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Practical Exam DA601P

Pens and Printers Sales Analysis

15 January, 2025

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# *Overview of Project*

Introduction

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This project evaluates the performance of three sales strategies—Email, Call, and Email + Call—tested over a six-week period for a new product line at Pens and Printers. Using sales data, the analysis aims to determine the most effective method to maximize revenue while optimizing resource use. The findings will include a **comparison of results, key metrics for monitoring**, and **recommendations** to enhance sales performance and **guide future decision-making**.

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Background Project

Current scenario:

Pens and Printers, established in 1984, provides high-quality office supplies to large organizations. To adapt to changing consumer behaviors, the company tested **three sales strategies** for its new product line—designed for brainstorming and creativity. The strategies varied in effort and engagement, ranging from emails to phone calls and a combination of both. This analysis helps the company identify the best approach for boosting sales while ensuring efficient resource allocation.
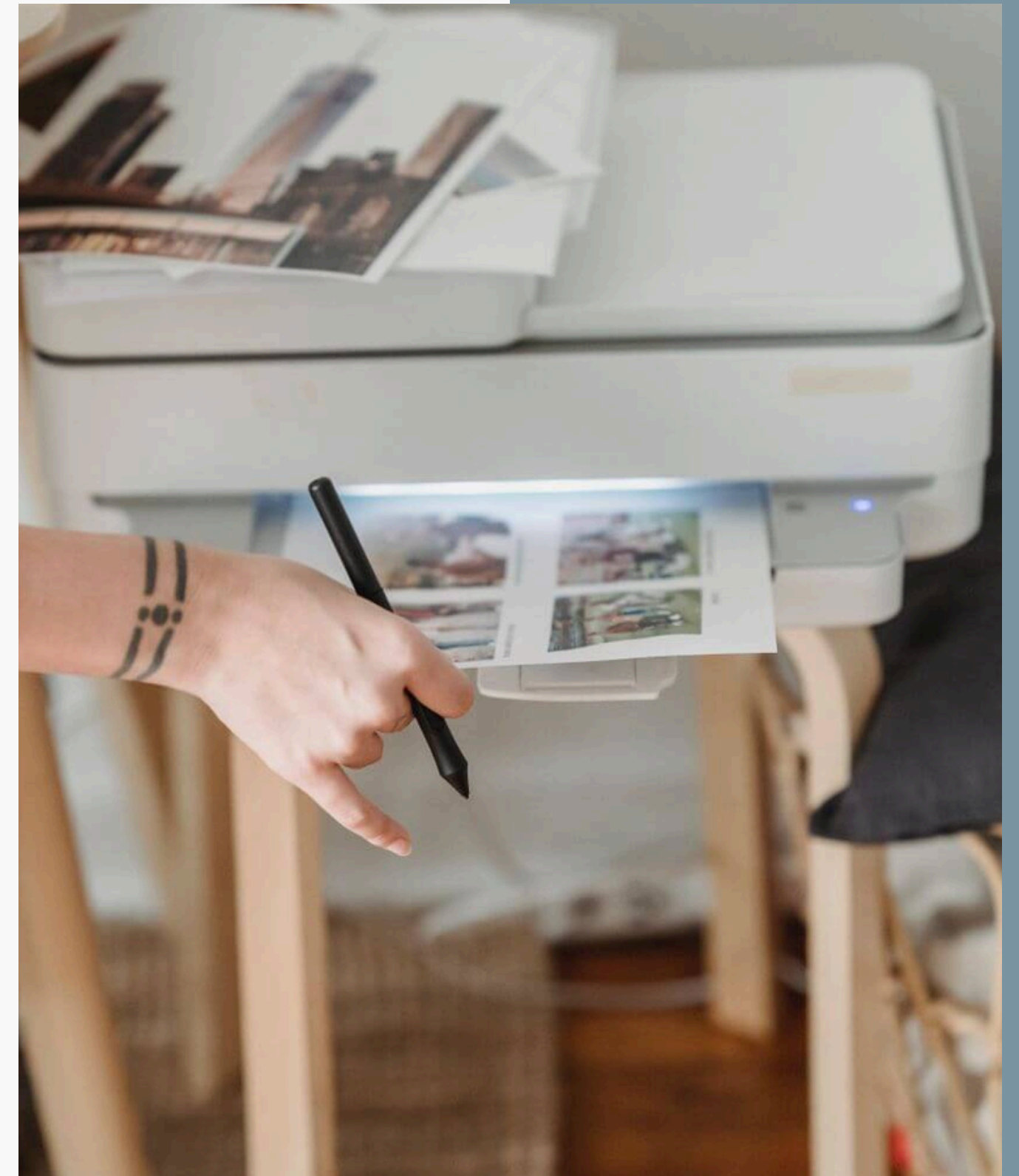
Business Goal

