**Project Documentation**

**Project Title:** Supermarket Sales and Profit Analysis  
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**1. Project Overview**

This project aims to analyze sales, profit, and customer behavior trends using a transactional dataset from a retail supermarket. The analysis covers a time span from 2015 to 2018 and evaluates performance across product categories, regions, and quarters. The goal is to assist decision-making by identifying high-performing areas and opportunities for improvement.

**2. Key Performance Indicators (KPIs)**

|  |  |
| --- | --- |
| **KPI Name** | **Value** |
| Total Sales Revenue | ₹14,956,982 |
| Total Profit | ₹3,747,121.20 |
| Profit Margin % | 25.05% |
| Average Order Value | ₹1,495.45 |
| Total Orders | 9,994 |

**3. Yearly and Quarterly Sales Analysis**

Data Source: **Q2i\_Yearly\_Quarterly\_Sales**

The sheet provides average sales figures per region over the years. A sample of the data:

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Region** | **2015** | **2016** | **2017** | **2018** | **Grand Total** |
| Central | 1480.06 | 1472.94 | 1499.94 | 1507.54 | 1492.96 |
| Bodi | 1666.89 | 1504.73 | 1524.32 | 1416.69 | 1511.75 |

**Observations:**

* Sales are generally increasing over the years.
* Central and Bodi regions consistently perform near the average.
* Minor fluctuations exist but the trend shows healthy growth.

**4. Category and Subcategory Sales by Region**

Data Source: **Q2ii\_Category\_SubCategory\_Sales**

This pivoted data shows average sales by category and region.

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Category** | **Central** | **East** | **South** | **West** | **Grand Total** |
| Bakery | 1450.95 | 1500.61 | 1505.77 | 1513.37 | 1494.89 |
| Biscuits | 1446.12 | 1564.25 | 1446.95 | 1477.64 | 1490.38 |

**Insights:**

* Biscuits and Bakery have strong average sales across regions.
* The East region performs best in several categories.
* West is a consistently strong market as well.

**5. Profit Analysis by Category and Year**

Data Source: **Q2iii\_Category\_Profit\_Analysis**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Category** | **2015** | **2016** | **2017** | **2018** | **Total Profit** |
| Bakery | 107,567 | 124,536 | 122,079 | 174,339 | 528,521 |
| Beverages | 104,835 | 110,201 | 135,180 | 175,390 | 525,606 |
| Eggs, Meat & Fish | 126,058 | 114,208 | 135,896 | 191,195 | 567,357 |
| Food Grains | 90,838 | 113,643 | 149,776 | 174,906 | 529,163 |

**Findings:**

* All categories show increasing profit trends, especially after 2016.
* Eggs, Meat & Fish leads in profitability.

**6. Highest Selling Products by Region**

Data Source: **Q2iv\_Highest\_Selling\_Products**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Category** | **Central** | **East** | **South** | **West** | **Total Sales** |
| Bakery | 448,343 | 588,241 | 361,385 | 714,312 | 2,112,281 |
| Beverages | 501,194 | 577,206 | 344,666 | 662,247 | 2,085,313 |
| Eggs, Meat & Fish | 516,642 | 677,830 | 360,963 | 711,966 | 2,267,401 |
| Food Grains | 463,683 | 598,868 | 353,069 | 699,652 | 2,115,272 |

**Analysis:**

* Eggs, Meat & Fish are the top-selling products overall.
* All categories perform well in the East and West.

**7. Customer Monthly Purchase Behavior**

Data Source: **Q2v\_Customer\_Monthly\_Purchase**

Quarterly sales by product type:

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Quarter** | **Bakery** | **Beverages** | **Eggs, Meat & Fish** | **Food Grains** | **Fruits & Veggies** | **Oil & Masala** | **Snacks** | **Total** |
| Q1 | 386,411 | 398,245 | 443,232 | 397,591 | 411,083 | 474,597 | 468,466 | 2,979,625 |
| Q2 | 441,153 | 483,815 | 525,377 | 482,427 | 457,040 | 444,808 | 473,753 | 3,308,373 |
| Q3 | 605,161 | 577,897 | 597,377 | 593,628 | 565,407 | 537,163 | 557,421 | 4,034,054 |
| Q4 | 679,556 | 625,356 | 701,415 | 641,626 | 667,197 | 581,874 | 737,906 | 4,634,930 |

**Observations:**

* Sales peak in Q3 and Q4 for all categories.
* Q4 is the highest-performing quarter overall, likely due to festivals or seasonal demand.

**8. Raw Data Summary**

Data Source: **Raw\_Data**

Sample fields:

* **Order ID**
* **Customer Name**
* **Category/Sub-Category**
* **Sales, Discount, Profit**
* **Region, City, State**
* **Order Date, Year, Quarter, Month**

**Notes:**

* The dataset is well-structured and includes all necessary time-series and categorical dimensions.
* Clean and usable for pivot analysis and visualization.

**9. Key Insights**

* Sales and profit trends are increasing steadily from 2015 to 2018.
* The East and West regions dominate in sales and profit contributions.
* Eggs, Meat & Fish is the highest-selling and most profitable category.
* Q3 and Q4 consistently see higher customer purchase volumes.
* Average order value is strong, indicating consistent customer spend.

**10. Conclusion**

This analysis demonstrates healthy business growth, robust performance in key product categories, and strong regional contributions. The insights suggest a focus on high-performing quarters and categories can maximize profitability. Regional marketing in East and West, along with seasonal promotions in Q4, could further enhance outcomes