Summary Email to the Internal Team

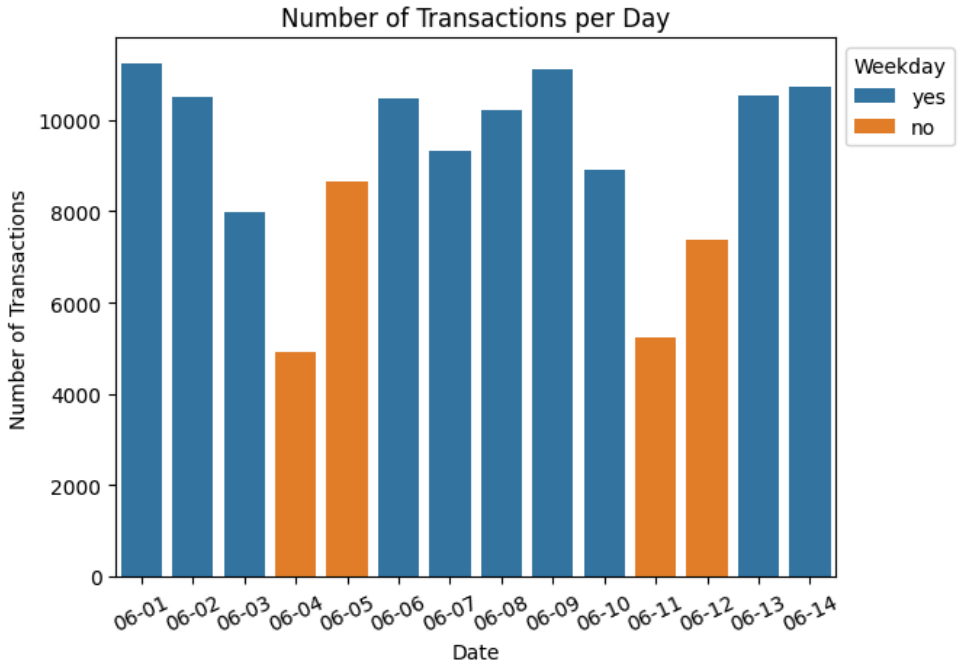
Dear Data Team leadership and Sales team,

I have completed the initial analysis of our client's transactional data from June 1st to June 14th, 2023.

The tools I used were Python, the Pandas library for data manipulation, and the Seaborn library for data visualization. After taking an initial look at the data, I decided to answer these three questions:

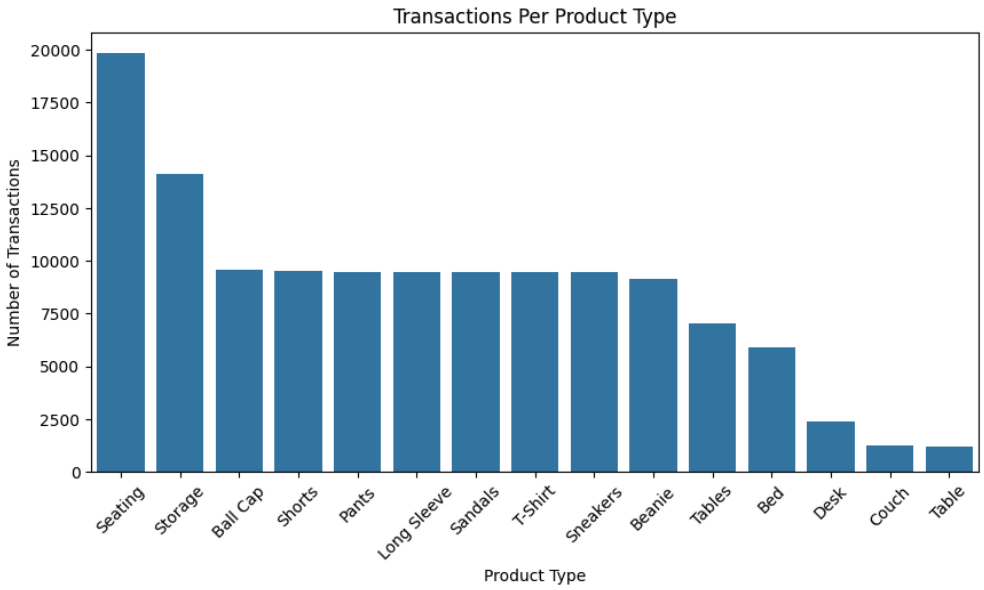
1. How many transactions are there per day, and does it vary over time?
2. What are the most purchased products, and are they different from the products with the highest revenue?
3. What are the most popular store locations, and are they different from the stores with the highest revenue?

