Product Sales Analysis

Introduction:

In this analysis, we delve into the sale of a product, leveraging the power of IBM Cognos for insightful visualization. Through data-driven exploration, we aim to uncover valuable trends and patterns that will inform strategic decisions, optimize performance, and drive growth.

Step 1: Define and analyze the dataset.

Step 2: Obtain the sales product analysis data.

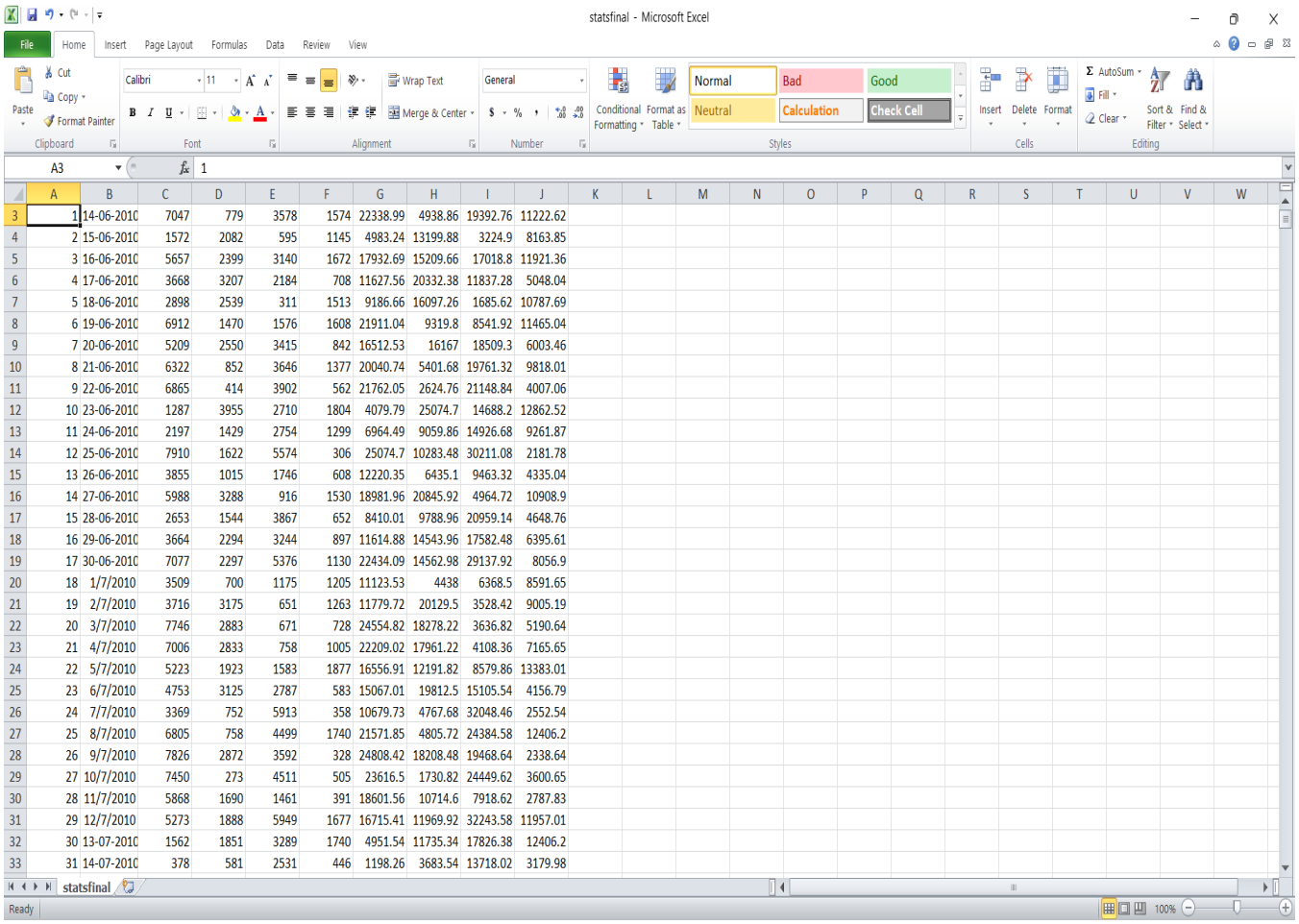
Step 3: Clean and preprocess the give data.

