EXPLORING MY EUROPE TRIP: EXPENSES, TIME AND TRENDS

Tracking every aspect of the Spain and Portugal trip

Visual Analytics for dashboards

Final report 2024 - Aditi Jain

Dashboard Link

OVERVIEW

I embarked on this project to gain a comprehensive understanding of my recent trip to Spain and Portugal, focusing on expenses across various categories such as stay, food, transport, and activities, along with payment methods and time spent. The objective was to analyze spending patterns, assess the allocation of resources, and identify key insights for better budgeting and planning in future travel. To collect the data, I tracked every aspect of my trip. By exploring cost-to-time ratios, category breakdowns, and overall spending trends, the dashboard offers insights into the efficiency of the trip in terms of both money and time. This data was recorded during the trip and then compiled into a structured dataset, having columns as follows-

Data Structure:

1. **Date**

2. **Destination**

3. **Duration**

4. **Expenses** (Total expenses for a destination)

5. **Category:** List of expense category (e.g., Stay, food, activity, transport).

6. **Payment Method:** (e.g., credit card, cash).

7. **Sub-category**

8. **Amount:** Amount spent per sub-category

9. **Time spent (in hours):** For sub-categories

10. **Rating:** Rated Activities category on the scale of 1-5, where 1 is poor and 5 is excellent.

I correlated this data to evaluate my hypotheses, which allowed me to draw conclusions on whether to approve or disapprove them.

EXPLORING THE DATA

1. For the **Expenses by category** chart, a bar graph was finalized to compare expenses by different categories over the entire trip.
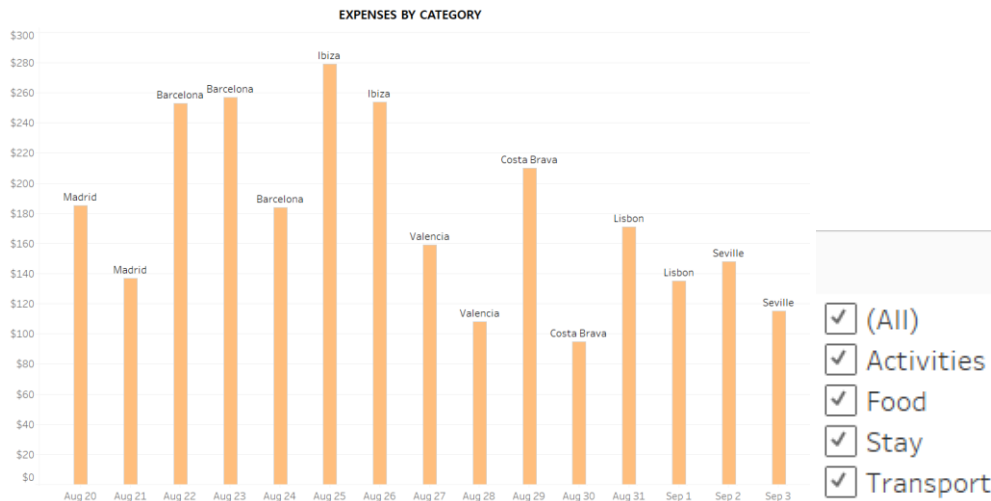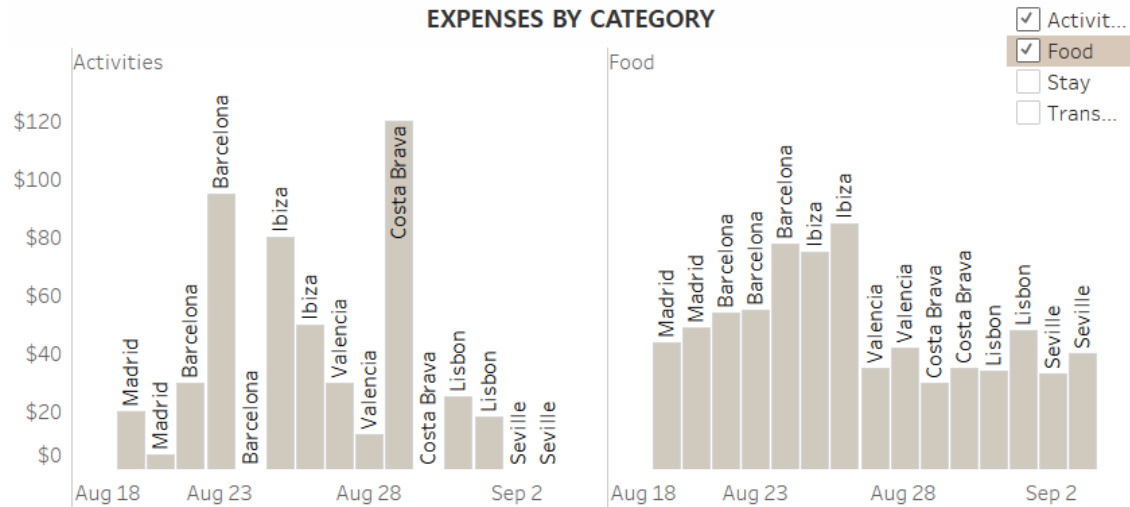

