Analysis of orders by an average retail store

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ABSTRACT

A normal retail store usually has most of the necessary FMCG products. Obviously retail stores do not produce these goods, they are just a medium through which the companies sell their goods. But retailers do not always purchase the goods directly from the company produce these products; they buy it from the wholesalers on a daily, weekly or monthly basis. Here, I have collected data of the goods that stores order daily because of their demand or perishability.

Keywords— *Store data, Regression, Histogram, Analysis*

1. INTRODUCTION

This is the primary data collected from one such store owned by my family. The total quantity ordered by the store is far greater than the one I have presented, the reason being that I have not taken into account the other various items sold by the store such as soft drinks, fresh snacks, imported food items, candies, dry fruits, ready to make mixes etc.

I have chosen 3 basic parameters i.e. chocolates, snacks and sweets. These commodities are ordered daily and in Kilograms which makes grouping them simpler as the other commodities are ordered either in a different unit example litres and units or the frequency of ordering is uneven example dry fruits and soft drinks which are ordered when the existing stock runs out.

The store I have selected is located in Dadar, near Shivaji Park. Because of the nature of the data I have been asked to not reveal the name of store. The idea behind me revealing the location of the store was simple, to understand the choices of the consumer in the given location and what kind of goods the consumers order, how frequently they order it and what are their preferences to which the retailers have to adapt and accordingly keep certain in their stores which under normal circumstances they would not.

Also, I would like to mention that I have omitted the 'abnormal sales' the store makes during the festive seasons. During this time stores receive orders from companies for gift boxes and hence the quantity ordered is tenfold during this time. The data I have provided is how much the store has ordered for walk-in customers or deliveries made for households.

2. OBJECTIVES
- To analyse what product category takes up what percentage of the total orders
- To find if there exists a relationship between the 3 commodities or are they independent of each other's quantity purchased.
- To understand and predict the quantity purchased of a good based on the pattern of ordering the goods and also know more about the dietary choices of the people in the given location.

3. ANALYSIS
The correlation between sweets and total quantity ordered is 0.542924. This indicates that there is a weak positive correlation between sweets and total quantity ordered.

The correlation between chocolates and total quantity ordered is 0.271859. This indicates a negligible positive correlation between chocolates and total quantity ordered.

The correlation between snacks and total quantity ordered is 0.770499. This indicates that there is a strong positive correlation between snacks and total quantity ordered. That is because total snacks ordered are numerically a huge portion of the total quantity ordered.
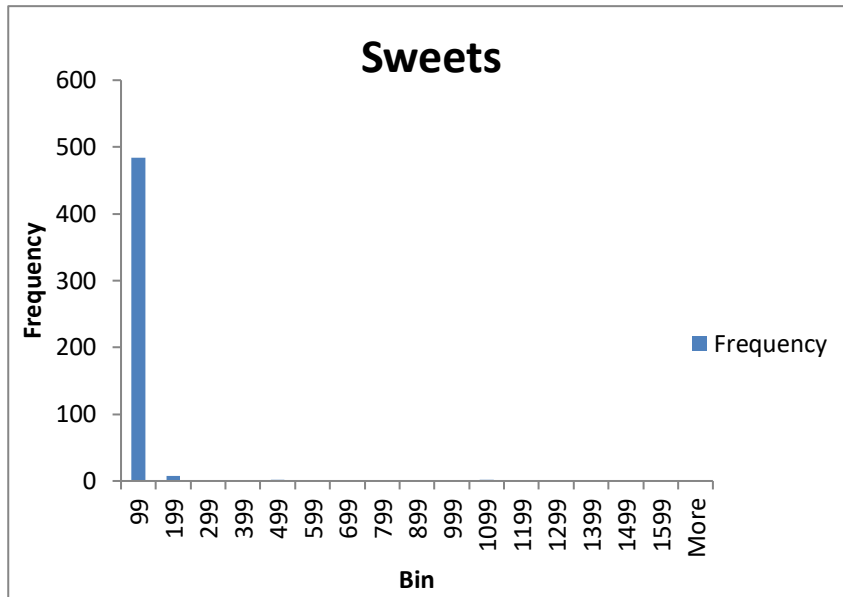
4. REGRESSION
4.1 Sweets
Y= a+bx