Step 4: Load the data into IBM cognos

Step 5: Build the Visualizations.

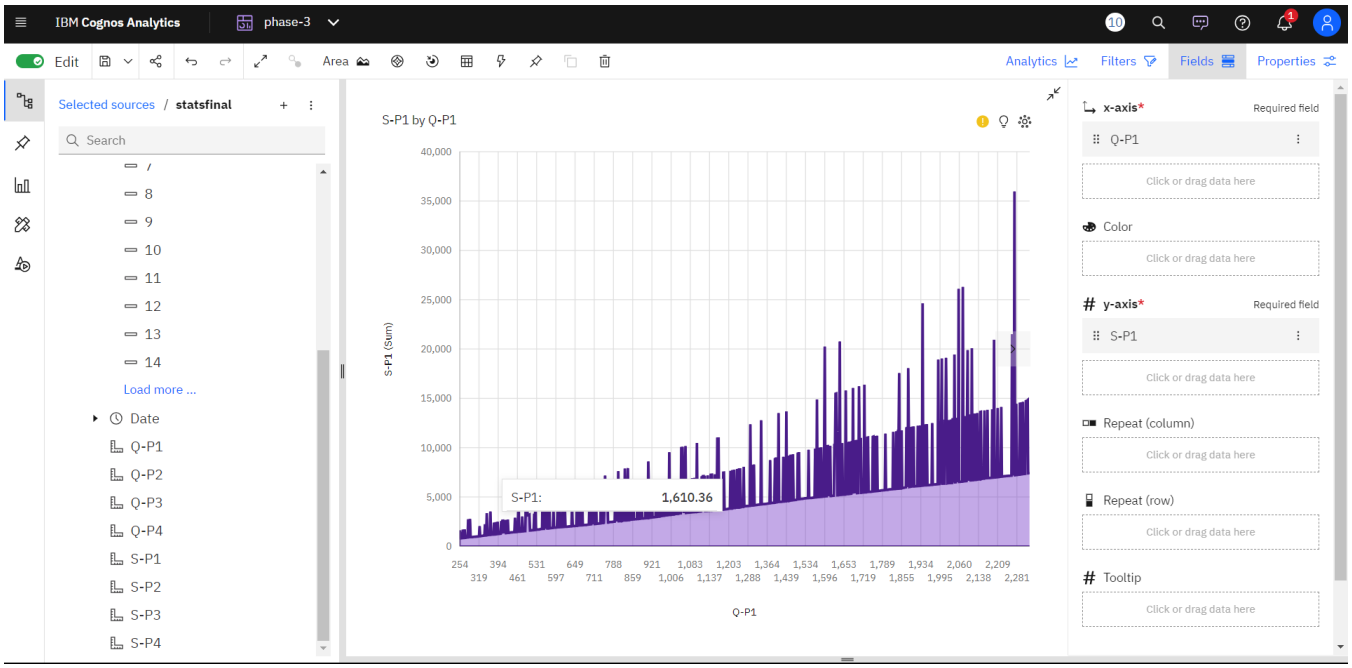
Step 6: Analyze and share the data.

