

# EDA Report and Business Insights

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## 1. Identifying products that haven't been sold once and customers who haven't yet made a single transaction

```
Products that haven't been sold:  
Empty DataFrame  
Columns: [ProductID, ProductName, Category, Price]  
Index: []
```

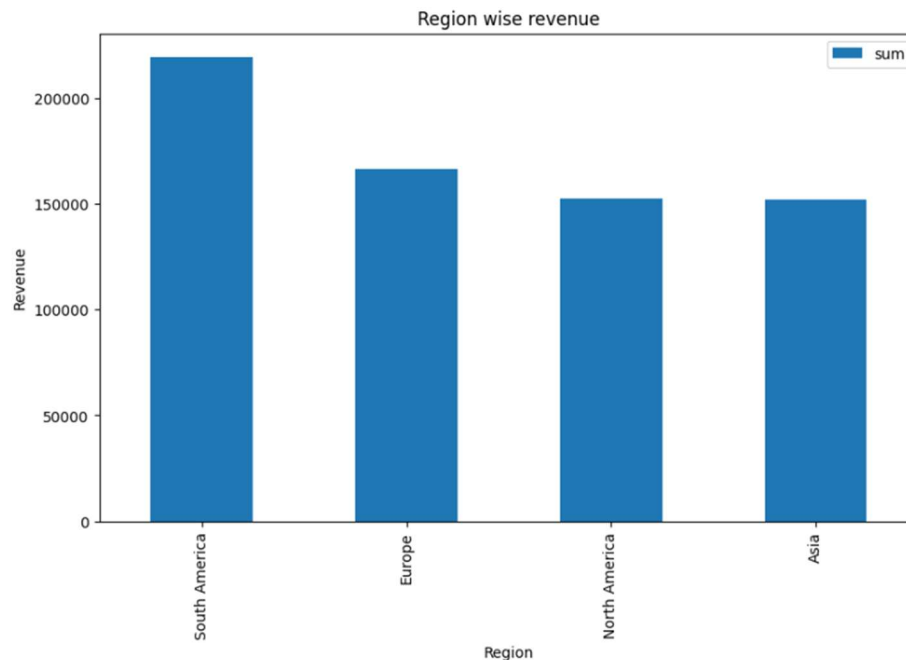
```
Customers who haven't made a single transaction:  
  CustomerID  CustomerName Region  SignupDate  
179      C0180  Amy Carpenter   Asia  2023-10-25
```

There are no such products that haven't been sold even once, however, there is a customer by the name Amy Carpenter, customer id C0180, who hasn't made even a single purchase since signup.

### Insights & Suggestions:

- Products that are not getting sold can be discontinued to save on costs.
- People who don't make purchases can be reached out via informational mails, new comer offers etc. to encourage them to make purchases.

## 2. Region-wise revenue generation

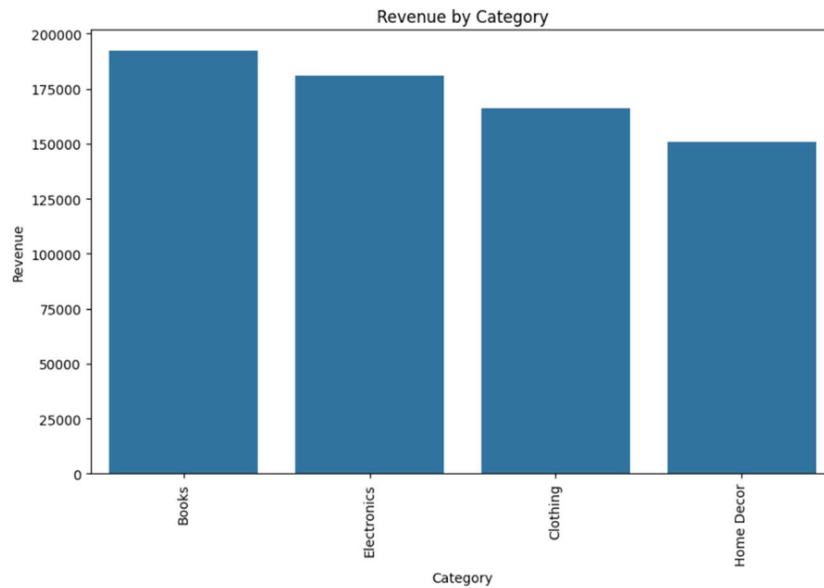


South America is the largest market (219352.56 USD), with Europe on number second (166254.63 USD), closely followed by North America (152313.40 USD) and Asia (152074.97 USD).

