Determinants of Big Data Utilization in Auditing and Disclosure Processes

محددات استخدام البيانات الضخمة في عمليات التدقيق والإفصاح

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Abstract

This research aims to elucidate the concept of big data, its areas of application, and its significance in the auditing and disclosure processes. It emphasizes the critical role of big data analysis in influencing the performance of economic units, particularly within the unique environmental and societal context of Iraq. A specialized questionnaire was developed as the primary data collection tool to achieve the research objectives. This questionnaire was distributed to a selected sample of managers from the financial affairs and accounting departments of three industrial companies listed on the Iraq Stock Exchange: Modern Paint Industries Company, Iraqi Carton Industries Company, and Baghdad Soft Drinks Company.

The findings of this research yield several key conclusions:

1. The Cronbach Alpha test, with stability values exceeding 0.7, validated the questionnaire's reliability and validity, demonstrating its high quality and consistency in both its tool and its results.
2. The analysis of the responses confirmed the acceptance of the study's three hypotheses, indicating a statistically significant impact of big data's determinants on auditing and disclosure processes. This underscores the role of big data in enhancing transparency within these frameworks.

Keywords: Big Data / Auditing / Disclosure / Usage Determinants.

المستخلص:

هدف البحث الى التعريف بالبيانات الضخمة من حيث المفهوم ومجالات الاستخدام التي يستند اليها فضلا عن نطاق تطبيقه ، وكذلك بيان اهمية تحليل البيانات الضخمة والتي تؤثر على أداء الوحدات الاقتصادية بناءً على طبيعة عملها وخصوصية البيئة العراقية وظروف المجتمع العراقي ، ووصولاً للتعرف على ابرز المحددات التي تواجه تحليل البيانات الضخمة ، ولتحقيق هدف البحث تم تصميم استبانة خاصة كأداة أساسية لجمع البيانات، ووزعت استمارة استبانة على عينة مختارة موزعين ما بين مدراء أقسام الشؤون المالية والحسابات الذين يعملون في ثلاث شركات صناعية مدرجة في سوق العراق للأوراق المالية (شركة صناعة الأصباغ الحديثة, الشركة العراقية لصناعات الكرتون و شركة بغداد للمشروبات الغازية)لاستطلاع رأيهم ، وقد توصلت البحث الى مجموعة من الاستنتاجات كان أهما :

1. أكد اختبار كرونباخ ألفا (Cronbach Alpha) ثبات وصدق الاستبيان، حيث تجاوزت قيم الثبات 0.7، مما يعكس جودة الأداة واستقرار نتائجها.

2. أظهرت نتائج تحليل الإجابات قبول الفرضيات الثلاث للدراسة، مما يؤكد وجود تأثير دال إحصائياً لمحددات البيانات الضخمة على كل من التدقيق والإفصاح، ويبرز دور هذه البيانات في تحسين مستوى الشفافية.

كما اوصت البحث بالآتي:

1. توصي الدراسة بتعزيز البنية التحتية التكنولوجية للشركات لتمكينها من معالجة وتحليل البيانات الضخمة بكفاءة أعلى.
2. ضرورة توفير برامج تدريبية لتطوير مهارات الموظفين في التعامل مع البيانات الضخمة بفعالية في سياق التدقيق والإفصاح.

الكلمات المفتاحية: البيانات الضخمة / التدقيق / الإفصاح / محددات الاستخدام

1. Introduction

The contemporary world is witnessing a remarkable scientific advancement characterized by the emergence of "Big Data." This concept revolves around accumulating vast amounts of data, facilitated by advancements in storage technologies and the proliferation of data-generating innovations, such as computers and mobile devices. These developments have led to the creation of interconnected devices equipped with GPS and internet connectivity, including televisions, household appliances, radar systems, navigation equipment, and transportation networks, all of which contribute to the Internet of Things (IoT).