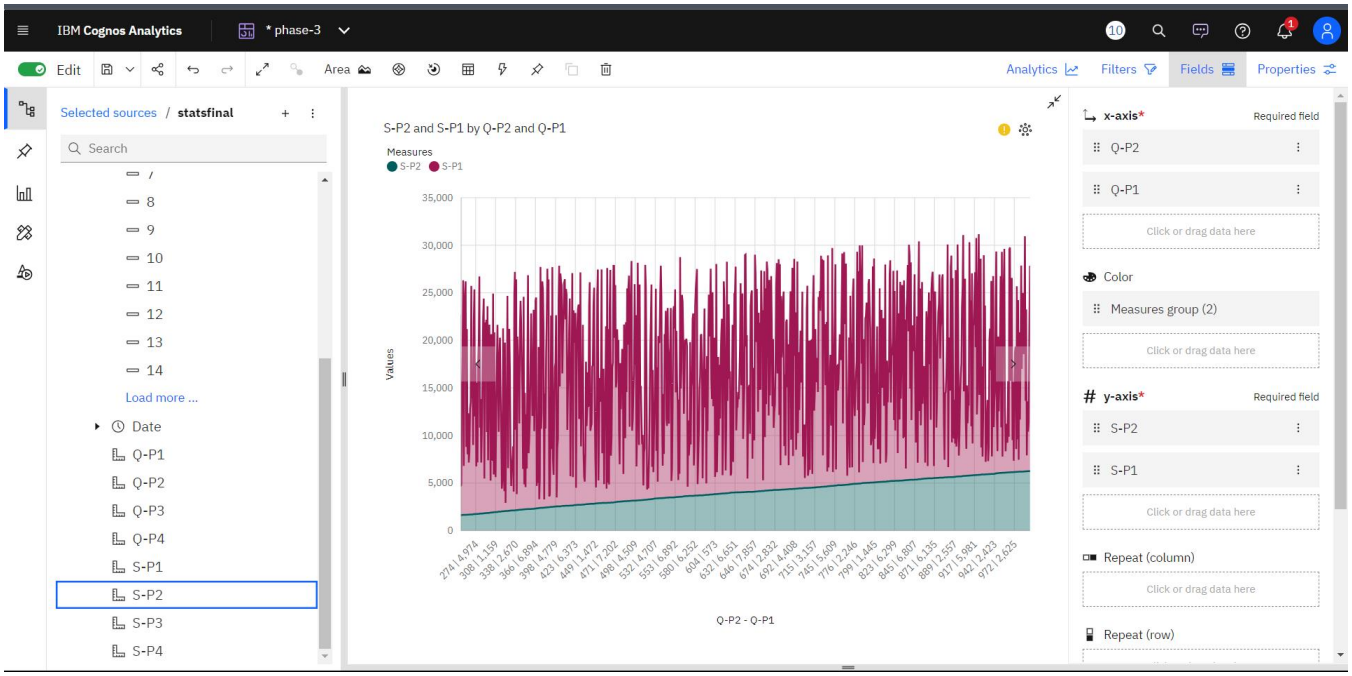
➢ In this session we have used Microsoft Excel to clean the data.