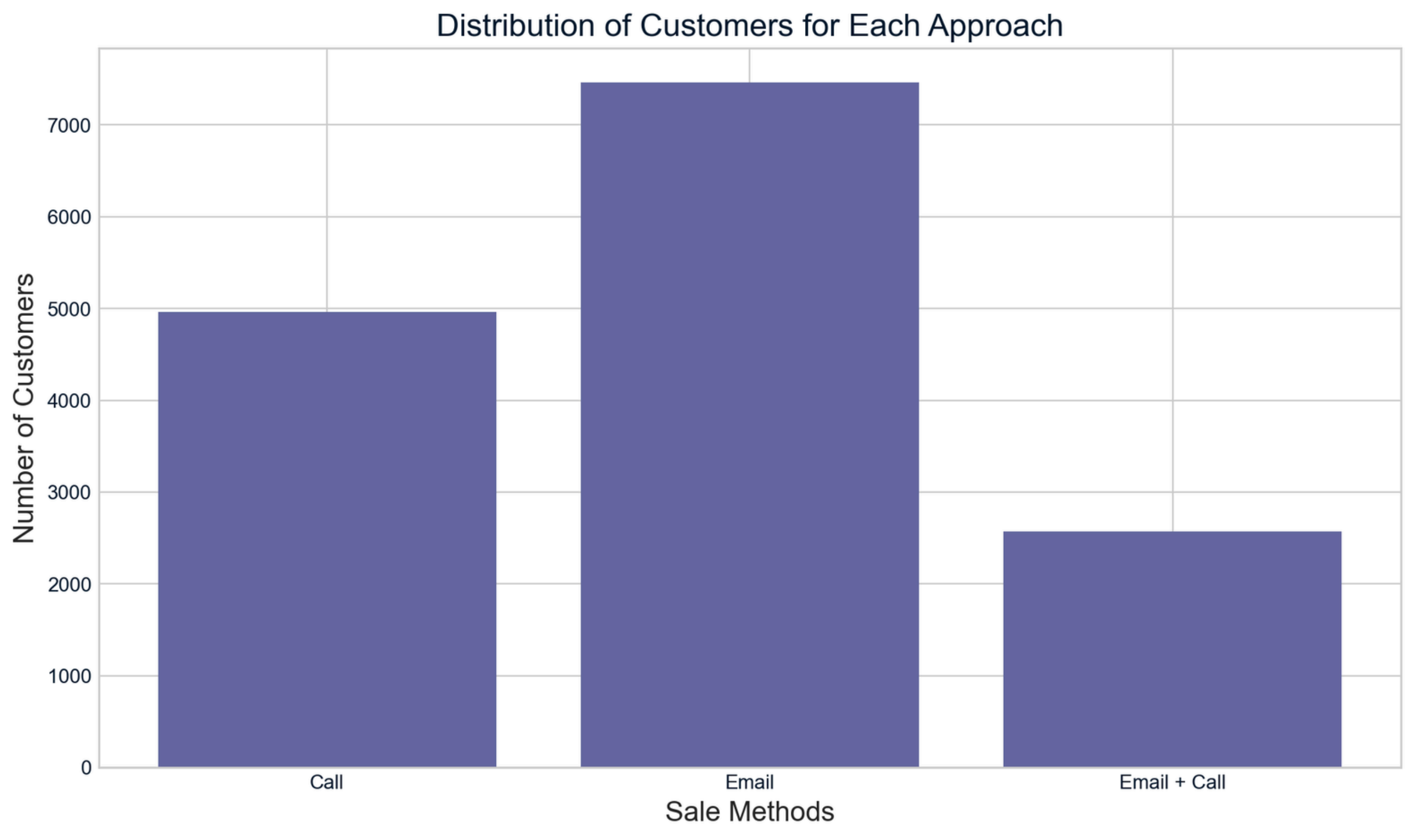Maximize Revenue

Optimize Resource Allocation

Enhance Sales Performance

Support Data-Driven Decision-Making

Improve Customer Engagement

Analyzing work

How many customers were there for each approach?