The IoT has generated unprecedented volumes of data, prompting technology researchers to develop methods and programs for data collection and mining from various stored sources. Although this process involves complex and costly technical operations, the benefits derived from data analysis far outweigh these costs. Consequently, numerous technology companies have entered this field, each leveraging big data analytics to target specific types of data pertinent to their products or services.Big data technology has emerged as one of the most essential contemporary tools, providing access to extensive data sets, information, applications, and tools that can be utilized to enhance cognitive capabilities within accounting and reshape organizational priorities. As a result, organizations may no longer risk ignoring or postponing the processing of this data; they should use data analysis and processing tools to convert raw data into valuable insights. This requirement has focused on increasing the use, analysis, and processing of extensive data among companies in recent years.

2. PROBLEM OF THE STUDY

The central problem in this study is expressed through the following research questions: "To what extent is there a relationship between big data, revision, and use of disclosure?" This primary inquiry leads to more preparations:

a. 1-What are the benefits of business organizations analyzing Big Data?
b. How is the audit process related to the use of Big Data?
c. Is there a correlation between the utilization of big data and the disclosure of financial information

3. The significance of the research

The significance of this study lies in its innovative approach to adopting big data analysis as a means to foster a business environment characterized by transparency and credibility. This aligns with the new directives from professional organizations and experts in the field of accounting. The approach aims to deliver optimal benefits for users of accounting information while enhancing the efficiency and effectiveness of its utilization. This is particularly relevant in response to the global landscape's economic, social, and environmental factors, specifically focusing on developing countries, including Iraq.

4. OBJECTIVES OF THE STUDY

This research aims to achieve the following objectives:

a. Analyze the Concept and Applications of Big Data: Present a comprehensive analysis of big data, including its definition, areas of application, and overall scope.
b. Examine the Importance of Big Data Analysis: Highlight the significance of big data analysis and its impact on the performance of economic units, considering their operational nature, the Iraqi environment, and society's unique characteristics.
c. Identify Key Determinants of Big Data Analysis: Identify the primary determinants affecting big data analysis, focusing on its characteristics, handling methods, and governance frameworks.

5. RESEARCH HYPOTHESES

This research aims to test the following hypotheses:

a. Hypothesis One: The determinants of big data significantly impact the auditing process.
b. Hypothesis Two: The determinants of big data significantly influence disclosure practices.
c. Hypothesis Three: Big data has a significant impact on both auditing and disclosure.

6. Statistical Analysis Tools Used:

The study relied in its practical aspect on a set of statistical tools and methods to achieve its objectives and test its hypotheses. Cronbach's Alpha test was used to verify the reliability and internal consistency of the questionnaire instrument, and the results showed values above 0.70, indicating good internal consistency. Descriptive statistics were also employed, represented by means, standard deviations, coefficients of variation, and percentages, to describe the trends in the participants' responses and determine the level of agreement. To analyze the relationship between the study variables, Pearson's correlation coefficient was used to measure the strength and direction of the relationship between big data determinants and both auditing and accounting disclosure. In addition, linear regression analysis was employed to estimate the effect of independent variables on the dependent variables, and coefficient of determination (R^2) was extracted to indicate the proportion of explained variance. The significance of the regression models was verified using the F-test through analysis of variance (ANOVA). The statistical analysis was based on the five-point Likert scale to code the questionnaire responses and convert them into quantitative data suitable for analysis.

Theoretical Framework for Using Big Data

Definition of Big Data

Professional organizations, authors, and researchers have defined big data based on their perspectives and applications. Some authors describe it as a "data explosion"(Jeffrey, et al,. 2019: 507).

According to the McKinsey Global Institute, big data is a collection of data that can be analyzed, managed, or stored more effectively than traditional data. The International Organization for Standardization (ISO) defines big data as data that cannot be processed and analyzed using conventional technologies, characterized by its large volume, diversity, and component variability (Zulkarnain, and Muhammad, 2016: 1-7) .

The International Telecommunication Union (ITU) refers to big data as data characterized by large volume, high velocity, and significant variety compared to traditional data (Tarrahi and Shadravan, 2021: 132).

