UNIT III DESCRIPTIVE ANALYTICS

Introduction to Descriptive analytics - Visualising and Exploring Data - Descriptive Statistics - Sampling and Estimation - Probability Distribution for Descriptive Analytics - Analysis of Descriptive analytics

Introduction to Descriptive analytics

Descriptive analytics is a statistical interpretation used to analyze historical data to identify patterns and relationships. Descriptive analytics seeks to describe an event, phenomenon, or outcome. It helps understand what has happened in the past and provides businesses the perfect base to track trends.

What Does Descriptive Analytics Tell Us?

Alright, so descriptive analytics gives businesses essential information about how it's doing, where it's going, and how it's stacking up against the competition. But there's much more to the story. So what does this tell companies and aspiring professionals in the field?

The company's current performance:

Descriptive analytics helps businesses keep track of critical metrics involving individuals, groups and teams, and the company as a whole. For instance, descriptive analytics can show how a specific sales rep is doing this quarter or which of the rep's products sells the most.

The business's historical trends:

Descriptive analytics gathers information over long periods, and that accumulated information can be used to track the company's progress by comparing the metrics for different periods. For example, the corporate bean counters can track sales or expenses by comparing the results of various quarters, calculating revenue growth by percentages, and rendering the results on easy-to-read charts.

The company's strong and weak points:

Descriptive analytics gives professionals the tools to compare the performances of various business groups using metrics like employee-generated revenue or expenses as a percentage of revenue. It will also compare these results with known industry averages or published

results from other businesses. These comparisons help companies see where they're doing well and where they need to improve.

How Does Descriptive Analytics Work?

Descriptive analytics breaks down into five steps, including:

1. State the Business Metrics

For starters, the business must identify the metrics that it wants to generate based on the essential business goals of each group within the company or the company's overall goals. For instance, a company emphasizing growth may emphasize measuring quarterly revenue increases. At the same time, the company's accounts receivable department might monitor great days' sales and other metrics that show how much time it takes to collect money from their customers.

2. Identify the Data Required

Next, the company must find the data needed to generate the desired metrics. This task is a potential challenge since the relevant data may be scattered across many files and applications. However, companies that employ an Enterprise Resource Planning (ERP) system may have an easier time because they will already have most or all the needed data in their systems' databases. Furthermore, some metrics may also need data from external sources, like e-commerce websites, industry benchmarking databases, or social media platforms.

3. Extract and Prepare the Data

Extracting, combining, and preparing the relevant data for analysis is potentially time-consuming if the needed analysis data originates from multiple sources. However, this is a crucial step to ensure accuracy. Furthermore, this may involve data cleansing to eliminate inconsistencies and mistakes in the data, a reasonable effort considering the information coming from an eclectic group of sources and rendering data into a suitable format for analysis tools. Advanced data analytics types use a process known as data modeling, a framework residing within information systems to help prepare, arrange, and organize the company's information. Data modeling defines and formats complex data, turning it into a usable, actionable resource.

4. Analyze the Data

Companies have various tools at their disposal to apply descriptive analytics, ranging from business intelligence (BI) software to spreadsheets such as ones found in Excel. Descriptive analytics usually involves using fundamental mathematical operations to one or more of the variables. For instance, a sales manager might like to monitor the average sales revenue or the monthly revenue from either established or recently acquired customers.

5. Present the Data

Once business analysts have gone through the necessary steps, all that's left is presenting the data. First, however, the information must be presented so that everyone can understand it, from stakeholders to finance specialists. Stakeholders usually appreciate seeing the report in compelling visual forms, like bar charts, pie charts, or line graphs. Visible data is easier to grasp. Finance specialists on the other hand, may want the information presented through numbers and tables.