

Indian Institute of Technology Madras

Bs in Programming and Data Science

CAPSTONE PROJECT- MID-TERM SUBMISSION

On Topic

Sales Planning for “2K market”

For course

Business Data Management

By

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Roll No: 21F1000414
Date: 30 December 2022

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EXECUTIVE SUMMARY

The sales data is collected to analyze the trend in sales of “2K market”, a shopping complex in NIT Tiruchirappalli. Using Analysis, Manager of “2k Market” will be smartly able to manage inventories and get an idea about practical fields for Improvement

It will help the shopping complex to make more revenue by fulfilling dynamic customer demand. As “2k market” is the only shopping complex on my college campus, my intention is to provide “can do” services to the customers. Every product which customer may need, or need must be available in the complex. It all could be possible if you predicted the dynamic nature of the customer.

To move in the direction of analysis of sales data available by shopping complex, various types of analysis will perform including univariate, Bivariate and multivariable analysis along with permuting different factors for statistical and mathematical analysis. Some of those factors are like time of sales, customer gender, hostels which booking more online deliveries, company products like by customer etc. Results will be presented in a PowerPoint presentation.

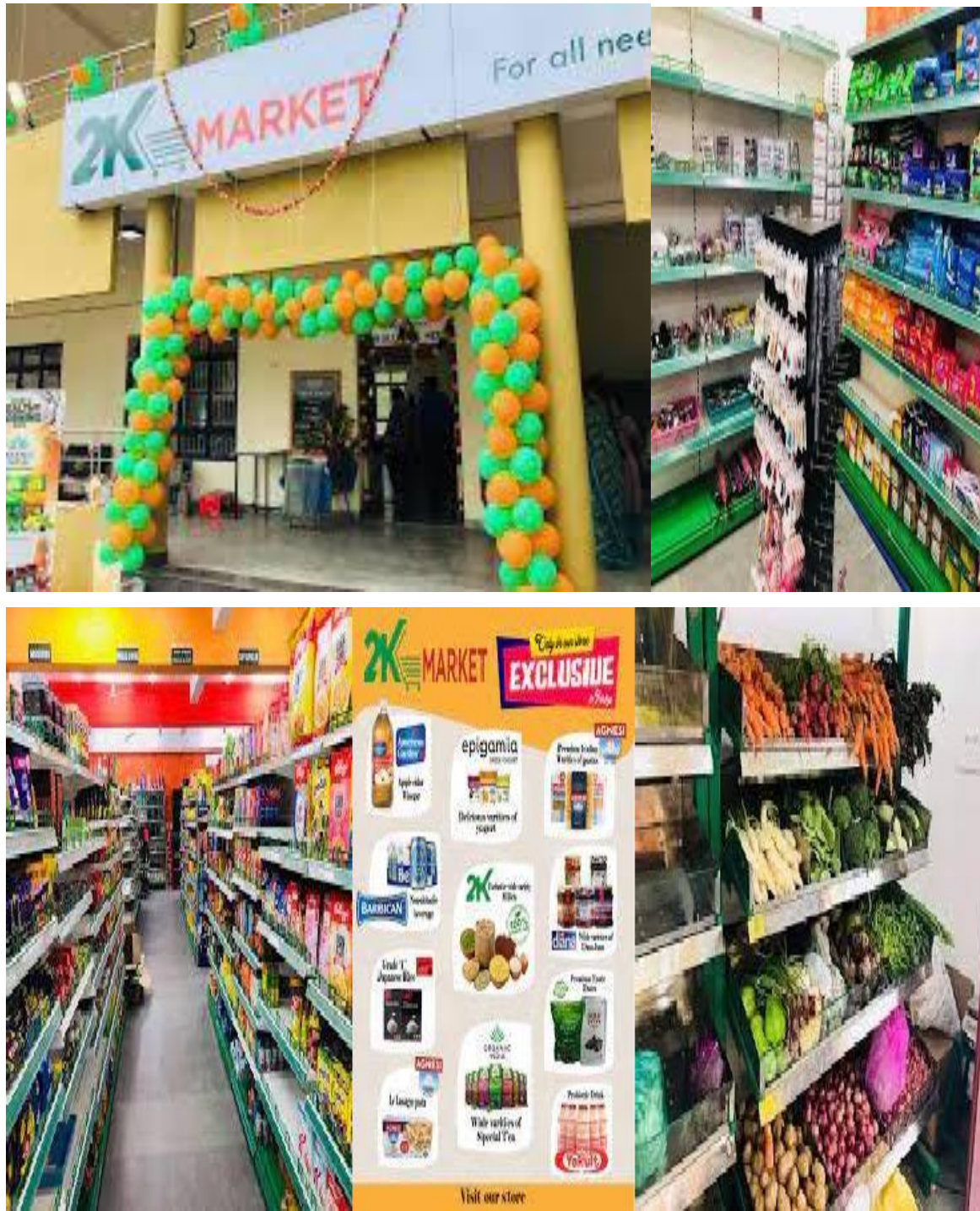
After final analysis, hope is that the results will surely be helpful for the manager of the shopping complex to make effective planning for sales and Inventories. The Analysis recommendations will be helpful to increase revenue and customers will be more comfortable to get services. Also, big e-commerce companies like Amazon, Flipkart, Big Basket won't be able to capture customers of “2K market”.

