

## INTRODUCTION

Product sales analysis is an indispensable tool for modern businesses striving for success in an increasingly competitive market. By delving insights into customer preferences, market trends, and the performance of their products. This project explores the significance of product sales analysis, its key components, and its vital role in shaping business strategies.

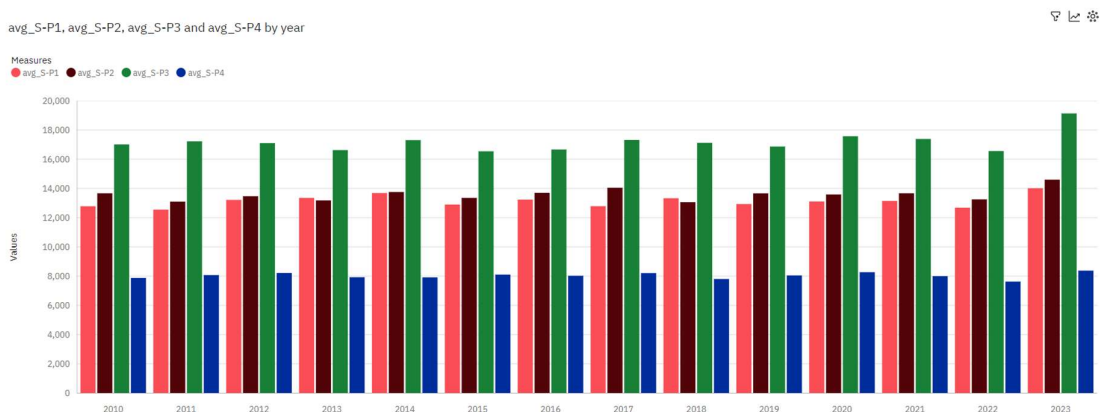
## DESCRIPTION

Analyse sales data to identify top-selling products, peak sales periods, and customer preferences, aiding in inventory management and marketing strategies.

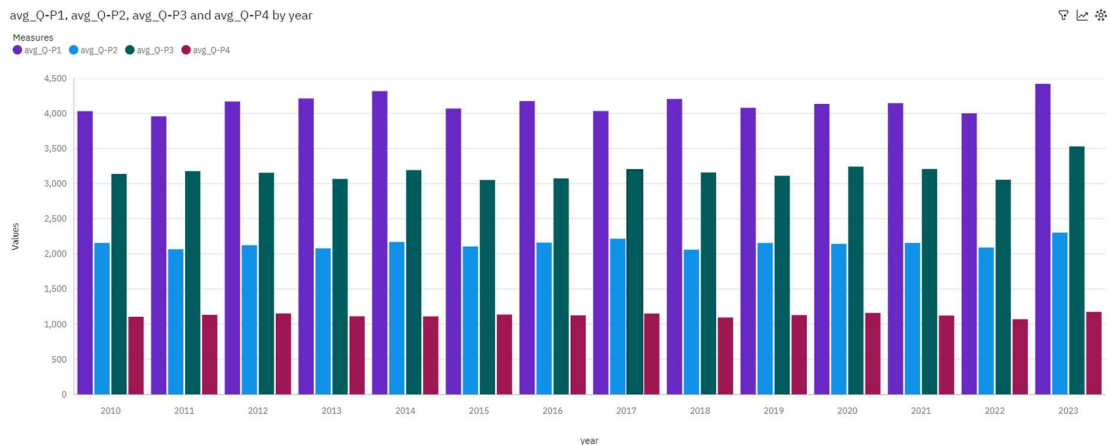
## IBM Cognos tool

The IBM Cognos tool is used for analysing the files such as csv files and other files to visualize data from them.

## REVENUE COLUMN BAR GRAPH



## UNIT SOLD COLUMN BAR GRAPH



## AIDING INVENTORY MANAGEMENT

Inventory is one of the most crucial aspects of any business model. A close tab on the movement of inventory can make or break your business and that's why entrepreneurs always emphasise on effective inventory management. While a few business owners do understand the significance and cruciality of tracking inventory on a regular basis, some fail to realise its importance making their business fall through the unseen cracks.

year, avg\_Q-P1, avg\_Q-P2, avg\_Q-P3 and avg\_Q-P4

year	avg_Q-P1	avg_Q-P2	avg_Q-P3	avg_Q-P4
2010	4,031.92	2,155.97	3,138.81	1,104.77
2011	3,958.75	2,065.79	3,177.85	1,131.94
2012	4,149.25	2,124.31	3,155.4	1,152.02
2013	4,212.21	2,078.96	3,067.12	1,111.36
2014	4,317.52	2,169.77	3,193.31	1,110.06
2015	4,069.33	2,106.16	3,051.92	1,136.44
2016	4,175.22	2,160.68	3,074.47	1,125.11
2017	4,033.45	2,216.01	3,195.43	1,150.67
2018	4,205.34	2,059.76	3,159.22	1,094.28
2019	4,079.47	2,155.18	3,112.19	1,128.42
2020	4,135.11	2,143.02	3,242.14	1,159.56
2021	4,146.35	2,156.08	3,207.99	1,121.4
2022	4,000.73	2,090.14	3,054.72	1,069.48
2023	4,420.88	2,302.97	3,530.29	1,174.26
Summary	4,123.34	2,129.71	3,143.77	1,123.74

## MARKETING STRATEGIES

1. As comparing the sales unit column graph and revenue column graph many things seems odd.
2. Because P1 sold more than P3 in every year, but P3 has more revenue than P1.
3. Other products like P2,P4 has similar hike in the units sold and revenue graph.
4. P1 has to change it's Sales strategy, Since it has more popularity among customers compared to other products.
5. P3 has to increase its customers, since P1 has more customers than P3.

## DATASET MODIFICATION

Previously we cleaned and processed the data's in dataset. Now we're modifying the dataset by adding averages of every products sales unit and revenue.

### CODE

```
import pandas as pd

# Load your dataset into a Pandas DataFrame

# Assuming you have a CSV file with 'Date' and 'value' columns
df = pd.read_csv('statsfinalsample.csv')

# Assuming 'Date' is in a datetime format, if not, you may need to
convert it
df['Date'] = pd.to_datetime(df['Date'], format='%d-%m-%Y',
errors='coerce')

# Extract the year from the 'Date' column
df['year'] = df['Date'].dt.year

# Specify the columns for which you want to calculate averages
columns_to_average = ['Q-P1', 'Q-P2', 'Q-P3', 'Q-P4']

# Calculate average for each specified column
for column in columns_to_average:
    avg_column_name = f'avg_{column}'
    df[avg_column_name] =
df.groupby('year')[column].transform('mean')

# Drop the 'year' column if you don't want it in the final output
df = df.drop('year', axis=1)

# Save the modified DataFrame back to the CSV file
df.to_csv("D:\CSE\PROGRAM\PYTHON\statsfinalsample.csv",
index=False)
print(df.head(5))
```