Business Data Management - Capstone Project
Analysis of Sales of a Local Multipurpose Store

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About the Business:

- GreatZone is a small multipurpose grocery store located in the basement of Shriram Apartments in Urban Residential Bangalore.

- As this business is located close to a college, Bangalore International Airport and a Tech Park, the target market ranges from nuclear families, bachelors to students residing in Shriram Apartments.

- There are approximately 1200 residents currently residing here. The store is open daily from 7am to 10pm except on Fridays where it is open only for half a day.

- This area is also home to bigger supermarkets like More, Easy Day and Big Bazaar that are close by.

- Residents prefer to shop at GreatZone mostly for last minute/emergency purchases and visit bigger supermarkets for monthly bulk purchases.

SAMPLE DATASET

Time interval of dataset - January 1st, 2021 to January 31st, 2021.
Total number of Bills- 5143

Invoice No. -
Unique, sequential numeric code assigned to each bill generated

Invoice Date –
Date of Issue of the bill

Product Name –
Name of SKU

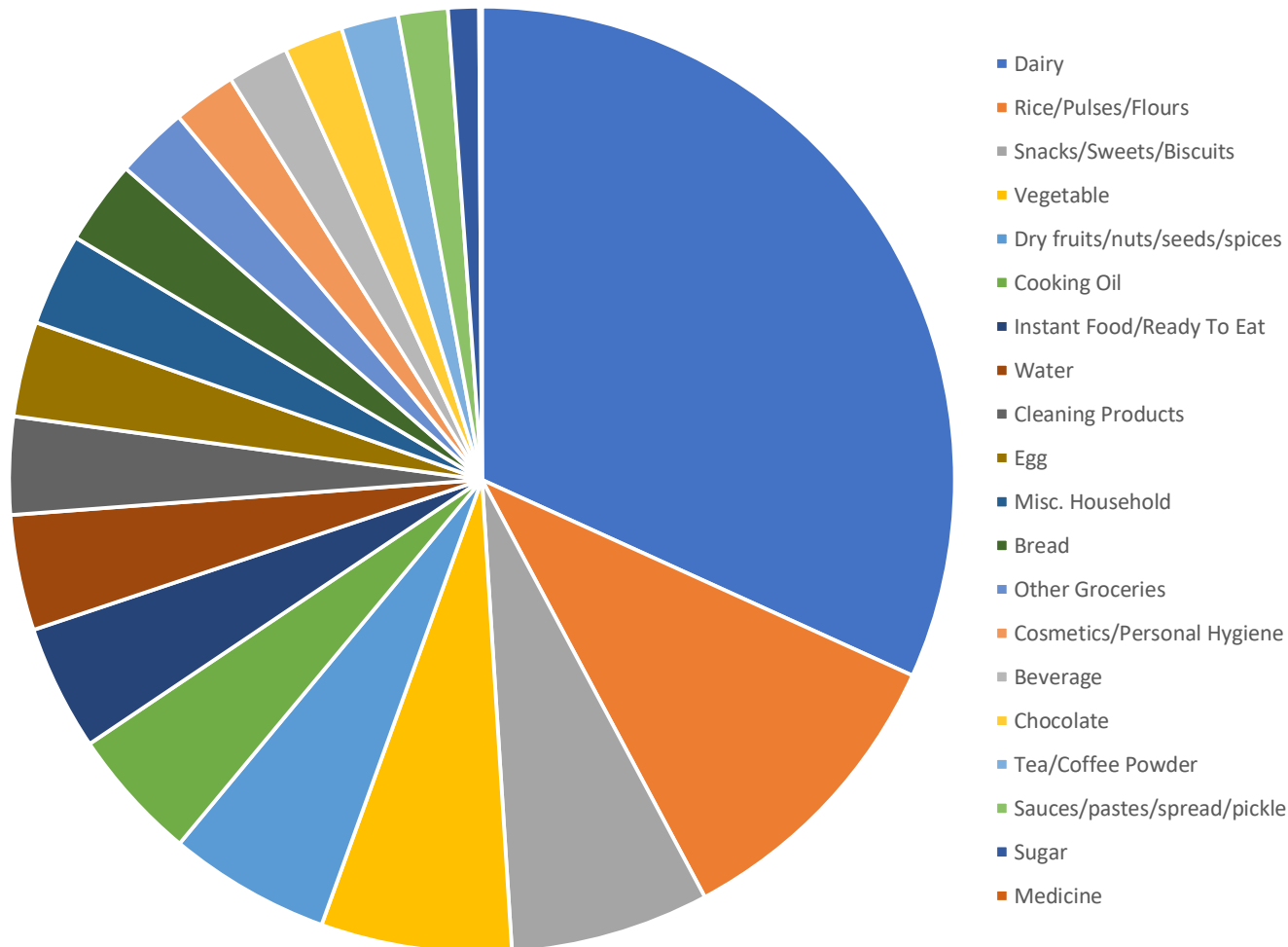| Sl. No.	Invoice No.	Invoice Date	Invoice Value	Product Name	UOM	Qty	Rate	Price	Cash/Credit
1	2120014706	01/01/2021	20.00	Appy Apple Drink 160Ml	PC	2	10.0	20.00	Cash
2	2120014707	01/01/2021	45.00	Modern 100% Whole Wheat Bread 400G	PC	1	45.0	45.00	Credit
3	2120014708	01/01/2021	35.00	Modern Sandwich Supreme Bread 400Gm	PC	1	35.0	35.00	Cash
4	2120014709	01/01/2021	57.00	Styxe 20Ltr Water	PC	1	35.0	35.00	Cash
5	2120014709	01/01/2021	57.00	Nandini Shubham Pasteurised Standardised Milk 500 Ml	PC	1	22.0	22.00	Cash

