

# Group Recommendation Report

Goal: Provide a recommendation regarding tailored marketing efforts and focus for the proposed sub-categories to increase profits by 10% for the year.

Natalie is overseeing the sales and marketing department at Office Solutions. Office Solutions is a low-cost, online office supplies retailer. As head of the sales and marketing department, Natalie has expressed concerns over the focus on specific sub-categories based on their profit from Office Solutions. To investigate those sub-categories and which ones to tailor marketing efforts and focus on to increase profit, we conducted the following analysis:

1. In Figure 1, copiers (profit: \$55,617), phones (profit: \$44,516), and accessories (profit: \$41,916) are the top three most profitable sub-categories.
2. We analyzed the sum of sales and profits for each sub-category of products. While Phones generated high sales (Figure 2), their total profits were lower compared to Copiers, which showed the highest profit sum (Figure 1).
3. We look into segments to identify the strengths and weaknesses of the sub-categories. From this, we are able to look at the sub-categories and identify departments where products perform better.
4. We also looked at the profit margin as a percentage of sales by dividing the profit/sales \* 100. In order to boost total profitability, we may apply a similar methodology to other categories like copiers and phones, using the example of labels, which have a 42% profit margin with low discounts and moderate quantities sold.
5. We analyze the relationship between sales and profits. A higher profit does not mean higher sales. There are products like Copiers, as shown in (Figure 1), that show high profits, but with lower sales as shown in (Figure 2).

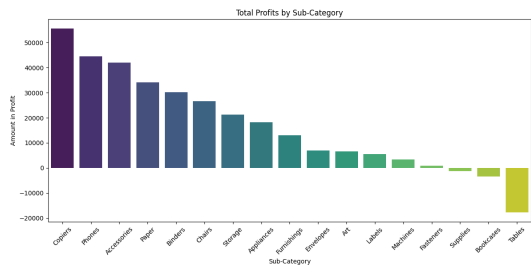


Figure 1: Total Profit by Sub-Category

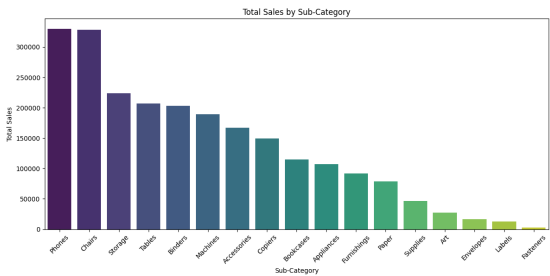


Figure 2: Total Sales by Sub-Category

Table 3: Relationship between Sales and Profit

Accessories:	correlation = 0.767, p-value = 0.0
Appliances:	correlation = 0.859, p-value = 0.0
Art:	correlation = 0.896, p-value = 0.0
Binders:	correlation = 0.526, p-value = 0.0
Bookcases:	correlation = 0.233, p-value = 0.0
Chairs:	correlation = 0.39, p-value = 0.0
Copiers:	correlation = 0.899, p-value = 0.0
Envelopes:	correlation = 0.989, p-value = 0.0
Fasteners:	correlation = 0.722, p-value = 0.0
Furnishings:	correlation = 0.627, p-value = 0.0
Labels:	correlation = 0.984, p-value = 0.0
Machines:	correlation = 0.338, p-value = 0.0
Paper:	correlation = 0.986, p-value = 0.0
Phones:	correlation = 0.679, p-value = 0.0
Storage:	correlation = 0.421, p-value = 0.0
Supplies:	correlation = 0.504, p-value = 0.0
Tables:	correlation = 0.061, p-value = 0.276

6. While some products show high profits with lower sales, there is a significant correlation between the relationship between the two. Most product sub-categories show statistically significant relationships between sales and profit, confirming that their profit increases reliably with high amounts of sales. P-value  $\leq 0.05$  shows that there is a relationship

between profit and sales. Furthermore, a correlation value closer to 1 indicates that high sales are strongly associated with high profits. The sub-category tables in (Figure 3), for example, show a weak correlation (correlation coefficient = 0.06 and p-value = 0.276). This indicates that higher sales for that sub-category do not indicate an increase in profit, and even turn into losses.

**Recommendation:**

Copiers, phones, and labels are profitable sub-categories with significant correlation between its total sales and profit, that Office Solutions should concentrate on in order to enhance profits by 10% for the year. Since sales and profitability are shown to be closely correlated, these sub-categories are ideal candidates to tailor marketing efforts in order to increase profits. Office Solutions should simultaneously lessen its emphasis on low-profit or loss-making categories, such as tables and appliances, where total profits are being adversely affected by ineffective discounts and weak profit-to-sales correlations. Bundling with other products that are not doing well in order to maximize profit.