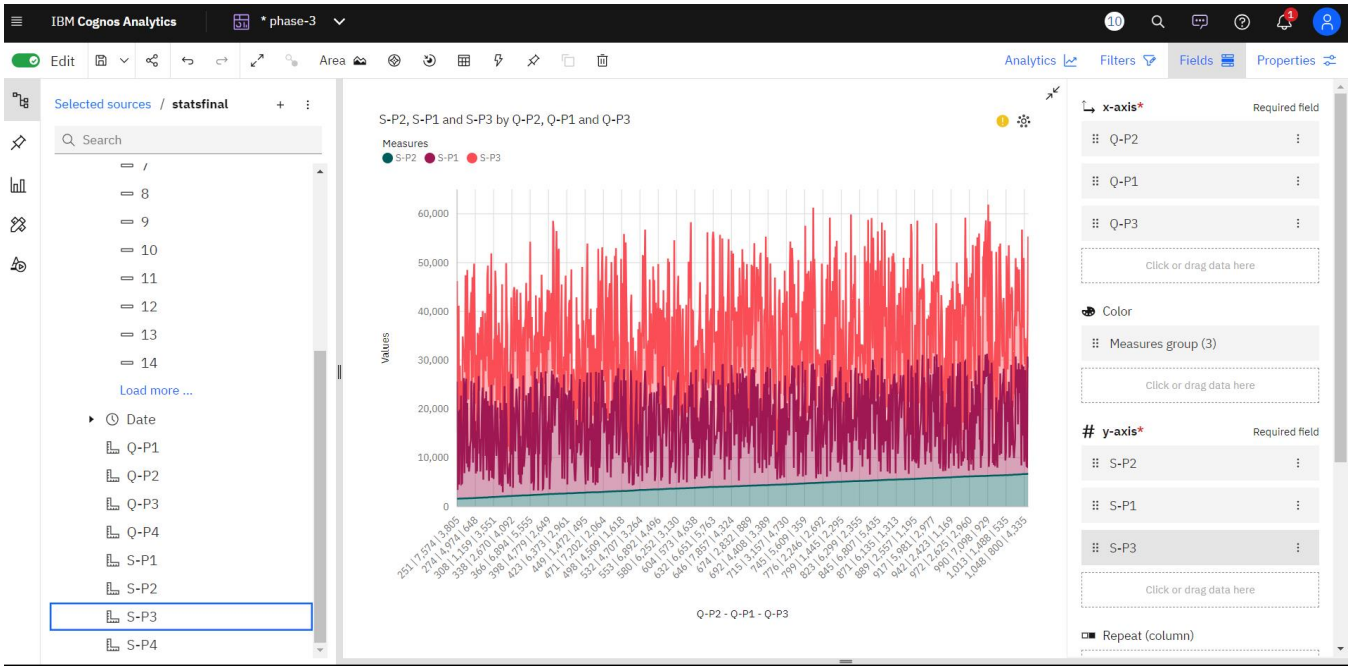


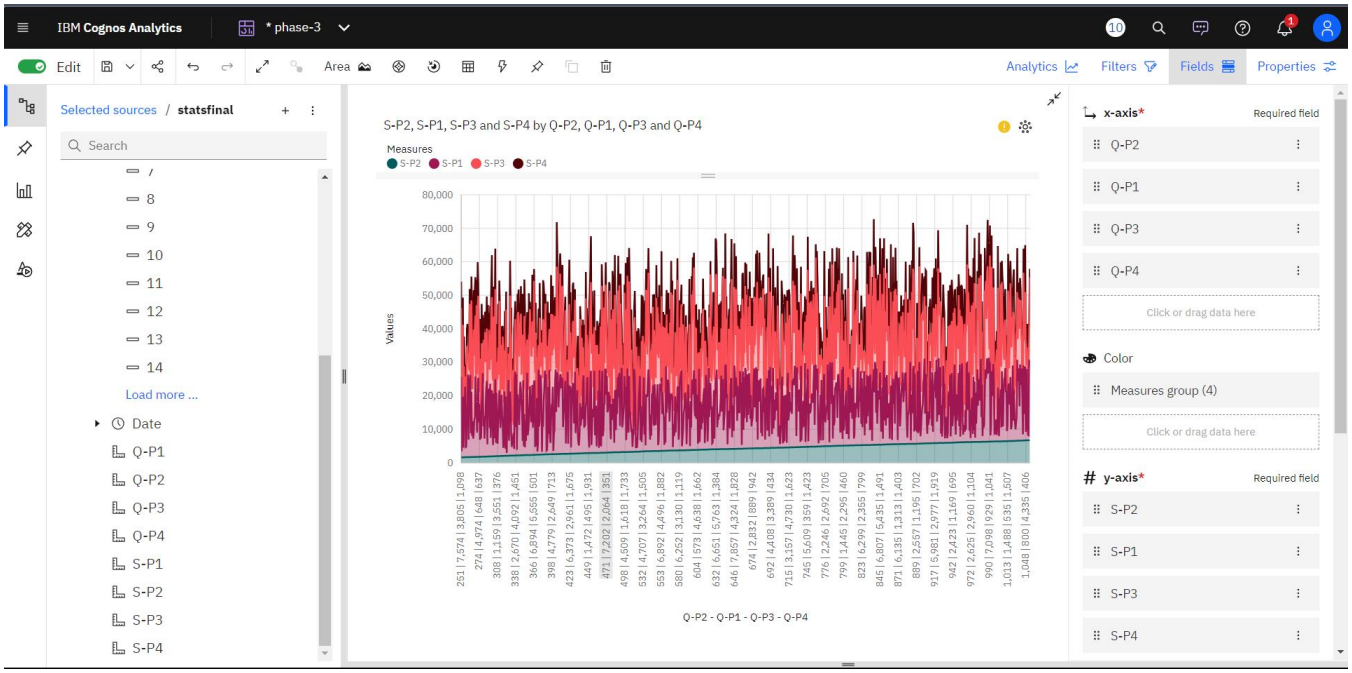
	A	B	C	D	E	F	G	H	I	J
3	1	14-06-2010	7047	779	3578	1574	22338.99	4938.86	19392.76	11222.62
4	2	15-06-2010	1572	2082	595	1145	4983.24	13199.88	3224.9	8163.85
5	3	16-06-2010	5657	2399	3140	1672	17932.69	15209.66	17018.8	11921.36
6	4	17-06-2010	3668	3207	2184	708	11627.56	20332.38	11837.28	5048.04
7	5	18-06-2010	2898	2539	311	1513	9186.66	16097.26	1685.62	10787.69
8	6	19-06-2010	6912	1470	1576	1608	21911.04	9319.8	8541.92	11465.04
9	7	20-06-2010	5209	2550	3415	842	16512.53	16167	18509.3	6003.46
10	8	21-06-2010	6322	852	3646	1377	20040.74	5401.68	19761.32	9818.01
11	9	22-06-2010	6865	414	3902	562	21762.05	2624.76	21148.84	4007.06
12	10	23-06-2010	1287	3955	2710	1804	4079.79	25074.7	14688.2	12862.52
13	11	24-06-2010	2197	1429	2754	1299	6964.49	9059.86	14926.68	9261.87
14	12	25-06-2010	7910	1622	5574	306	25074.7	10283.48	30211.08	2181.78
15	13	26-06-2010	3855	1015	1746	608	12220.35	6435.1	9463.32	4335.04
16	14	27-06-2010	5988	3288	916	1530	18981.96	20845.92	4964.72	10908.9
17	15	28-06-2010	2653	1544	3867	652	8410.01	9788.96	20959.14	4648.76
