a high dispersion of the answers and a relative importance of.(%70.46)

Second: Testing the correlation hypotheses.

The results of the statistical analysis in Table (2) indicate that the total value of Spearman's rank correlation coefficient was (0.645), indicating the average strength of the relationship and the directness of the trend. Values The value of (Z) calculated was (6.417) and at a significant level (0.01) to indicate a significant correlation between the research variables and accordingly we accept the first main hypothesis which states (the existence of a statistically significant correlation between the application of neural network information systems and parallel processors of decisions and streamlining Smart solutions for human resources) and reject the null hypothesis.

Table (2) Correlation Hypothesis Testing

	dependent variables	Spearman's rank correlation coefficient	Test Z	Sig	interpretation
Organized information networks nervousness	**Parallel processors for decisions**	**0.674**	**6.706****	**0.01**	**There is a direct correlation between neural network information systems and parallel decision processors.**
	Streamlining smart solutions for human resources	**0.612**	**6.089****	**0.01**	**There is a direct correlation between neural network information systems and smart solutions.**
	Total	**0.645**	**6.417****	**0.01**	**The existence of a direct correlation between neural network information systems, parallel processors of decisions, and the streamlining of smart solutions for human resources, and accordingly we accept the first main hypothesis**

**at a significant level of 0.01
*At a significant level of 0.05
Source: prepared by the researcher based on the output of the electronic calculator

Third: Testing the impact hypotheses.

The results of the statistical analysis in Table (3) indicate the following:

1. The value of the total coefficient of determination was (0.416), and it indicates what its value is.(%41.6)

2. The value of (F) calculated was (69.915) and at a significant level (0.01). Accordingly, we accept the second main hypothesis, which states (there is a significant, statistically significant effect of applying neural network information systems in parallel processing of decisions and streamlining smart solutions for human resources). We reject the null hypothesis

Table (3) Impact hypothesis testing

	dependent variables	Spearman's rank correlation coefficient	Test Z	Sig	interpretation
Neural network information systems	**Parallel processors for decisions**	**0.454**	**81.508****	**0.01**	**There is a significant effect of neural network information systems in parallel processing of decisions.**
	Streamlining smart solutions for human resources	**0,374**	**58.621****	**0.01**	**There is a significant effect of neural network information systems in streamlining smart solutions for human resources.**
	Total	**0.416**	**69.915****	**0.01**	**There is a significant effect of neural network information systems in the parallel processing of decisions and streamlining smart solutions for human resources, and accordingly we accept the second main hypothesis.**

**at a significant level of 0.01
*At a significant level of 0.05
Source: prepared by the researcher based on the output of the electronic calculator

THE THIRD TOPIC.. CONCLUSIONS AND RECOMMENDATIONS

First: conclusions

1. Educational administrative leaders possessing intellectual and technical awareness helped educational institutions with the support of the strategic digital system to process and analyze intensive and complex decisions.

2. The ability of the neural network information system has been shown fairly well to work under complex and turbulent conditions and the absence of complete information and the ability to interpret the inputs.

3. The NNIS system helps educational institutions analyze non-linear relationships about the internal and external environment, which are difficult to deal with

4. The high ability of the (NNIS) system to use, analyze and index huge data, which helped to obtain information of good quality and quantity.

5. The neural network information system achieved harmonization between the human mind and electronic minds in achieving parallel processing of decisions and streamlining smart solutions for human resources.

6. Although educational institutions possess the infrastructure of the digital system, the level of use and application was not at the required level, which affected its adoption by educational leaders.

7. It was noticed that the educational administrative leaders needed advanced specialized training programs commensurate with the actual need to adopt the digital system in decision-making.

Second: Recommendations

1. The need to work on increasing the intellectual and technical awareness of educational leaders of the importance of the digital system in addressing decisions and solutions.

2. Increasing specialized skills and creating educational leaders working in a dynamic environment based on possibilities and scenarios in decision-making in the partial absence of information.

3. The need to continue analyzing the internal and external environment continuously according to new work formulas, digital business models, and various methods.

4. The need to move from the state of digital ownership with dimensions to the actual use and application of these dimensions for a qualitative shift in educational decisions, addressing their complexities, and streamlining smart solutions for human resources.

5. The need to prepare specialized training programs for educational and administrative leaders that use artificial intelligence systems to advance leadership thinking by attributing digital thinking.

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