While this chart gave a comparison of individual category expenses over time, it was hard to compare different categories. **Hence, a sparkline chart was finalized -**
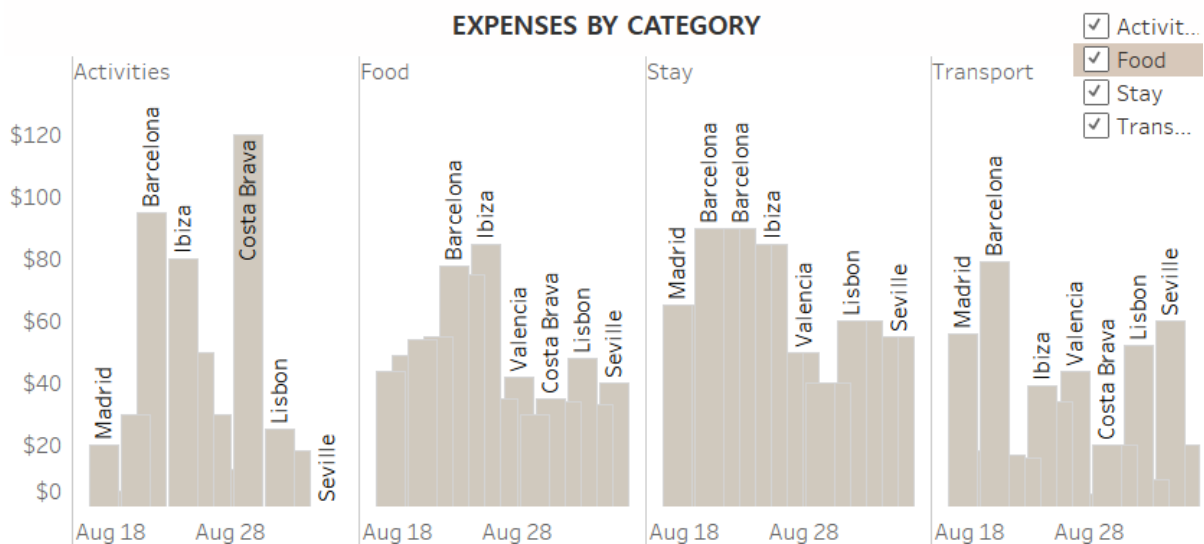
With this chart, we can compare all or any number of categories at once.

This allows for individual category comparison over time as well as comparison of different categories over time as a multiple-choice category filter is used.

Another issue: The earlier chart displayed total expenses across all categories for each day, but the final one didn't include this detail.

Solution: To address this, I created another visualization that shows expenses by destination and duration –

EXPENSE BY DESTINATION AND DURATION

| Desti..	Total Amount	Duration (Days)	Avg cost/ day
Barcelona	$694	3	$231
Ibiza	$533	2	$267
Madrid	$322	2	$161
Lisbon	$306	2	$153
Costa Bra..	$305	2	$153
Valencia	$267	2	$134
Seville	$263	2	$132