Al-Salmi (2021) states that big data encompasses "any collection of data that exceeds the processing capabilities of traditional database tools in terms of capturing, sharing, transferring, storing, managing, and analyzing within an acceptable timeframe." From the perspective of

service providers, it includes the tools and processes necessary to handle large volumes of data for analysis (Abdeslam, 2021: 31)

Panda and Nabaghan define the analysis and processing of big data as "the process of collecting, organizing, and analyzing big data to discover, visualize, and present patterns, insights, artificial intelligence, and other information contained within big data (Al-Salmi, 2021: 85).

From these definitions, it is evident that big data primarily involves large datasets that contain vast and complex amounts of facts and knowledge derived from various sources. This data exceeds the capabilities of traditional processing systems and databases, aiming to generate information that meets the needs of diverse users. The large size, diversity, rapid changes, and emerging trends within big data render it incompatible with the structures and frameworks of traditional databases.

Types of Big Data

Big data can be classified into the following types (Rashwan. 2022: 32) :

1- Structured Data: This type is characterized by its well-organized structure and format, which makes it easily stored and managed within traditional databases such as Oracle and MySQL.

2- Unstructured Data: Unstructured data lacks a predefined format or organization, making it more challenging to analyze. Examples include chat messages, social media posts, and multimedia files.

3- Semi-Structured Data: This type combines structured and unstructured data elements. While it resembles structured data, it does not conform to a formal structure or organized tables, allowing for more flexibility in data representation.

Dimensions of Big Data

1 -Intensity of Competition (Highly Competitive)

This dimension pertains to the degree of influence an organization has over its competitors' viability. It reflects the market competition level, characterized by the organization's ability to vie for financial and organizational resources against other entities in the industry. Intense competition arises from many competitors and limited growth opportunities, necessitating strategic approaches to maintain market position (Rashwan, 2022 33).

2 -IT Intensity (IT-Intensive)

This dimension involves collecting, selecting, and analyzing data through non-traditional methods. Information technology encompasses various tools that facilitate the electronic scanning and storage of information, including computers, communication devices, interconnected networks, and related equipment. Researchers assert that information technology is pivotal in effectively handling big data for accounting disclosure, ultimately supporting informed decision-making. As a fundamental aspect of big data, the density of information technology directly correlates with the quality of organizational decisions. Furthermore, advancements in information technology have transformed global communication, fostering innovation and collaboration among organizations .

The Relationship Between Big Data Usage, Auditing, and Disclosure

The prevailing belief is that more data equates to better outcomes, as it enables more accurate predictions and meets stakeholders' high expectations. However, it is essential to ensure that the benefits derived from big data outweigh the costs, time, and effort involved in its collection, management, and utilization. This is where big data analysis becomes crucial, supported by auditing through continuous evaluation of the returns and costs associated with big data usage.

The audit ensures the efficiency of the control mechanism in technical processes and continuously promotes improvement.

The audit also plays a vital role in assessing the effectiveness of data use and the efficiency of analytical processes. It meets the needs of top management, the board, the accounting committee, and other stakeholders by providing high-quality accounting information through accurate reports, advice, and recommendations. This role has evolved significantly due to changes in a commercial environment, which has led to a fundamental shift in the responsibility of auditors (Bassiouni, 20020: 69) ' The modern business landscape implements new requirements for auditors, which require them to increase their skills and knowledge and prepare for new roles set by these requirements. An important mechanism in modern organizations is the ability to develop as a strategic partner in successfully implementing extensive data analysis in auditing. International standards that control auditors are necessary to meet the needs of governance and stakeholders by providing insight into extensive data, its quality of implementation, and the viability of different applications. (Bouarki et al, 2021: 121).

To be effective participants and vigilant overviews with large data capacities, auditors must understand the components of extensive data analysis and related roles and responsibilities. In addition, ignoring extensive data analysis may highlight organizations for various unexpected risks, such as a lack of achievement of strategic goals, unauthorized access to ineffective information protection, violation of compliance with regulations, and data quality problems, such as incorrect disclosures and fraudulent management reports. These risks can ultimately result in flawed decision-making, underscoring the need for auditors to enhance their capabilities to navigate the challenges posed by big data **(**Ben, 2017: 42).

