Unlocking the Power of Data Analytics: A Comprehensive Study on Types of Data Analytics for Effective Decision - Making

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Abstract: *Big Data helps an organization identify new opportunities. A business that uses big data leads to more efficient business operations and higher profit margins. Today the organization has found itself the newer and more efficient way of conducting business .data analytics really empowers the business by analyzing the data much faster. Today, business decisions are improved with the use of data analytics. Types of data analytics play a significant role in transforming complex raw data into an informative one. All types of data analytics are important for an organization to stay ahead of its competitors. Thus, the present study aims at understanding the different types of data analytics for improved business decision-making*

Keywords: data analytics, decision-making, raw data, business

I. INTRODUCTION

With the advancement of technology and the resulting growth in the amount of data moving in and out of businesses on a daily basis, it has become necessary to develop faster and more effective methods of evaluating such data. Furthermore, given the increasing number of knowledge sources and the sophistication of data analytics, big data storage should enable analysts to quickly develop and adapt data. This necessitates the use of a flexible database, one whose logical and physical contents can adjust in response to fast data changes. Finally, because contemporary data studies rely on sophisticated statistical procedures, and analysts must be able to drill down into large datasets, a massive data repository must be both deep and operate on a difficult algorithmic runtime engine. As a result, a variety of technologies are utilized for massive data, ranging from distributed systems and big data processing databases for high query performance and platform scalability to non-relational or in-memory databases. The present paper aims at understanding the different types of data analytics.

II. OBJECTIVES

To know the different types of data analytics for improved business decision-making.

III. RESEARCH METHODOLOGY

Secondary data sources have been used to collect the data for the present data. Secondary Sources include research articles, research papers, e-books, journals, etc.

IV. TYPE OF DATA ANALYTICS

Text Analysis

Text analysis, often known as text analytics or data mining, combines machine learning and natural language processing (NLP) to organize unstructured text data and analyze it for useful insights. Text analysis is a type of qualitative research that looks at more than simply numbers and figures. Text analysis software sorts text by subject extracts keywords, and reads for emotion and purpose by converting human language into machine-readable data. As concrete, often subjective data, it tells us "What is happening." It provides more detailed and focused explanations of why something is happening or happened.

Descriptive Analysis

Descriptive data analysis provides an answer to the question "What happened?" when analyzing quantitative data. It is the most basic and frequently employed type of data analysis, and it entails summarizing, describing, and identifying patterns using already available data and computations like mean, median, mode, percentage, frequency, and range. Descriptive analysis is frequently used as a starting point for further data analysis. It is, without a doubt, quite beneficial for creating revenue reports and KPI dashboards. The fact that it is primarily focused on statistical analysis and absolute numbers prevents it from being able to provide an explanation for why or how those numbers were generated.

Inferential Analysis

The inferential analysis makes generalizations or hypotheses by comparing statistics from groups within a larger population, such as a country's population, current clientele, medical research patients, etc. Hypothesis testing and estimation theories are the most frequent approaches for doing inferential statistics. When two variables are compared in order to draw a conclusion in market research, such as the amount of money spent by female consumers vs. male customers or age groups. Alternatively, it may be used to survey a subset of the population in order to extrapolate data about the complete population. In this instance, accurate calculations for a representative sample of the population are required.

Predictive Analysis

The predictive analysis makes assumptions about future occurrences based on previously collected data. It's all about "what's likely to happen." It's commonly used in sales analysis to forecast consumer behavior by combining demographic and purchase data with other data factors. For example, when the demographics of a certain place change, some enterprises' ability to operate there will alter as well. Alternatively, if a customer's wage rises, they will presumably be able to purchase more of your stuff. Predictive analysis sometimes involves a lot of extrapolative guessing, but the more data points you have on a certain demographic or individual consumer, the more accurate the prediction will be.

Prescriptive Analysis

The prescriptive analysis is the most advanced type of analysis since it integrates all of your data and analytics before producing a model prescription: what action to take. Prescriptive analysis examines a variety of scenarios, forecasts their outcomes, and determines the optimal course of action based on the findings. Prescriptive analysis, such as artificial intelligence, is at the leading edge of data analysis. Prescriptive analysis is possible because AI, can consume and break down large volumes of data and successfully train itself how to utilize the data and make its own informed conclusions. Artificial intelligence used to need a lot of processing power, making it difficult for organizations to deploy. However, as more powerful data analysis tools become available, many options are growing. However, with the advent of more complex data analysis tools, there are a plethora of new and intriguing possibilities.

V. CONCLUSION

From the above study, it can be concluded that business data analytics helps in optimizing business performance. Business data analytics has brought a new way of doing business. Business decisions can be easily improved when applied business data analytics. Transforming complex data into informative is the real essence of data analytics.

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