

Analysis on Supermarket Data

This is data from supermarket data store that has three branches A, B, C located in Yangon, Mandalay, Naypyitaw in Myanmar. There are 17 columns in total namely Invoice Id, Branch, City, Customer (member /Normal), Gender (Male /Female), Product Line (Health and Beauty ,Electronic Accessories, Home and Lifestyle, Sports and Travel, Food and Beverages, Fashion Accessories), Unit Price, Quantity, Tax 5%, Total, Date, Time, Payment (Cash, Credit Card, Ewallet), cogs (Cost of Sold Goods), Gross Margin, Gross Income, Rating.

I started with analyzing what kind of product categories are brought by what kind of customer i.e. male or females. The bar chart showed that female customers bought more items in line of products corresponding to Fashion accessories, food and beverages, Home and lifestyle and sports and travel. They were slightly behind in Buying electronic accessories. But we can notice a huge difference for health and beauty related products. Conclusion is that mostly women come to shop for all the home items but maybe men do buy protein supplements for themselves so they might be more in number when it comes to buying of health and beauty related products.

Next we are analyzing time and date wise sales. We have data for Q1 of 2019. We can see that there was a huge drop in sales in the month of February for branches C and A but not that steep for branch B. The most sales were done by branch C out of all the three of them. Also, if we pay attention to the time the customers usually shop, we can see that most of the member customers visited the store at about 7'o clock in the evening and the normal ones visited at 10 in morning. May be the normal customers come to shop for groceries in morning and the member ones for more expensive items like electronic goods, so they come at leisure in the evening.

If we see to big picture, we can see that most of the sales was brought by Food and beverages followed by sports and travel goods. It is obvious as food is a day-to-day essential item so it is consumed by customers on a regular basis. Similarly, if we analyze the tax paid per product category, we can observe that most of the tax was paid in the same category. The lease sales was of Health and beauty products and hence the tax associated with them was also less as the same 5% tax was applicable to all kinds of goods.

We can also analyze the payment pattern of different kinds of customers. Most of the payments are made by cash followed by Ewallet and then credit card. If we look in to in a silight detail we can see that normal customers tend to pay more by cash and Ewallet than by credit cards but more member customers pay through credit cards. This can be because the members might get more discounts on payment by credit cards and might get membership bonus points on every purchase.

In the next slide we compare the goods sold versus the sales total. We can see that even though the greatest number of goods sold were from the electronic accessories category the total sale amount is still bigger for food and beverages category.

Furthermore we move on to compare profits and average cost of goods in each product line. As we have earlier seen that food and beverages is sold the most so the profits made by selling those is

the highest. Also, if we compare the average price of the products we see that comparatively the fashion accessories cost more than any other category and the electronic accessories cost the least. A possible explanation to this can be that certain brands sell high priced accessories. For the electronics it can be said that the store might not sell expensive electronic goods like TV sets or sound systems. It might be selling small goods like earphones mouse, keyboards, memory drives etc. and hence it brings down its average cost.

To conclude this comprehensive analysis of supermarket data, we have uncovered valuable insights into customer buying behaviors, sales patterns, and profitability across different product lines. The analysis highlighted the significant role of gender in purchasing decisions, with women dominating in categories like fashion accessories and home essentials, while men showed a preference for health and beauty products. Seasonal variations and time of day also influence shopping habits, revealing potential strategies for targeted marketing and inventory management.

The data further suggests that food and beverages remain a staple in consumer purchases, driving both sales volume and profit margins despite the lower unit price compared to other categories like fashion accessories. This underlines the importance of strategic product placement and pricing to capitalize on consumer demand and maximize profitability.

Payment methods and their correlation with customer types offer insights into consumer preferences and loyalty behavior, indicating potential areas for enhancing customer service and engagement through payment incentives and loyalty programs.

By delving into the nuances of sales totals versus the number of goods sold, and analyzing profit margins in relation to the average cost of goods, we can infer the significance of product selection, branding, and pricing strategy in achieving a successful retail operation.

This analysis not only sheds light on the current state of supermarket sales but also paves the way for implementing data-driven strategies to boost sales, enhance customer satisfaction, and optimize operational efficiency. Moving forward, supermarkets can leverage these insights to refine their product offerings, marketing tactics, and customer service approaches, ensuring a competitive edge in the dynamic retail landscape.