Advantages of Using Big Data Analytics in Auditing

The auditor uses Big Data Analytics when reviewing accounts for two primary causes: external pressure and opportunity (Rashwan, 2022: 479)

1-External pressure: The integration of computers into audit practices has become necessary, including rapid information technology in the profession, including Big Data Analytics. This change is primarily inspired by customers' and regulatory bodies' requirements for more efficient audit practices.

2 -Opportunities: The auditor assumes that Big Data Analytics provides more opportunities to increase the audit processes. Use these analyses to expect more efficient, effective, high-quality revision. By taking advantage of extensive data, the auditor can analyze the evidence at the accounting level more widely, which reduces the chances of misunderstanding (Sufyan, 2022: 123).

The use of big data and its analysis in auditing provides many essential benefits, including (Yoon, 2022: 232). (Haddara, 2018: 157)

A. Improved Audit quality: Increases the general quality of the audits through more intensive analysis.

B. Real-time financial information: Provides timely insight into economic data and facilitates early decision-making.

C. Continuous audit approach: Avoid a continuous audit method in external audit, which allows continuous evaluation.

D. Test of the entire audit population: Auditors can test the whole transaction population instead of relying on sampling.

E. Increase in professional doubt: encourages auditors to maintain high levels of suspicion, leading to stricter evaluation.

F. Increased confidence in audit professions: Better audit practice creates more stakeholder confidence.

G. Improved Reasonable Assurance: Increases the reasonable assurance level provided in audit reports.

H. Audit risk reduction: Potential issues are identified promptly, minimizing risks associated with the audit process.
I. Organized audit function: Helps establish a more structured and organized audit approach.
J. Fraud Detection: The AIDS auditor will use advanced data analysis techniques to identify potential fraud.
K. Business Continuity Assessment: Auditors support the continuity of professional activities.
L. Enhanced Social Importance: Elevates the auditing profession's perceived value and social importance in the modern business.

The Role of Big Data Analysis in the Disclosure Process

An analysis of big data is critical during the disclosure process, as it allows companies to manipulate and understand data more efficiently and disclose patterns and trends that better inform the disclosure chain of events. Organizations use big data analysis to handle enormous volumes of information and identify relevant market dynamics at present and in the future, as well as those of the company (Al-Hiyari, 2017). These insights will guide decisions about additional disclosures and help pinpoint information that must be disclosed (Kend, 2020: 274)

In addition, companies can gain insight into investors and customer behavior through data analysis and predict their future interests and needs. This understanding can guide companies in their disclosures to better match investor preferences.

Jamal (2019) emphasizes that the role of extensive data analysis in the revelation process involves using advanced analytical techniques and equipment to treat large datasets and to gain valuable insight into the company's financial results and operations. The specific contribution of extensive data analysis in the disclosure process is included (Hiyari, 2017: 163) :

1 -Extracting Value from Data: Big data analysis uncovers hidden information and value within extensive datasets that traditional methods may overlook.
2 -Analyzing Trends and Patterns: Analytical techniques can reveal actual and anticipated trends, as well as hidden patterns within the data, aiding in the understanding of performance trends, risks, and potential opportunities.
3 -Forecasting and Predictions: Statistical analysis and machine learning techniques can be applied to large datasets to predict future events and analyze various scenarios.
4- Leveraging Quantitative Analysis: Big data facilitates precise quantitative analysis of the causes and effects of financial events and internal operations.
5 -Increasing Transparency and Making Better Decisions: A deeper understanding of big data enables companies to make informed decisions and identify essential information to disclose to shareholders and stakeholders.

Big Data Analysis Techniques Used in Disclosure

Big Data analysis techniques are quickly used to increase data, analysis, understanding, and price recovery to expedite the disclosure process. So, analytical techniques that usually play a key role in the revelation process include:

1 .Artificial intelligence and machine learning: These machine learning methods process vast amounts of data, identifying trends and making predictions. Using historical data, artificial Intelligence can predict future events and spot new patterns.
2 .Statistical and behavioral analysis: Statistical analysis techniques detect relationships between different variables, while behavioral analysis focuses on understanding the behavior patterns and trends within the data.

