Dear Data Science Team Lead,

In this preliminary stage, our task involves preparing and exploring a dataset provided by Gala Groceries, a technology-driven grocery store chain in the USA. The dataset, named "sample\_sales\_data.csv," is intended for use in a Python coding notebook, specifically for conducting exploratory data analysis (EDA) to understand the statistical properties, distributions, and other relevant characteristics of the data. The objective is to gain a solid understanding of the dataset's content and properties to formulate questions and recommendations related to Gala Groceries' supply chain challenges. This step is crucial to inform the subsequent analysis and recommendations that will address the issue of optimizing stock levels for perishable grocery items.

* The bar plot and pie plot of payment\_type indicate that cash, credit card, debit card, and e-wallet are the primary payment methods at Gala Groceries, each with a count of 2027, 1949, 1918, and 1935, contributing 25.9%, 24.9%, 24.5%, and 24.7% towards sales, respectively.

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A colorful pie chart with numbers

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* The bar plot of Day\_of\_week reveals that Sunday, Tuesday, and Wednesday are the top three days of the week at Gala Groceries, with counts of 1132, 1165, and 1169, contributing 14.5%, 14.9%, and 14.9% towards sales, respectively.

A colorful bar chart with numbers

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* The bar plot and pie plot of the hour of the day show that the hours from 11 AM to 12 PM, 4 PM to 5 PM, and 6 PM to 7 PM are the top three timeslots at Gala Groceries, each with a count of 738, 730, and 727, contributing 9.43%, 9.32%, and 9.29% towards sales, respectively.

A colorful bars of different colors

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A colorful pie chart with numbers

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* The bar plot and pie plot of customer\_type reveal that non-member, premium, and standard customers are the top three regular customers of Gala Groceries, each with counts of 1601, 1590, and 1595, contributing 20.4%, 20.4%, and 20.3% towards sales, respectively.

A colorful bars with numbers

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A pie chart with different colored sections

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* The correlation plot indicates that the unit\_price has a significant impact score of 0.79 on the total. To increase profits, Gala stores can consider increasing the unit\_price of individual items where possible and feasible.

A screenshot of a computer

Description automatically generated

* The scatter plot suggests that as the unit\_price increases, the total sales also increase.

A graph showing the value of a product

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* Fruits, vegetables, packaged foods, baked goods, canned foods, and refrigerated items are the types of groceries that contribute to more than 5% of sales at Gala Groceries. Therefore, the unit prices of items belonging to such grocery types can be increased.
* Groceries belonging to types such as spices and herbs, pets, personal care, and condiments and sauces have a very low contribution, below 3% to sales at Gala Groceries. Prices of such items must be increased with extreme care, or discounts on such items must be reconsidered.
* Since the dataset is from March 2022, and it is almost summer in most parts of the USA, Gala Groceries can consider stocking up on cold beverages, refrigerated foods, and other summer skincare and sun tan prevention products to boost profits.

Thanks.

Kind regards,

Nikhil Padman