Further, the KPI's to be used for the dashboard were derived from this chart-

Total Amount
2,690

Total duration (days)
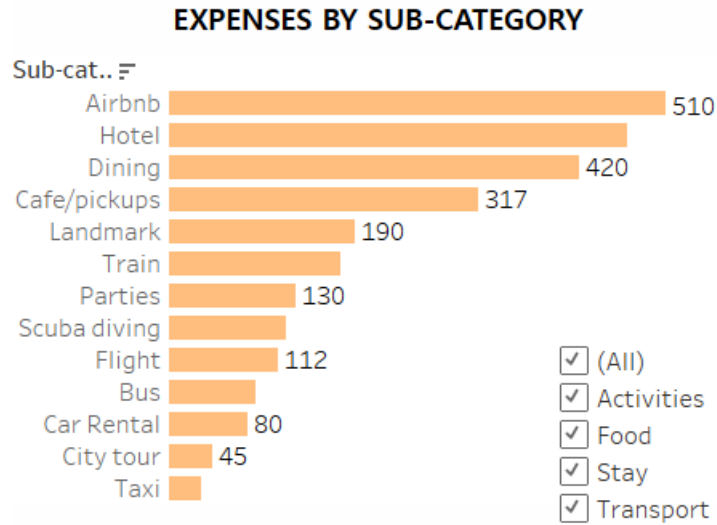15

Avg cost per day
$179.3

2. For **the expense by sub-category chart**, here are my explorations-
First, I explored a tree map like this –
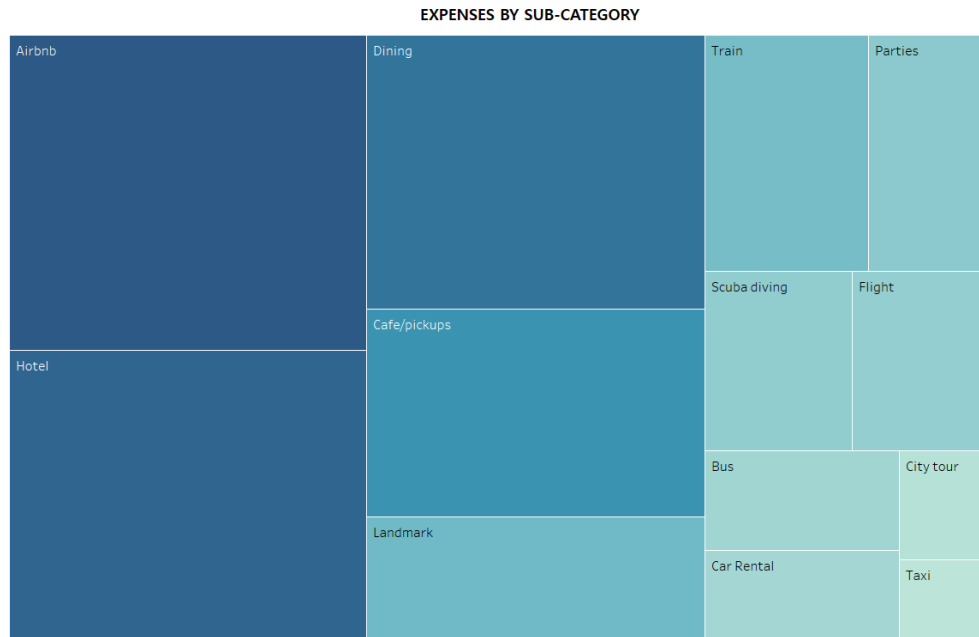
Even though it clearly communicated everything, it was taking up a lot of space in the visualization. Hence, I further explored a horizontal bar chart like this –
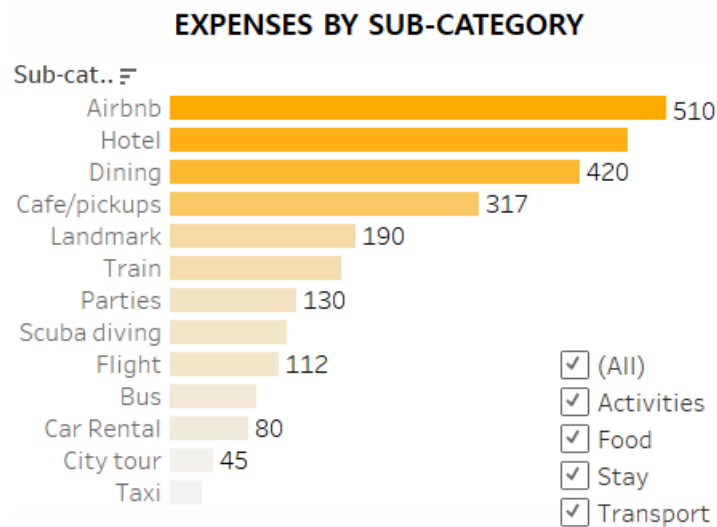
This was good and communicated everything effectively without taking up much space. However, the color shading in the bars seemed unnecessary since the bar lengths and the accompanying text already clearly indicated the expense levels of each sub-category. Hence, here's the final visualization for this-
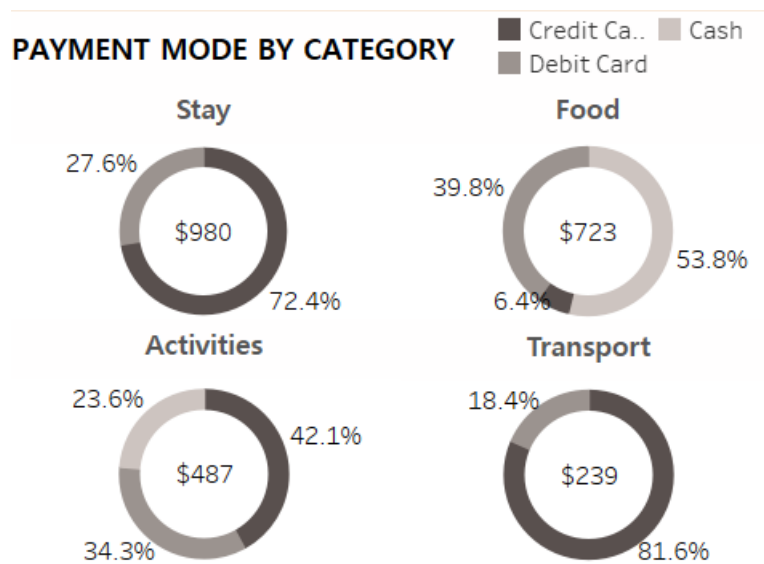
EXPENSES BY SUB-CATEGORY