A- Social network analysis: By handling data related to interactions between individuals or institutions, social network analysis techniques can be used to understand conditions, interactions, and effects between different parties.

b- Lesson and emotional analysis: Emotional analysis aims to remove feelings from text data. In contrast, text analysis is used to understand the content and references to written or oral information.

c- Deep learning: Deep teaching techniques are utilized to analyze large and complex datasets, allowing a deep understanding of complex patterns in the data.

d- Data Mining Technology: Data Mining Techniques search hidden conditions and patterns in the dataset, facilitating more informed decision-making.

Researchers believe that applying these techniques improves data understanding and the decision to provide high-value information to investors and stakeholders

Analysis Results

The necessary data for this research were collected through a questionnaire distributed to a selected sample of finance and accounting department managers from three industrial companies listed on the Iraq Stock Exchange: Modern Paints Industry Company, Iraqi Cardboard Industries Company, and Baghdad Soft Drinks Company. The sample was intentionally selected to include various specialties, which will be detailed later.

To ensure the validity of the data collection tool, a draft of the questionnaire was presented to a group of professors and specialists in accounting and statistics from Iraqi universities and to the relevant disclosure department within the market. This feedback was instrumental in evaluating, refining, and adjusting the questionnaire to ensure its effectiveness in achieving the research objectives. Appropriate modifications were made based on the insights received during the preparation and design phases.

The researchers distributed 60 questionnaires and successfully retrieved all of them. This process involved visiting the respondents at their workplaces, which required significant time and effort. The researchers employed a personal interview method with most respondents to explain the questionnaire sections in detail.

Analysis of Questionnaire Results and Respondents' Answers

Based on the general framework for analyzing the questionnaire outlined in the appendix, the statistical results from the collected data will be examined using various statistical methods to test the validity of the research hypotheses.

For the first axis, Determinants of Big Data and Its Impact on the Audit Process, participant responses were analyzed to determine the mean, standard deviation, relative weight, and degree of agreement. The results indicated the importance of 4.15, which had a standard deviation of 0.89 and a coefficient of variation of 0.20. The total relative weight of this axis was 0.82, reflecting the level of the classified agreement that "agrees".

Table 1 presents the reactions from test participants related to this axis, which observes the variable connected to the first axis.

Table (1) Coefficient of Variation, Weighted Mean, Standard Deviation, and the relative significance of the axis of Determinants of Big Data and Their Relationship to the Audit Process

Degree Of Agreement	Relative Weight	Coefficient Of Variation	Standard Deviation	Mean	Symbol
agree	0.80	0.24	0.998	4.02	**X1**
agree	0.80	0.22	0.911	3.98	**X2**
agree	0.80	0.24	0.974	3.97	**X3**
agree	0.81	0.25	1.023	4.07	**X4**
agree	0.82	0.17	0.969	4.10	**X5**
agree	0.80	0.24	1.00	4.02	**X6**
completely agree	0.86	0.19	0.825	4.28	**X7**
agree	0.84	0.19	0.813	4.18	**X8**
agree	0.83	0.21	0.880	4.15	**X9**
agree	0.81	0.24	0.999	4.05	**X10**
completely agree	0.84	0.21	0.885	4.22	**X11**
completely agree	0.84	0.21	0.885	4.22	**X12**
agree	0.83	0.23	0.960	4.17	**X13**
agree	0.82	0.24	0.982	4.13	**X14**
agree	0.81	0.22	0.926	4.08	**X15**
agree	0.81	0.16	0.809	4.08	**X16**
agree	0.83	0.21	0.880	4.15	**X17**
completely agree	0.89	0.15	0.673	4.43	**X18**
completely agree	0.87	0.14	0.601	4.33	**X19**
completely agree	0.86	0.19	0.833	4.32	**X20**
agree	0.83	0.24	0.999	4.13	**X21**
completely agree	0.85	0.22	0.936	4.27	**X22**
agree	0.82	0.20	0.89	4.15	

The Relationship Between Big Data Characteristics and Disclosure

Second, the ratio of significant data determinants and disclosure and participating reactions was analyzed to determine the mean, standard deviation, relative weight, and agreement. The results revealed a significance of 4.24, with a standard deviation of 0.82 and a coefficient of variation of 0.19. The general relative weight of this axis was 0.85, indicating a high degree of contract classified as "fixed agreed." The table below shows a precise observation of factors related to this axis by showing the reactions of six test participants.