Invoice Value –
Total bill amount to be paid by customer

Unit of Measurement –
Piece or Kilograms

Mode of payment –
Cash includes payment through cash and UPI
Credit is also offered to recurring customers

Total Overall Revenue Distribution

Total Revenue

Legend:
- Dairy
- Rice/Pulses/Flours
- Snacks/Sweets/Biscuits
- Vegetable
- Dry fruits/nuts/seeds/spices
- Cooking Oil
- Instant Food/Ready To Eat
- Water
- Cleaning Products
- Egg
- Misc. Household
- Bread
- Other Groceries
- Cosmetics/Personal Hygiene
- Beverage
- Chocolate
- Tea/Coffee Powder
- Sauces/pastes/spread/pickle
- Sugar
- Medicine

Maximum Revenue Source is Dairy

Recommendation:
Place Dairy products at the end of the store and low revenue sources such as medicine and sugar at the beginning of the store.

To optimize store space, stock of medicines can be reduced as it brings almost negligible revenue.

Total Revenue Pareto
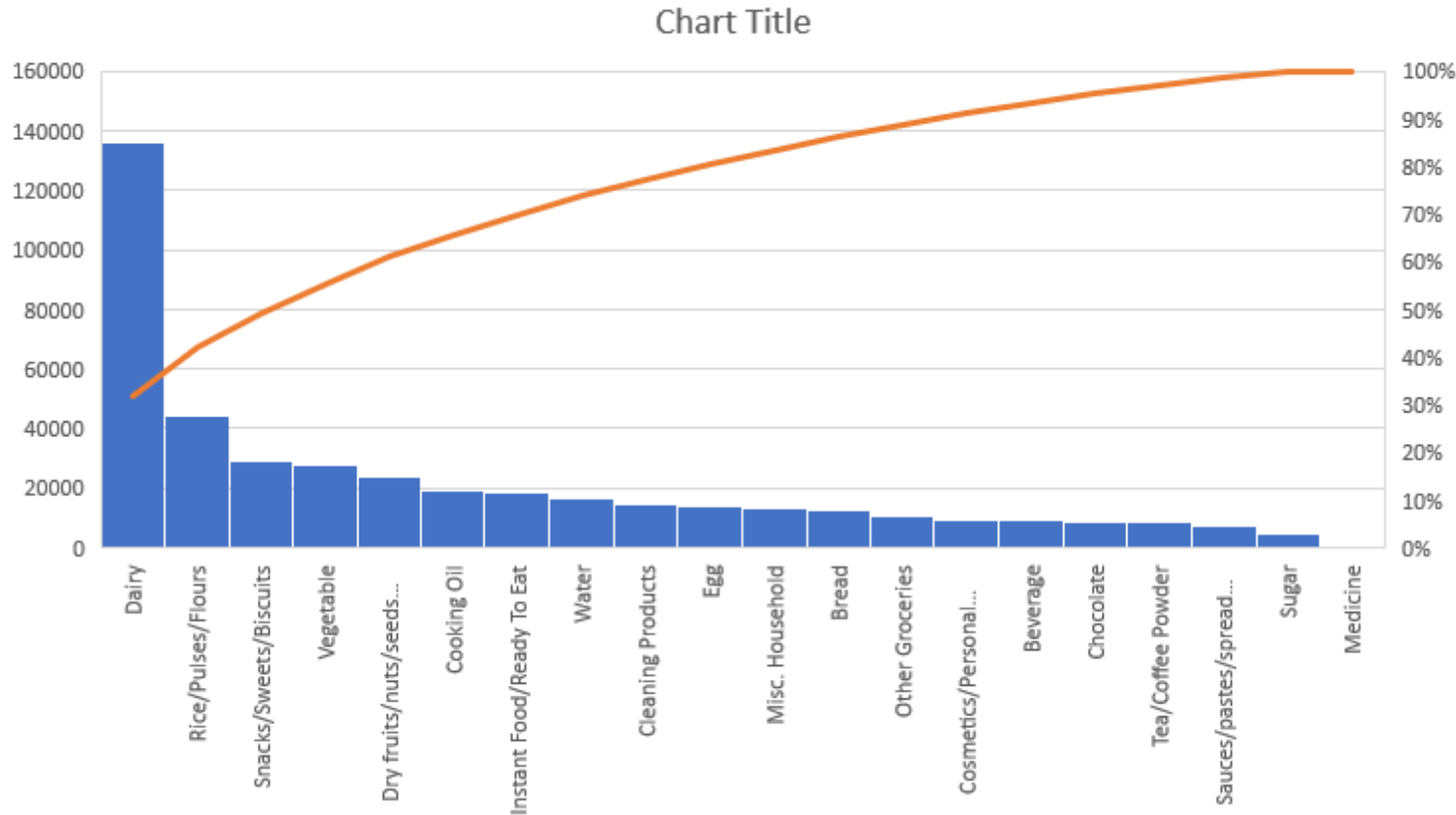
Maximum revenue source is Dairy (31%) and Rice/Pulses/Flour, minimum source is Medicine and Sugar.

Pareto principle (80/20 rule) is not followed as more than half of the product types account for 80% revenue.

Hence, all product categories are important and needs to be focused on.
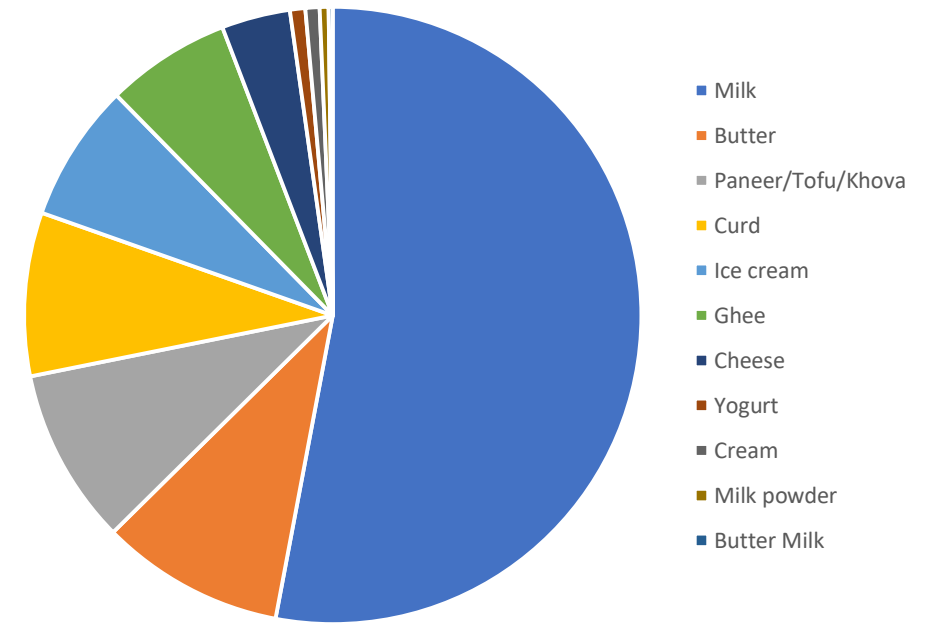
Total Revenue Distribution - Dairy

