

Business Data Management

MID -TERM SUBMISSION



Case Study Of Agrawal Soap Works & Kirana Store

(Morena M.P.)

~By Shakti soni (22f1001845)

Date: - 9/05/2024

1. Executive Summary:

Grocery shopping is a necessary part of our daily lives that has a significant impact on our health and well-being. It's not just about buying food - it's about nourishing ourselves and our families. From a personal perspective, having an efficient grocery shopping routine can save us time, money, and reduce food waste.

Agrawal Soap Works and Kirana store, is local business, are facing challenges in profit, inventory management, and customer loyalty, affecting their sales and profitability. The rise of online shopping has further complicated matters, leading to a decline in profits for stores like Agrawal Soap Works and Kirana Store. This project aims to address the unique business hurdles faced by these stores, focusing on understanding cash flow intricacies, inventory control, and enhancing customer loyalty. By leveraging data analysis, we aim to provide practical solutions to overcome these challenges and enhance the overall performance of these local businesses, ultimately helping them thrive in a rapidly changing market.

Goal for mid-term:

- 1.1 Check the types of customers Loyal, Potential, regular and at risk and monetary value from each type of customer.
- 1.2 Show the frequency of customers in each week.
- 1.3 Sales of category and products.

2. Proof Of Originality:

Details:

Shop Name: Agrawal Soap Works & Kirana Store.

Owner: Mr. Amit Goyal

Adress: Agrawal Soap Works, Pepari Pura Road, Shyam Vihar Colony, Sanjay Colony, Morena, Madhya Pradesh 476001

About:

Agrawal Soap Works is a trusted local business that has been serving the community since 2016. In addition to their high-quality soaps and cleaning products, they offer a wide range of daily essential items including. Pulses and lentils (dal), Flours and grains, Spices and seasonings, Dried fruits and nuts, Dairy products like milk and ghee, Animal feed and pet supplies etc. The store is known for its commitment to providing affordable, reliable products that meet the needs of residents. Agrawal Soap Works has built a reputation for excellent customer service and a focus on building trust with the community. Located conveniently in the heart of the city, Agrawal Soap Works is a one-stop shop for all your household and personal care needs. With competitive prices and a wide selection, it's no wonder that local people depend on them as their go-to source for daily essentials. Whether you need laundry detergent, spices for your kitchen, or pet food for your furry friend, you can count on Agrawal Soap Works to deliver quality products and friendly service every time. Stop by today and see why they are a trusted name in the community.

Images:

To support my assertions, I've attached a photo documentation that includes pictures of the actual business as well as the informal receipts and sample bills that the shop used to carefully track every transaction.



