

Sales Metrics and Market Trends

A Data-Driven Approach to Understanding Sales Dynamics



SPACE For Early Childhood Education
Business Analytics internship



Agenda

1

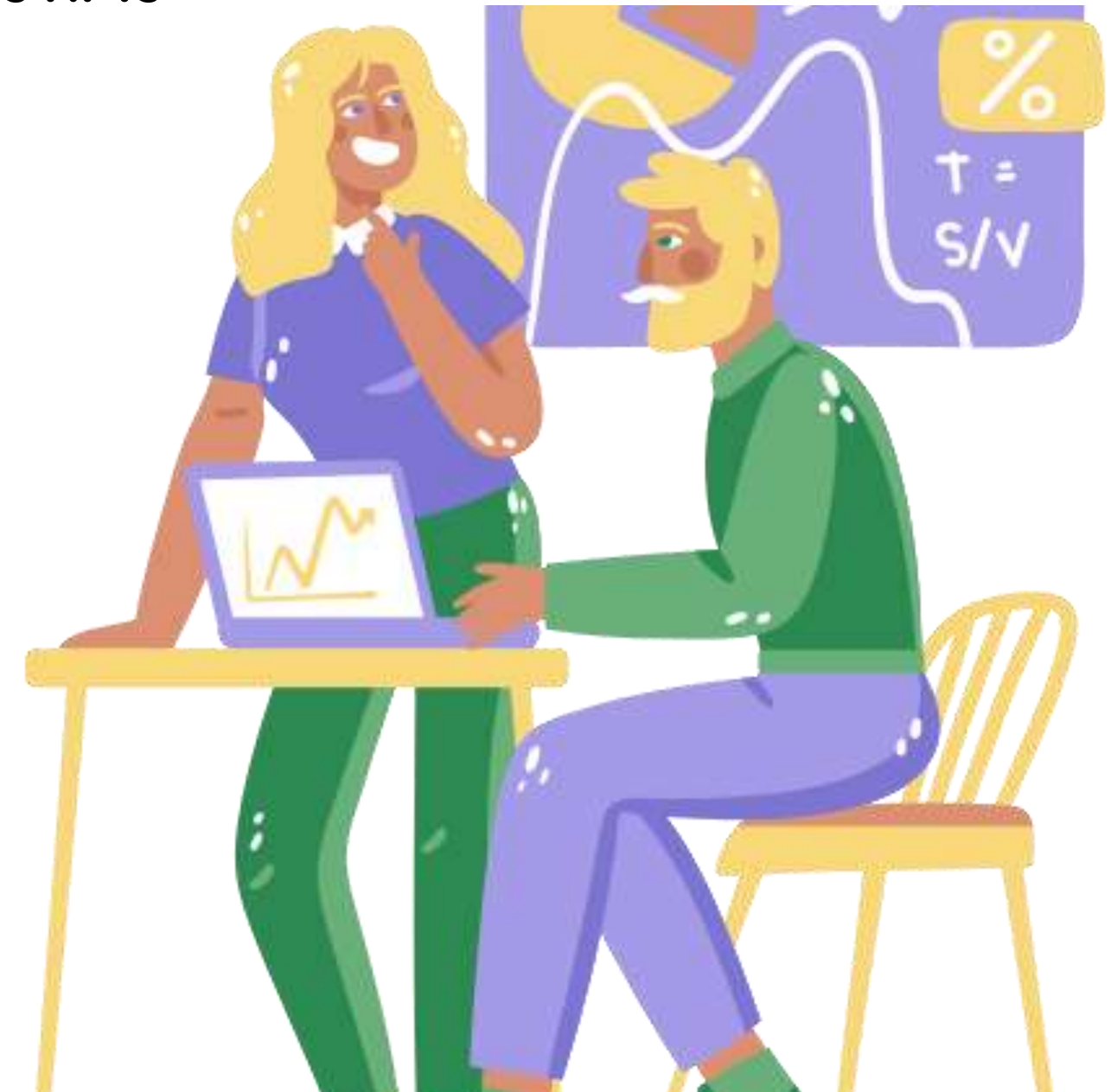
Dashboard Components KPIs

2

Visualizations

3

Insights and Analysis



Introduction

To analyze sales performance and identify actionable insights through key metrics and visualizations, helping businesses make informed decisions and drive growth.

Data Overview:

Two datasets: Details.csv and Orders.csv

Merged using Order ID to create a unified dataset

Tools Used:

Python (Pandas, Matplotlib, Seaborn) for analysis and visualization



Problem Statement

Businesses require insights into sales performance to identify growth opportunities, address underperforming areas, and make informed decisions. This project aims to analyze key sales metrics, market trends, and customer satisfaction to provide actionable insights through a comprehensive dashboard for better strategic planning and revenue growth.



Objective

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The primary objective of this is to assist the analyze sales data and provide actionable insights for improving business performance and decision-making :-

- **Monitor overall sales performance through key metrics.**
- **Identify high-performing and underperforming regions.**
- **Understand customer satisfaction to enhance user experience.**
- **Highlight trends in product categories and seasonal sales patterns.**
- **Provide a visual representation of market share and geographic distribution.**



Key Performance Indicators (KPIs)

- 1.Total Sales: ₹437771
 - 2.Average Sales per Region:-
 - 3.Customer Satisfaction Score: 85%
- High-Performing Region:
Uttar Pradesh with Average Sales of **₹440.94**
 - Low-Performing Region:
Goa with Average Sales of **₹155.93**



Average Sales per Region:-

Average Sales per Region:-

- High-Performing Region:
Uttar Pradesh with Average Sales of **₹440.94**
- Low-Performing Region:
Goa with Average Sales of **₹155.93**

State	Average Sales
Andhra Pradesh	315.62
Bihar	216.40
Delhi	302.07
Goa	155.93
Gujarat	245.64
Haryana	340.88
Himachal Pradesh	298.83
Jammu and Kashmir	221.00
Karnataka	250.40
Kerala	308.24
Madhya Pradesh	278.54
Maharashtra	342.80
Nagaland	266.51
Punjab	279.77
Rajasthan	301.81
Sikkim	219.83
Tamil Nadu	251.04
Uttar Pradesh	440.94
West Bengal	227.43

Visualizations

- 1. **Bar Chart:** Sales by Product Category.
- 2. **Column Chart:** Monthly Sales Trends.
- 3. **Donut Chart:** Market Share by Region.
- 4. **Map:** Sales Distribution by Geography.
- 5. **Slicer:** Filter by Date Range, Product Category, and Region.