Distribution of Customers for Each Approach

What does the spread of the revenue look like overall? And for each method?

ANOVA test → **Post-hoc Test Tukey's HSD test** → **Bar chart** → **Box plot**

Process of answering this question

What does the spread of the revenue look like overall? And for each method?

```
ANOVA Test Results:
F-statistic: 32241.143748373015
P-value: 0.0
There is a statistically significant difference in revenue trends between
the methods.
```

```
      Multiple Comparison of Means - Tukey HSD, FWER=0.05
========================================================================
group1     group2     meandiff p-adj  lower      upper      reject
------------------------------------------------------------------------
  Call          Email  47.6075   0.0  46.7551      48.46     True
  Call Email + Call   122.19    0.0 121.0592   123.3207     True
 Email Email + Call  74.5824    0.0  73.5184    75.6465     True
------------------------------------------------------------------------
```
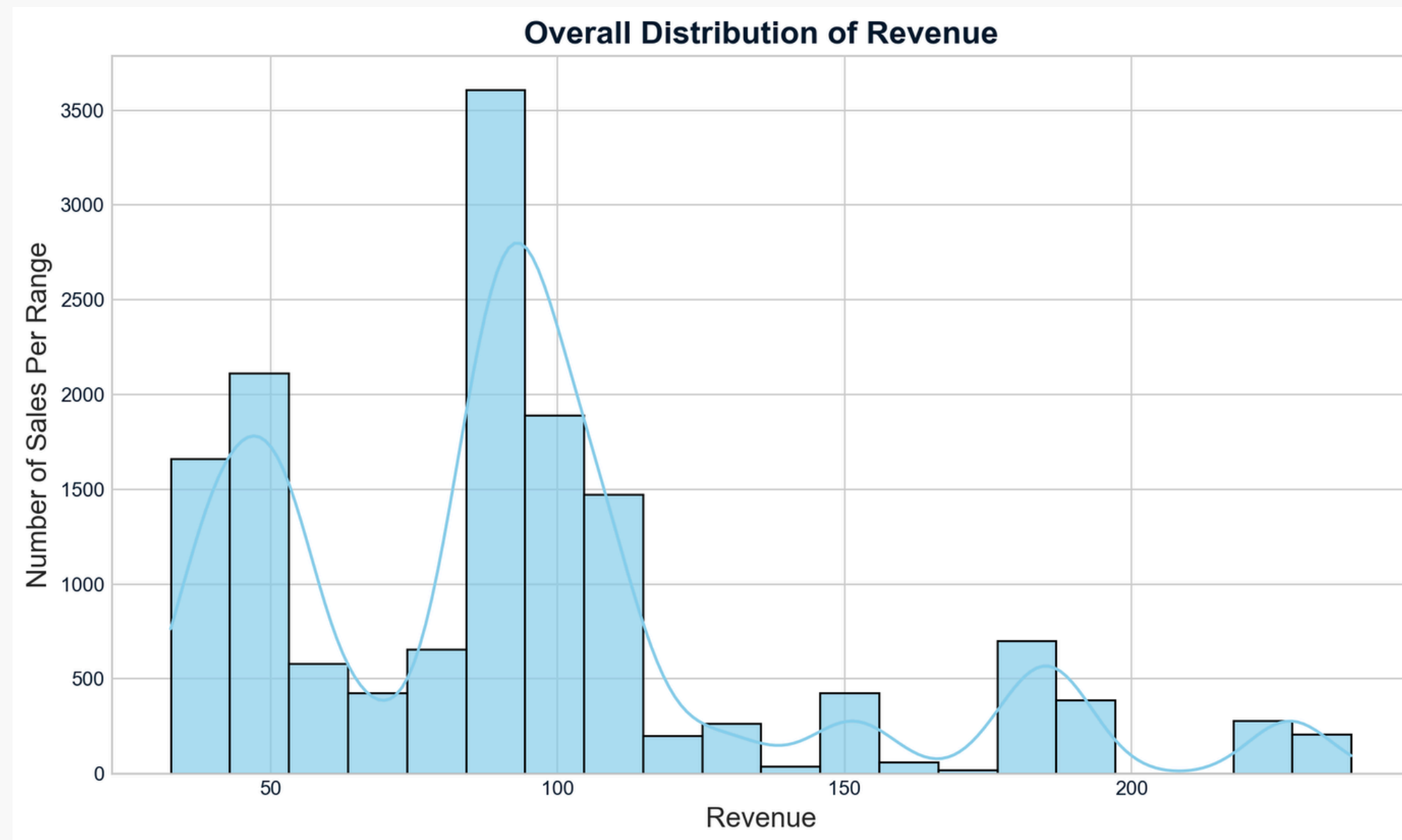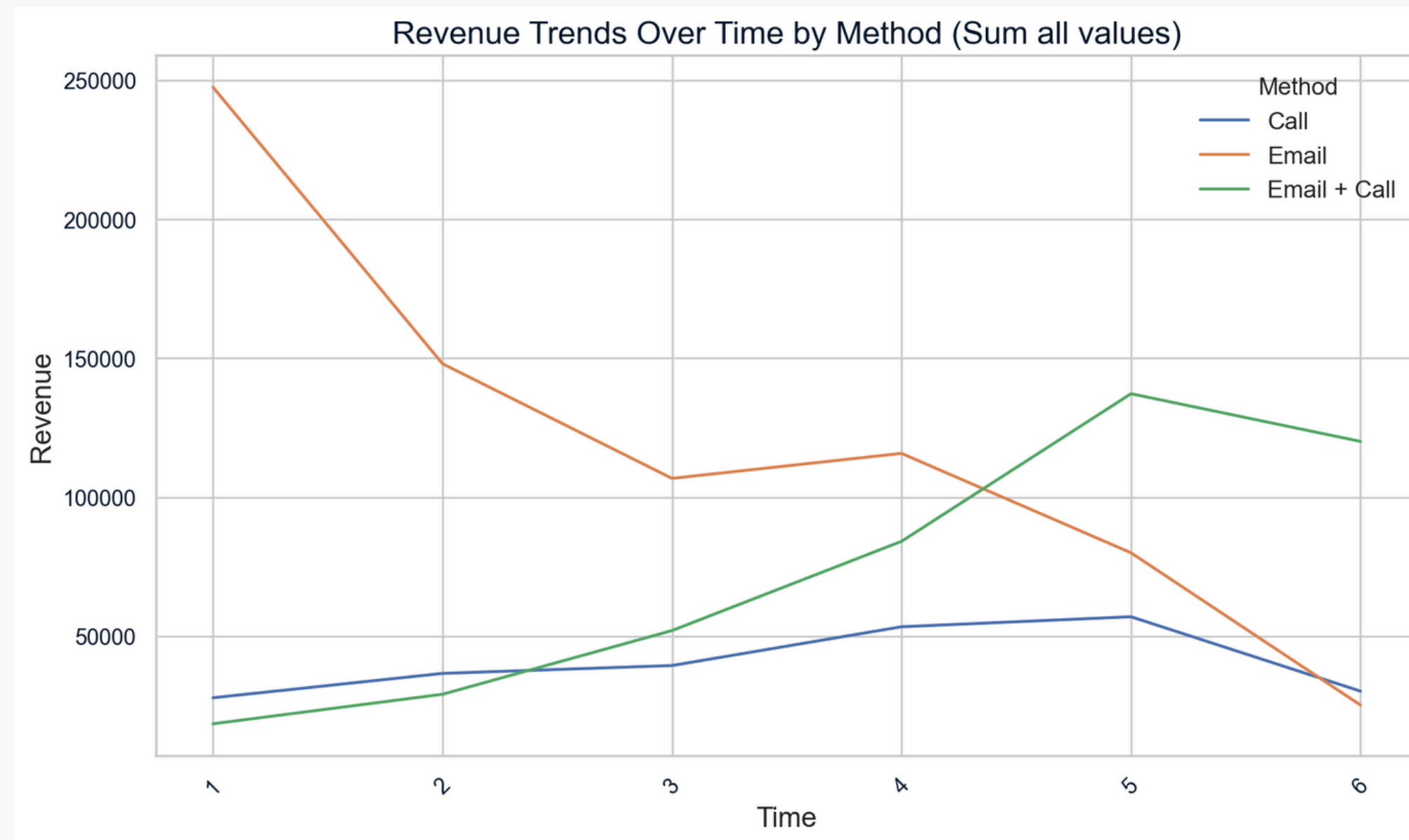
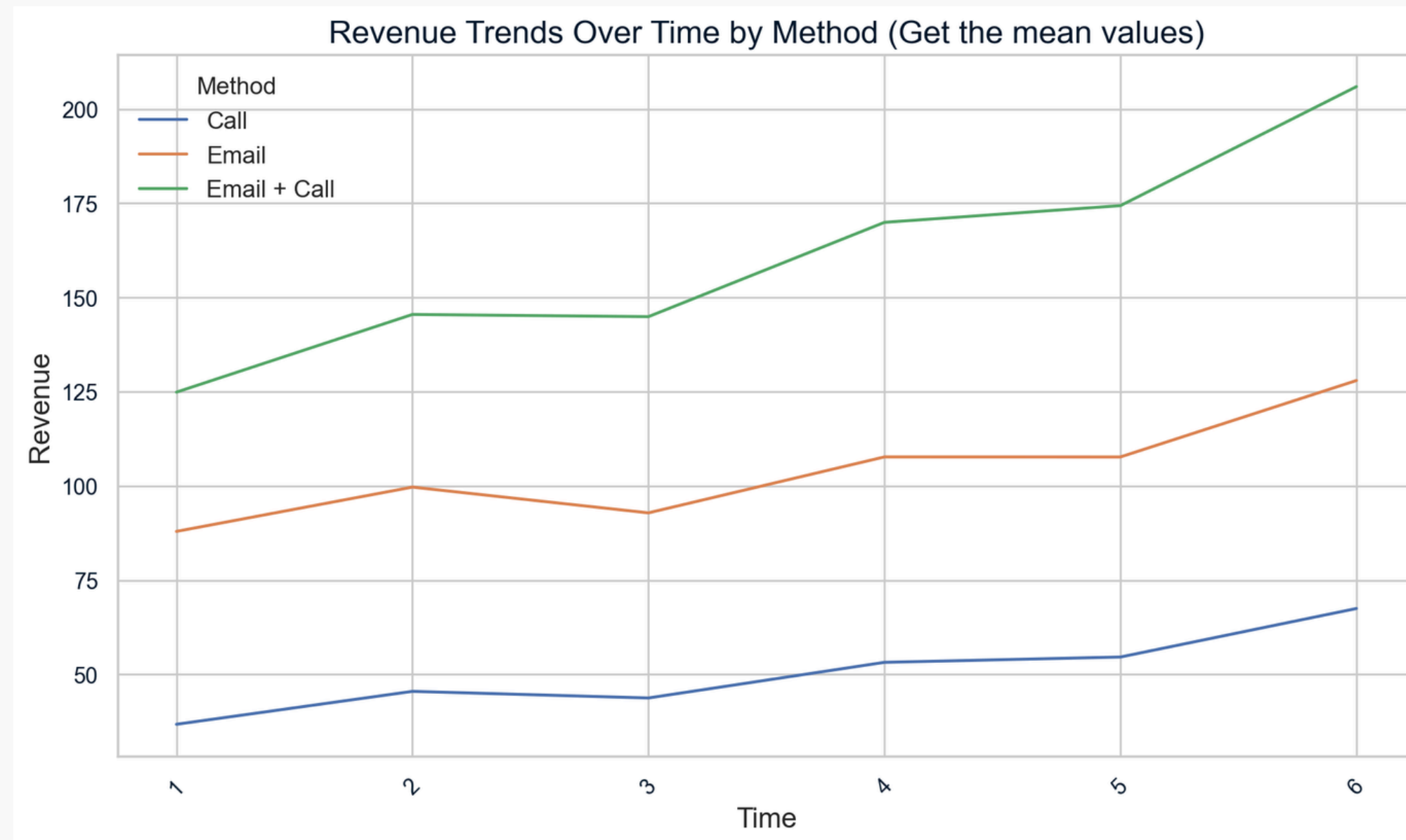# What does the spread of the revenue look like overall? And for each method?