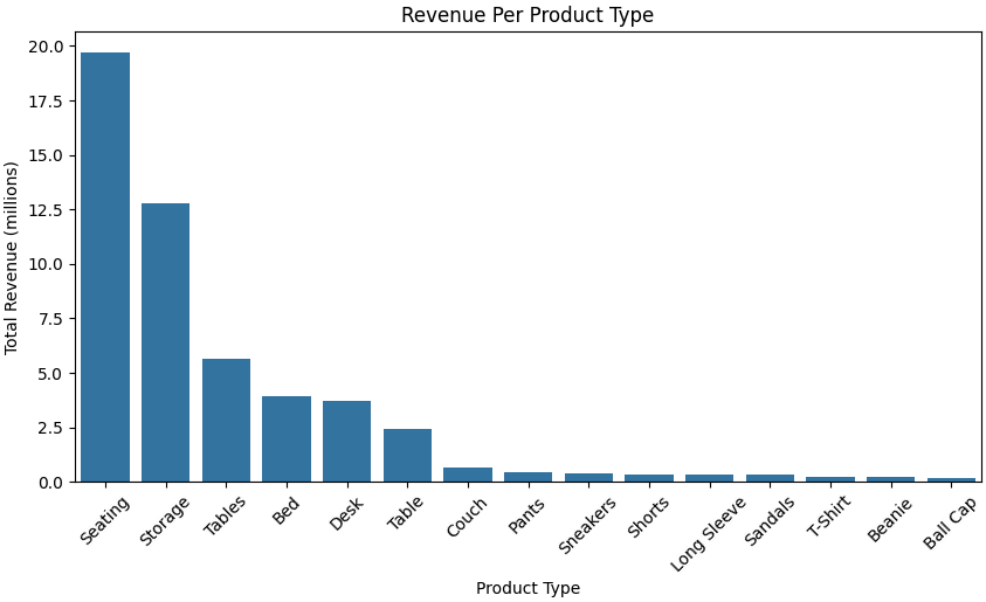
To answer question 1, I created this chart:



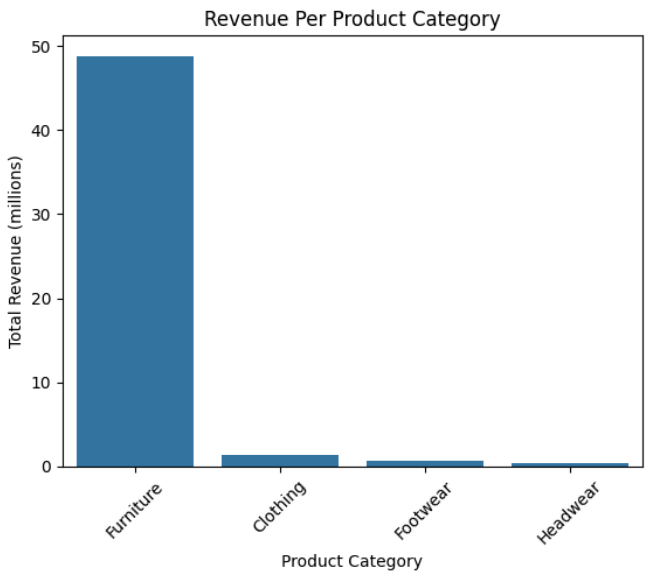
You can clearly see a weekly trend; sales go down on weekends and are highest on weekdays. To make this chart, I counted the number of purchases per day, coded them by if they were a weekday or not, then plotted the total number of purchases across all locations for each day.