2.1 My pic in front of shop

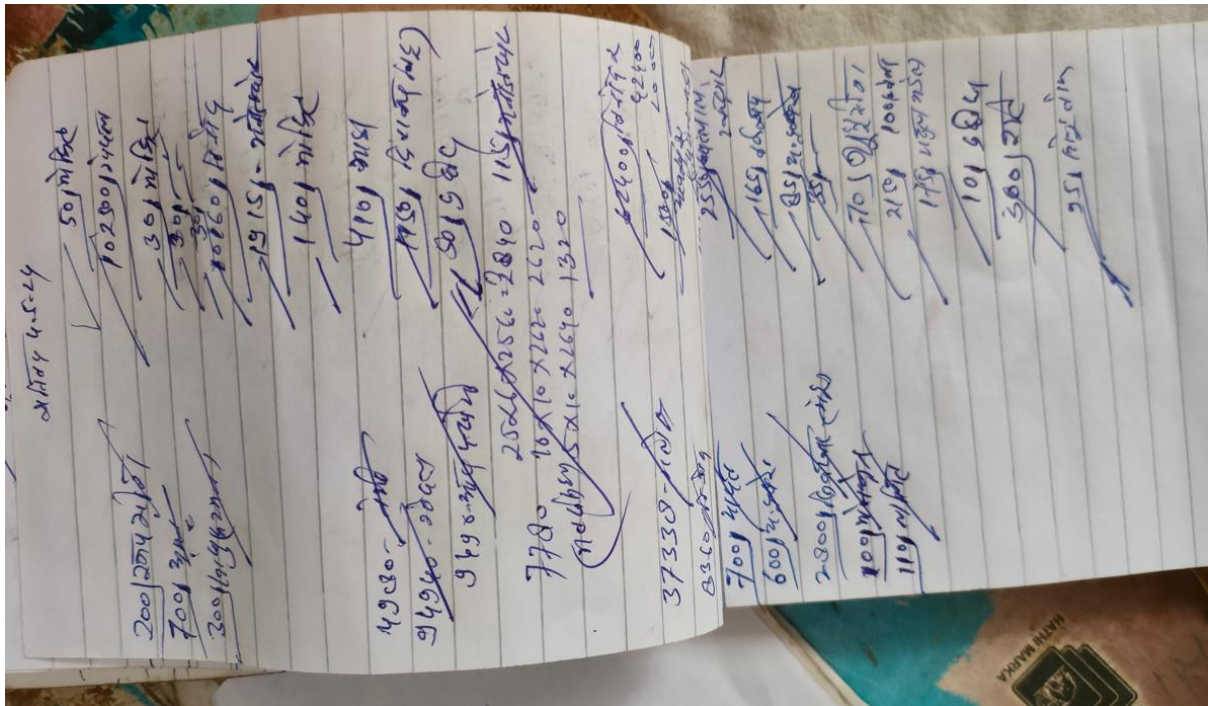


2.2 Storage area of shop



2.3 Inside pic of shop

Even if there isn't any formal documentation, these taken pictures give us important insights into the shop's working methods and help us comprehend its place in the neighbourhood.



2.4 One of Many Pictures of sales record (informal)

The snapshots of informal bills provide an insight into the shop's transactional activity and sales records, even though the lack of formal data preservation may restrict the availability of documentation. This data emphasizes the store's significance as a reliable supplier of everyday necessities for locals, as does its reputation for offering high-quality goods and first-rate customer support.

Drive

link:-

https://drive.google.com/drive/folders/legyFZHYdvvZqJwn9Bqx3Nw43TAmPxn_S?usp=sharing

3. Metadata and Descriptive Statistics:

I have painstakingly assembled an extensive dataset that spans 28 days, beginning on February 1st, 2024, and ending on February 28th, 2024. Daily shop visits and well-planned alternating-day visits were part of my data collection strategy, which made sure that all relevant data was gathered for the duration of the study.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N
1	Name	LAST Purchase Date	WEEK 1	WEEK 2	WEEK 3	WEEK 4	Total Frequency	Monetary Value (IN Rs.)	R SCORE	F SCORE	M SCORE	RFM SCORE	SEGMENT	
2	ANIL	29/Feb/24	1	2	1	2	6	1580	4	4	3	443	Loyal	
3	RAMESH	27/Feb/24	2	1	0	1	4	1940	4	3	3	433	Loyal	
4	PRIYA	19/Feb/24	1	1	1	0	3	1830	3	2	3	323	Potential	
5	SURESH	27/Feb/24	0	1	1	1	3	1065	4	2	2	422	Loyal	
6	DEEPAK	18/Feb/24	0	2	1	0	3	1310	3	2	2	322	Potential	
7	MEENA	29/Feb/24	1	2	2	1	6	3420	4	4	4	444	Loyal	
8	BABU	28/Feb/24	1	0	1	1	3	900	4	2	2	422	Loyal	
9	SANJAY	29/Feb/24	1	1	1	2	5	5225	4	4	4	444	Loyal	
10	AJAY	16/Feb/24	1	0	1	0	2	725	3	1	2	312	Potential	
11	SUNITA	22/Feb/24	0	0	0	1	1	310	4	1	1	411	Loyal	
12	MANISH	10/Feb/24	2	1	0	0	3	975	2	2	2	222	Regular	
13	KRISHNA	29/Feb/24	1	0	1	3	5	3069	4	4	4	444	Loyal	
14	KAVITA	18/Feb/24	1	1	1	0	3	930	3	2	2	322	Potential	
15	ANITA	21/Feb/24	2	1	1	0	4	1303	3	3	2	332	Potential	
16	JYOTI	14/Feb/24	0	1	0	0	1	290	2	1	1	211	Regular	
17	ROHIT	22/Feb/24	2	1	1	1	5	2730	4	4	4	444	Loyal	
18	VIVEK	16/Feb/24	1	0	2	0	3	1350	3	2	2	322	Potential	
19	SHALINI	26/Feb/24	1	1	0	1	3	755	4	2	2	422	Loyal	
20	RITU	26/Feb/24	2	2	0	1	5	1505	4	4	3	443	Loyal	
21	ARJUN	24/Feb/24	1	1	2	1	5	1915	4	4	3	443	Loyal	
22	POOJA	29/Feb/24	1	0	0	2	3	1060	4	2	2	422	Loyal	
23	RAJESH	25/Feb/24	2	0	2	1	5	2521	4	4	4	444	Loyal	
24	NISHA	27/Feb/24	2	0	1	2	5	3605	4	4	4	444	Loyal	
25	NEHA	19/Feb/24	1	1	2	0	4	1005	3	3	2	332	Potential	
26	MANOJ	24/Feb/24	0	0	2	1	3	575	4	2	1	421	Loyal	
27	SONALI	25/Feb/24	1	0	1	1	3	835	4	2	2	422	Loyal	