PROOF OF ORIGINALITY OF THE DATA

“2K Market” is a B2C retail shopping complex located in National Institute of Technology, Tiruchirappalli, Tamil Nadu, India. It is also known as “Kaavya Home Needs” with the GST no is: 33AAMFK2373G1ZD. It has other branches across Tiruchirappalli city. Complex is for students and professors of NIT Tiruchirappalli and the students can get almost everything they need under the sun here. In-store pickup along with online delivery are available services. It is open from 9Am to 8:30PM, 24X7.

Link of Primary data provided by “2K Market” for analysis is available over [link](#)

PHOTOGRAPH:



LETTER FROM ORGANIZATION:

GSTIN: 33AAMFK2373G12D

C-37 NORTH EAST EXTENSION
7TH CROSS THILLAI NAGAR,
TIRUCHIRAPALLI-620018

✉ kaavyahomeneeds@gmail.com



☎ +91 9677099619

To
Adarsh Kumar Gupta
(21f100414)

Date: 24 Dec 2022

This is to certify that ADARSH KUMAR GUPTA(21F100414), student of BS degree program, IIT Madras are allowed to use some data related to sales of Retail shop 2K market. The purpose is for their Capstone project in the Business Data Management course. The data provided will not be shared with anyone else and will be used for academic purposes only. Kindly maintain data privacy and he will not share this data with anyone else. Student will be responsible for any loss.

yamini

2K MARKET
C-37 North East Extension
7th Cross Thillai Nagar,
Tiruchirappalli-620018
kaavyahomeneeds@gmail.com
91 9677099619

Manager

SHORT VIDEO OF INTERACTION WITH THE BUSINESS PERSON

A short video introducing the shopping complex is accessible through the link: [Video Link](#)

METADATA AND DESCRIPTIVE STATISTICS

Shopping complex data was provided with 5 Excel sheets of dataset. For better Analysis and to know our customer, we segmented our NIT Tiruchirappalli campus into 5 Zones. You can get a rough estimate about target zones through this link: [link](#).

North Zone: area near Main Entry Gate,

South Zone: straight opposite to North zone or back area

East Zone: Area to left Side of North Zone

West Zone: Area to right side of North zone

Central Zone: central area of NITT campus



DATASET NO: 1

- File Name: File-1.xlsx
- File Format: Comma Separated Format(.csv)
- Description: Data having relation between customer and products with sales, Discount and profit as additional supporting variables
- Source of data: Data provided by manager of retail complex: “2k Market”
- Language of data: Data viewed in Excel with English Language
- Data columns and format:
 - Order Id: Alpha-Numeric data type format
 - Customer: Text data type format
 - Category: text data type format
 - Sub Category: Text data type format
 - Order Date: Numeric/ Datetime data type format
 - Region: Text data type format
 - Sales: Number data type format
 - Discount: Number data type format
 - Profit: Number data type format
 - State: Text data type format
- Data size: 9995 Samples* 10 Features
- Other information: Data can be used to find relation that which region is preferred which category of product and other analysis too.

