

## The impact of using big data on the quality of accounting information

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### Abstract:

This study came to highlight the impact of the use of big data in enhancing the quality of accounting information due to its importance in enabling the analysis of huge amounts of financial statements with high accuracy and to increase the level of transparency between the actors with the institution .

This study concluded that big data allows organizations to deal with a huge amount of data and analyze it, which enhances the quality of accounting information and thus enables to give a real picture of the financial situation of the organization to make sound decisions that ensure its continuity and development, in addition to preventing the depletion of enterprise resources for fraud and embezzlement, work in transparency and respect the rights of various parties.

**Keywords:** Big data, Quality of accounting information

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### **1. INTRODUCTION**

Accounting is considered among the topics and studies that are of interest to researchers and professionals in various fields. Especially in light of the rapid developments in the world of technology that we are witnessing in this era and with the increasing size of data available, Big data has become one of the most important challenges and opportunities for companies, especially in the field of finance and accounting, therefore, improving the quality of accounting information is an urgent goal to ensure and making sound financial decisions, so in this research we studied the impact of big data on the quality of Accounting information and analyzing how to use it to achieve development in the field of accounting .

Study problem:

What is the impact of using big data on the quality of accounting information?

#### **1.2 Sub-questions:**

- What is meant by big data, its importance and types?
- What is meant by the quality of accounting information and what are its most important characteristics?
- How does big data affect the quality of accounting information?

#### **1.3 The Study hypotheses:**

To address the problem of our research, we formulated the following hypotheses:

- The use of big data is an imperative necessity in the field of accounting and finance.
- Big data enhances the quality of accounting information.

#### **1.4 The Objectives of the study:**

- Identifying the role of big data in enhancing the quality of accounting information.
- Defining the concept of big data, its characteristics, importance, and most important types.
- Determine the extent to which big data can contribute to enhancing the quality of accounting information.
- Coming up with some results that can be used.

#### **1.5 The Study methodology:**

Based on the nature of the study and in order to achieve the research objectives and include its various aspects, therefore the Descriptive method was adopted which is based on presentation and then drawing conclusions.

#### **1.6 The Study topics:**

To answer the problem raised, the study was divided into three main axes :

First: What is big data?

Second: The Quality of accounting information.

Third: The impact of the use of big data on the quality of accounting information .

Firstly, what is big data?

## **2. The concept of big data:**

It is a collection of large-sized data that cannot be obtained and stored by Traditional database software, as the size of this data grows over time or with technological advances from different applications, requiring a degree of rapid processing and modern techniques to process and analyze them. (Al-Hassan Shaaban Ahmed, 2022, p. 101)

It can also be defined as a group of information assets of large size, diversity and high speed which require new forms of processing that help in discovering insights and making appropriate decisions (Mishra, 2015, p. 124)

In addition, big data is defined as a huge amount of complex data that achieves High levels in distribution, huge quantum data resources, ultra-high speed and great diversity, which exceeds the capacity of traditional software and computers which require storage, processing and distribution and are often made available in a timely manner where It takes various forms if it is understood more deeply and used better. (Abdul-Ghani Al-Aqel & Qashy, 2021, p. 44)

Company Gartner, a research and consulting company in the field of information technology, has defined information technology as large-volume, high-speed, and highly diverse information assets that require innovative and cost-effective forms of data processing in order to improve visibility and make appropriate decisions. (Sinan Zuhair Abdul Rahman Zuhair Abdul Qader, 2022, p. 189)

Through the previous definitions, the researcher sees big data as a large set of various types of information may be in the form of legal or financial texts, videos, images, etc., which are constantly updated where it has been processed, analyzed and interpreted, to be used at the appropriate time to make decisions.

## **3.The Characteristics of big data:**

Big data can be described by the following characteristics: (Mishra, 2015, p. 124)

**3.1. Volume**, i.e. the huge amount of data available.

**3.2. Diversity**, Big data is characterized by the diversity of its sources and different scopes which data analysts must know about to use it more effectively.