Bar Chart:

Sales by Product Category

- Category with **Highest** Sales:
Electronics - ₹166,267
- Category with **Lowest** Sales:
Furniture - ₹127,181

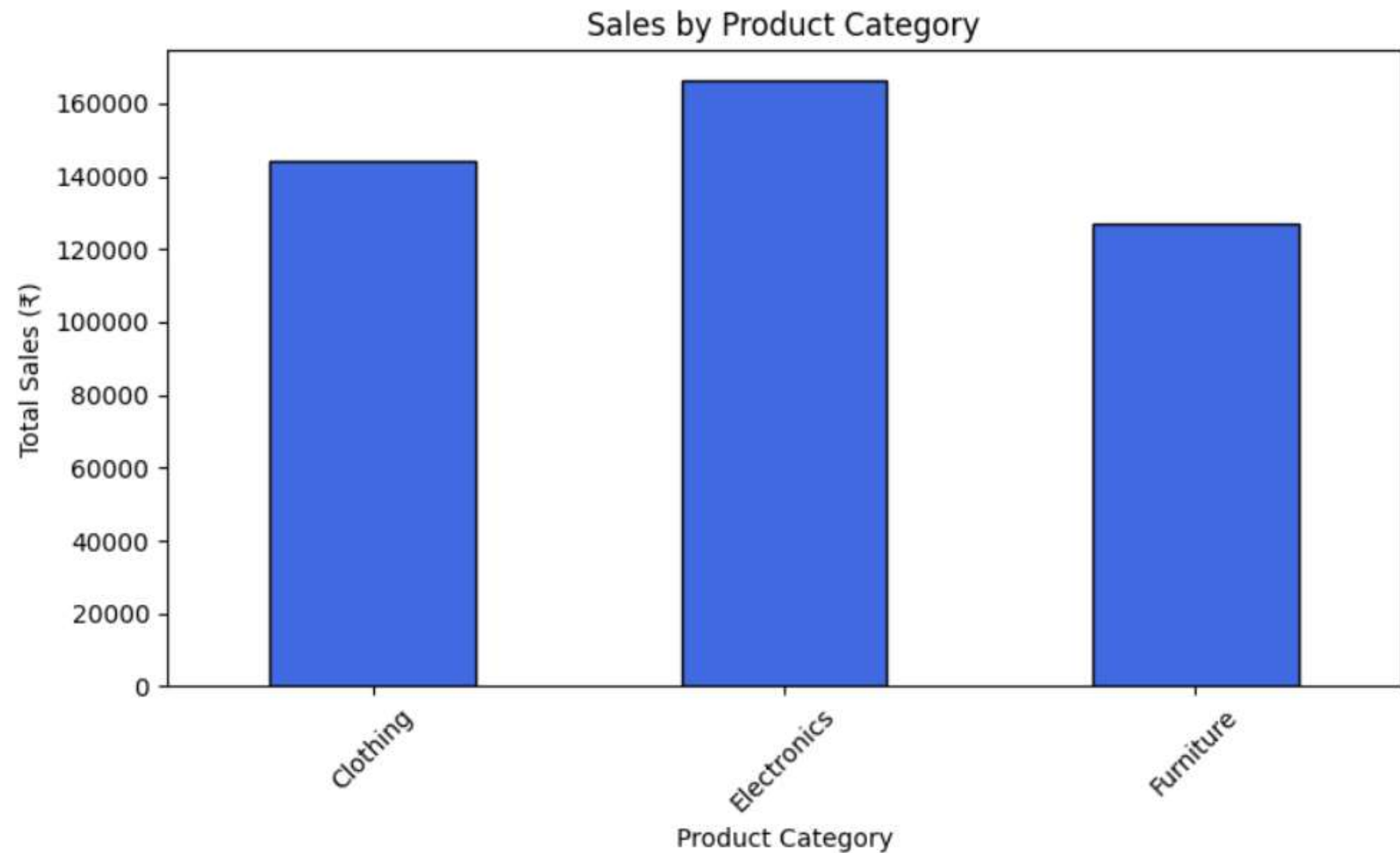


Fig. (1)

Column Chart:

Monthly Sales Trends.

- Month with **Highest** Sales:
January - 2018-01 - ₹61,632
- Month **with Lowest** Sales:
July - 2018-07 - ₹12,966