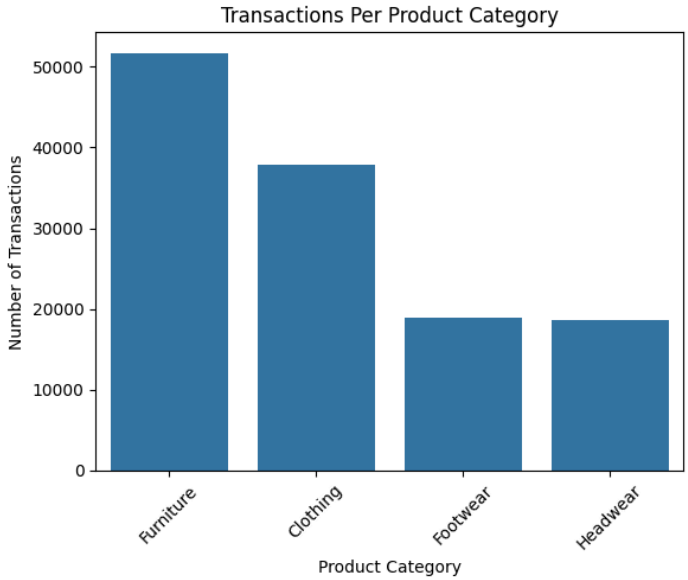
For question 2, I first looked at each type of product. As you can see, Seating and Storage are the most popular product types and also bring in the most revenue. However, while product types such as Ball Caps, Shorts, and Pants also have a high number of transactions, they bring in very little revenue to show for it.





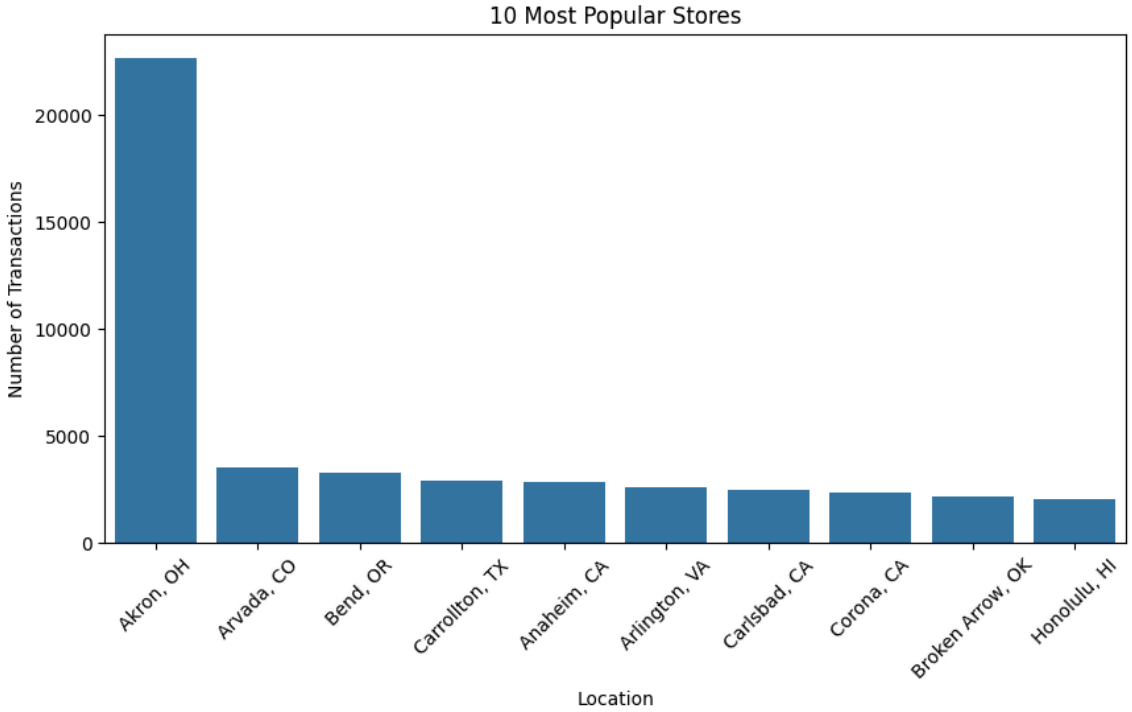
To make things simpler, I then looked at revenue and transactions per product category.