Sub-cat..	
Airbnb	510
Hotel	
Dining	420
Cafe/pickups	317
Landmark	190
Train	
Parties	130
Scuba diving	
Flight	112
Bus	
Car Rental	80
City tour	45
Taxi	

☑ (All)
☑ Activities
☑ Food
☑ Stay
☑ Transport

This one contributes to the making of a simple yet efficient dashboard.

HYPOTHESIS

There are 2 hypotheses that I wanted to explore with this data-

Hypothesis 1: "Most Expensive Category is more Likely to Use Credit Cards"

After I made the below visualization, I agree with this hypothesis-

PAYMENT MODE BY CATEGORY

Legend: ■ Credit Ca.. ■ Cash ■ Debit Card

Stay
27.6%
$980
72.4%

Food
39.8%
$723
53.8%
6.4%

Activities
23.6%
42.1%
$487
34.3%

Transport
18.4%
$239
81.6%

Stay stands out as the most expensive category, with 72.4% of the payments made via credit card.

Food comes in second as the most expensive category, with most payments made in cash and by debit card, and only a small amount by credit card. On the other hand, nearly half of the spending on activities category and 81.6% of the transport category is paid by credit card.

Reflecting on this, I realize I made a less-than-ideal choice by using my credit card predominantly for activities and transport rather than food. Given that my credit card offers more points and cashback rewards for food purchases, it would have been smarter to use it more for food expenses. To keep my budget balanced, this would mean using the credit card less for activities and transport categories.

In conclusion, while the hypothesis holds true for the most expensive category, the payment methods for other categories could have been chosen more strategically.

Hypothesis 2: "Activities That Require More Time Are More Expensive"

There are 2 possible scenarios for this hypothesis-

Scenario 1: Total time spent on activities and the total cost
To understand the overall relationship between time spent on activities and total expenses on activities for the entire trip, this approach was used.
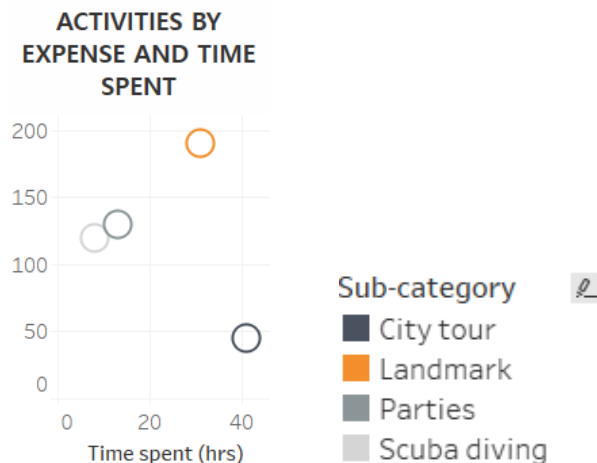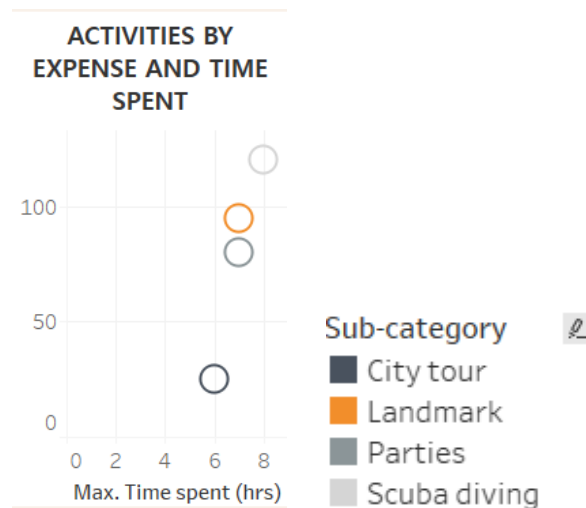
According to this, the hypothesis is false, exploring landmarks is the most expensive activity, but the time spent on city tours is the most.