# *What does the spread of the revenue look like overall? And for each method?*

Revenue Distribution by Sales Method
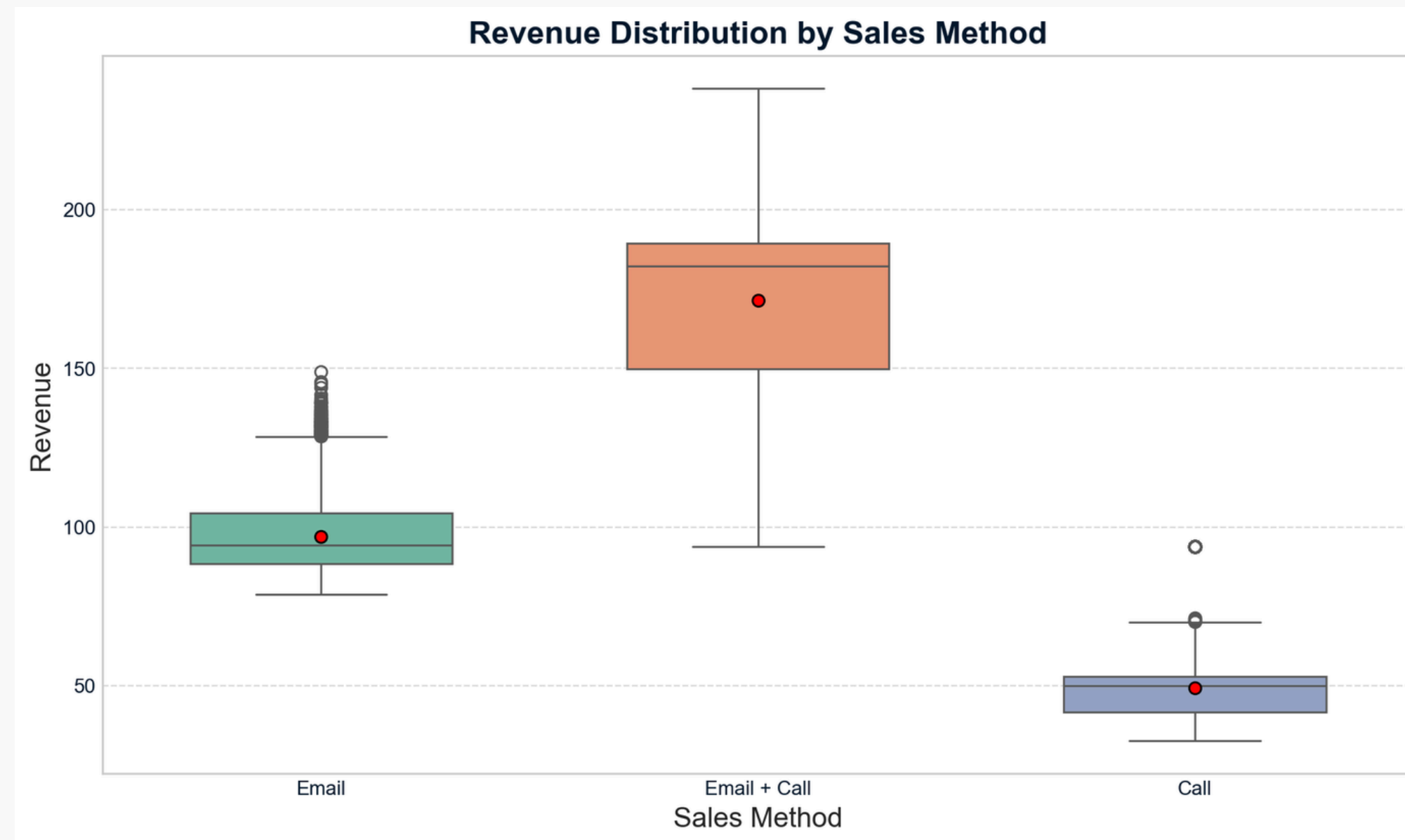
Was there any difference in revenue over time for each of the methods?

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Revenue Trends Over Time by Method (Get the mean values)

Based on the data, which method would you recommend we continue to use?

