

# Project Name: Chekafgham Retail Sales Performance and Profitability Investigation

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Designation: Data Analyst

# Problem Summary

- To identify whether revenue growth is translating into real profit or eroded by costs.
- To determine which product categories that deserve more investment
- To determine the customers that drive the most revenue and repeat purchases.
- How customer Demographics affect sales.
- Lack of clarity on sale trends over time.
- To determine whether customer typically make bulk purchases or small frequent ones.

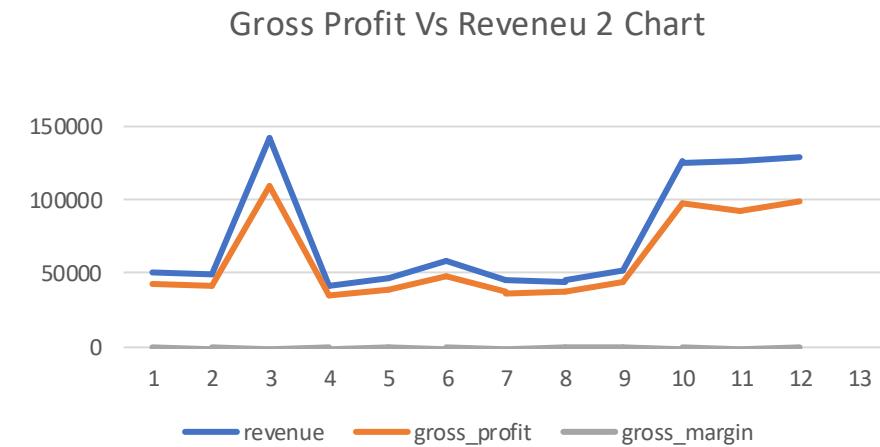
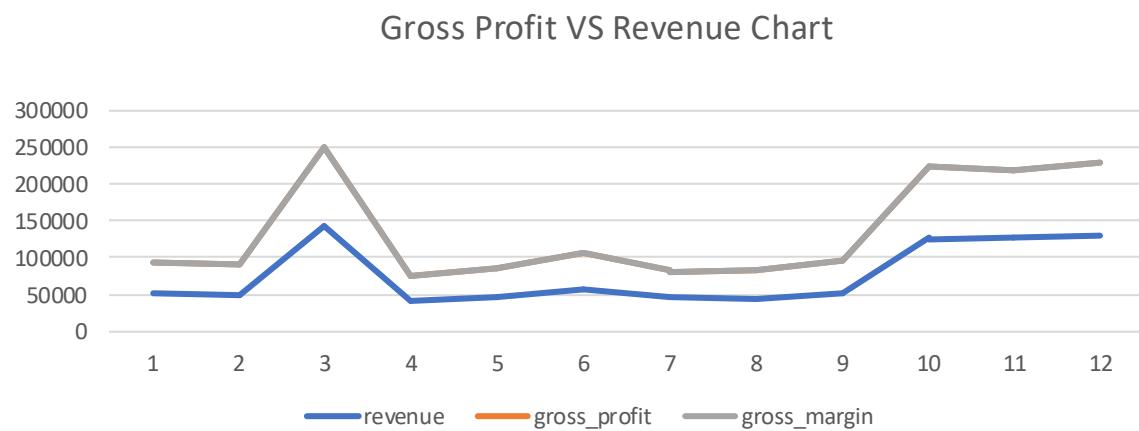
# Objective of the Analysis

- To analyze the dataset of the organization using KPIs.
- To design an interactive dashboard that give insights and answer some burning questions.
- Prepare presentation slide that captures all the activities, insights and explanation.
- Give findings and recommendations.