After this, I felt like is it even fair to make this hypothesis false based on the whole trip and not individual days. Some activities, though individually affordable, become costly when repeated multiple times, while others, despite being expensive on their own, may seem more cost-effective when spread out over the entire trip due to their limited frequency.

Hence, scenario 2 was created.

Scenario 2: Activities with maximum amount and hours spent at once

This approach focuses on identifying whether the most time-consuming and expensive day in the activity category in my dataset aligns with the hypothesis.

According to this scenario, the hypothesis can be held true since scuba diving is the most expensive activity and requires the highest amount of time too.

In conclusion, when we consider scenario 1, where the overall relationship between time spent on activities and total expenses for the entire trip is considered, the hypothesis is false.

Whereas, when considering scenario 2, where individual days with longer activities are compared with their costs, the hypothesis is true.

OBSERVATION AND CONCLUSION

Destination

Although Barcelona has the highest total expense, Ibiza turns out to be the most expensive destination among all since the average cost per day in Ibiza is more than Barcelona. Seville is the cheapest destination.

Category

- Stay as a category consumed most of the budget. The local transport seems to be overall cheap in the country.
- For the stay category, Barcelona is the most expensive followed by Ibiza and Madrid.
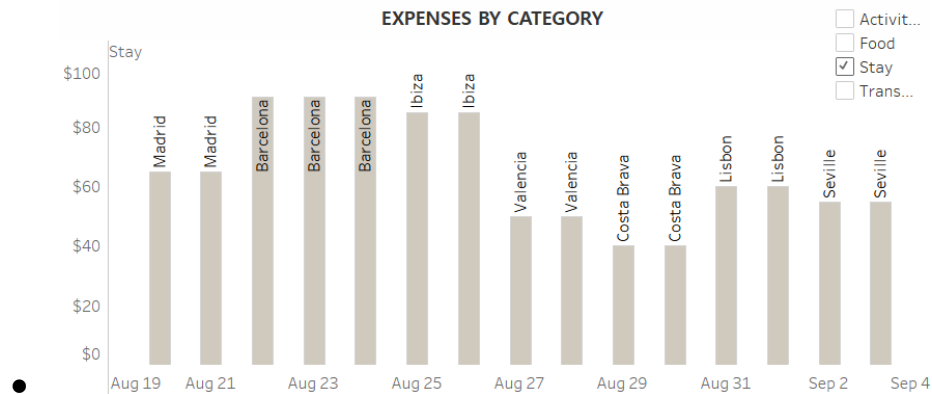
Expenses trend

- In most cities, except Barcelona, the expenses in the activity category are higher on the first day and lower on the second day. This must be because I get excited and do most of the paid landmarks on the first day so that there's more flexibility on the second day.
- For the transport category, the cost for all the destinations tends to be higher on the first day since the intercity transport cost is included on the first day.
- For the food category, the expense for all the destinations on the first day tends to be lower and keeps getting higher on the second/third day. This may be because initial days are spent more on travel and paid activities and later food and free activities.

Sub-category

- I noticed that expenses for stay, transport, and food are lowest in Costa Brava compared to all the other cities. However, Costa Brava ends up being more expensive than Valencia and Seville. Why? This is because the cost of one of the activities there, scuba diving, that is $120, is significantly higher. It is the most expensive activity as well as the priciest subcategory.
- For all the categories – Airbnb, Dining, train and landmarks are the highest spent subcategories respectively.

Duration

The number of days spent in Barcelona is higher than other places, which suggests that it has more to offer than the other destinations.

Efficiency Rating for activities
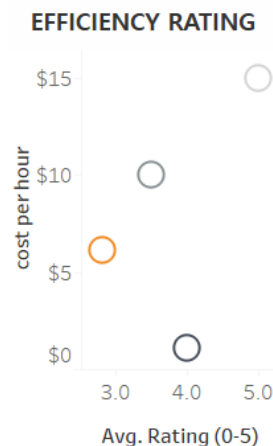
Scuba Diving (light grey circle on top), despite its high cost per hour, received the highest rating, indicating exceptional value. Interestingly, City Tour (dark grey circle at bottom), with the lowest cost per hour, received the 2nd highest rating.

This suggests that high-cost activities can provide great satisfaction, but lower-cost activities can also deliver significant enjoyment. In Future, I need to balance cost with satisfaction and consider the value-for-money ratio when selecting activities.

Go Back to Dashboard