3.1 Image of visiting customers Data

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	Product	Quantity (KG/PCS/PKT)	Category	MONETARY VALUE														
2	ANIL	Rice	10	R	700				Category	Acronym								
3		Utensil Soap	2	L	20				ANIMAL FOOD (A)	A								
4		MAGGIE	5	SB	70				EDIBLE OIL (E)	E								
5		MOONG DAL	2	D	220				DAL & PULSES (D)	D								
6		CHUNI	5	A	100				FLOUR (F)	F								
7		BREAD	1	SB	50				SPICES (S)	S								
8		ARHAR DAL	2	D	320				LAUNDRY (L)	L								
9		MACRONI	1	SB	60				SNACKS & BEVERAGES (SB)	SB								
10		CHEESE	2	DP	40				OTHER ITEMS	O								
11		WASHING POWDER	5	L	300				DRY FRUITS (DF)	DF								
12		TOOTHPASTE	2	O	110				DAIRY PRODUCT (DP)	DP								
13		MAIDA	2	F	80				RICE (R)	R								
14		MATCHSTICK	1	O	40													
15		MAKHANA	1	SB	150													
16		TURMERIC	1	S	50				WEEK 1									
17		JEERA	1	S	60				WEEK 2									
18		AJWAIN	1	S	50				WEEK 3									
19				Total	1580				WEEK 4									
20	RAMESH	MAIDA	10	F	360													
21		MAIDA	2	F	40													
22		ARHAR DAL	5	D	800													
23		SUGAR	10	O	450													
24		BATHING SOAP	5	L	50													
25		UTENSIL SOAP	5	L	50													
26		SHAMPOO	15	L	30													
27		CHANA DAL	2	D	160													