Y=95.92257218 + 0.951105375x

This means that for every 0.9511053 increase in the quantity purchased of sweets, the total sales will increase by 1 unit.
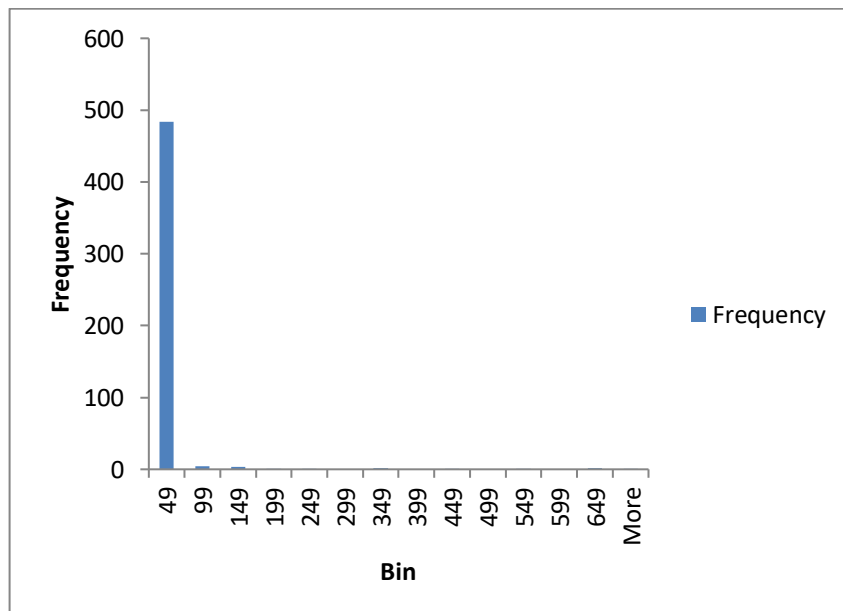

199	490
399	1
599	1
799	1
999	0
1199	5
1399	1
1599	0
1799	0
1999	0
2199	0
2399	0
2599	1

4.2 Chocolates
Y= a+bx

Y= 130.339642 + 0.903951844x

This means that for every 0.903951844 increase in the quantity purchased of chocolates, the total sales will increase by 1 unit.
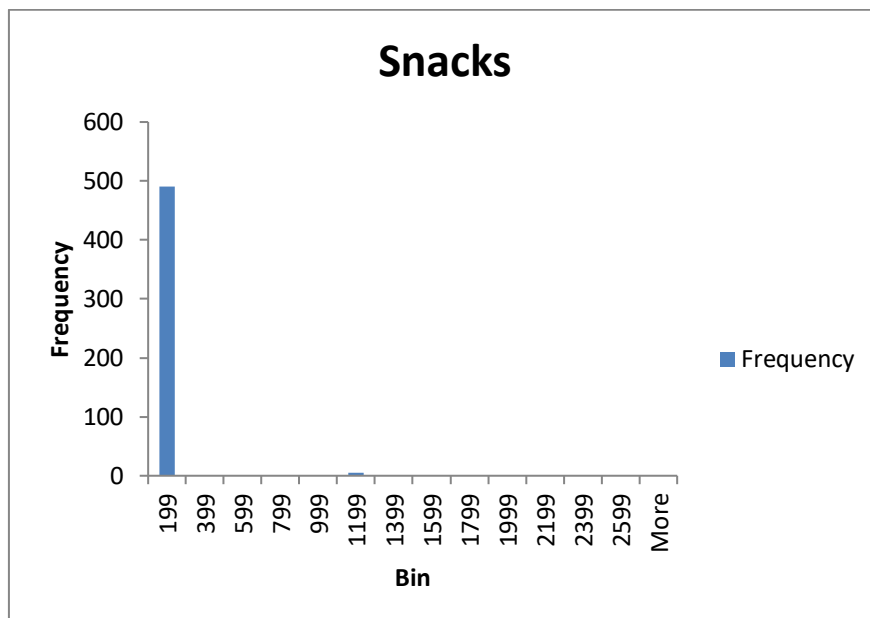
99	484
199	8
299	0
399	0
499	2
599	1
699	1
799	0
899	0
999	0
1099	2
1199	1
1299	0
1399	0
1499	0
1599	1

