

Pens and Printers Co.

New Product Sales Methods Analysis



Presenter: Ines LU

Date: 13/01/2024

Introduction of the project



New Product Sales Methods

Six weeks ago we launched a new line of office stationery. Despite the world becoming increasingly digital, there is still demand for notebooks, pens and sticky notes.

We have tested **three different sales strategies** for this, targeted email and phone calls, as well as combining the two.

- **Email:** an email when the product line was launched
- **Call:** a call by a member of the sales team
- **Email and call:** first the product information email, then a call a week later

An overview of the project and business goals

Overview of the analysis

- Data validation and cleaning
- Exploratory Analysis
 - findings showing single variables only to **demonstrate the characteristics of data**
 - findings showing multiple variables to represent **the relationship between features**
- Definition of a metric for the business to monitor
 - How should the business use the metric to monitor the business problem
 - estimate initial value(s) for the metric based on the current data
- Final summary including recommendations

Business Goals

- How many customers were there for each approach?
- What does the spread of the revenue look like overall? And for each method?
- Was there any difference in revenue over time for each of the methods?
- Based on the data, which method would you recommend we continue to use? Some of these methods take more time from the team so they may not be the best for us to use if the results are similar.

Data validation and cleaning



After checking all the columns against the criteria in the dataset table, data cleaning is as follows.

- sales_method: Due to duplications based on the description, the dataset is aggregated into 3 categories 'Email + Call', 'Call', 'Email'.
- revenue: Due to 1074 missing values, related rows are dropped.
- years_as_customer: Due to two values larger than 40, two rows are dropped.

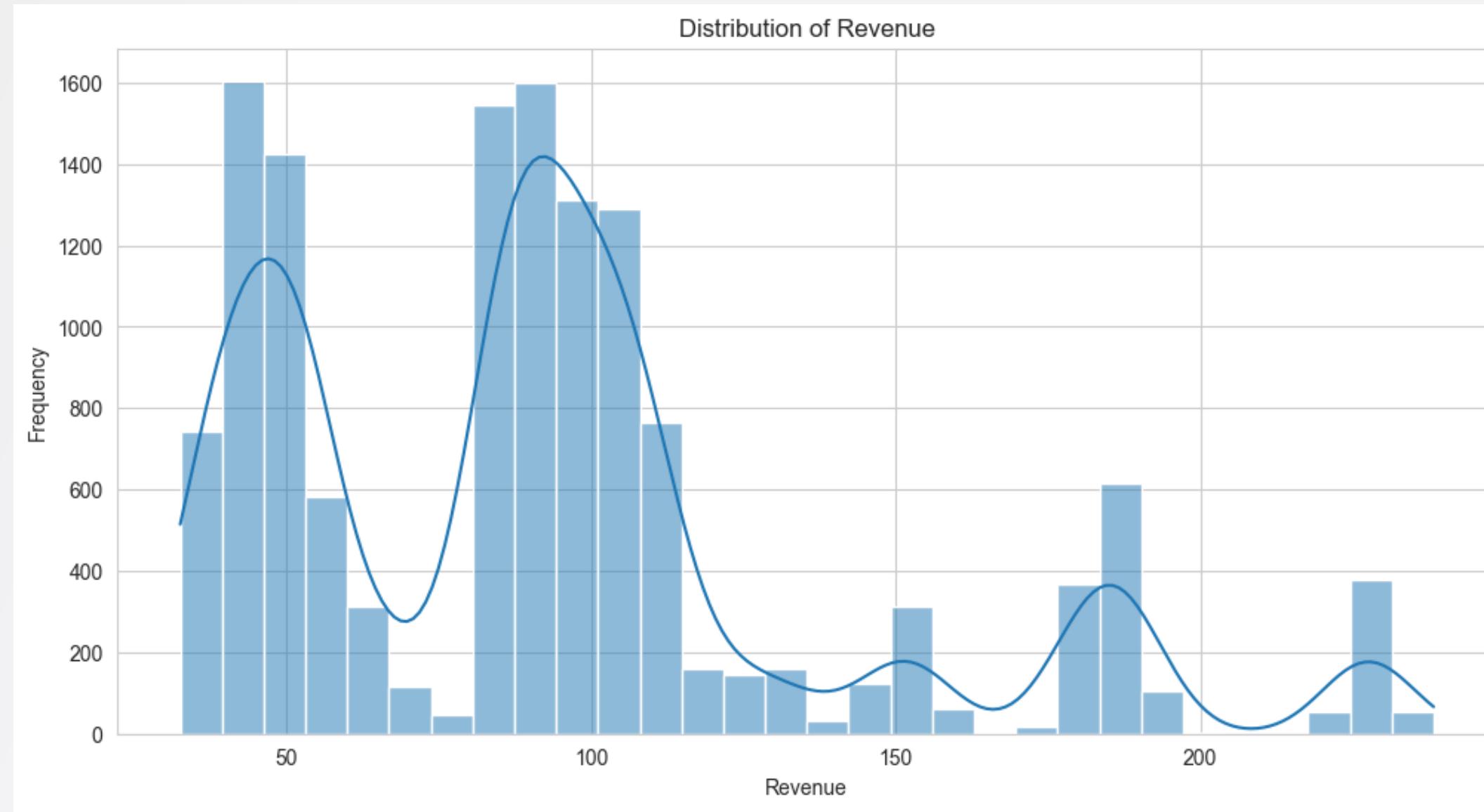
After the data validation, the dataset contains 13924 rows and 8 columns without missing values.