DATASET NO 2

- File Name: File-2.xlsx
- File Format: Comma Separated Format(.csv)
- Description: data about total units sold of different 24 products like jam, plain bread, milk etc. recorded in weekly interval.

- Source of data: Data provided by manager of retail complex: “2k Market”
- Language of data: Data viewed in Excel with English Language
- Data columns and format
 - Date Time: Date Time format
 - Day of week: Text data type format
 - Total Sales: Number data type format
 - Other 24 products: Number data type format
- Data size: 2421 samples*27 features
- Other information: It will be very useful to find relation that which product is high demand and in which day of week.

DATASET NO 3

- File Name: File-3.xlsx
- File Format: Comma Separated Format(.csv)
- Description: It contains data regarding region wise and time of delivery for on line shopping with category and sub category of product type.
- Source of data: Data provided by manager of retail complex: “2k Market”
- Language of data: Data viewed in Excel with English Language
- Data columns and format:
 - Order Date: Number data type format
 - Customer ID: Alpha-Numeric data type format
 - Customer Name: Text data type format
 - Segment: Text data type format
 - Region: Text data type format
 - Product ID: Alpha Numeric data type format
 - Category: Text data type format
 - Sub-Category: Text data type format
 - Product Name: Text data type format
 - Sales: Number data type format
 - Ship Mode: Alpha Numeric data type format
- Data size: 9801 Samples* 11 features

- Other information: Using analysis we could get an idea that which region (i.e. south zone, north zone etc.) are more interested for opting for online shopping from 2K Market complex rather than in-store shopping. So, we could more focus and ready in advance for upcoming online orders.

DATASET NO 4

- File Name: File-4.xlsx
- File Format: Comma Separated Format(.csv)
- Description: This dataset tells relation with gender and Customer datatype (i.e. Member, Normal, Premium) with mode of payment (Cash, E-wallet, Credit card etc.) including other features like rating given by users.
- Source of data: Data provided by manager of retail complex: “2k Market”
- Language of data: Data viewed in Excel with English Language
- Data columns and format:
 - Invoice ID: Numeric data type format
 - Branch: Text data type format
 - City: Text data type format
 - Customer type: Text data type format
 - Gender: Text data type format
 - Product line: Text data type format
 - Unit price: Numeric data type format
 - Quantity: Numeric data type format
 - Tax 5%: Numeric data type format
 - Total: Numeric data type format
 - Date: Date time data type format
 - Time: Numeric data type format
 - Payment: Text data type format
 - Cogs: Numeric data type format
 - gross margin percentage: Numeric data type format
 - gross income: Numeric data type format
 - Rating: : Numeric data type format

- Data size: 1001 Samples * 17 features
- Other information: Using Analysis we could be able to find level of satisfaction by customers in different zones, also analysis of payment time will affect that service satisfaction.

DATASET NO 5

- File Name: File-5.xlsx
- File Format: Comma Separated Format(.csv)
- Description: It tells about the sales of different products on variation with months of year
- Source of data: Data provided by manager of retail complex: “2k Market”
- Language of data: Data viewed in Excel with English Language
- Data columns and format
 - Member number: Numeric data type format
 - Date: Date time data type format
 - Item Description: Text data type format
 - Date: Text data type format
 - Week: Numeric data type format
- Data size: 387 Samples* features
- Other information: Using Data Analysis, we could be able to track the pattern by which customer are shopping on account of months.

METHODS FOR DATA ANALYSIS

The sales data collected from a shopping complex, where our interested was in analyzing data using MS-excel. Some methods for justification which will use are:

- ❖ **Diagnostic Analysis** to answer pattern which is happening under point 8 “sales trend of new product launching in store”, does it relate with other factors like gender, hostel, timing, average amount of shopping, etc.
- ❖ **Predictive analysis** of sales trend for point no 1: “Products in high demand and low demand” and online order analysis from different hostels. The same analysis will be done

while launching new products and purchasing responses by gender. Prediction of preferred company for products in future.