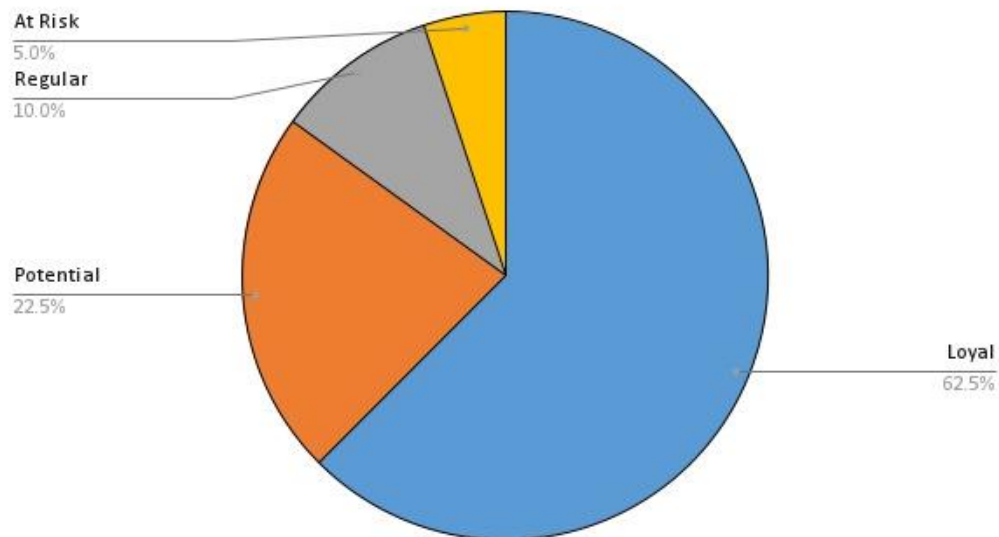
3.2 Image of purchasing items Data

Data link :-

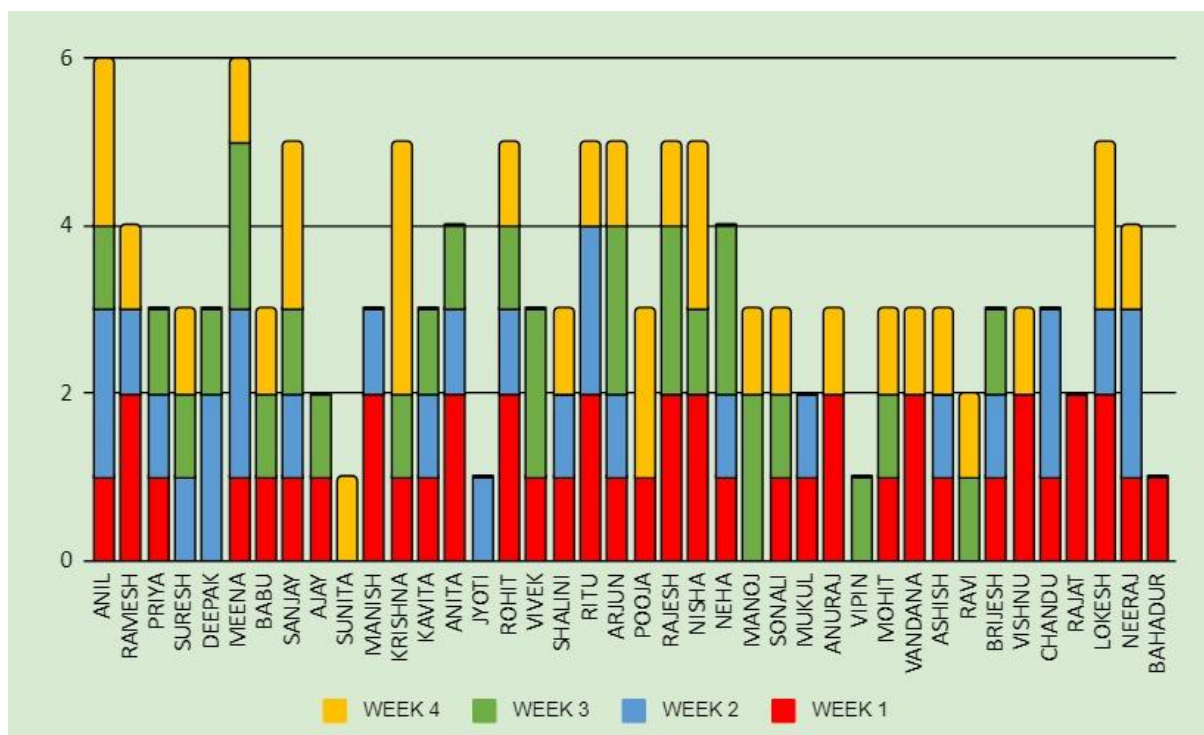
https://docs.google.com/spreadsheets/d/1NCqBmKfHDHeBRe93991SvPWIIYZ_xhXod/edit?usp=sharing&ouid=112033896608494394350&rtpof=true&sd=true

Here is the descriptive statistics analysis conducted based on the collected data.