18	16	29-06-2010	3664	2294	3244	897	11614.88	14543.96	17582.48	6395.61
19	17	30-06-2010	7077	2297	5376	1130	22434.09	14562.98	29137.92	8056.9
20	18	1/7/2010	3509	700	1175	1205	11123.53	4438	6368.5	8591.65
21	19	2/7/2010	3716	3175	651	1263	11779.72	20129.5	3528.42	9005.19
22	20	3/7/2010	7746	2883	671	728	24554.82	18278.22	3636.82	5190.64
23	21	4/7/2010	7006	2833	758	1005	22209.02	17961.22	4108.36	7165.65
24	22	5/7/2010	5223	1923	1583	1877	16556.91	12191.82	8579.86	13383.01
25	23	6/7/2010	4753	3125	2787	583	15067.01	19812.5	15105.54	4156.79
26	24	7/7/2010	3369	752	5913	358	10679.73	4767.68	32048.46	2552.54
27	25	8/7/2010	6805	758	4499	1740	21571.85	4805.72	24384.58	12406.2
28	26	9/7/2010	7826	2872	3592	328	24808.42	18208.48	19468.64	2338.64
29	27	10/7/2010	7450	273	4511	505	23616.5	1730.82	24449.62	3600.65
30	28	11/7/2010	5868	1690	1461	391	18601.56	10714.6	7918.62	2787.83
31	29	12/7/2010	5273	1888	5949	1677	16715.41	11969.92	32243.58	11957.01
32	30	13-07-2010	1562	1851	3289	1740	4951.54	11735.34	17826.38	12406.2
33	31	14-07-2010	378	581	2531	446	1198.26	3683.54	13718.02	3179.98