- ❖ **Prescriptive analysis** for point no 4: Which company is preferred by students for Personal, Laundry, Dishwashing and Household cleaning, to analyze which company products we should stock more. Bivariate analysis of the above point can be done with other points to check its dependency with other variables i.e., gender, timing, day etc.
- ❖ **Statistical Analysis** for variables like average amount of shopping by different genders, day timing and payment method. Statistical analysis will be done for variables like visiting peak hour, online order analysis from different channels.

DETAILS ABOUT THE ANALYSIS TOOLS WITH JUSTIFICATION

Analysis will do using MS-excel to analyze the data with different tools. Other analysis tools will also be use like sum, average, ifs,sum if, countify, plot, Pivot table and other descriptive and visualization tools to analyze the provided dataset. Also, MS word and MS PowerPoint will be used for the presentation of results. Results will be exciting to learn and finally present results to manage Yamini for better performance of the shopping complex.

RESULTS AND FINDINGS

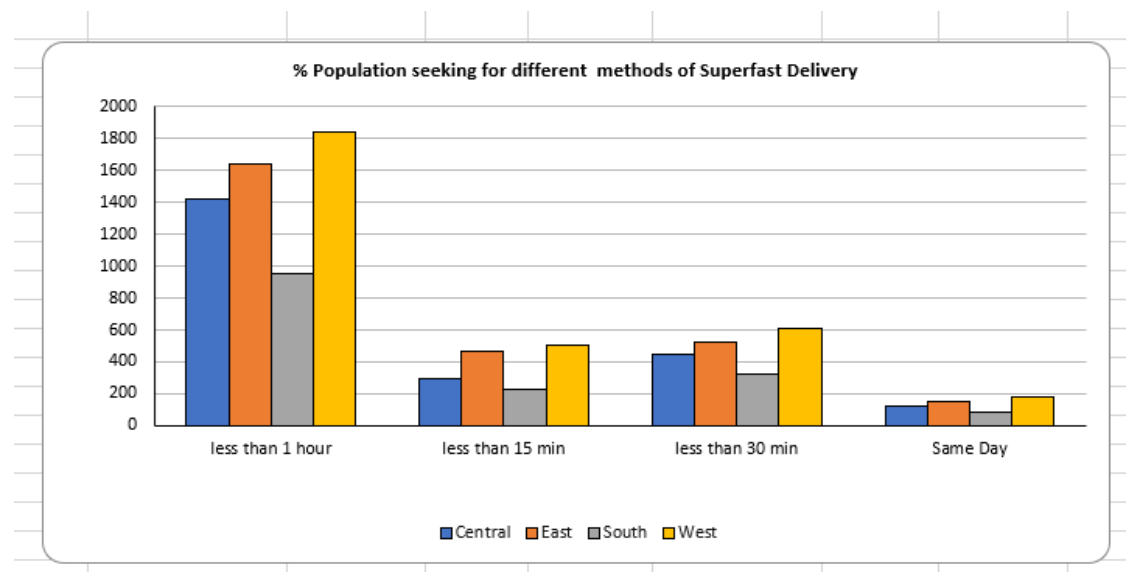


Figure: Different time delays for online order delivery

Above graph showing that most online customers are comfortable with delay in delivery around less than 1 hour. Very few deliveries are demanding for less than 15 min or” Urgent Delivery”.