4.3 Snacks
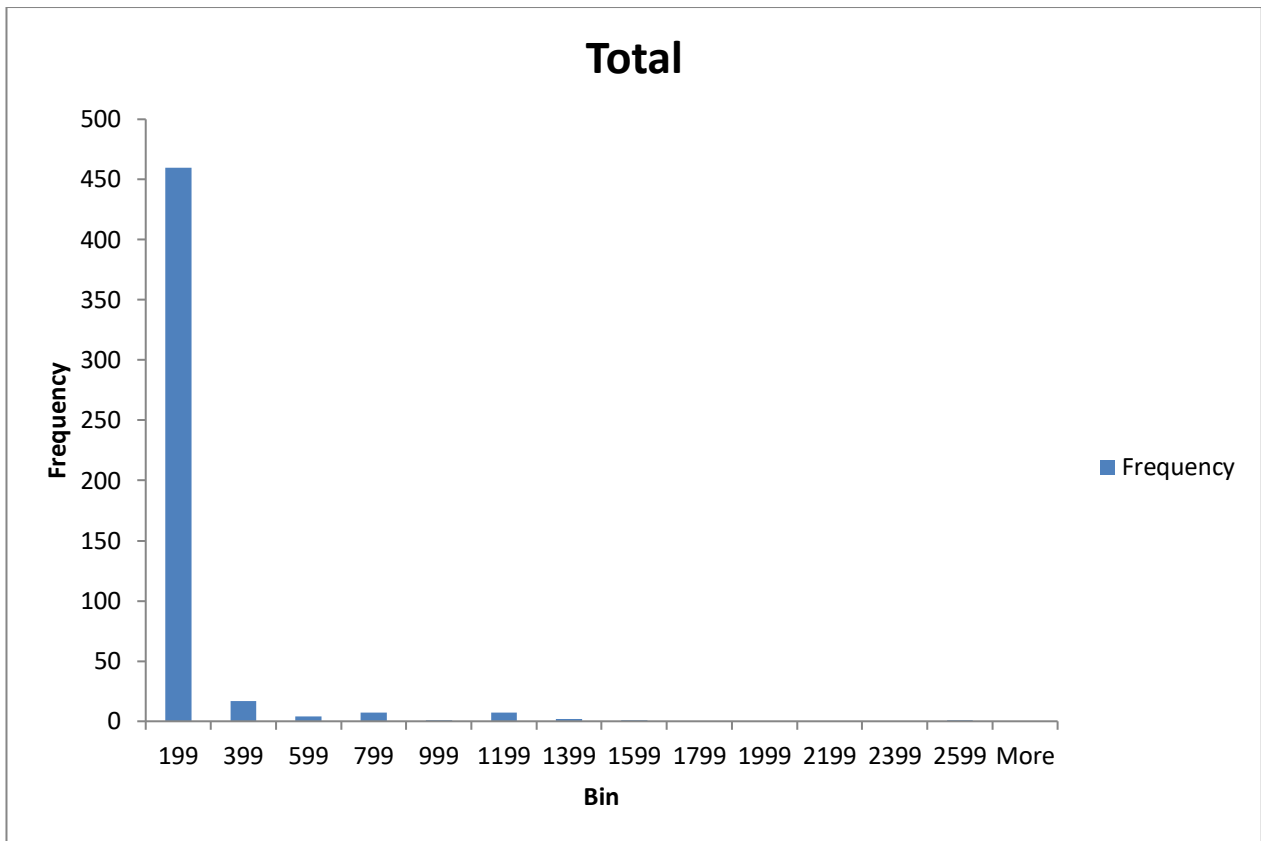
Y= a+bx

Y= 71.3175074 + 0.975915488x

This means that for every 0.975915488 increase in the quantity purchased of snacks, the total sales will increase by 1 unit.

99	484
199	8
299	0
399	0
499	2
599	1
699	1
799	0
899	0
999	0
1099	2
1199	1
1299	0
1399	0
1499	0
1599	1

Total

199	460
399	17
599	4
799	7
999	1
1199	7
1399	2
1599	1
1799	0
1999	0
2199	0
2399	0
2599	1

5. CONCLUSION

The store has a disproportionate order rate, the most orders being situated between the first-class interval. The aforementioned nature of data makes it difficult to be plotted on a histogram. However, the data concludes that people demand more snacks (in kgs) than chocolates or sweets (in kgs) in the given area.

6. APPENDIX

The source of the data is the store records itself. This is a primary data, the only one of its kind with respect to the store in question.