# Dataset Overview

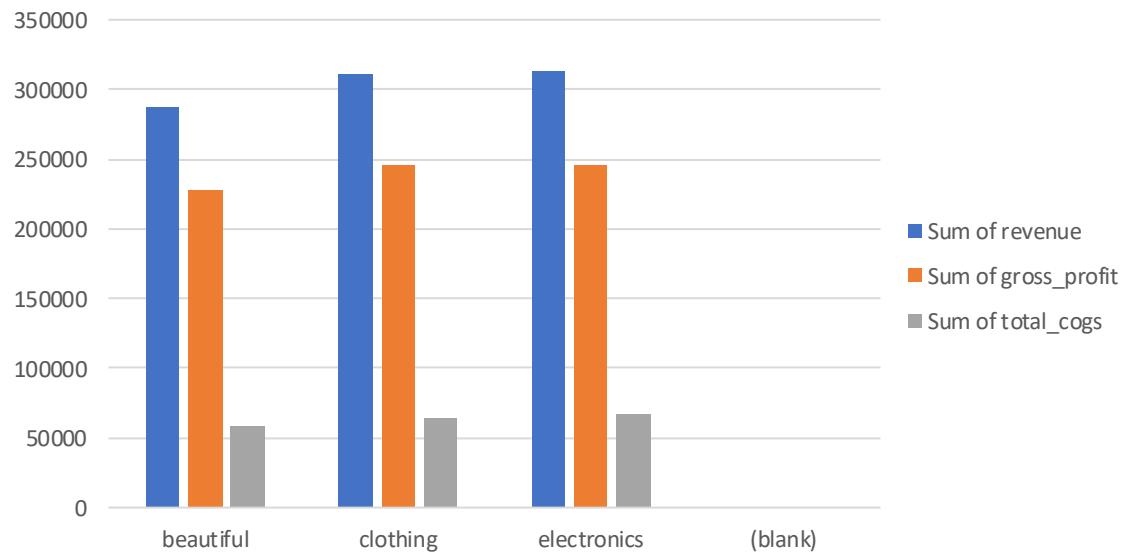
- 1 dataset was used
- Main column used includes: transaction\_id, customer\_id, gender, age,
- Category, quantity, price per unit, total sale, cogs, sale date, sale time.
- Data cleaning and transformation was carried out.

# Question 1: Revenue Vs Gross Profit, Gross Margin



revenue	gross_profit	gross_margin
50630	42234.65	83.4182303
49465	41080.9	83.0504397
142025	109035.5	76.7720472
41280	34536.25	83.6633963
46425	39444.55	84.964028
58120	48565	83.5598761
45255	37456.35	82.7673185
45035	37739.1	83.7994893
51990	43553.45	83.7727448
126050	97515.45	77.3625149
126115	91749.9	72.7509812
129330	99046.2	76.5840872

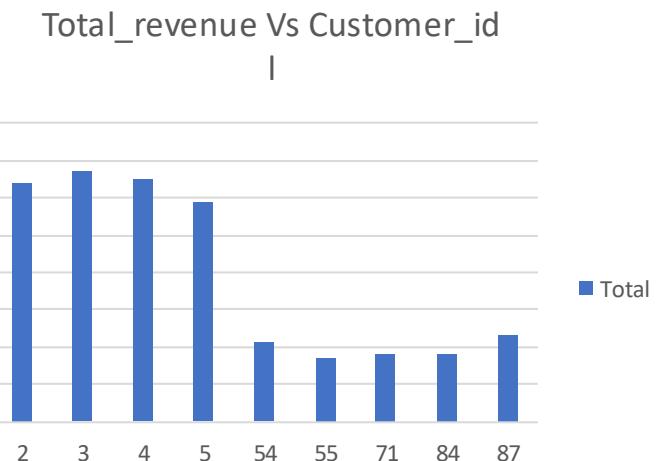
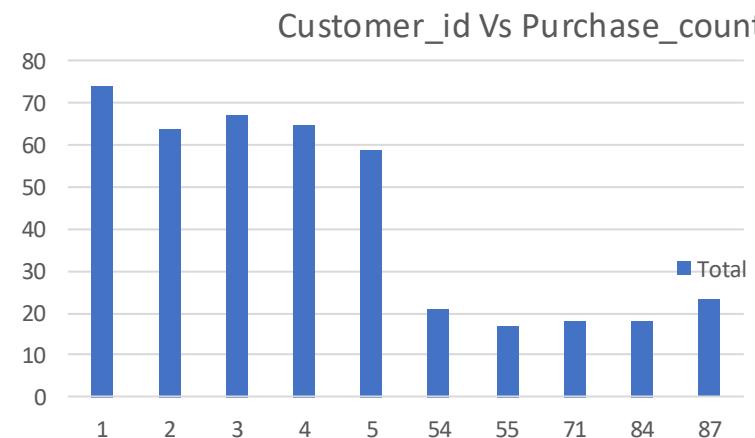
# Question 2: Categories for Investment



