**STATISTICAL AND BUSINESS INSIGHT PROJECT 2**

**STATITICAL DATA:**

**COUNT:** 308

**MIN DATE VALUE =** 1

**MIN TOTAL** **=** 23

**OVERALL STATISTICAL INISIGHTS**

**Mode:**

CUSTOMER CODE: 10002684

CUSTOMER NAME: CUSTOMER\_39

KIT ITEM: KIT0001158

OEM: MANUFACTURE\_2

ITEM DESCRIPTION: M760

PRODUCT TYPE: ENGINE PARTS

ITEM CODE: A020000001

**Total**:

MEAN: 4168.46906

MEDIAN: 632

MODE: 40

RANGE: 152872.

VARIANCE: 226163231.532

STANDARD DEVIATION: 15038.7244

SKEWNESS: = 7.686289749

KURTOSIS: 66.22888048

**BUSINESS INSIGHTS:**

**1. Most Frequent Customer:**

- Customer Code 10002684 is the most frequently buying customer in the dataset.

- This customer might represent a significant portion of sales or play a crucial role in the business.

Analyze the specific products or categories frequently purchased by Customer Code 10002684. This information can guide inventory management, product bundling, and marketing strategies to cater to similar customer preferences.

**2. Top Customer by Name:**

- The customer with the name "Customer\_39" is consistently making purchases.

- Understanding the preferences and needs of this customer can help tailor marketing and sales strategies.

Focus on customer retention strategies for "Customer\_39" to ensure their continued loyalty. This may involve exclusive offers, early access to new products, or membership benefits.

Identify opportunities for cross-selling additional products based on "Customer\_39"'s purchasing history.

**3. Frequently Purchased KIT\_ITEM:**

- KIT0001158 stands out as the most frequently purchased KIT\_ITEM.

- This particular kit may have high demand or special significance within the product offerings.

Identify the individual components of "KIT0001158" and analyze which specific items contribute to its popularity. This information can guide inventory management and marketing efforts.

**4. Dominant OEM (Original Equipment Manufacturer):**

- The majority of items in the dataset are associated with "manufacturer\_2" as the OEM.

- Exploring the partnership with this manufacturer could be beneficial for securing reliable supplies.

Strengthen your relationship with "manufacturer\_2" as they are a significant OEM. This may involve negotiating favorable terms, exploring collaborative marketing efforts, or discussing potential exclusivity agreements.

**5. Common Item\_Description:**

- "M760" is the frequently occurring item description in the dataset.

- Understanding the characteristics of this item and its popularity can guide inventory management and marketing efforts.

Highlight and promote "M760" as a featured or popular product in your marketing materials. This can attract customer attention and potentially drive more sales.

**6. Prevalent Product\_Type:**

- "Engine Parts" emerges as the dominant product type in the dataset.

- Focusing on marketing strategies and inventory management for engine parts could be crucial for maximizing sales.

Ensure robust inventory management for "Engine Parts" to meet the high demand. Regularly monitor stock levels, optimize reordering processes, and consider predictive analytics to forecast demand accurately.

**7. Key Item\_Code:**

- The Item\_Code "A020000001" is prevalent in the dataset.

- Understanding the significance of this item code in the product lineup can help optimize stock levels.

Ensure robust inventory management for "A020000001" to meet the demand.

Based on the provided statistical data for the column "Total," the business insights are:

**1. Central Tendency Measures:**

- The mean (average) value for the "Total" column is 4168.46906

- The median (middle value) is 632

- The mode (most frequently occurring value) is 40

**2. Dispersion Measures:**

- The variance for the "Total" column is 226163231.532.

- The standard deviation is 15038.7244

- The range (difference between the maximum and minimum values) is 152872.

**3. Skewness and Kurtosis:**

- The skewness of 7.686289749 indicates a significant rightward skew in the distribution of the "Total" column. This suggests that there may be a tail of higher values.

- The kurtosis of 66.22888048 indicates a highly leptokurtic distribution, suggesting heavy tails and a higher probability of extreme values.

**DATA AFTER PREPROCESSING**

**Total**:

MEAN: 2650.7096

MEDIAN: 605

MODE: 40

RANGE: 44997

VARIANCE: 34204087.532812685

STANDARD DEVIATION: 5848.42607

SKEWNESS: = 4.104641119957992

KURTOSIS: 19.328772160279847

**BUSINESS INSIGHT:**

* The mean value of 2650.7096 suggests the average total for the dataset, while the median of 605 indicates a potential presence of outliers pulling the mean higher.
* The mode being 40 may signify a common occurrence of this value in the dataset.
* The high variance and standard deviation indicate a wide spread of values in the "Total" column.
* The large range of 44997 further highlights the variability in the dataset.
* The skewness and kurtosis values suggest that the distribution of the "Total" column is not symmetric and has heavy tails.

**POINTS:**

* These statistical insights can guide business decisions, financial planning, and risk management by providing a deeper understanding of the distribution and variability in the "Total" column.
* Further analysis may be required to identify specific patterns or outliers that could impact business performance.
* These insights provide a foundation for strategic decision-making, allowing the business to tailor its operations, marketing, and inventory management to better meet customer needs and capitalize on the most profitable products and customers.
* Additionally, further analysis and exploration could uncover deeper patterns and opportunities within the dataset**.**