**3.3. velocity** means how quickly this data is created and processed in a timely manner .

**3.4. Inconsistency** refers to the inconsistency that data can sometimes show, which hinders the process of dealing with and managing data effectively

**3.5. Honesty** relates to the reliability and quality of data through its validity and source, which are considered as major factors to ensure the accuracy of the analysis and take appropriate decisions

## **4.Types of big data:**

**4.1 Structured data:** It is data organized in the form of tables or databases in preparation for processing. (Futoun Ahmed Othman , 2023, p. 3)

**4.2 Unstructured data:** It is everything that cannot be easily classified, such as images, graphs, audio clips, songs, videos, clicks on websites, web pages, PDF files, emails , Twitter tweets, Facebook posts, chat messages...etc. (Hajj Salem Attia, 2022, p. 31)

**4.3 Semi-structured data:** It is considered as a type of structured data, but it is not designed in tables or databases , in a research report and a number of related lectures in 2001, Doug Allen , META Group Analyst , now known as Gratner , defines data growth challenges and opportunities as a three dimension element, due to the increase of volume, speed, and diversity of data. (Jamal Ali Muhammad Youssef, No date, p. 18)

### **5. The importance of big data:**

The main importance of big data is that it can improve efficiency in the context of using a large amount of data of a different type. If big data is properly defined and used accordingly,

Organizations can get better visibility over their business and thus lead to efficiency in different areas such as Sales, improving the manufactured product and the service .

Big data can be used effectively in each of the following fields: (Suleiman bin Ibrahim Al-Riya & Zainab bin Al-Tayeb, 2018, p. 8)

**5.1 In information technology:** in order to improve security and tracing errors through Patterns analysis in the existing records.

**5.2 In customer service:** using information from call centers in order to obtain customer patterns, Thus, enhancing customer satisfaction by customizing services according to their trends and desires.

**5.3 In improving services and products:** through the use of social media content by knowing potential customers' preferences, a company can modify its products to address a space more than people.

**5.4 In detecting fraud in automatic online transactions .**

**5.5 In presenting risks through analyzing information from transactions in the financial market:** In the future we propose analyzing the potentials of big data and the power that can be empowered through data analysis.

### **Secondly : The Quality of Accounting Information .**

### **6. The concept of quality of accounting information:**

Accounting information represents all quantitative and non-quantitative information

related to the economic events that is processed and reported by accounting information systems in the financial reports submitted to accounting bodies In operating plans and reports used internally, where high-quality accounting information is more useful in the field of rationalizing decisions, the quality of accounting information is a criterion on the basis of which the extent of the ability of information to be held accountable to achieve its objectives, Or consider it as a basis for differentiation between accounting methods and procedures used in measurement and accounting disclosure in financial statements and reports (Delirmousa Ahmed Shea Reda Taher, 2022, p. 119)

## **7. The Characteristics of the Quality of Accounting Information:**

It should be noted that big data has an effective role in enhancing the characteristics that Accounting information should have in order to be more useful to its users, we mention among them:

### **7.1 Suitability:**

Appropriateness is defined as the ability of accounting information to change the user's decision by relying on a huge database by increasing its influence in controlling the present, understanding the past, and the ability to predict the future. Therefore, appropriate information is accounting information that has predictive and retrospective value that affects the direction of the behavior of decision makers and influences it to change the decision towards the position on which it is taken when it is presented at the appropriate time before it loses its ability to influence that decision. From the above, suitability can be defined as the characteristic that would affect the behavior of the decision maker and make a difference in decisions in the event of its absence or availability. In order for accounting information to be appropriate, it must provide three sub-characteristics, which are To be: (Ibtihaj Ismail Yacoub., (No date)., p. 415)

#### **- Predictive Value:**

It is the ability of accounting information to improve the ability of the decision maker to predict the results of future expectations, but without data to help know past events makes it difficult Predicting what it will be like in the future.

#### **- Retrospective Value :**

It is called feedback, as it helps the information user evaluate The accuracy of thier previous expectations, and therefore they uses huge data to evaluate the results of the decisions he adopts on these expectations.