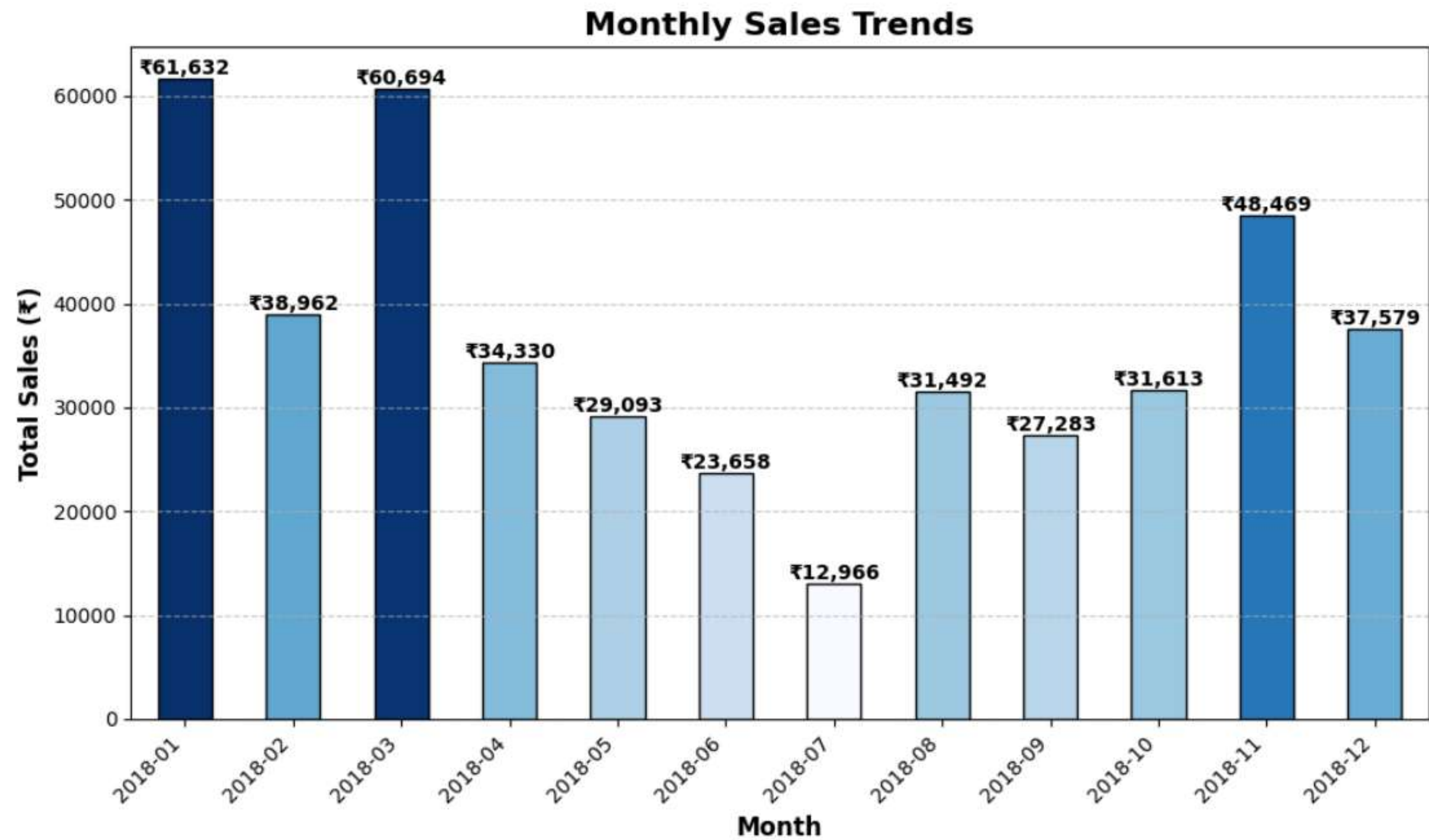


Fig. (2)

Donut Chart:

Market Share by Region.

- Region with **Highest** Market Share:
Maharashtra - ₹102,498 (23.4%)
- Region with Lowest Market Share:
Sikkim - ₹5,276 (1.2%)

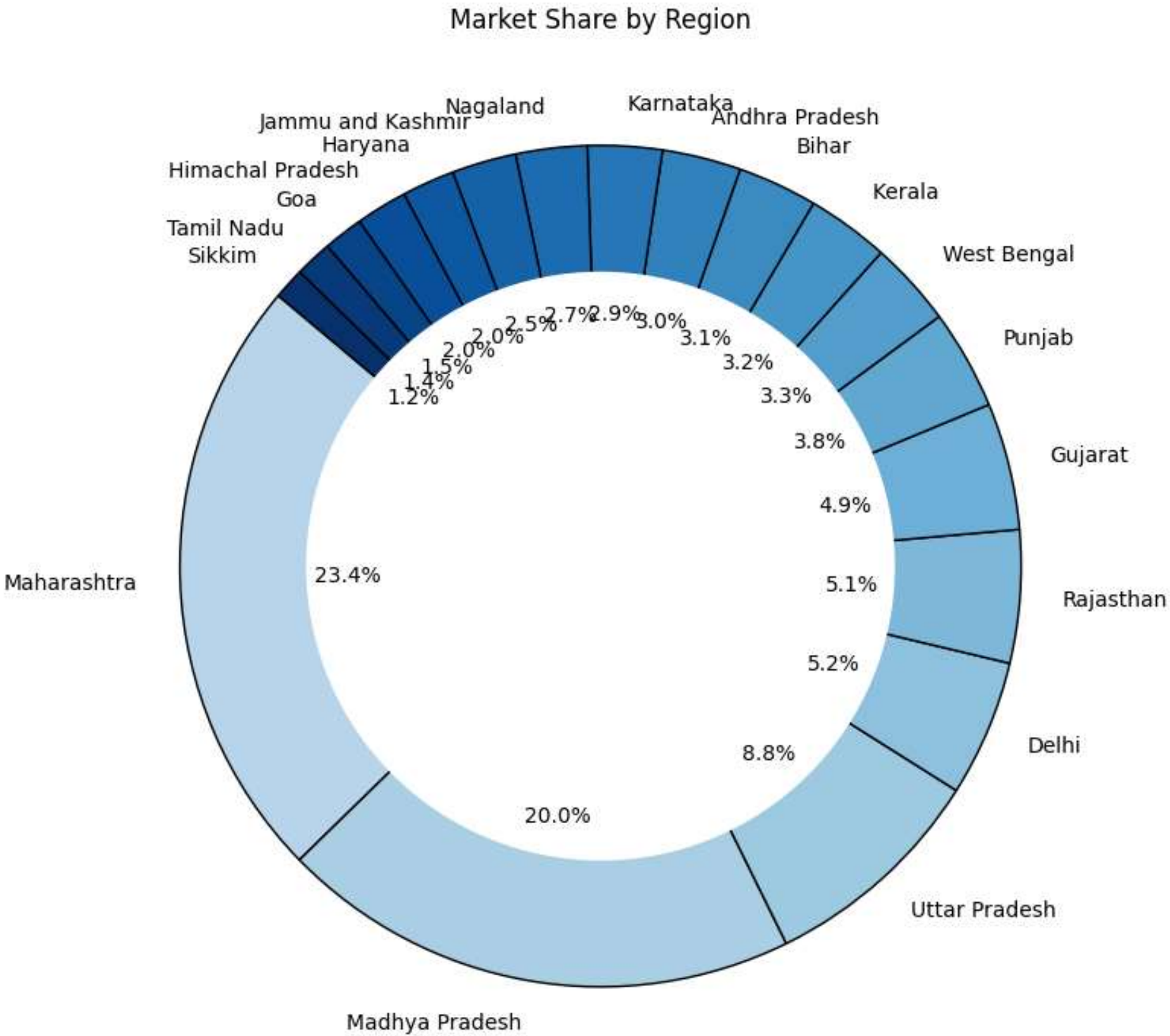
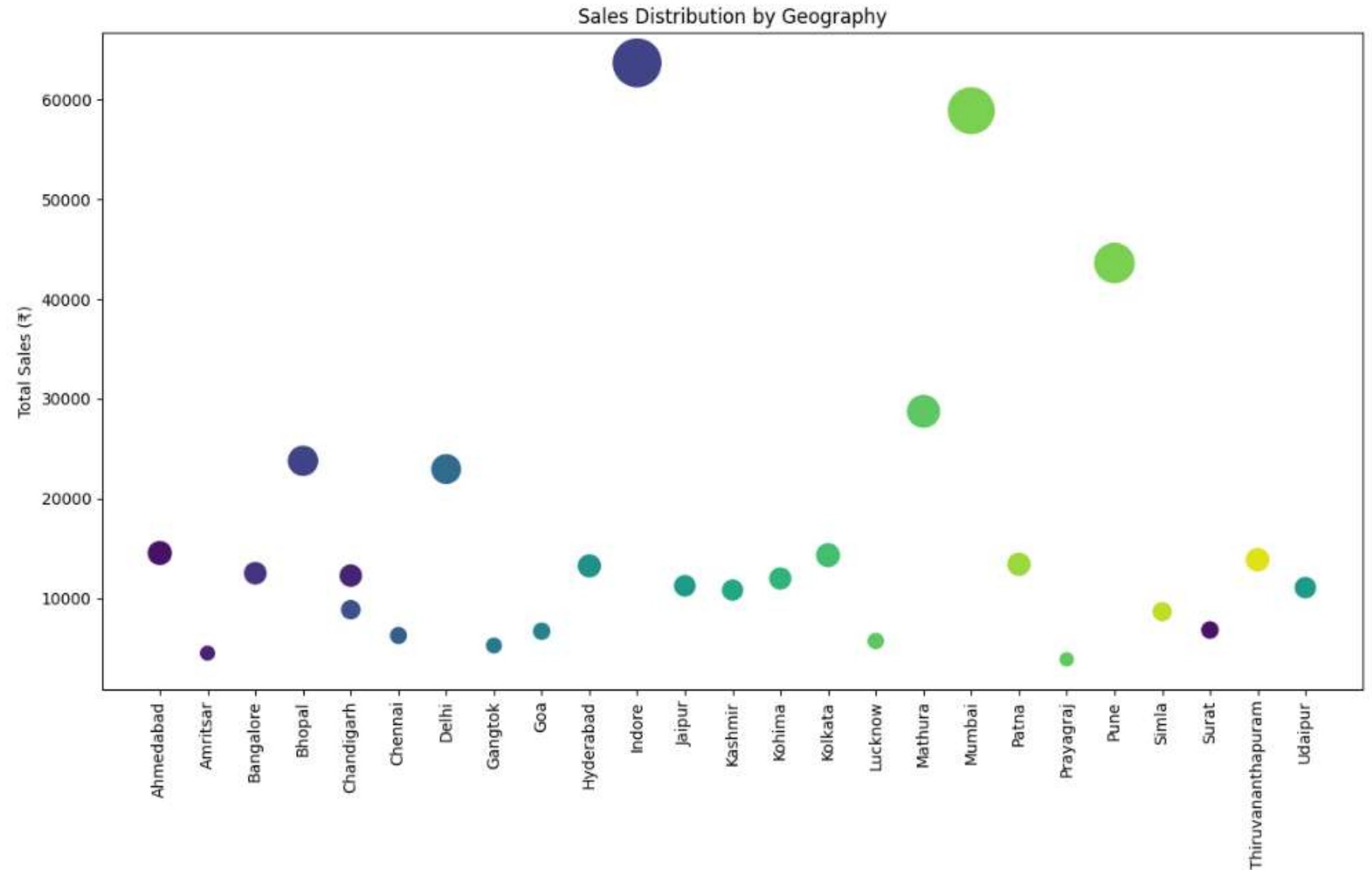