Revenue Pareto - Dairy Products

Revenue Pie Chart – Dairy Products
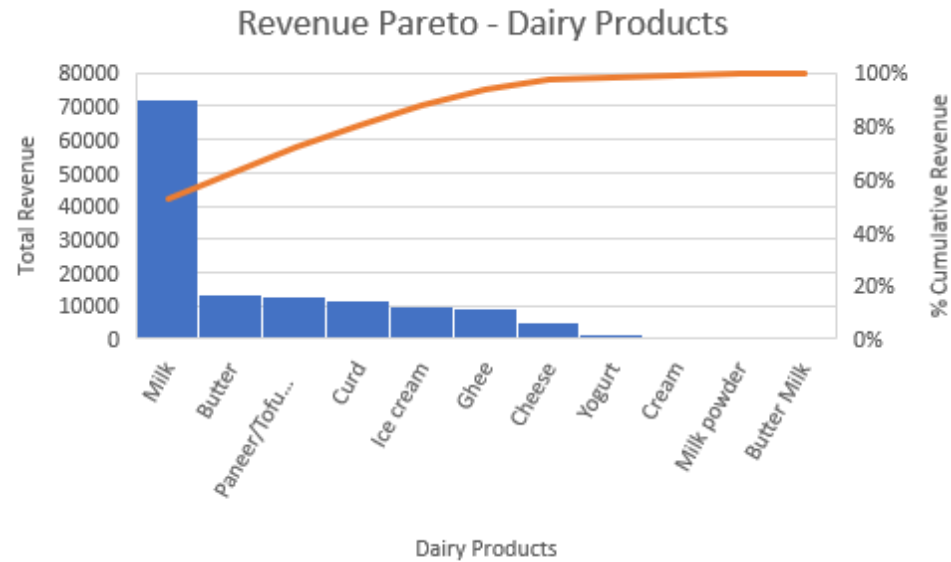
Maximum revenue source – Milk (more than 50%)
Minimum revenue source - Butter Milk

80% revenue is coming from Milk, Butter, Paneer/Tofu/Khova and Curd

Recommendation:
Initiate inter-society delivery system for milk during morning hours (school/office hours) with nominal delivery charges to attract working/employed customers and senior citizens.

Introduce more varieties/brands of milk.

Reduce stock of Butter Milk as it is slow moving

Daily Revenue in January 2021

- Daily Average – Rs. 13790.52
- Maximum revenue collection on 31/01/2021
- Minimum Revenue collection on 01/01/2021
- Overall increasing trend

Recommendation:
Introduce discounts and offers in the beginning of the month to encourage monthly salaried customers to fulfil their grocery needs at GreatZone

Daily Revenue in Jan 2021
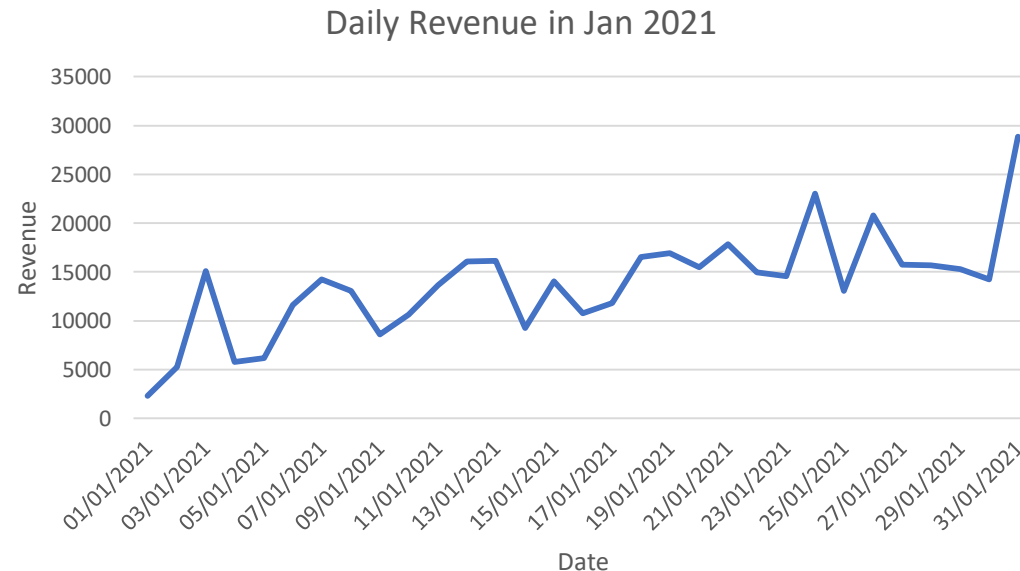
Average sales wrt day of week