### Insights & Suggestions:

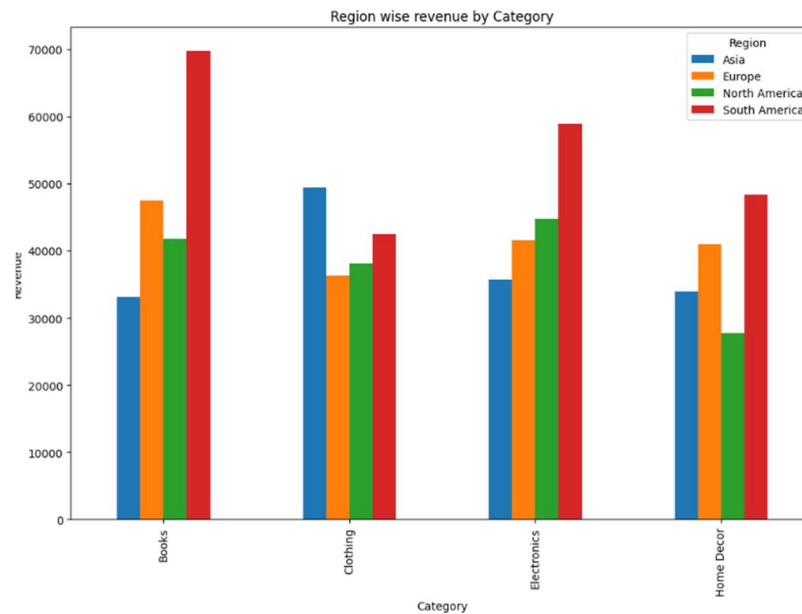
- Overall regional analysis helps identify the largest markets to play on aggressively, while at the same time introspecting the reasons behind low revenue regions and any potential improvements.

### 3. Revenue by Categories



The above charts depict books as the bestselling category, while home décor being the least sold ones.

### 4. Region-wise revenue by category



From here it can be observed that:

- books are sold highest in South America
- clothing highest in Asia
- electronics highest in South America
- home décor highest in South America

#### Insights & Suggestions:

Overall this analysis can help with providing customized focus as per region. With use of supply and demand concepts, the highest selling products could be leveraged for more revenue generation and studies can be done to identify improvement areas for low selling products, as per different demographics and consumer sentiment.

## 5. Identifying top purchasers

CustomerID	CustomerName TotalValue	
C0141	Paul Parsons	10673.87
C0054	Bruce Rhodes	8040.39
C0065	Gerald Hines	7663.70
C0156	William Adams	7634.45
C0082	Aimee Taylor	7572.91
C0188	Anna Ball	7111.32
C0059	Mrs. Kimberly Wright	7073.28
C0028	Jennifer Pena	6819.57
C0099	Rodney Eaton	6715.72
C0165	Juan Mcdaniel	6708.10

These consumers are the ones who are the top 10 purchasers in terms of revenue. To reward their loyalty, they can be reached out with gifts, vouchers, free purchases, etc.

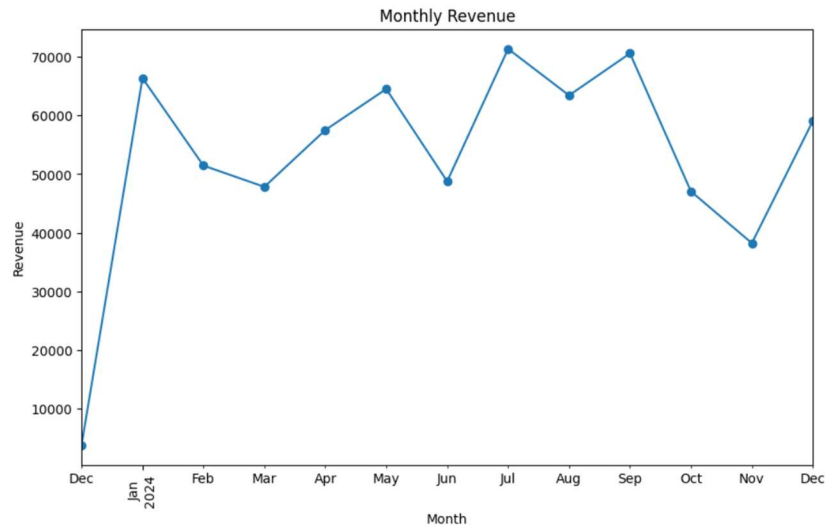
## 6. Region wise top customers

CustomerName TotalValue			CustomerName TotalValue		
Region			Region		
Asia	Bruce Rhodes	8040.39	North America	Gerald Hines	7663.70
Asia	Jennifer Pena	6819.57	North America	William Adams	7634.45
Asia	Matthew Johnson	6210.53	North America	Mrs. Kimberly Wright	7073.28
Asia	Brian Parker	6044.63	North America	Mark Cox	5950.42
Asia	Michael Williams	6021.80	North America	Beth Cardenas	5627.83
CustomerName TotalValue			CustomerName TotalValue		
Region			Region		
Europe	Paul Parsons	10673.87	South America	Aimee Taylor	7572.91
Europe	Lindsey Deleon	6149.78	South America	Anna Ball	7111.32
Europe	Misty Higgins	5848.97	South America	Rodney Eaton	6715.72
Europe	Benjamin Anderson	5780.43	South America	Juan Mcdaniel	6708.10
Europe	Nicholas Ellis	5699.57	South America	Travis Campbell	6604.23

### Insights & Suggestions:

- Region wise identification of top consumers helps in identifying the loyal consumers of the platform and must be rewarded accordingly to maintain their enthusiasm for the platform.
- Also month long games (like making most purchases, referring the most people, etc.) can be organized between these top purchasers from different regions to generate more sales, new customers, etc. and in return awarding them with some reasonable prizes.

## 7. Monthly revenue analysis



From the above graph it can be observed that sales are highest during the months of July and September and lowest in November for the year 2024.

### Insights & Suggestions:

- During the months with high sales it becomes a priority to maintain a healthy workforce that can promptly attend to the tasks, since workloads will possibly be high.
- Similarly, for months with low sales, immediate analysis must be conducted to identify potential reasons and solutions.

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