Fig. (3)

Map:

Sales Distribution by Geography.

- City with **Highest** Sales: Indore in Madhya Pradesh - ₹63680
- City with **Lowest** Sales: Prayagraj in Uttar Pradesh - ₹3889



City
Fig. (4)

Slicer:

Filter by Date Range, Product Category, and Region.

Sales Data with Filters

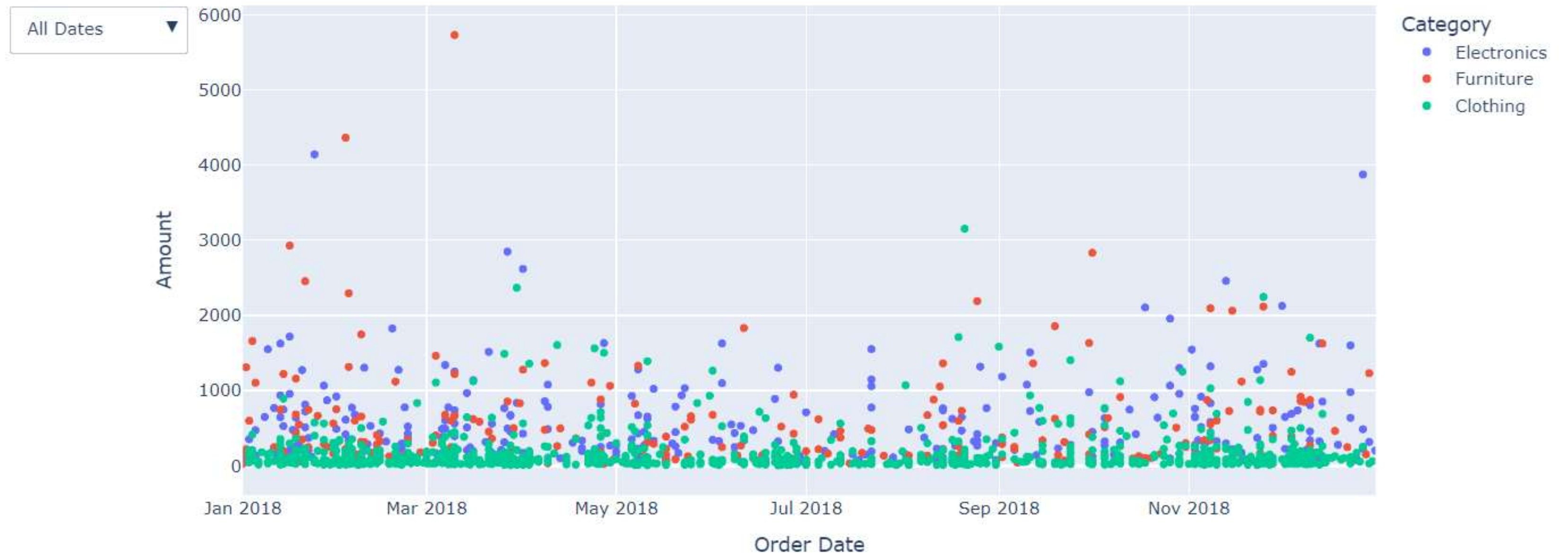


Fig. (5)

Slicer:

Top 5 States by Sales

	Category	Amount	Profit
0	Clothing	144323	13325
1	Electronics	166267	13162
2	Furniture	127181	10476

Top 5 States by Sales

	State	Amount
0	Maharashtra	102498
1	Madhya Pradesh	87463
2	Uttar Pradesh	38362
3	Delhi	22957
4	Rajasthan	22334

Slicer:

Sales Trend (First 5 Months):

Sales Trend (First 5 Months):		
	Order Date	Amount
0	2018-01	61632
1	2018-02	38962
2	2018-03	60694
3	2018-04	34330
4	2018-05	29093

Insights and Analysis

- 1.Total Sales: Monitor overall performance and growth.
- 2.Average Sales per Region: Identify high-performing regions and areas needing improvement.
- 3.Customer Satisfaction Score: Track customer feedback and satisfaction levels.
- 4.Sales by Product Category: Determine which product categories are driving sales.
- 5.Monthly Sales Trends: Analyze seasonal trends and sales patterns.
- 6.Market Share by Region: Understand your market position in different regions.
- 7.Sales Distribution by Geography: Visualize geographic sales performance and identify potential markets.

Total Sales:

Monitor overall performance and growth.