Call
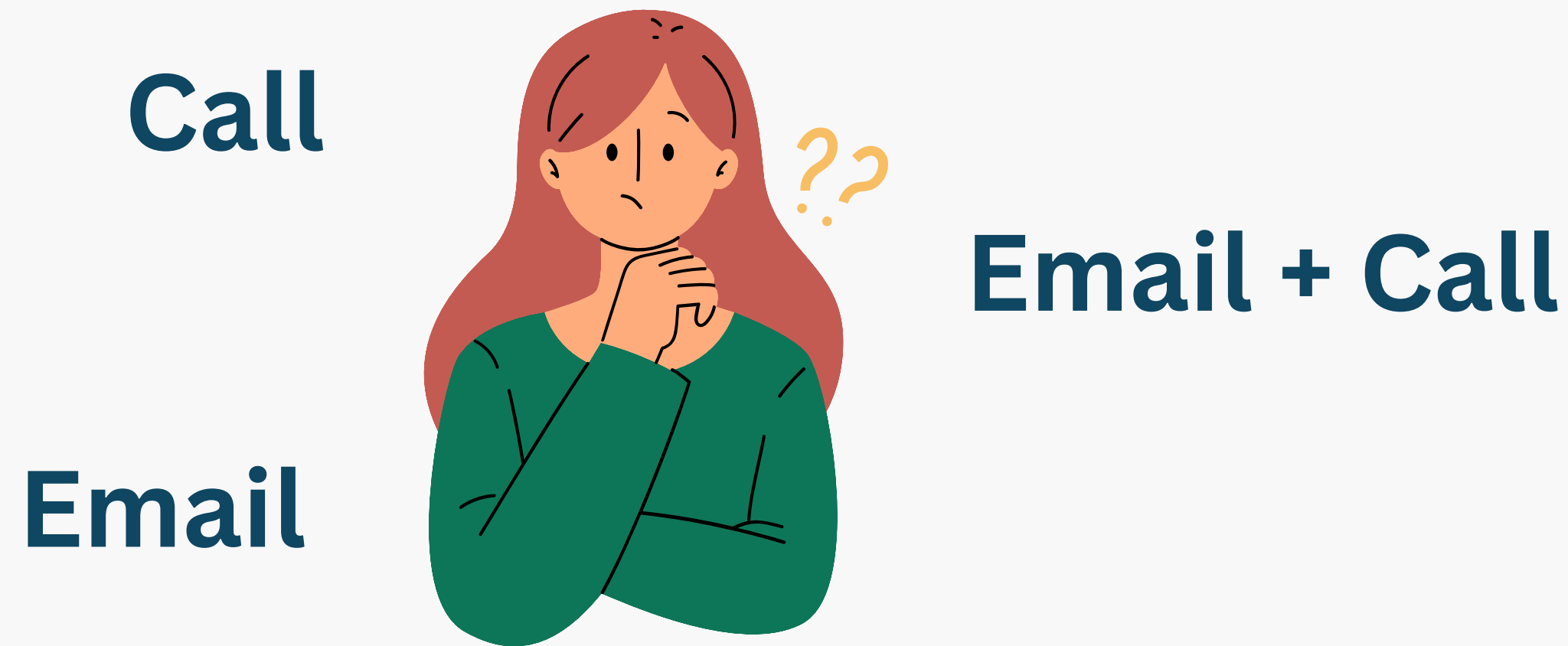
Email + Call

Email

Based on the data, which method would you recommend we continue to use?
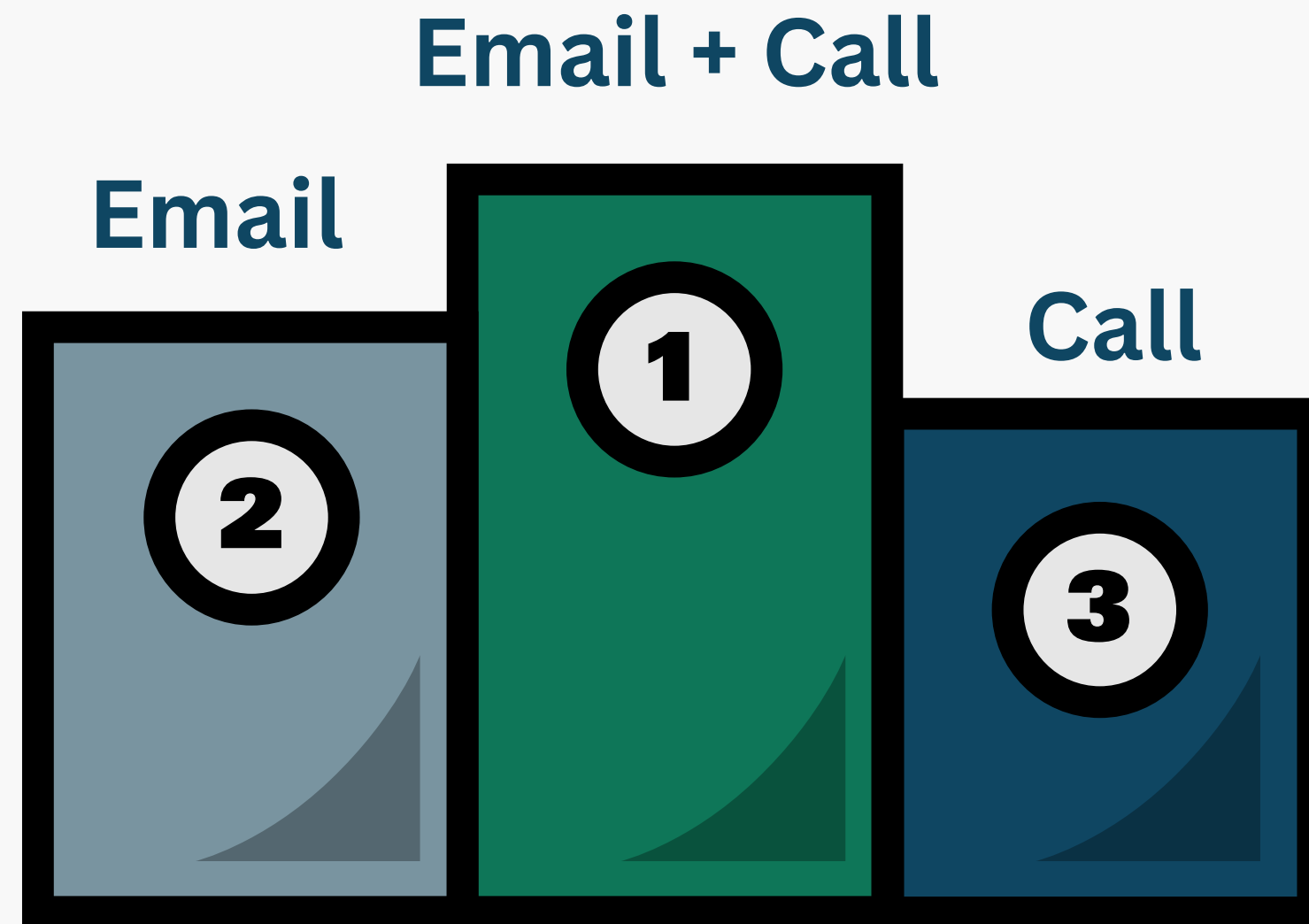
Key findings