category	revenue	total_cogs	gross_profit	n_pct	profit_margi
clothing	311070	64390.5	246679.5		79.3
electronics	313810	67162.35	246647.65		78.6
beautiful	286840	58209.85	228630.15		79.71

# Question 3: Most Valuable Customers

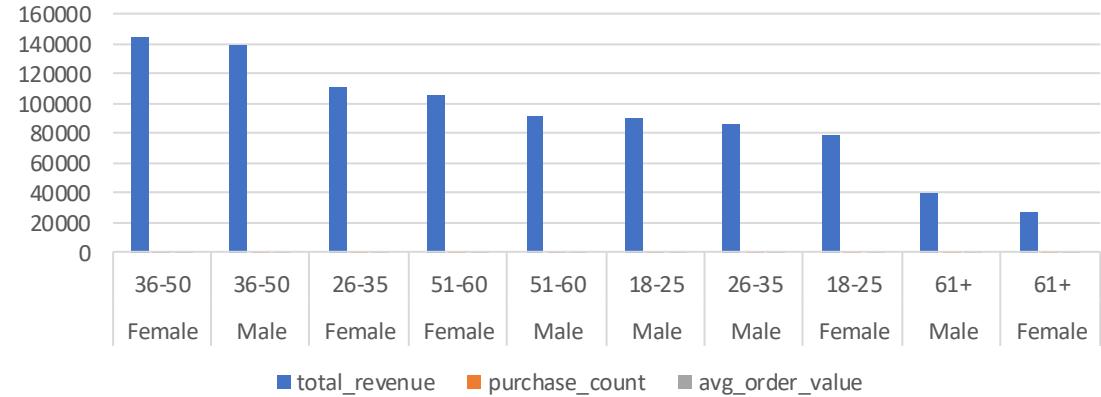
customer_id	total_revenue	purchase_count
3	38440	67
1	30750	74
5	30405	59
2	25295	64
4	23580	65
87	15855	23
54	13475	21
71	12790	18
55	12080	17
84	11730	18



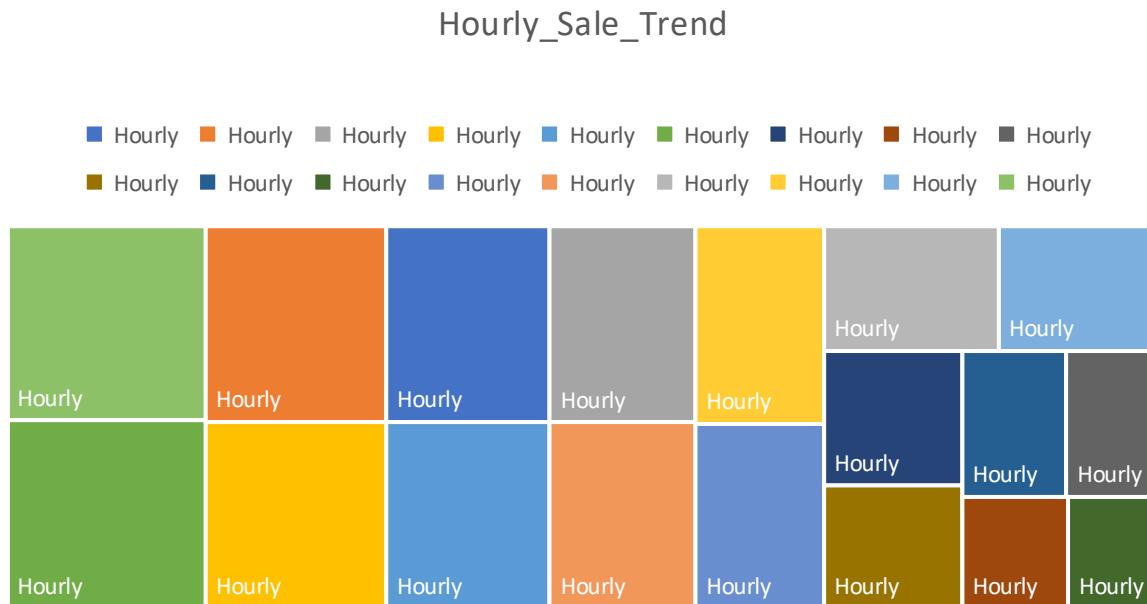
# Question 4: Demographics Purchase Behavior