week	customer_id	nb_sold	revenue	years_as_customer	nb_site_visits	state	combined_sales_method
1	6 3998a98d-70f5-44f7-942e-789b...	15	225.47	1	28	Kansas	Email + Call
2	5 d1de9884-8059-4065-b10f-86ee...	11	52.55	6	26	Wisconsin	Call
4	3 10e6d446-10a5-42e5-8210-1b54...	9	90.49	0	28	Illinois	Email
5	6 6489e678-40f2-4fed-a48e-d0df...	13	65.01	10	24	Mississippi	Call
6	4 eb6bd5f1-f115-4e4b-80a6-5e67f...	11	113.38	9	28	Georgia	Email

Overview of the cleaned data

Exploratory Analysis - Single Variable Analysis

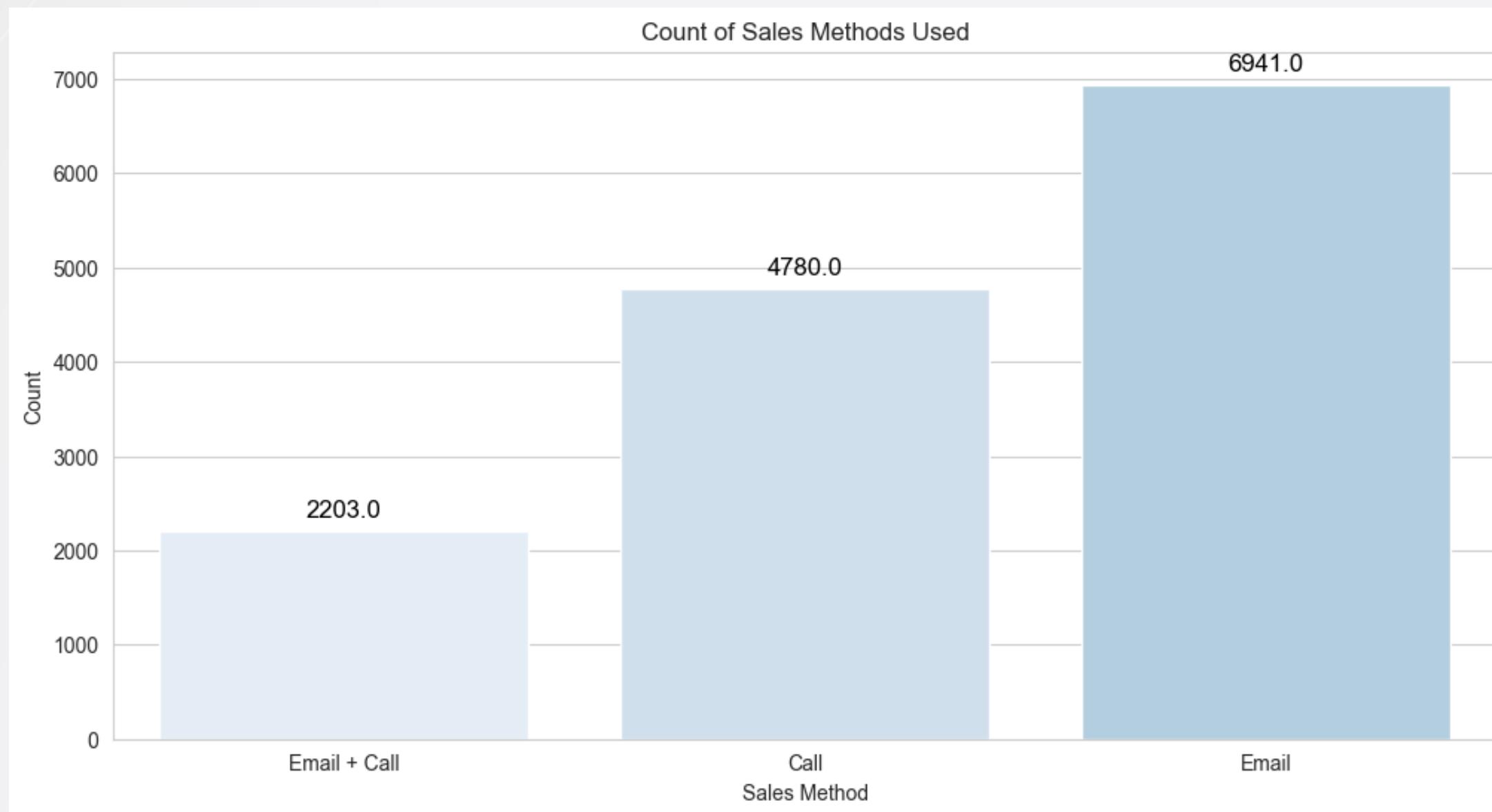
Distribution of Revenue



- The distribution of revenue is right-skewed, indicating that most of the sales transactions are of lower value, with fewer transactions of higher value.
- This skewness implies that while a majority of the sales are smaller in value, there are some significant sales that contribute a large part to the total revenue.