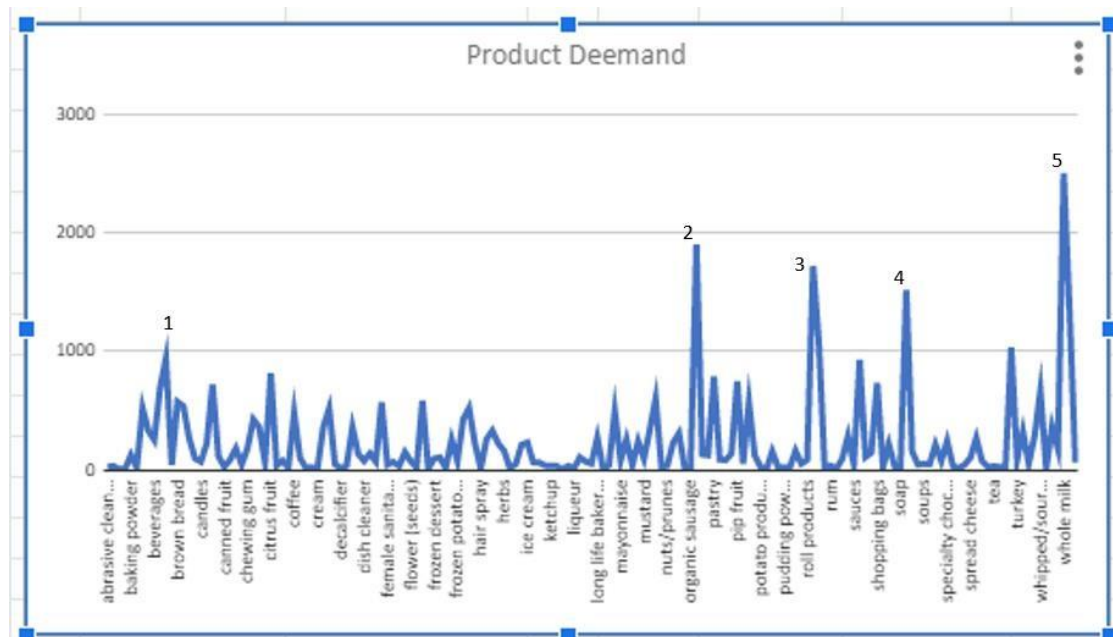


Figure: Different product demand year wise

Above graph showing 5 major peaks which are Beverages, Organic Sausage, Rolls, Soap and Milk which are in high demand throughout the year.

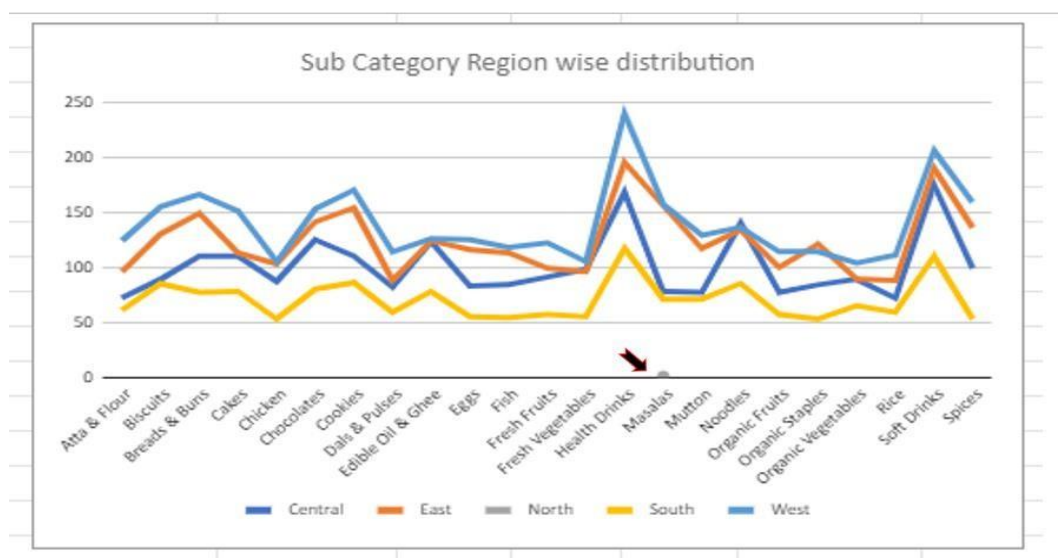


Figure: Region wise Sales of products in NITT campus

As shown in figure, North zone have very less customers and those who are from north are only for masalas products. Moreover, North Region have major customer segment of this shopping complex.