SALES ANALYSIS REPORT

Part 1: Sales and Profitability Analysis

Task 1- Merge the List of Orders and Order Details datasets based on Order ID. Calculate the total sales (Amount) for each category across all orders.

Category	Amount
Clothing	139054
Electronics	165267
Furniture	127181

These are the total sales for each category across all orders.

Task 2- For each category, calculate the average profit per order and total profit margin. (profit as a percentage of Amount).

	Category	Average Profit per Order	Total Profit Margin(%)
0	Clothing	28.40	8.03
1	Electronics	51.44	6.35
2	Furniture	12.35	1.81

These are the average profit per order and total profit margin for each category and the profit margin values are in percentage.

Task 3- Identify the top-performing and underperforming categories based on these metrics. Also, suggest reasons for their performance differences.

	Category	Positive Orders	Positive Profit	Negative Orders	Negative Profit	Positive %	Negative %
0	Clothing	631	23156	279	-11993	66.491043	29.399368
1	Electronics	180	27216	122	-16722	58.441558	39.610390
2	Furniture	139	17819	102	-15521	57.201646	41.975309

In these, the top-performing category is Clothing which has 631 profitable orders with an 8.03% profit margin and the low-performing category is Furniture which has only 139 profitable orders with a 1.81% profit margin.

- Here we can see that clothing has 2/3 of positive profit where only 1/4 of negative profit can be manageable and In furniture 3/5 positive profit but 5/12 of negative profit which is almost 50/50 chances.

- You can also note that there is only 241 orders were placed where 102 orders gave negative profit but clothing holds a total of 631 successful orders out of 910.

- Focus on product pricing and plan strategies to attract more customers.

Part 2: Target Achievement Analysis

Task 1- Using the Sales Target dataset, calculate the percentage change in target sales for the Furniture category month-over-month.

	Month of Order Date	Category	Target	Percentage Change(%)
0	2018-04-01	Furniture	10400.0	0.00
1	2018-05-01	Furniture	10500.0	0.96
2	2018-06-01	Furniture	10600.0	0.95
3	2018-07-01	Furniture	10800.0	1.89
4	2018-08-01	Furniture	10900.0	0.93
5	2018-09-01	Furniture	11000.0	0.92
6	2018-10-01	Furniture	11100.0	0.91
7	2018-11-01	Furniture	11300.0	1.80
8	2018-12-01	Furniture	11400.0	0.88
9	2019-01-01	Furniture	11500.0	0.88
10	2019-02-01	Furniture	11600.0	0.87
11	2019-03-01	Furniture	11800.0	1.72

These are percentage changes in target sales for the furniture category and have an average of 1.059%

Task 2- Analyse the trends to identify months with significant target fluctuations. Suggest strategies for aligning target expectations with actual performance trends.

	Category	High Increase	Low Increase	Static
0	Clothing	July 2018,October 2018		April 2018,May 2018,June 2018,August 2018,Sept...
1	Electronics	January 2019		April 2018,May 2018,June 2018,July 2018,August...
2	Furniture	July 2018,November 2018,March 2019	December 2018,January 2019,February 2019	April 2018

The furniture category shows a single static value with target sales increasing gradually each month, which is good. Other categories have multiple static values, indicating a lack of predictive and historical data analysis.
   ● Targets were not adjusted based on previous performance or market trends. Analyzing historical performance and making predictions to set target sales will lead to achievable targets.
   ● A significant jump in the target does not yield a positive result. Gradually increasing the target will lead to realistic sales growth.
   ● Conducting regular performance reviews helps you set realistic and achievable targets.

Part 3: Regional Performance Insights

Task 1- From the List of Orders dataset, identify the top 5 states with the highest order count. For each of these states, calculate the total sales and average profit.

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Index(['Madhya Pradesh',
'Maharashtra', 'Gujarat',
'Rajasthan', 'Delhi'],
dtype='object', name='State')
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These are the top 5 states that have the highest order count.

Task 2- Highlight any regional disparities in sales or profitability. Suggest regions or cities

that should be prioritized for improvement.

	State	City	Totalsales	Totalprofit	Avgprofit	Totalorder
22	Tamil Nadu	Chennai	6087	-2216	-88.640000	25
18	Punjab	Chandigarh	12279	-1153	-25.622222	45
4	Gujarat	Ahmedabad	14230	-880	-14.193548	62
19	Rajasthan	Jaipur	10076	-753	-17.113636	44
0	Andhra Pradesh	Hyderabad	13256	-496	-11.809524	42
1	Bihar	Patna	12943	-321	-5.177419	62
8	Jammu and Kashmir	Kashmir	10829	8	0.163265	49
16	Nagaland	Kohima	11903	148	3.288889	45
24	Uttar Pradesh	Lucknow	5502	156	4.105263	38
3	Goa	Goa	6705	370	8.604651	43
21	Sikkim	Gangtok	5276	401	16.708333	24
12	Madhya Pradesh	Delhi	2488	521	74.428571	7
17	Punjab	Amritsar	4507	544	36.266667	15
7	Himachal Pradesh	Simla	8666	656	22.620690	29
6	Haryana	Chandigarh	8863	1325	50.961538	26
5	Gujarat	Surat	6828	1345	53.800000	25
20	Rajasthan	Udaipur	11073	2010	67.000000	30

Regional Disparities in Sales and Profitability
1. Chennai from Tamil Nadu
2. Chandigarh from Punjab
3. Ahmedabad from Gujarat
4. Jaipur from Rajasthan
5. Hyderabad from Andhra Pradesh
6. Patna from Bihar

These city's sales face a lot of loss in the total sales orders and profit whereas in Chennai only 25 orders were placed and its total profit is negative(-2216) which means there is no profit margin in that region so we have to cross-check operational costs, heavy discounting, or low pricing strategies responsible for the losses. Focus on product pricing and higher-margin product lines.

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20	Rajasthan	Udaipur	11073	2010	67.000000	30
5	Gujarat	Surat	6828	1345	53.800000	25
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Regions Positive in Profitability
1. Delhi from Madhya Pradesh
2. Udaipur from Rajasthan
3. Surat from Gujarat
4. Chandigarh from Haryana

These cities have good profitability but have less than 30 orders whereas Delhi has an average profit of '74.42' but only has 7 orders so focus on promoting products in these areas to gain more profits and plan strategies to attract more customers to change underperforming areas into a leading sales figures.

Cities like Udaipur and Jaipur from Rajasthan and Surat and Ahmedabad from Gujarat have different profit stats but in the same state. We also analyzed and find what was the reason for that difference and tried to apply some strategies to improve sales in low-performing regions.