#### **- Relatively Important Value:**

Canceling or not mentioning some items is important if these items individually or Combined were to affect the economic decisions of users based on financial statements.

### **7.2 True representation:**

Reliability is the second basic property after suitability and this property is known as the property of information to ensure that the information is free of errors and bias to

a reasonable degree, and that it faithfully represents what it claims to represent. Reliability is also related to the integrity of the information and the possibility of relying on it, and thus it is possible to achieve the characteristic of trust through the following: (Halilia Salem Ahmed Kayed Nouredine., 2019, p. 247)

- Honesty of expression: Accounting information must express its events correctly and free from any approved manipulation. (Ismail Othman Sharif Ishaq, 2022, p. 409)
- Neutrality which means not being biased
- Verifiability: i.e. the ability to reach the same results by more than one person.

### **7.3 Comparability:**

Refers to the ability to compare the financial statements for a given period with the financial statements of a previous period for the same company, or comparing the financial statements of some establishments with the current statements of other companies and this is done by users of financial statements for the purpose of making investment and financing decisions or determining the financial position and performance of the company. Thus, by comparing companies in a similar sector that apply similar accounting procedures to achieve the goal (Delir mousa Ahmed Shea Reda Taher., 2022, p. 119).

### **7.4 Stability :**

It means consistency in using the same approved methods and procedures for measuring and communicating accounting information from one period to another. Article No. 05 of Executive Decree 156-08, which includes the application of the provisions of Law 11-07 containing the financial accounting system, stipulates that accounting methods are represented in principles, agreements, rules, and specific applications which are specified in the articles must be applied from one session to another on a permanent basis to prepare and present the financial statements. (Gourin Haj Qwaider & Khayra, 2019, p. 248)

## **8.The Impact of Big Data on the Quality of Accounting Information.**

The basis for preparing financial statements is financial accounting data, which has witnessed development in recording methods and analysis of that data, throughout history, from feather pens to FinTech accounting systems based on computing, which is followed by an increase in accounting data represented by additional data such as videos and images. voice and text data, and emails, so accountants and financiers must generally know the impact of big data on traditional accounting records and information, and because Big Data Technology institutions can benefit from any computer technology that transforms big data into information that is useful for making decisions. (Najat Muhammad Marai Younis, 2019, p. 20)

The impact of big data analysis on the quality characteristics of accounting information is as follows: (Najat Muhammad Marai Younis, 2019, p. 28)

### **8.1 Analysis of Big Data and the Characteristic of Credibility:**

Big data analysis leads to complete financial reports and improved prediction of facility risks achieving consensus among decision makers, and revealing hidden information in financial reports, which works to reduce information asymmetry and thus improve the credibility of financial reports as Big data analysis works to providing internal information such as discussions, meetings, and phone calls that cannot be revealed via traditional methods which increases the honest expression of the facility's performance and financial position. Therefore, data analysis represents an urgent issue and a real opportunity for accountants, and that there is no change in the nature of accounting and financial disclosure.

But the change in traditional methods of recording, collecting and analyzing accounting information, and the analysis of big data, greatly affects the future of financial reports, their accuracy and the development of accepted accounting principles ; especially on the disclosure of assets outside the balance sheet and fair value accounting. Therefore, analyzing big data leads to improving the credibility characteristic of accounting information.

## **8.2 Big Data Analysis and Relevance:**

Big data analysis leads to improved predictions of the facility's future profits and risks and improved predicted future growth opportunities for the facility, improving the prediction of the facility's future sales, and predicting financial fraud and Early detection of strengths and weaknesses in the organization's sectors and improving the evaluative ability of financial reports ;and then improving the evaluation of the facility's performance as big data is used in disturbance prediction models like financial failure, fraud, and stock market prediction, through neural networks and algorithms, so analyzing big data leads to improving the appropriateness then achieving the Quality accounting information.