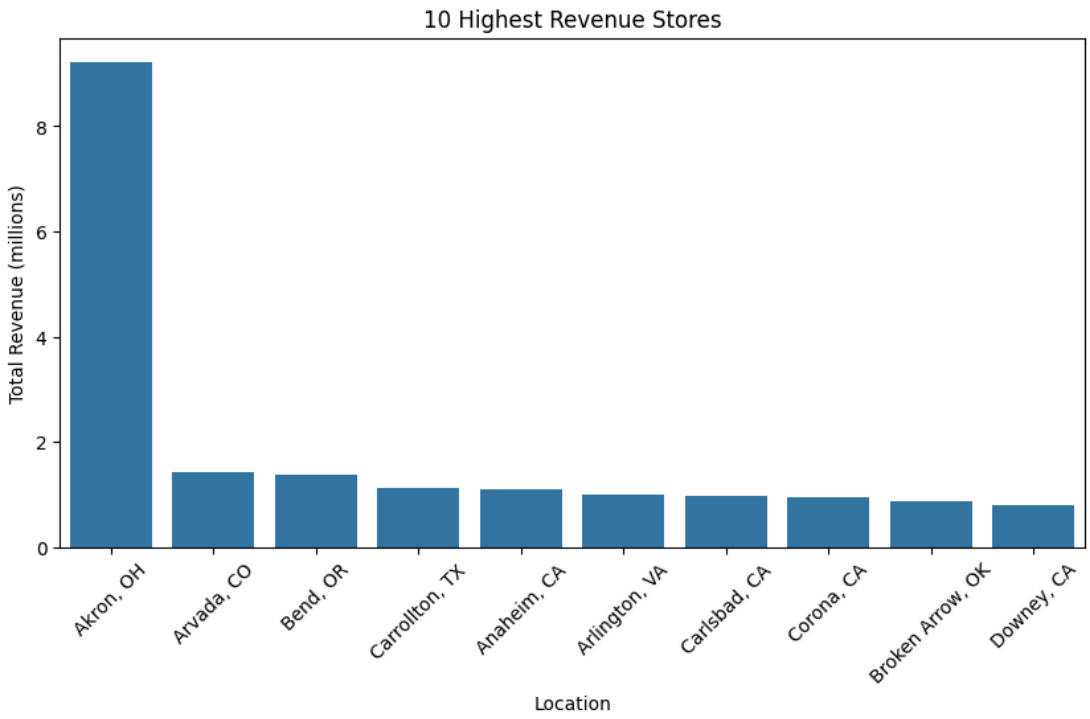




These bar charts clearly show that furniture brings in far more revenue than other product categories, even if they have a comparable number of transactions to other categories. To make these charts, I aggregated the price and count for each product ID in the transactions file and joined it with the information in the products file.

For question 3, I looked at the top 10 stores, ranked both by total number of transactions and revenue.





As you can see, the stores with the highest number of transactions are the ones with the highest revenue. Not surprising. The Akron, Ohio location seems to be the clear winner here, with all the other locations having similar results.

My overall findings are that sales dip on weekends, furniture far outshines any other product category, and the Akron, Ohio location does multitudes better than any other store location.

I have a few questions for our client. First, why do they think sales go down on weekends, when people are away from work? Intuitively they would go up. Second, why do they think Akron, Ohio is the best location? What sets it apart from the rest, in their eyes? And third, how can they increase revenue from the clothing-related product categories?

Our next steps can help them answer those questions. I would like to gather more data about the Akron, Ohio location so that other locations can learn from them. I would also like to look at ways to market their clothes items so they can bring in a greater return for the inventory space they take up, and hopefully bring in more customers on the weekends.