TYPE OF CUSTOMERS

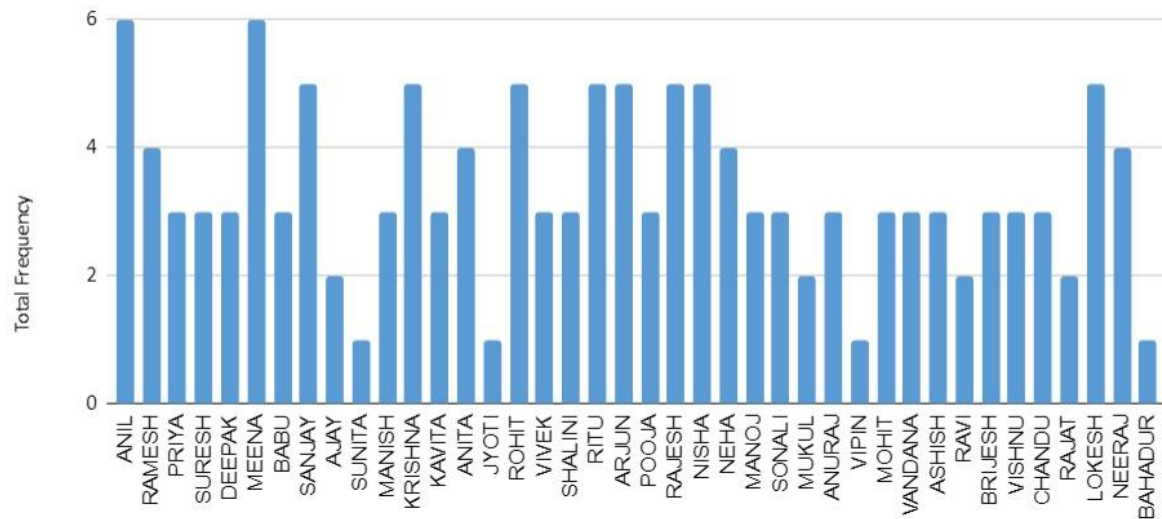


3.3 Customer types based on RFM score.



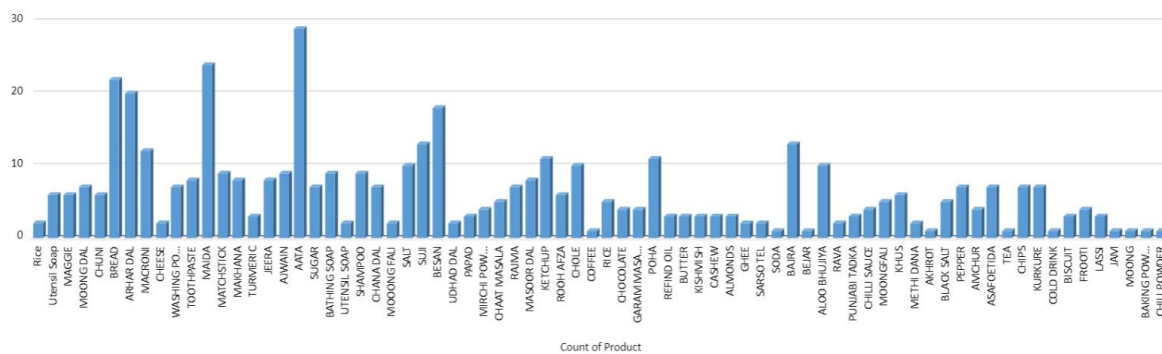
3.4 Frequency of customers visited on weekly basis.