Table (2) Coefficient of Variation, Weighted Mean, Standard Deviation, and Axis Relative Importance on Big Data Determinants and Their Impact on Disclosure

Degree Of Agreement	Relative Weight	Coefficient Variation	Standard Deviation	Mean	Symbol
agree	0.80	0.27	1.092	3.98	**X23**
agree	0.82	0.24	0.968	4.10	**X24**
completely agree	0.85	0.21	0.880	4.27	**X25**
agree	0.84	0.21	0.879	4.20	**X26**
agree	0.83	0.19	0.806	4.17	**X27**
completely agree	0.87	0.17	0.757	4.33	**X28**
agree	0.77	0.13	0.515	3.85	**X29**
agree	0.82	0.24	0.986	4.10	**X30**
agree	0.82	0.22	0.933	4.10	**X31**
agree	0.83	0.21	0.899	4.15	**X32**
completely agree	0.90	0.15	0.701	4.52	**X33**
completely agree	0.90	0.15	0.701	4.47	**X34**
completely agree	0.90	0.17	0.769	4.47	**X35**
completely agree	0.90	0.14	0.651	4.50	**X36**
completely agree	0.87	0.18	0.825	4.38	**X37**
	0.85	0.19	0.82	4.24	

Depending on the collected answers, financial units in research tests must use more active approaches to address and reduce determinants associated with extensive data. By doing this, these devices can fully benefit from extensive data analysis, which is essential to reducing the linked risks and increasing the disclosure process. Improvements in a concentrated strategy for extensive data can include transparency, better decision-making, and, gradually, more effective financial reporting.

The Impact of Big Data on Auditing and Disclosure

For the third axis, the effect of extensive data on revision and disclosure, participants' reactions were analyzed to determine the medium, standard deviation, relative weight, and agreement. 4.29 in conclusions revealed, which had a standard deviation of 0.79 and a coefficient of variation of 0.18. The general relative weight of this axis was 0.85, indicating a high degree of contract classified as "fixed agreed".

Table 3 below presents a detailed observation of the variable attached to this axis. It shows reactions from test participants about the effect of large data on revision and disclosure.

Table (3) Axis Relative Importance, Weighted Mean, Standard Deviation, and Coefficient of Variation on the Effect of Big Data on Disclosure and Auditing

Degree Of Agreement	Relative Weight	Coefficient Of Variation	Standard Deviation	Mean	Symbol
agree	0.80	0.24	0.977	4.00	**X38**
completely agree	0.84	0.21	0.885	4.22	**X39**
completely agree	0.87	0.18	0.765	4.33	**X40**
completely agree	0.91	0.11	0.502	4.55	**X41**
completely agree	0.86	0.19	0.783	4.28	**X42**
completely agree	0.85	0.19	0.841	4.27	**X43**
completely agree	0.86	0.19	0.830	4.30	**X44**
completely agree	0.85	0.18	0.800	4.27	**X45**
completely agree	0.85	0.19	0.836	4.25	**X46**
completely agree	0.89	0.16	0.723	4.45	**X47**
	0.85	0.18	0.723	4.29	**Overall mean**

Testing the Research Hypotheses

After formulating the first hypothesis regarding the feasibility of auditing and applying disclosure for the companies in the research sample, the regression and correlation relationships among the research variables were analyzed. The following three research hypotheses were then tested:

Table (4) Test Results by Axis

Significance	F	R^2	r	β	α	Axis
Moral	26.3	0.79	0.89	2.23	1.04	Big data determinants and their relationship to the audit process.
Moral	24.4	0.77	0.87	1.13	2.24	Determinants of big data and its relationship to disclosure.
Moral	35.16	0.85	0.92	2.11	1.66	Big data reflection on audit and disclosure.