## **8.3 Big data Analysis and Comparability:**

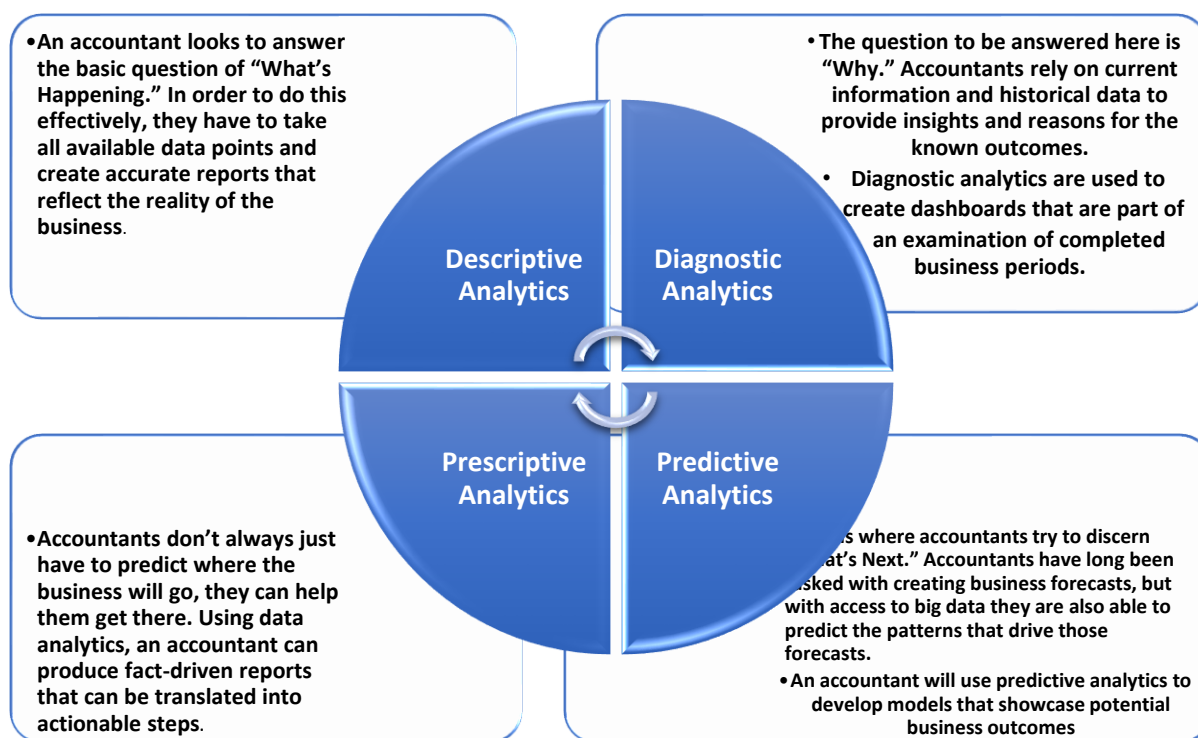
Big data analysis leads to improving the comparison feature between an establishment's sectors and comparing the company for more than one financial period, and between similar sectors through the detailed information provided by big data analyses. Helen Crofts, content consultant at Kaplan, pointed out that every sector, from the manufacturing sector to retail sales and services, can benefit from the opportunity to increase operational efficiencies and assess risks And identifying advantages and weaknesses through big data analysis. Therefore, big data analysis leads to improving the comparability of accounting information.

## **8.4 Big data analysis and understandability:**

Big data analysis leads to improving understanding and analyzing the content of the information contained in financial reports in a more clear way, revealing unclear information and providing a better picture of the company and Big data improves understanding of other information from annual reports, and improves understanding of company performance as a whole, big data analysis also provides valuable information

in understanding and making company decisions where A better opinion can be reached by relying on detailed information about the company and thus having a better understanding of the extent of the company's success or failure

**Fig.1. Types of Data Analysis for Accountants**



Source: (<https://www.franklin.edu/blog/accounting-mvp/accou>, s.d.)