Total Frequency

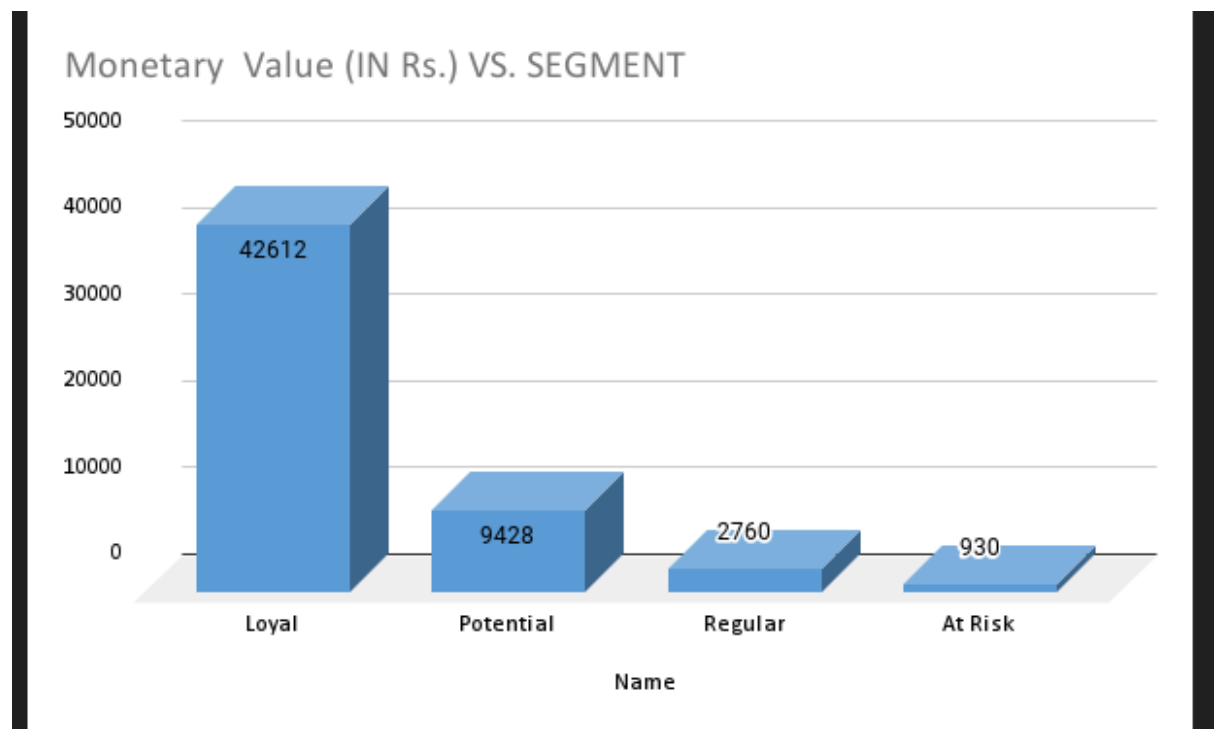


3.5 Total frequency of customers

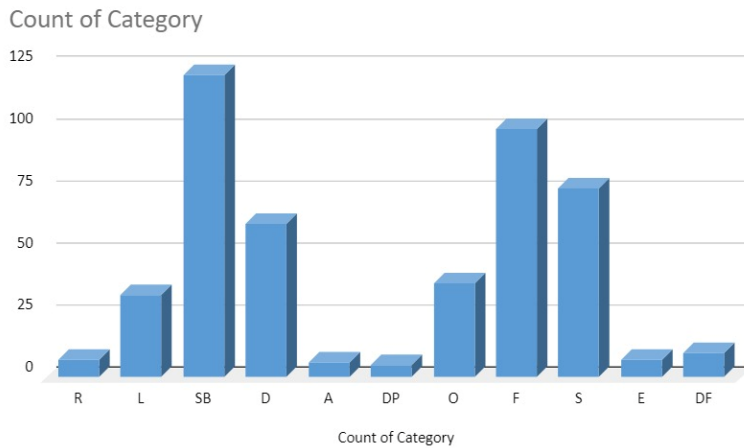
Count of Product



3.6 Sales of product



3.7 monetary vs segment



Category	Acronym
ANIMAL FOOD (A)	A
EDIBLE OIL (E)	E
DAL & PULSES (D)	D
FLOUR (F)	F
SPICES (S)	S
LAUNDRY (L)	L
SNACKS & BEVERAGES (SB)	SB
OTHER ITEMS	O
DRY FRUITS (DF)	DF
DAIRY PRODUCT (DP)	DP
RICE (R)	R

3.8 Sales of category

Detailed Explanation of Analysis Process/Method:

I have collected 28 days' worth of data in google sheets, which was then cleaned, organised and analysed.

The initial phase involved a meticulous review of the data to guarantee its cleanliness and organization for optimal analysis. This process included identifying and rectifying any inconsistencies, missing data points, or outliers that could influence the outcomes.

Subsequently, a range of descriptive statistical methods was employed to condense and delve into the dataset, facilitating a comprehensive exploration and understanding of the information at hand. Column, bar, and pie charts were used to visualise the loyalty of customers, frequency of customers visited to shop throughout month also maximum sell of

category and product. They help identify trends, patterns, and areas of focus for decision-making. By utilizing these descriptive statistics and visualizations, we gain a comprehensive understanding of the data and its implications for the business. This analysis will enable us to make informed decisions and optimize business strategies for improved performance and profitability.

To show the types of customers based on RFM score a pie chart is used which shows the percentage of loyal, potential, regular and at risk we used circular pie chart. For finding the frequency of customer on the weekly basis throughout the month we used bar chart. For segment vs monetary value, we used column graph. We also used it for product and category sell.

Results and Findings:

Based on the analysis conducted using the graphs and charts, several key findings have emerged:

1. 62.5 % customers are loyal, 22.5 potential customers, 10% regular and 5% at risk.
2. Meena and Anil visited mostly at 6 times to the shop during the period followed by Sanjay, krishna, Ritu, etc at 5 times.
3. Snacks and beverage is the most sold category which means number of products in this category is most.
4. Aata is most sold product which is of the category flour. It is sold to 29 customers, Aata give the most profit from the shop.