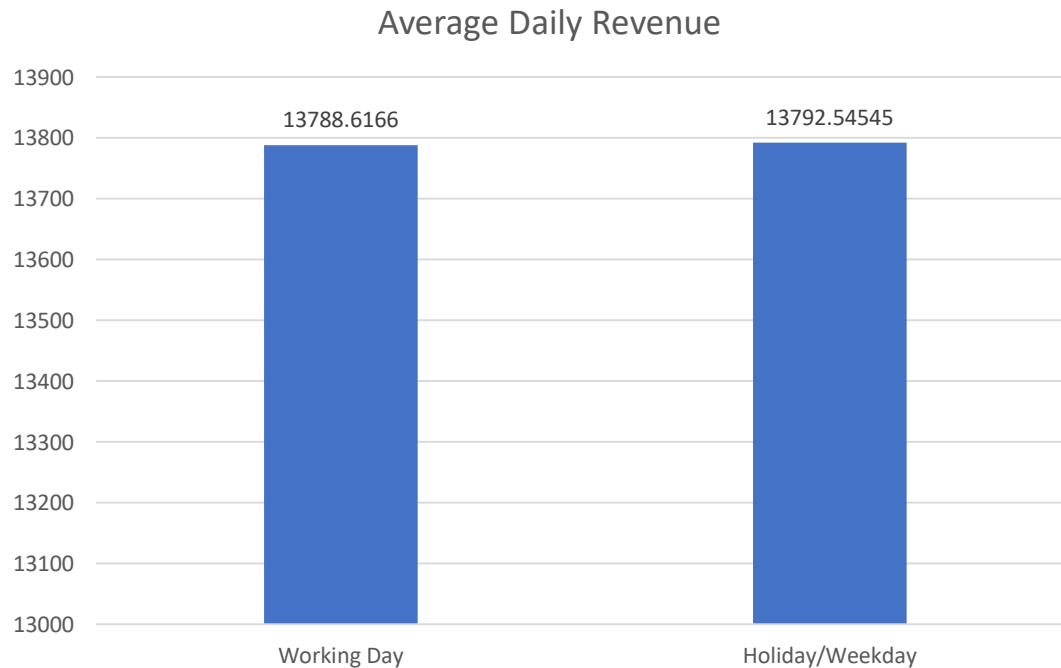Average Revenue based on Day of Week
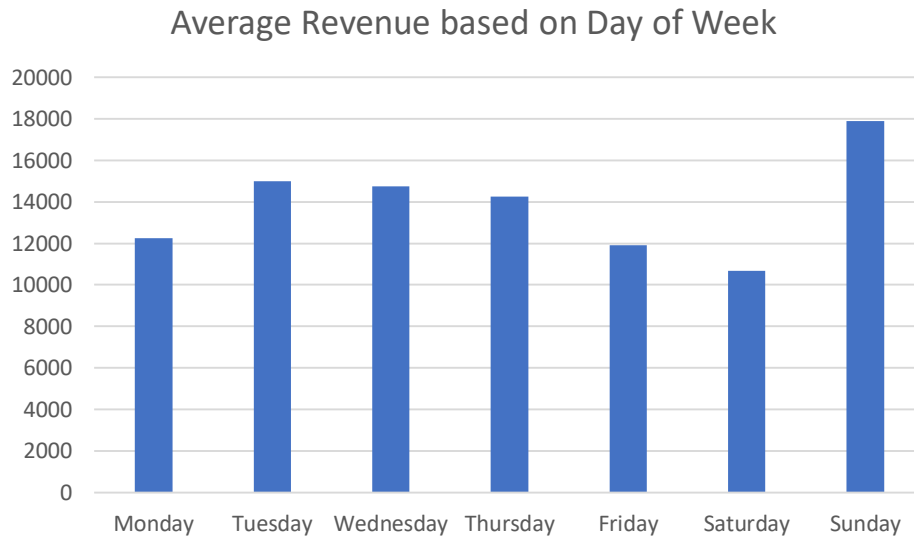
Maximum average sales on Sunday and minimum on Friday (half day)/Saturday.