Total Sales: ₹437771

Customer Satisfaction Score:-

Satisfaction levels :- 85%

Average Sales per Region:

Identify high-performing regions and areas needing improvement.

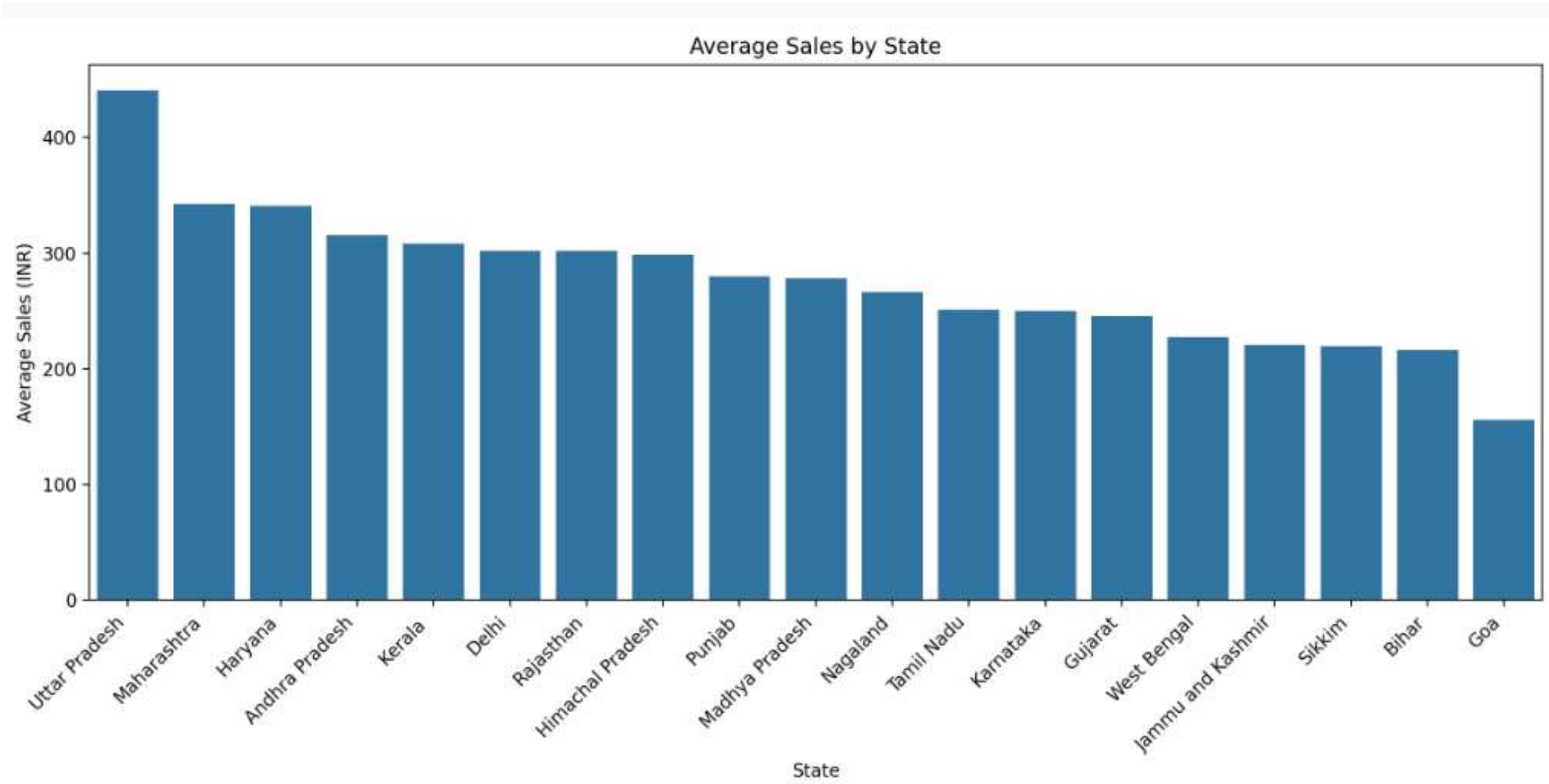


Fig. (6)

Average Sales per Region:

Identify high-performing regions and areas needing improvement.

	Avg_Sales	Number_of_Orders	Total_Sales
Uttar Pradesh	440.94	87	38362
Maharashtra	342.8	299	102498
Haryana	340.88	26	8863
Andhra Pradesh	315.62	42	13256
Kerala	308.24	45	13871

Key findings:

- Uttar Pradesh has highest average order value (₹440.94)
- Maharashtra leads in total sales volume with 299 orders
- Significant variation in order volumes across states

Average Sales per Region:

Identify areas needing improvement :-

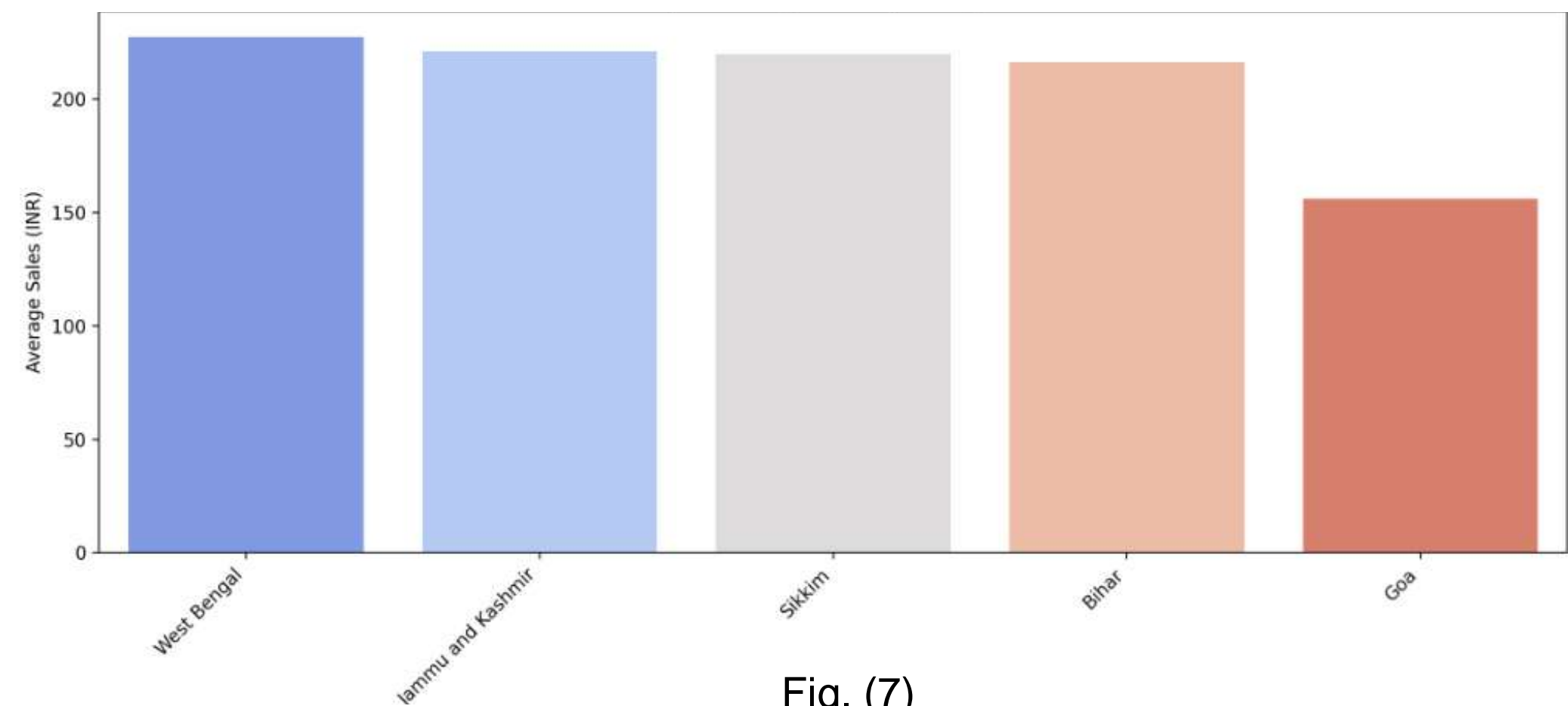


Fig. (7)

These states, such as Goa and Bihar, have the lowest average sales and may require targeted strategies to improve performance.

	Avg_Sales	Number_of_Orders	Total_Sales
West Bengal	227.43	63	14328
Jammu and Kashmir	221	49	10829
Sikkim	219.83	24	5276
Bihar	216.4	62	13417
Goa	155.93	43	6705

Sales by Product Category:

Determine which product categories are driving sales.

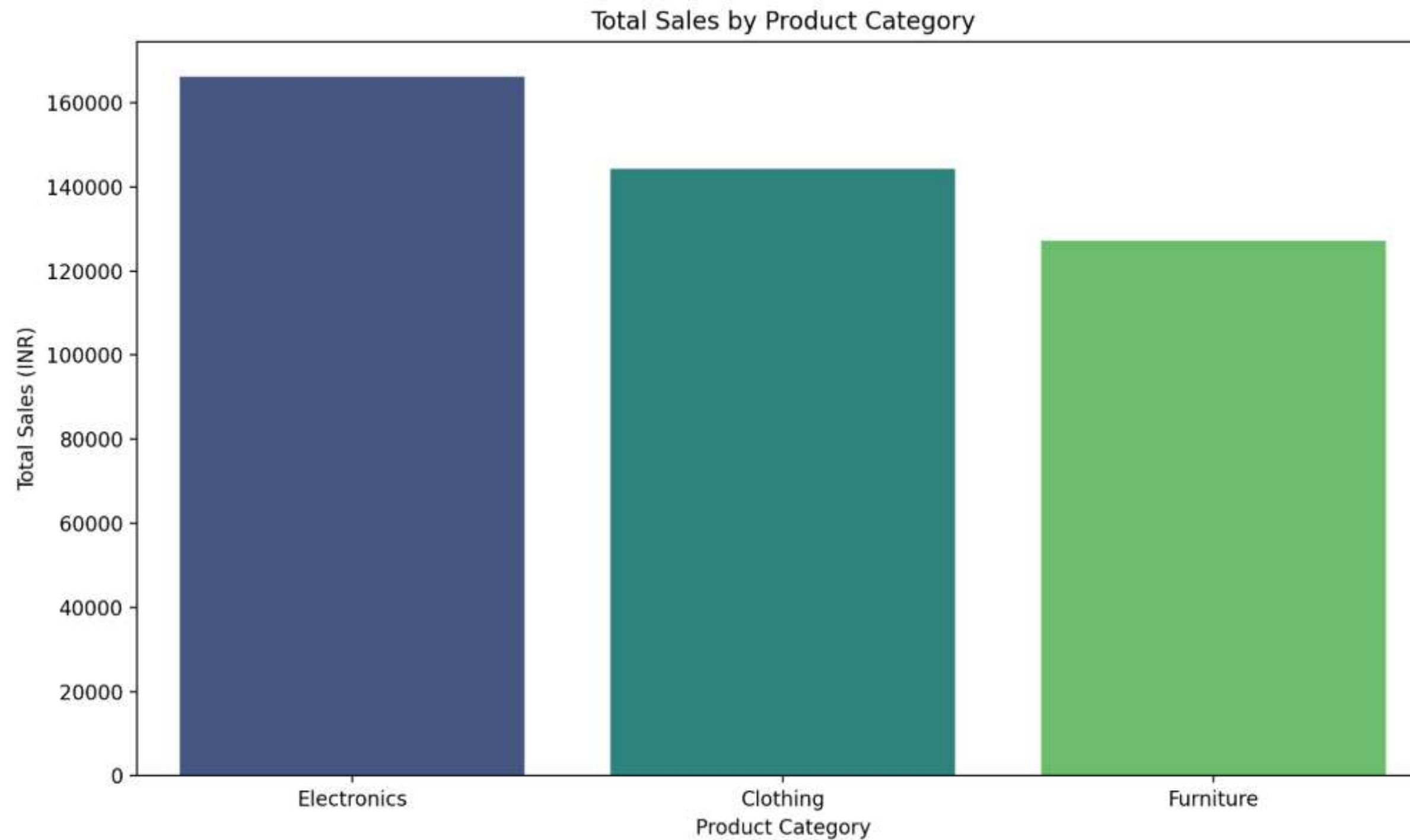


Fig. (8)

Sales by Product Category:

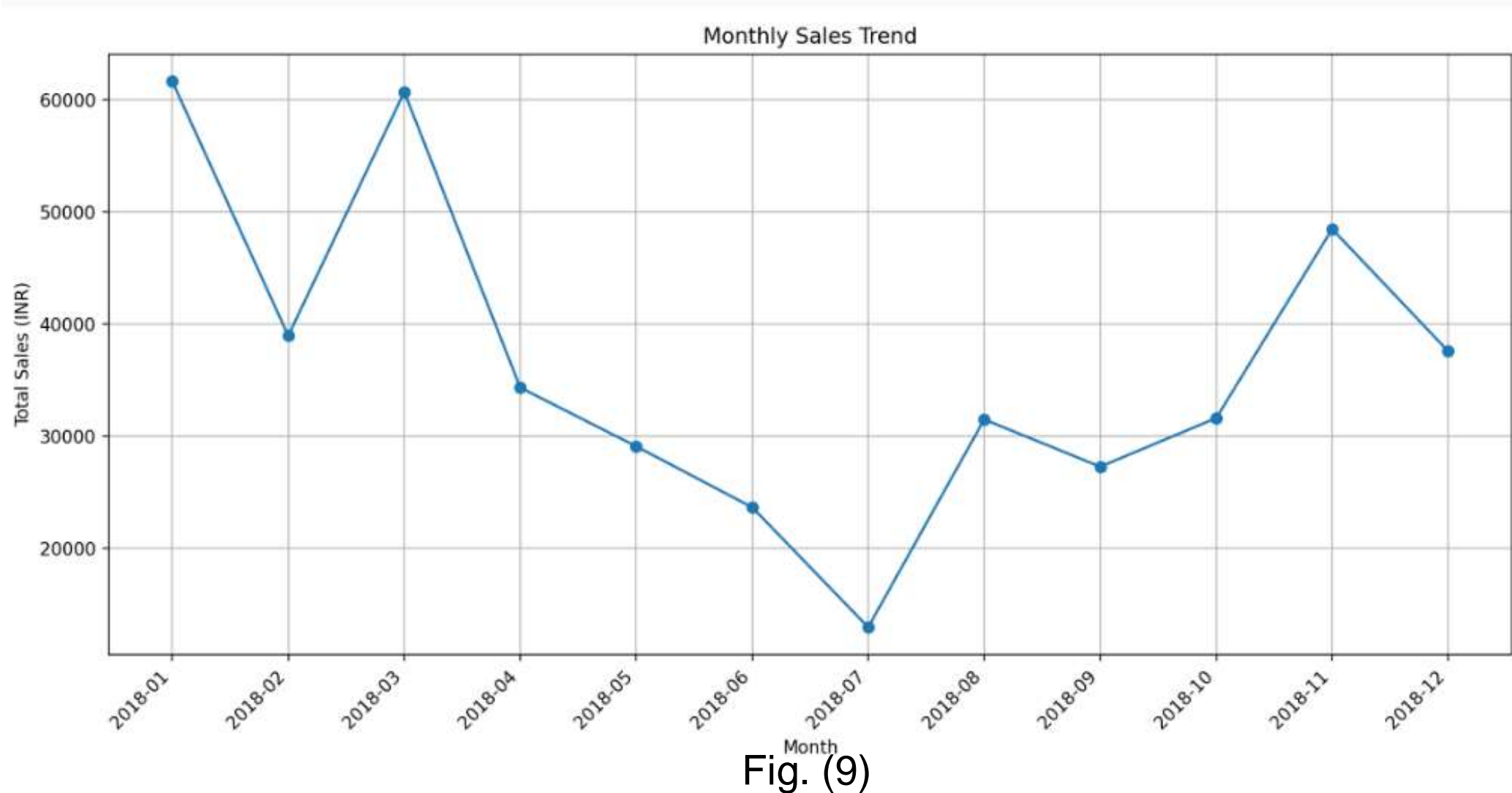
Determine which product categories are driving sales.

	Category	Amount
0	Electronics	166267
1	Clothing	144323
2	Furniture	127181

- Electronics is the top-performing category, followed by :- Clothing and Furniture.

Monthly Sales

Trends: Analyze seasonal trends and sales patterns.



The analysis reveals strong sales performance in January and March 2018, with a notable peak in January (61,632 INR)

Key insights:

- Strongest sales in Q1 (January-March 2018)
January had highest revenue at 61,632 INR
- March followed closely with 60,694 INR
- November showed a secondary peak at 48,469 INR
- Clear dips in sales during mid-year months (May-July)

	Month_Year	Amount
0	2018-01	61632
2	2018-03	60694
10	2018-11	48469

Market Share by Region:

Understand your market position in different regions.

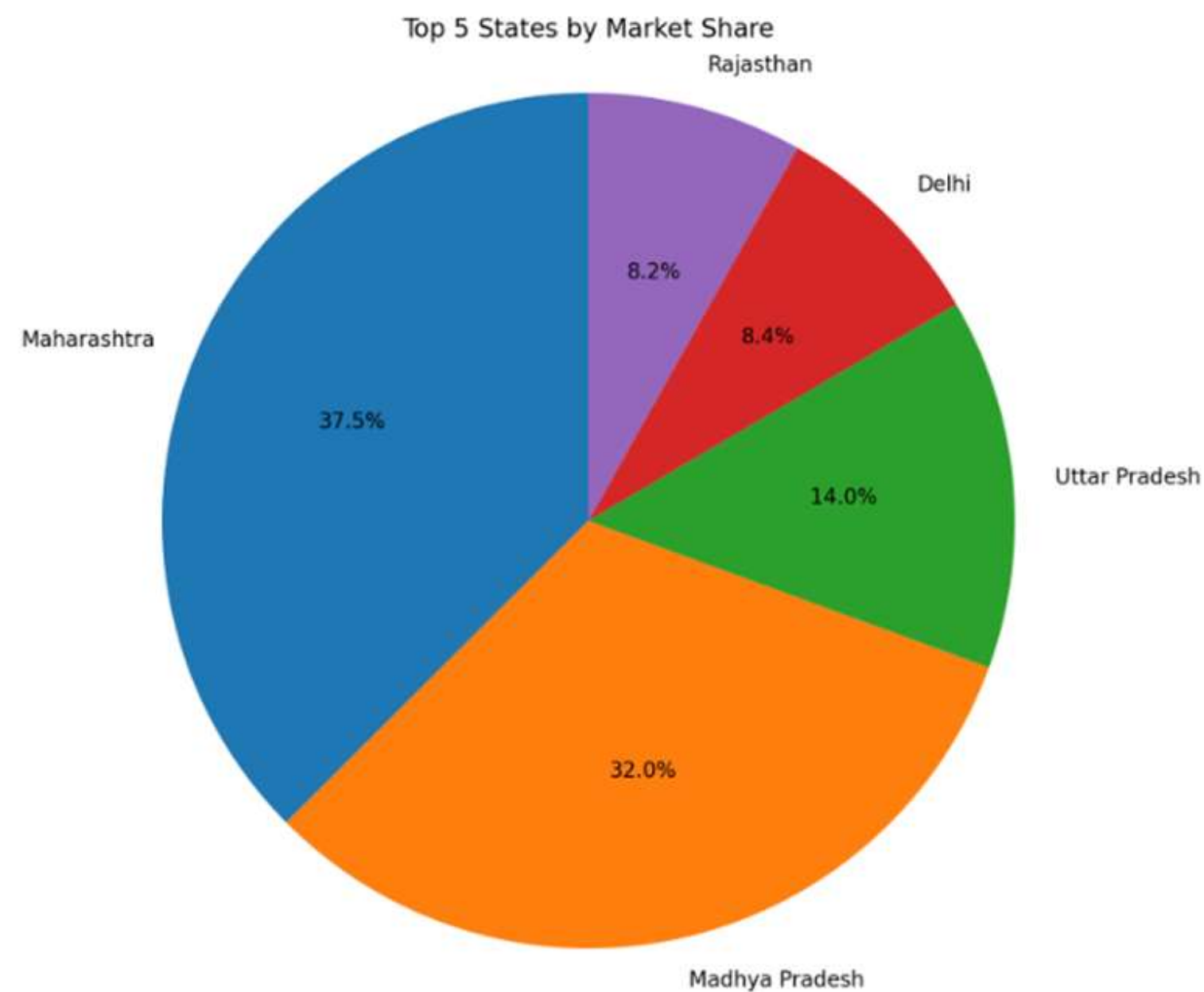


Fig. (10)

- **Maharashtra** leads with the **highest** market share (23.4%), followed by **Madhya Pradesh** (19.98%).