Exploratory Analysis - Single Variable Analysis

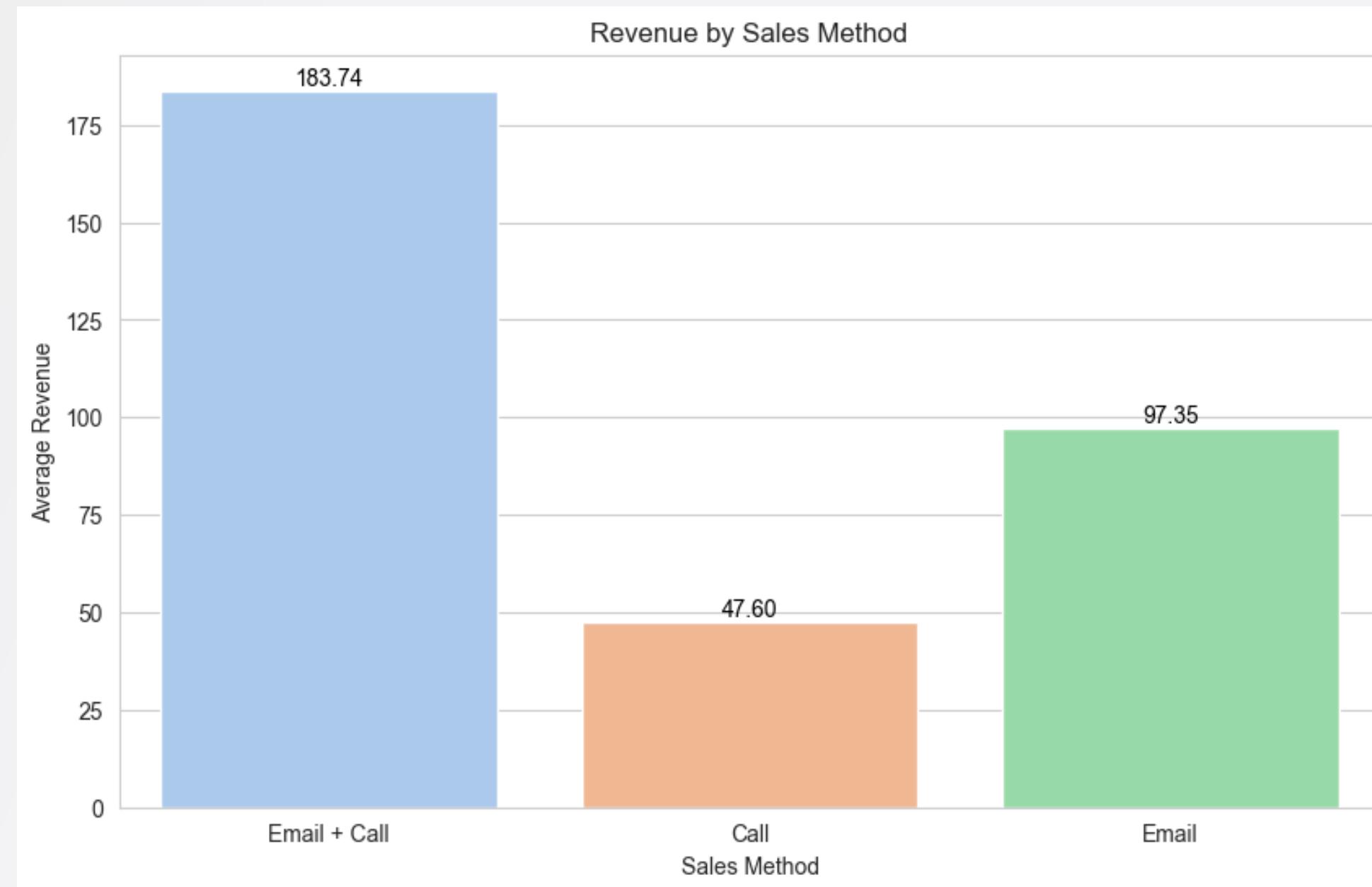
Distribution of Sales Methods Use



The "Email" method was used the most (6,941 customers), followed by "Call" (4,780 customers), and "Email + Call" was the least used (2,203 times). The numbers are annotated on the bars for clarity.