Recommendation:
Offer discounts on Fridays to reduce effect of Friday being shut for half the day.

Effect of Holiday on Sales:

- January had a total of 15 holidays/weekends and 16 working days
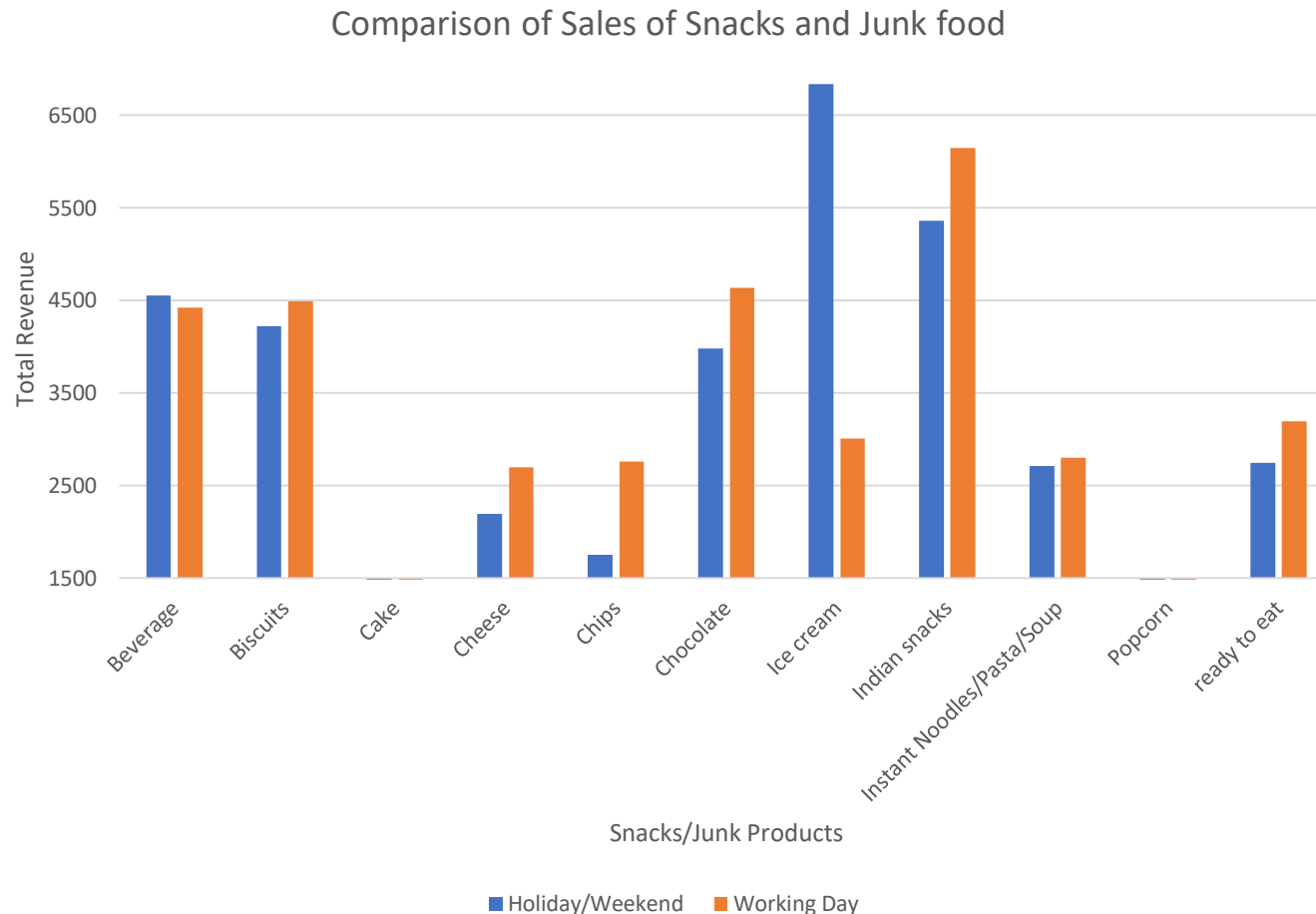

Average Daily Revenue

Total sales on holiday/weekends is less than working days but very negligibly - No certain conclusion.

Recommendation:
Display snacks/junk/sweets in front of store on weekends/holidays to attract customers and increase sales.