Please let me know your thoughts.

Best,
Andrew Dettor

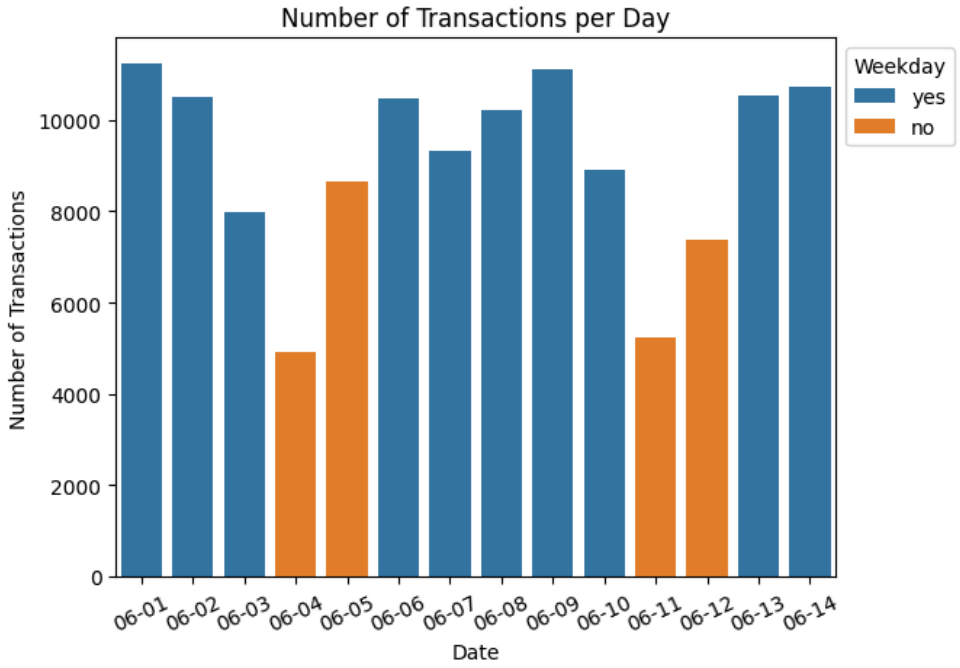
Summary Email to the Client

Dear Client,

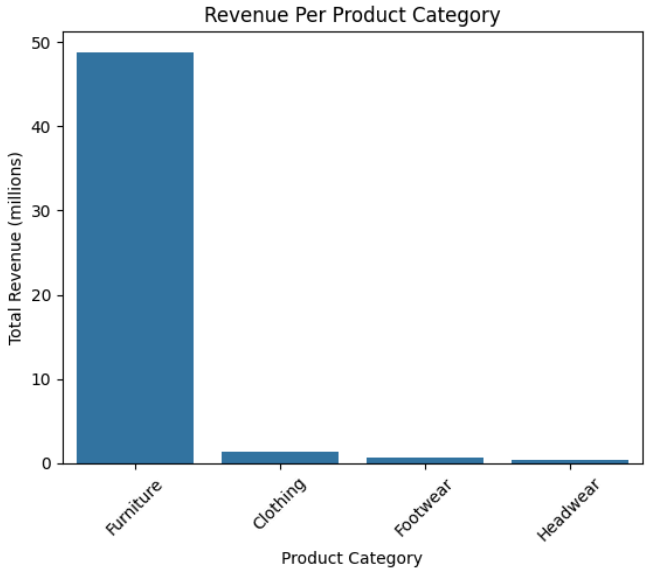
I have completed the initial analysis of your transactional data from June 1st to June 14th, 2023.