Data Visualization And Analysis:

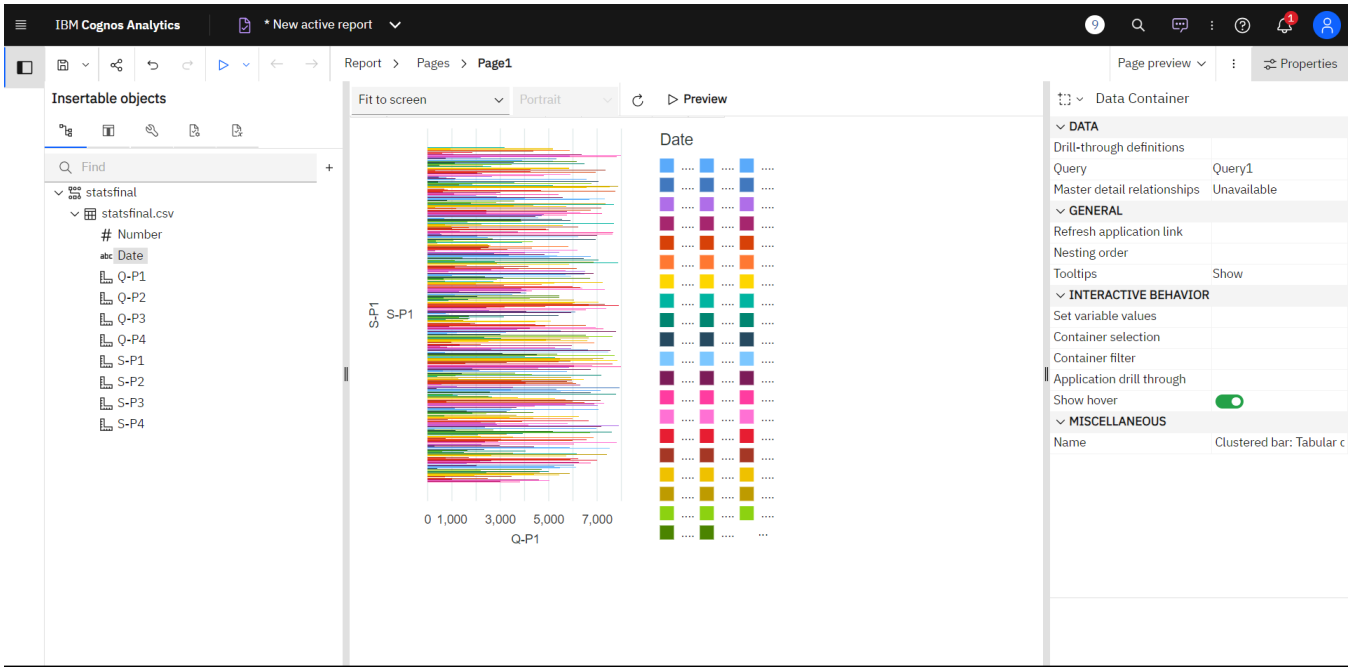





IBM Cognos Analytics
* phase-3
Edit
Area
Analytics
Filters
Fields
Properties
Selected sources / statsfinal
Search
8
9
10
11
12
13
14
Load more ...
Date
Q-P1
Q-P2
Q-P3
Q-P4
S-P1
S-P2
S-P3
S-P4
S-P2, S-P1 and S-P3 by Q-P2, Q-P1 and Q-P3
Measures
S-P2
S-P1
S-P3
Values
60,000
50,000
40,000
30,000
20,000
10,000
0
Q-P2 - Q-P1 - Q-P3
x-axis*
Required field
Q-P2
Q-P1
Q-P3
Click or drag data here
Color
Measures group (3)
y-axis*
Required field
S-P2
S-P1
S-P3
Repeat (column)


IBM Cognos Analytics
* phase-3
Edit
Area
Analytics
Filters
Fields
Properties
Selected sources / statsfinal
Search
8
9
10
11
12
13
14
Load more ...
Date
Q-P1
Q-P2
Q-P3
Q-P4
S-P1
S-P2
S-P3
S-P4
S-P2, S-P1, S-P3 and S-P4 by Q-P2, Q-P1, Q-P3 and Q-P4
Measures
S-P2
S-P1
S-P3
S-P4
Values
80,000
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
Q-P2 - Q-P1 - Q-P3 - Q-P4
x-axis*
Required field
Q-P2
Q-P1
Q-P3
Q-P4
Click or drag data here
Color
Measures group (4)
y-axis*
Required field
S-P2
S-P1
S-P3
S-P4

Drilling Down For Deeper Insights



Code For The Data Cleaning And Preprocessing.

```
import pandas as pd

import numpy as np

from scipy import stats


# Load the data

data = pd.read_csv('your_data.csv')


# Check for missing values

missing_values = data.isnull().sum()
```

```
# Handle missing values by filling with the mean
data.fillna(data.mean(), inplace=True)

# Remove duplicate rows
data.drop_duplicates(inplace=True)

# Convert data types if needed
data['column_name'] = data['column_name'].astype('desired_dtype')

# Rename columns
data.rename(columns={'old_name': 'new_name'}, inplace=True)

# Clean text data
data['text_column'] = data['text_column'].str.strip().str.lower()

# Remove outliers using z-scores for a numerical column
z_scores = np.abs(stats.zscore(data['numerical_column']))
data = data[(z_scores < 3)]

# Parse and format date/time columns
```

```
data['date_column'] = pd.to_datetime(data['date_column'], format='%Y-%m-%d')


# Save cleaned data to a new CSV file
data.to_csv('cleaned_data.csv', index=False)
```

conclusion:

The use of IBM Cognos in our product sales analysis has proven instrumental in extracting actionable insights. By visualizing and interpreting the data, we have identified key trends, opportunities, and areas for improvement. This analysis equips us with the knowledge to make informed decisions, enhance sales strategies, and ultimately drive the success of our product in the market.