FOOD MANUFACTURING COMPANY – BUSINESS ANALYSIS

The food manufacturing sector is one of the top most industry in today's era. I chose a dataset for the same and used queries and analytical problem solving techniques to find solution for the company. In this project I have downloaded a dataset which consists of 7000+ tuples.

The dataset attributes consist of :

Item ID

Item Weight

Item Fat Content

Item Type

Item MRP

Outlet Identifier

Years since inception

Outlet Size

Outlet Location Type

Outlet Type

Sales

The outlet location type attribute consists of 3 Locations – Tier 1, Tier 2, Tier 3.

Each locations consists of 4 types of outlets – Supermarket Type 1, Supermarket Type 2, Supermarket Type 3 and Grocery Store.

All the 4 outlet types can be segregated based on their sizes i.e. Small, Medium and High.

Every outlet sells numerous food items in various package weights and different fat contents.

By analysing the data from a data analyst point of view, I came up with some important factors to optimize the business.Basically they are business objectives for which a company would seek solution.

The objectives are categorised with respect to Sales, Item and Outlet.

Sales

- Which outlet makes the maximum sales?
- Highest selling item in each location.
- Location wise sales.

Item

- Which type of item packaging (weight) sells out the most?
- The category of fat content preferred for each item in descending order w.r.t. sales.
- The item fat content demanded in each location (societal preference).
- Top 10 items that face the highest sales in each outlet type.

Outlet

- How does an outlet size affect sale?
- How does the outlet location affect sale?

Thereafter, I have used MySQL to query the dataset and find the solutions to the above objectives.

```
/*Which type of outlet makes the maximum sales*/
SELECT Outlet_Type, ROUND(SUM(sales)) as sales
FROM food_manufacturing_company
group by Outlet_Type;

/*Location wise sales*/
SELECT Outlet_Location_Type,ROUND(SUM(sales)) as sales
FROM food_manufacturing_company
group by Outlet_Location_Type ORDER BY 2 desc;
```

```
/*Highest selling item in each location*/
SELECT f1.Outlet_Location_Type,round(SUM(f1.sales))AS sales,
(SELECT f2.Item_Type
FROM food_manufacturing_company f2
WHERE f2.Outlet_Location_Type = f1.Outlet_Location_Type
GROUP BY f2.Item_Type
order by COUNT(*)DESC
LIMIT 1) AS Item
FROM food_manufacturing_company AS f1
GROUP BY f1.Outlet_Location_Type order by 1;

/*Top 5 outlets vs their sales*/
SELECT Outlet_Identifier,round(sum(sales)) as sales,Outlet_Type
from food_manufacturing_company
group by Outlet_Identifier order by 2 desc
limit 5;

/*Which item packaging sells out the most*/
select f1.Item_Type,round(sum(f1.sales)) as sales,
(select f2.Item_Weight
from food_manufacturing_company f2
where f2.Item_Type=f1.Item_Type
group by f2.Item_Weight
order by count(*) desc
limit 1) as weight
from food_manufacturing_company f1
group by f1.Item_Type
```

```
/*The fat content demanded for each item in every outlet location*/
select Outlet_Location_Type, Item_Fat_Content, round(sum(sales)) as sales
from food_manufacturing_company
group by Outlet_Location_Type,Item_Fat_Content
order by Outlet_Location_Type

/*How does outlet size affect sale*/
select Outlet_Size,round(sum(sales)) as sales
from food_manufacturing_company
group by Outlet_Size
order by 2 desc

/*How does outlet location affect sale*/
select Outlet_Location_Type,round(sum(sales)) as sales
from food_manufacturing_company
group by Outlet_Location_Type
order by 2 desc
```

The output generated from the above queries is further visualized using MS Excel to make it user/reader friendly. I have used Bar Charts, Box Plots, Bar Graphs and Pie Chart to visualize the results.

The final results to the previously mentioned objectives are given below :

- *Which outlet makes the maximum sales?*

  Supermarket Type 1 has the highest sales whereas Supermarket Type 3 has the lowest sales.

- Highest selling item in each location.

  Fruits & Vegetables is the highest selling in Tier 1 & Tier 3.

  Snack Food is the highest selling in Tier 2.

- Location wise sales.

  Tier 2 is the best performing location in terms of sales while Tier 1 and 3

  perform almost same.

- The item fat content demanded in each location (societal preference).

  All the 3 tiers prefer around 65% of Low Fat products.

- How does an outlet size affect sale?

  Medium sized outlets face the highest sales which means majority of the population prefers buying from such outlets.

  Hence, we can conclude by saying –

- Tier 2 makes the highest sales among all the locations and Supermarket Type 1 exceeds among all the other outlet types in terms of sales. In fact All the top 5 performing outlets belong to Supermarket Type 1.
- Medium sized outlets have the highest sales which shows that majority of population prefers nearby medium sized stores.
- People prefer more of Low Fat items than High Fat items in all the locations.

Thus if a new business outlet is to be established, then it can be a medium sized Supermarket Type 1 outlet in Tier 2 location with a majority of low fat content products so as to maximize sales and thereby profits.

Kindly refer to the link for the entire project :
https://drive.google.com/drive/folders/1rVFlPa500JBOtX3UPTGAs67B-SqAE9kw