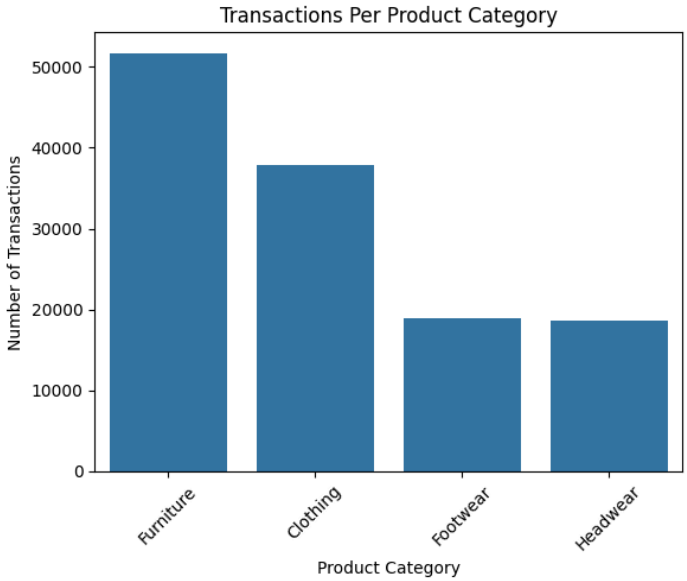
My findings are as follows:

Firstly, your sales tend to go down on weekends, as evidenced by this chart:

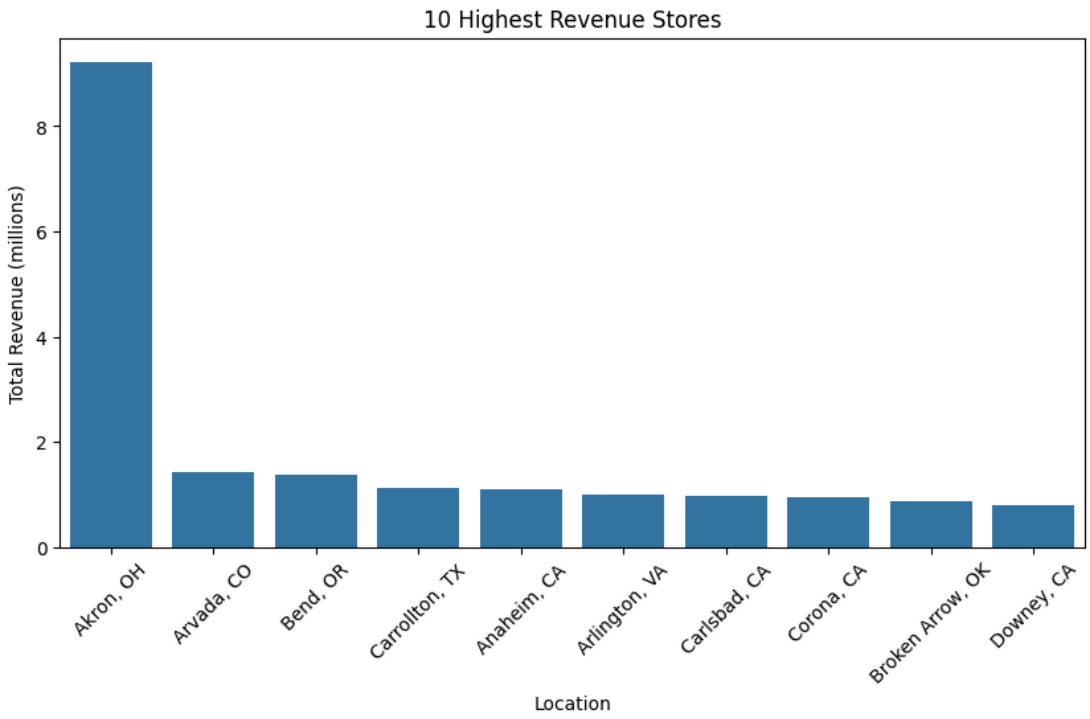


Secondly, your furniture sales revenue far outweighs your other product types, even though they have a similar total number of sales.





Thirdly, your Akron, Ohio store location far outperforms any other location.



We would like to take a look at your marketing efforts to try to bring in more customers on weekends to buy your clothing items. We would also like to gather more information on the Akron, Ohio location, so that we can bring up your other stores to meet its high performance.

Please let me know your thoughts so we can discuss further.

Best,
Andrew Dettor