## 9. RESULTS :

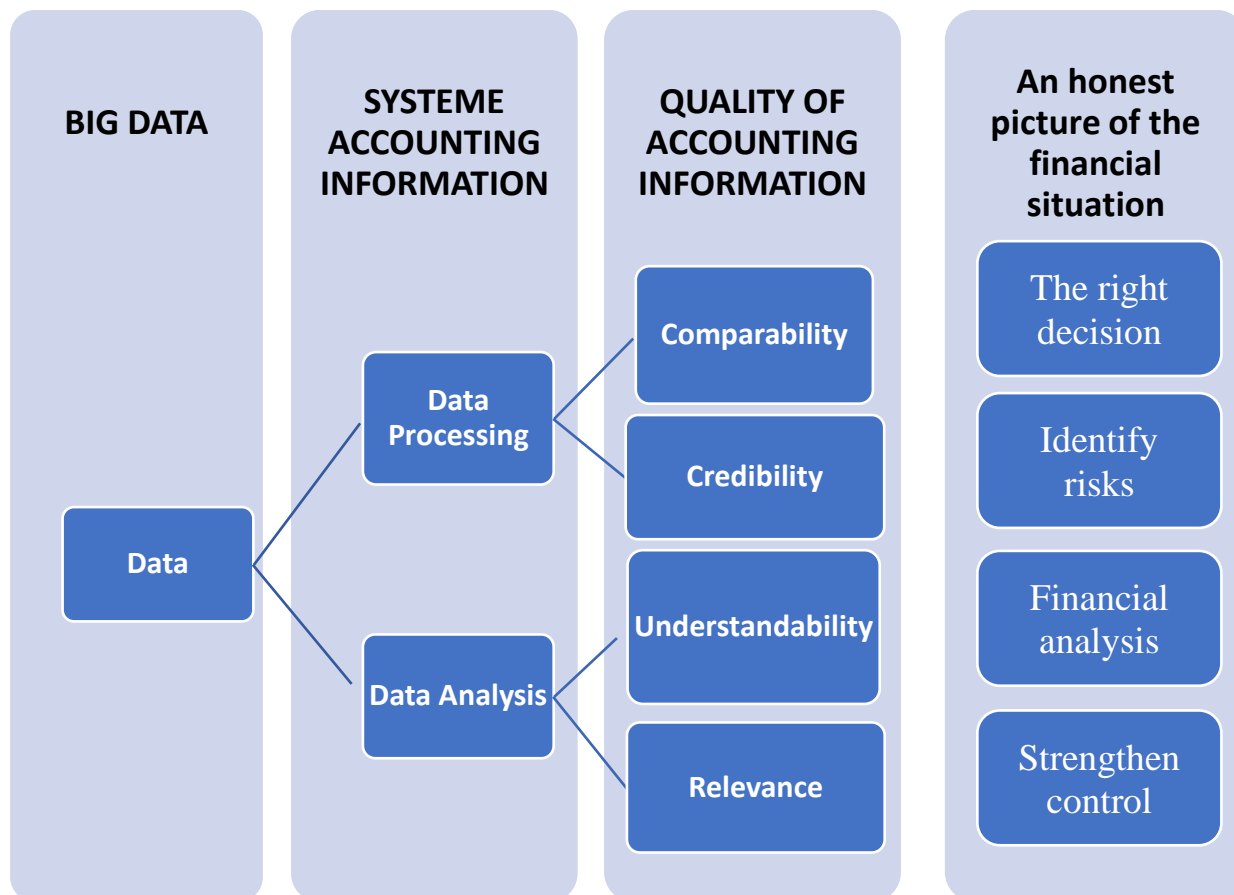
Through this study we reached the following results:

With the availability of huge data, any accounting information system can easily and quickly process and analyze the data it needs to:

- Transforming it into quality accounting information characterized by suitability and reliability that gives an honest picture of the association's financial situation.
- Providing quality accounting information for use in financial analysis in order to understand the financial performance of the association and make appropriate and strategic decisions.
- Preparing the necessary reports and financial statements, such as the financial position statement, income statement, and cash flow statement Strengthening the internal control system in order to ensure compliance with financial laws and international accounting standards.
- Collecting and providing a large amount of financial data from several different sources, which helps in predicting and enhances a deeper and more accurate understanding of financial trends.
- Speedy identification of financial and accounting data using advanced data analysis techniques which enhances the accuracy of financial statements and reports to make appropriate decisions.