From the analysis presented in Table 4, we can draw the following conclusions:

1- Correlation Coefficients: The correlation coefficients for the first, second, and third axes were 0.89, 0.87, and 0.92, respectively, indicating a strong relationship between the dependent and independent variables.

2- Coefficient of Determination: Each axis demonstrated a high coefficient of determination:

First Axis: R2 0.79, indicating that the model explains 79% of the variance, while external factors account for 21%.

Second Axis: R^2=0.77, meaning that 77% of the variance is explained, with 23% attributed to outside influences.

Third Axis: R0.85, suggesting that 85% of the variance is explained, leaving 15% for external factors.

3- F-values: The F-values were 26.3 for the first axis, 24.4 for the second, and 35.16 for the third. All results were statistically significant at the 1% significance level, exceeding the critical threshold 9.63.

4- Regression Equations: The regression equations derived from the analysis were all positive, indicating that an increase of one unit in the independent variable leads to an increase in the dependent variable by the regression coefficient:

Acceptance of Hypotheses

Based on the results of the analysis of variance, all three hypotheses are accepted:

- Hypothesis One: Big data determinants and the audit process have a relationship.
- Hypothesis Two: Big data determinants and disclosure have a relationship.
- Hypothesis Three: Big data determinants reflect positively on audit and disclosure.

These findings underscore the significant role that big data characteristics play in enhancing auditing and disclosure practices within the studied companies.

Conclusions and Recommendations

Conclusions

1 -Validity and Reliability: The Cronbach's Alpha test confirmed the questionnaire's validity and reliability, with all axes showing values exceeding 0.7. This indicates that the questionnaire items possess strong stability and cohesiveness.

2 -Respondent Analysis: The respondents' answers revealed they most strongly agreed with the questions across the study's axes. The standard deviation and coefficient of variation were minimal, while the relative importance remained consistently high across the variables within each axis.

3—Hypothesis Testing: Testing the study hypotheses confirmed the acceptance of all three hypotheses, aligning with the study's objective of assisting auditing units in applying disclosures and identifying strategies to mitigate challenges in auditing and disclosure processes.

4—Opportunities in Big Data: Big data's characteristics present significant opportunities to enhance auditing and disclosure within the financial market. However, fully capitalizing on these opportunities requires investment in appropriate technology, developing necessary skills for practical data analysis, and a commitment to transparency and integrity in all processes.

5 -Impact of Big Data: Big data refers to a massive volume of data that is challenging to process using traditional tools and techniques. This substantial increase in data volume has significantly affected companies' auditing and disclosure processes.

6- Data Management Challenges: Analyzing data characteristics, particularly in big data, involves key aspects such as analysis difficulty, storage, and privacy control. Each of these factors substantially impacts how data is managed and utilized within organizations

Recommendations

Depending on the findings, many recommendations can help companies solve Big Data-related challenges:

1- Invest in data processing technology: Increase technical infrastructure to enable the effective processing of large data. Applying analysis tools and techniques can help extract the price from this data.

2- Train staff: Develop the staff's auditing and data analysis skills to ensure effective handling of big data.

3- Install a strong structure: Create a broad structure that guides auditing and disclosure processes for extensive data, including guidelines for data usage, storage, and disclosure requirements.

4- Compliance with laws and regulations, such as the Data Protection Act, and ensure compliance with relevant privacy and security rules.

5- Be aware of quality: Maintain the accuracy of data and use regular and systematic disclosure practices.

6- Increase Disclosure Supervision: Improve the clearance and openness of the disclosure process for investors and stakeholders..

7- Utilizing Big Data Analytics: Going beyond traditional analysis, Big Data Analytics can highlight trends, opportunities, and challenges that can affect the company's financial results and strategic direction.

8- Review safety strategies: Strengthen security measures to protect extensive data and reduce fracture and leakage risk.

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