Exploratory Analysis - Multiple Variables Analysis

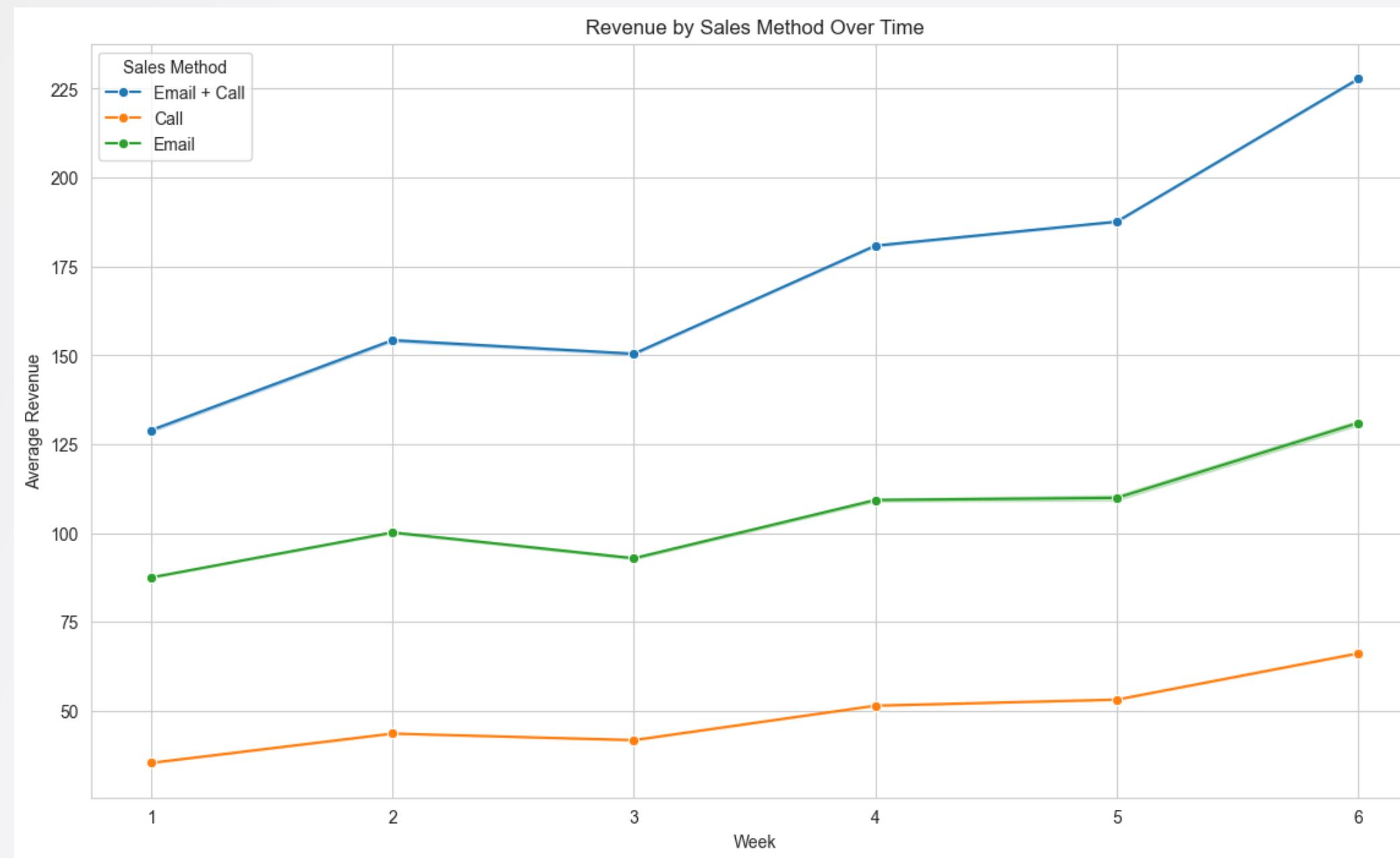
Revenue by Sales Method



The values represent the average revenue generated each of the sales methods used. The "Email + Call" method generates the highest average revenue, followed by "Email", and "Call" generates the least on average.

Exploratory Analysis - Multiple Variables Analysis

Revenue by Sales Method over Time



There is a difference in how each method contributes to revenue over time, with "Email + Call" showing the greatest increase, followed by "Email", and "Call" showing the smallest growth in revenue.

Business Metric

Business Metric Definition:

Average Revenue by Sales Method

- This metric will help in understanding the **effectiveness** of each sales method in terms of revenue generation.
- It accounts for the number of customers and the revenue, providing a more holistic view of sales performance.

Using the Metric:

- Sales team can compare this metric **weekly or monthly** to identify trends and make informed decisions on which sales methods are most effective.
- Regular monitoring will enable the business to adapt quickly, possibly reallocating resources to more effective methods.

Initial Values for the Business Metric:

- Call: \$47.60
- Email: \$97.35
- Email + Call: \$183.74

The "Email + Call" method generates the highest average revenue, followed by "Email", and "Call" generates the least on average.

Final summary including recommendations

1. Sales Methods and Customer Count:

- The "Email" method was used the most, followed by "Call", and "Email + Call" was the least used.

2. Revenue Analysis:

- Revenue distribution is right-skewed, with most sales being of lower value but some significant high-value transactions.
- The "Email + Call" method consistently shows the highest average revenue, followed by "Email", and then "Call".

3. Revenue Over Time:

- Revenue fluctuated over the weeks, but the "Email + Call" method showed increasing effectiveness, especially in later weeks.

4. Recommended Business Metric:

- Average Revenue by Sales Method: The initial number of the metric shows the "Email + Call" method as the most effective in terms of revenue generation.

Recommendations:

- **Prioritize the "Email + Call" Method:** Given its superior performance in revenue generation, it should be the primary focus. Despite taking more time, its effectiveness justifies the effort.
- **Monitor Trends Over Time:** Regularly review the average revenue for each method to detect any changes in trends or effectiveness.
- **Customer Segmentation:** Further analysis could reveal if certain customer segments respond better to specific sales methods, allowing for more targeted strategies.