State	Amount	Market_Share
htra	102498	23.413611226
Pradesh	87463	19.9791671902
desh	38362	8.7630290723
Delhi	22957	5.2440659614
Rajasthan	22334	5.1017541135

Sales Distribution by Geography:

Visualize geographic sales performance and identify potential markets.

ales Distribution Across India

This data suggests focusing on high-performing states for further growth while exploring strategies to improve sales in underperforming regions.

Identify potential markets.

- Maharashtra
- Madhya Pradesh
- Uttar Pradesh
- Delhi
- Rajasthan

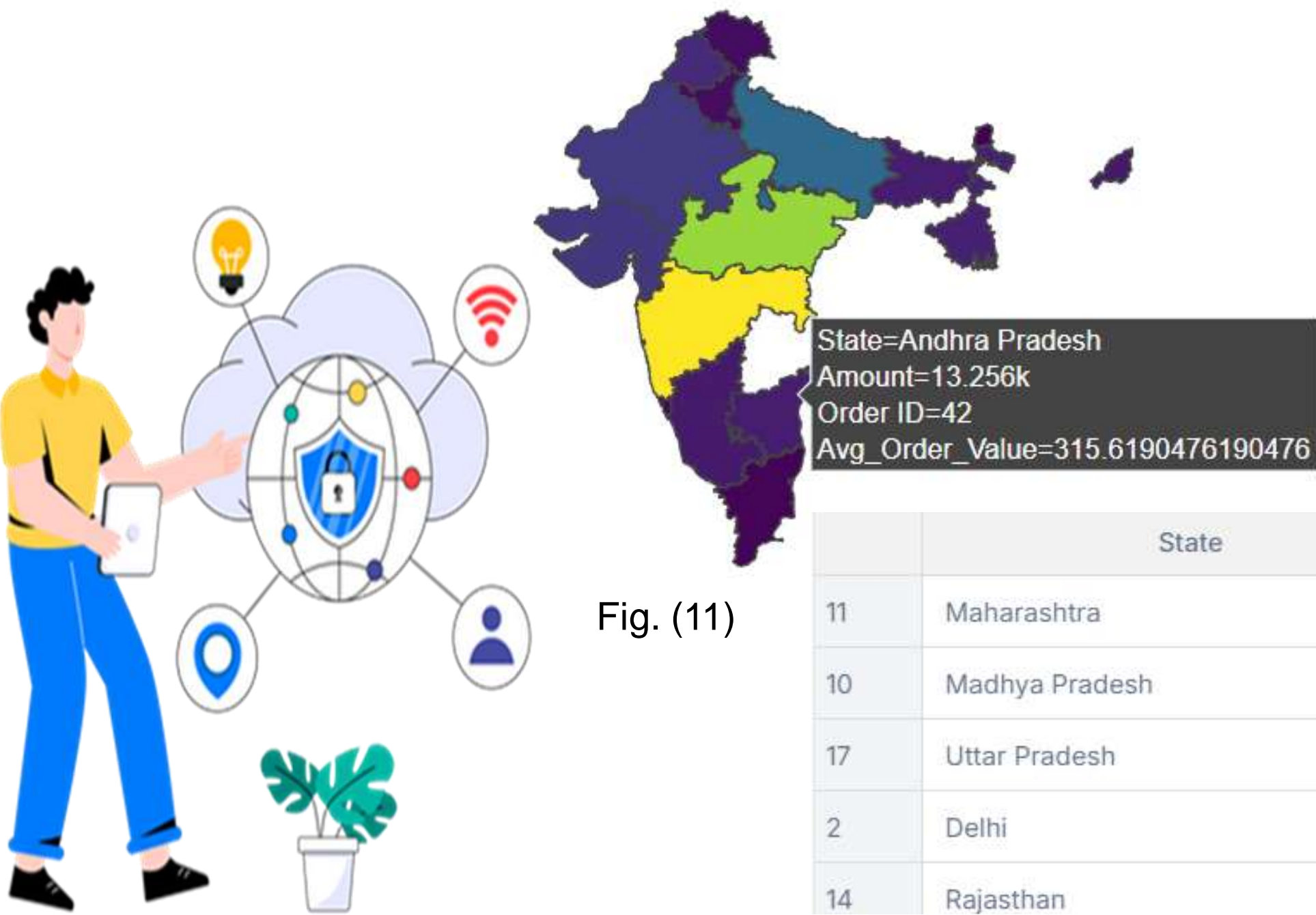


Fig. (11)

	State	Amount	Order ID	Avg_Order_Value
11	Maharashtra	102498	299	342.8026755853
10	Madhya Pradesh	87463	314	278.5445859873
17	Uttar Pradesh	38362	87	440.9425287356
2	Delhi	22957	76	302.0657894737
14	Rajasthan	22334	74	301.8108108108

Conclusio

The analysis of sales trends across various dimensions—payment modes, product categories, geographical regions, and customer purchasing patterns—provides valuable insights into business performance. By identifying high and low performers, we can implement targeted strategies to optimize sales, improve customer engagement, and drive growth across different areas of the business.

1. Sales by Payment Mode: Digital payment methods like credit cards or digital wallets may be more popular and contribute significantly to sales. Underperforming modes can be boosted with targeted promotions.
2. Sales by Product Category: High-performing categories drive revenue, while low performers may need product improvements or better marketing efforts.
3. Geographical Distribution: Focus on high-sales regions for expansion and marketing, while addressing challenges in low-performing areas through localized campaigns or better distribution.
4. Customer Purchasing Patterns: High-value customers can be rewarded with loyalty programs, while low-engagement customers can be targeted with personalized offers to increase retention.

Recommendations:

- Leverage strengths in high-performing regions and categories.
- Optimize underperforming payment methods with incentives.
- Improve customer retention through loyalty programs and personalized offers.
- Use targeted marketing campaigns to address both high and low-performing areas.