gender_clean	age_group	total_revenue	purchase_count	avg_order_value
Female	36-50	143870	333	432.04
Male	36-50	138865	302	459.82
Female	26-35	110140	213	517.09
Female	51-60	105680	226	467.61
Male	51-60	91025	205	444.02
Male	18-25	90110	175	514.91
Male	26-35	86730	196	442.5
Female	18-25	78850	161	489.75
Male	61+	39590	102	388.14
Female	61+	26860	84	319.76

Customer\_Demographic\_Vs\_Sale



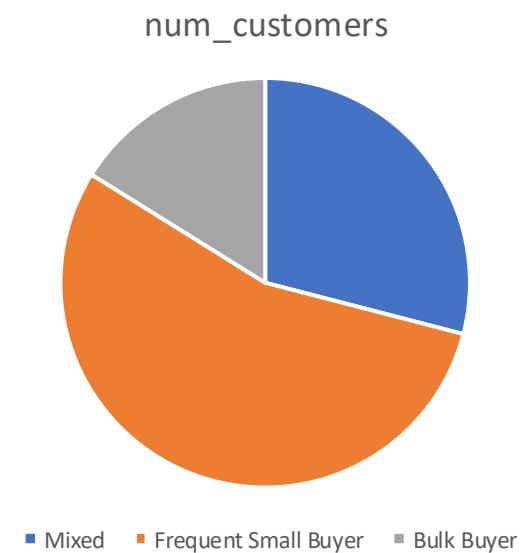
# Question 5: Sales Trends over Period type



# Question 6: Bulk Vs Small Frequent Buyer

purchase_behavior	num_customers
Mixed	66
Frequent	
Small Buyer	89

purchase_behavior	num_customers
Mixed	45
Frequent	
Small Buyer	85
Bulk Buyer	25



# Summary of Findings

- If revenue is rising but gross margin is shrinking, costs are eroding profitability.
- From question 1 chart, both revenue, gross profit and gross margin line rises and the gap between them widens. This means the growth is healthy and in turn means profitable sales.
- For category, clothing recorded highest gross profit and profit margin.
- Clothing and Electronics deliver strong profitability.
- The top 10 customers who spend most are customers with customer\_id : 1,2,3,4,5,54,55,71,84,87 in that order.
- The age group 36-50(male & female) generate most revenue while age group 61+ (male & female) generate least revenue.
- Female between 26-60 generate far more revenue than other gender and age brackets.
- The retail shop make most money(from peak downward) at:
- Monthly: December, then September, October. The least revenue at Febuary.
- Hourly: 19hrs, then 21hrs. The least revenue at 23hrs.
- Weekend: The highest revenue was recorded on 22/11/2025.

# Recommendations

- Better pricing and operational efficiency should be maintained and improved on for profitable sales.
- Clothing and Electronics categories deserve more investment from marketing budget.
- The top 10 customers who spend most must be given special considerations like loyalty programs, targeted marketing.
- Customer ids 1,2,3,4,5 are your VIPs; 54,55,71,84,87 may be occasional big spenders.
- Age bracket 36-50(male % female) should be given highest priority for premium promotions and product offerings. Next to this is female between 26-60 yrs.
- Age group 61+ will need tailored promotions to encourage trial or bundles.
- Staffing and inventory should be optimized in period type(Month, Hour, Weekend) with most sales.
- Most customer typically made small frequent purchases than bulk purchase.

# Conclusion

- With this dashboard, the retail shop can now optimize its operations and generate more profit margin.
- Thank You