**Fig.1. An honest picture of the financial situation with big data**



Source: Prepared by the researcher

## 10 . Recommendations:

Through the results obtained, we can make the following recommendations:

- The necessity of using big data and smart technologies to analyze and examine accounting data more accurately and effectively.
- The need to develop the skills of accountants and financial analysts in the field of smart technologies and data analysis in order to benefit more from them
- Developing accounting information systems to enhance the processing of huge amounts of data more accurately.
- Developing protection and security programs for huge accounting data to avoid hacking and leaking.

## 11.CONCLUSION:

In light of the technological and digital development, understanding, using and analyzing big data and using it in the field of accounting and finance is essential for making appropriate decisions and achieving the desired goals. Whereas improving the quality of accounting information contributes significantly to enhancing the level of efficiency and transparency,

Therefore, we must pay attention to better techniques for using big data to achieve maximum benefits and improve accounting performance in addition to finances in the futur

### **11. Bibliography List :**

- Abdul-Ghani Al-Aqel, K. Q., & Qashy. (2021). Big data and artificial intelligence to enable the transition to a smart government. *Namaa Journal of Economics and Trade*, 05(02), 44.
- Al-Hassan Shaaban Ahmed. (2022). Big data, its nature, importance, and elements. *The International Arab Journal of Knowledge Management*, 01(02), 101.
- Delir mousa Ahmed Shea Reda Taher. (2022). The role of artificial intelligence techniques in improving the quality of accounting information. *Tikrit Journal of Administrative and Economic Science*, 119.
- Delirmousa Ahmed Shea Reda Taher. (2022). The role of artificial intelligence techniques in improving the quality of accounting information. *Tikrit Journal of Administrative and Economic Sciences*, 119.
- Futoun Ahmed Othman , S.-B. (2023). The effective role of big data in supporting the communications sector. *Journal of Information Studies & Technology*, 03.
- Gourin Haj Qwaider, & Khayra, M. (2019). The quality of accounting information and its impact on accounting disclosure. *Journal of North African Economics*, 15(21), 248.
- Hajj Salem Attia. (2022). Big data and the bet on the future... Understanding the new deeply-rooted reality Symbolism. 31.
- Halilia Salem Ahmed Kayed Nouredine. (2019). The role of the accounting information system in improving the quality of information Accounting in the economic institution. *Journal of Financial and Business Economics*, 4(1), 247.
- <https://www.franklin.edu/blog/accounting-mvp/accou>. (s.d.). *FRAKLIN UNIVERSITY*. Récupéré sur <https://www.franklin.edu/blog/accounting-mvp/accounting-data-analytics>.
- Ibtihaj Ismail Yacoub. ((No date).). Accounting disclosure of human assets and its effects on improving the quality of accounting information. *Journal of the Islamic University College*, 1(67), 415.
- Ismail Othman Sharif Ishaq. (2022). Digital transformation and its impact on the credibility of accounting information. *Journal of contemporary economic research*, 5(2), 409.
- Jamal Ali Muhammad Youssef. (No date). A proposed introduction to evaluate the importance of development Accounting in a big data environment. .18. 18.
- Mishra, A. S. (2015). Information Professionals and Big Data . *International Journal of Advanced Research in Computer Science and Software Engineering*, 125.
- Najat Muhammad Marai Younis. (2019). The impact of big data analysis on improving the quality of accounting information: a field study. 20.
- Sinan Zuhair Abdul Rahman Zuhair Abdul Qader. (2022). The impact of big data on measurement and disclosure. *Tikrit Journal of Administrative and Economic Sciences*, 18(60), 189.
- Suleiman bin Ibrahim Al-Riya, Z. b.-T., & Zainab bin Al-Tayeb. (2018). New roles for information professionals to deal with Big Data. *Technology & Journal of Information Studies*, 8.