Holiday vs junk food

Comparison of Sales of Snacks and Junk food

Total sales of Ice cream are 2- fold on holiday/weekends. Other products like chips, beverages, chocolates etc. did not show considerable difference.

Recommendation:
Ensure sufficient inventory of Ice Cream varieties on and before holidays and weekends.
As refrigeration is expensive and frozen food storage is less, on weekends the store can optimize by replenishing stock of ice cream and reducing stock of other dairy/refrigerated goods like butter milk that don't sell as much.

'Buy Now, Pay Later'

Percentage of Revenue

- Cash
- Credit

27.00%

73.00%
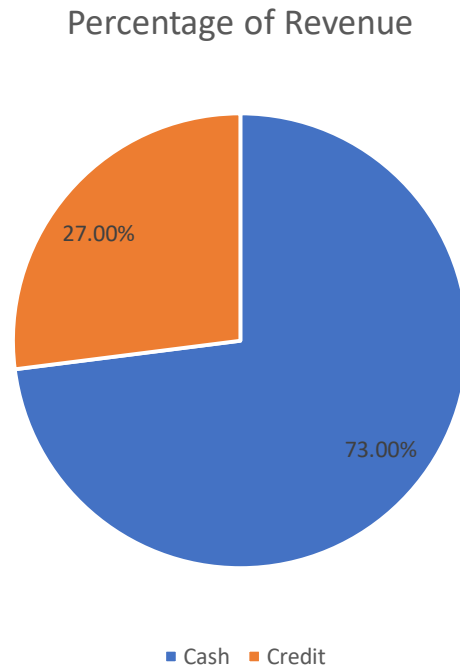
Roughly 70% of the revenue is received in cash. The rest is pending credit, yet to be collected from customers.

Recommendation:
Offer credit to loyal/recurring customers.

Keep detailed account of name/contact number of said customers.

Request repayment towards end of the month.

Market Basket Analysis – Products that are most likely to be purchased together:

Conducted Market Basket Analysis on Python to analyse the purchase history, reveal product groupings and products categories that are likely bought together.

Recommendation:

Place product types of the same basket close to each other on same aisle.

Maintain sufficient stock of products in the same basket.

Use purchase history data to make recommendations to customers.

Shopping basket → Shopping basket recommended
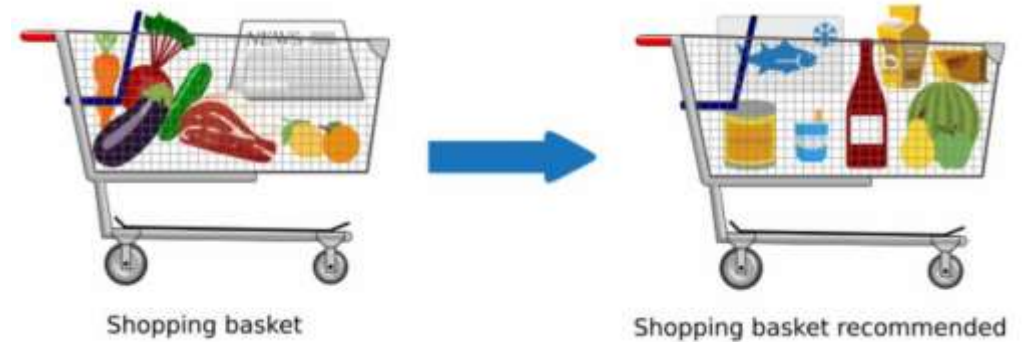
IF CUSTOMER PURCHASES	THEN RECOMMEND
Bread, Indian Snacks	Biscuits
Curd, Chocolate	Biscuits
Chocolate, Indian Snacks	Biscuits
Biscuits, Other groceries	Indian Snacks
Biscuits, Vegetable	Indian Snacks
Cleaning Products, Vegetables	Misc. Household
Pulses, Other Groceries	Indian Snacks

Profit Analysis

	Calculations	Observation/Recommendation
Fixed Costs (Rent, Staff Salary)	15000	
Variable Costs in January (Transport, miscellaneous)	2000	
Total Cost	15000+2000=17000	
Revenue for Jan	427506	
Approx. margin on goods sold	0.1 x 427506 = 42750	Assume 10% margin
Net Profit	42750-17000=25750 Profit is less	Initiate a Loyalty Program offered to residents of Shriram Apartments. Give recurring customers access to coupons/offers/discounts/free delivery and other perks to retain existing customers and acquire new ones