Sales Performance Findings

Business Metric to monitor

The average weekly revenue for each sales method (Call, Email, and Email + Call) at the end of each week.

Best method

The Email + Call approach has proven to be highly successful.

Estimate of Initial Values for the Metric

- Week 1: $124.87
- Week 2: $145.50
- Week 3: $144.91
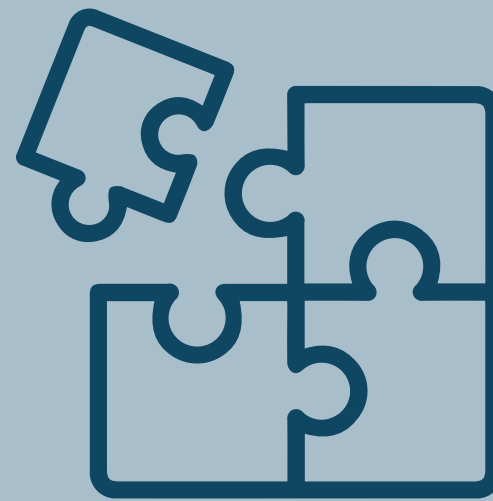- Week 4: $169.93
- Week 5: $174.37
- Week 6: $205.96

Recommendations

Recommendations

Focus on the 'Email + Call' Method

- Requires an average of just 10 minutes of phone time per customer
- Consistent growth over most weeks

Leverage Targeted Email Campaigns

A cost-effective way to supplement revenue generation with minimal additional workload.

Monitor Key Metrics

- Observe trends over time, analyze results, and forecast future outcomes.
- Provide actionable insights and help the company adjust its strategy quickly

Recommendations

Reduce Focus on the 'Call-Only' Method

- Significantly lower results
- Poor performance and high time investment

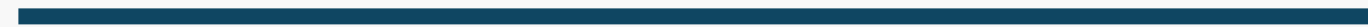### Improve Data Collection Practices

Improve data quality by correcting format, imputing missing values, delete outliers...

A Multi-Channel Strategy

Combining effective strategy with prompt follow-up calls—ideally within a day or two of sending a product information email—could boost sales conversions.

Conclusion

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By focusing on proven approaches like Email + Call, enhancing email campaigns, and improving data accuracy, the company can optimize its operations and revenue generation. Prompt follow-ups and strategic execution will allow the team to outperform competitors and achieve its sales objectives. With the right focus, efforts, and tools, success is well within reach.

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Thank you