# A Comprehensive Report on Geolocational Analysis of Online Retail

GEOLOCATIONAL ANALYSIS

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## Introduction

The dataset contains sales data from an online retail source,

available for download on Kaggle: Online Retail Dataset.

data in this dataset is like this :

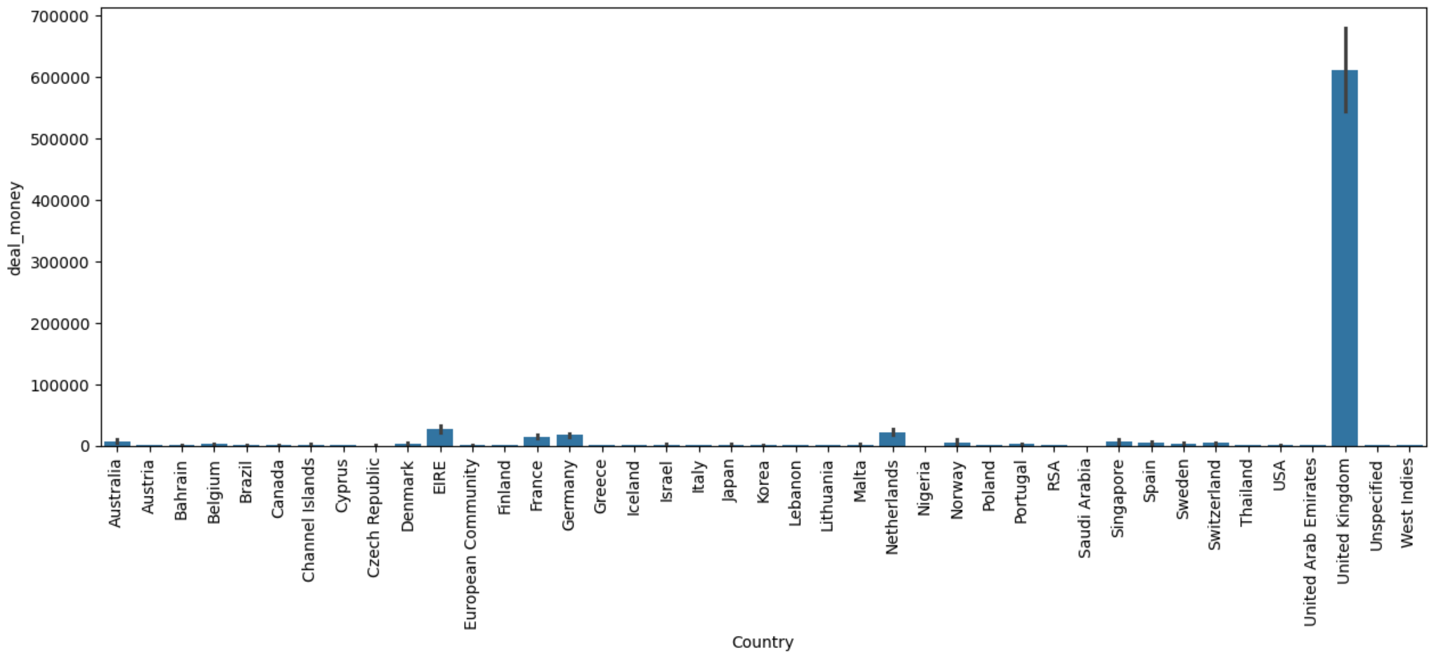
| InvoiceNo | StockCode | Description | Quantity | InvoiceDate | UnitPrice | CustomerID | Country |
|---|---|---|---|---|---|---|---|
| 536365 | 85123A | WHITE HANGING HEART T-LIGHT HOLDER | 6 | 12/1/2010 8:26 | 2.55 | 17850.0 | United Kingdom |
| 536365 | 71053 | WHITE METAL LANTERN | 6 | 12/1/2010 8:26 | 3.39 | 17850.0 | United Kingdom |
| 536365 | 84406B | CREAM CUPID HEARTS COAT HANGER | 8 | 12/1/2010 8:26 | 2.75 | 17850.0 | United Kingdom |

**Assumption**: Based on the substantial revenue generated in the UK, it's reasonable to conclude that the data corresponds to a UK-based company, which likely originated and is headquartered in the UK. Additionally, it's probable that the company's warehouses are situated within the UK.

## Main Objective of analysis: increase revenue

# Revenue - Country

The diagram displays the total amount of money gained from each country when aggregated:

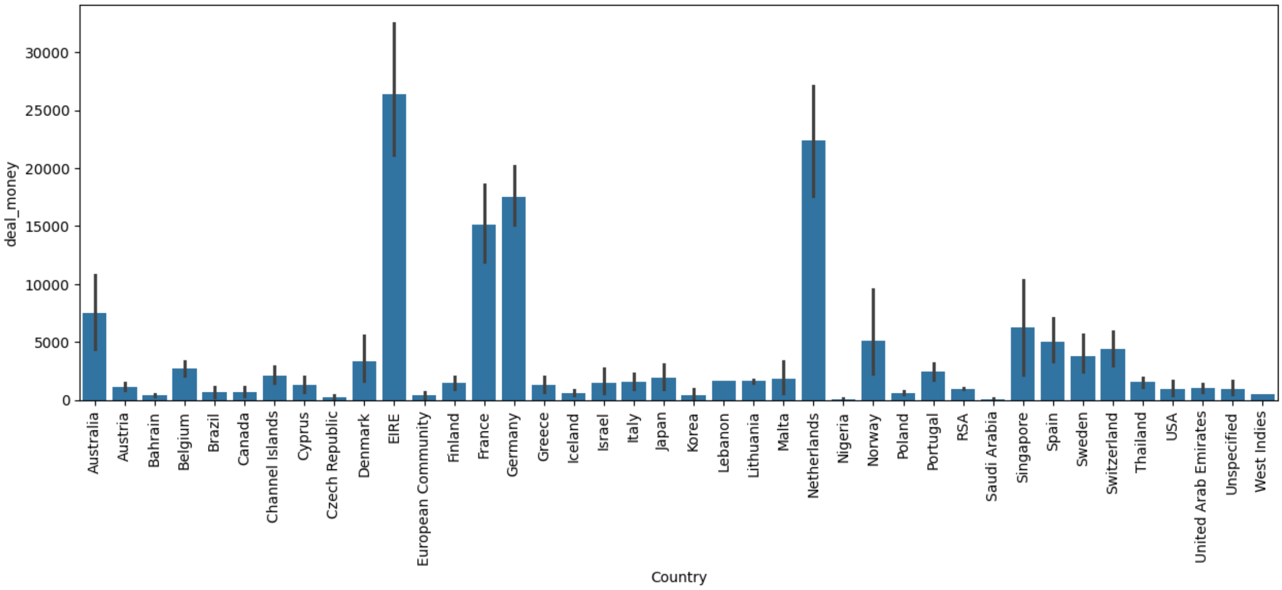



The significant gap in revenue between the UK and other countries could stem from various factors. One plausible explanation is that our company initially launched its operations in the UK before expanding globally. It's conceivable that customers in the UK are making substantially larger purchases compared to those in other countries. It would be valuable to analyze the strategies implemented by our company in the UK market and consider implementing similar approaches in other countries, particularly those that exhibit similar consumer behaviors to the UK.

# dropping UK

For a more comprehensive evaluation of the company's performance, it's advisable to treat the UK as an outlier and examine the revenue generated by other countries. This approach will provide a clearer understanding of how our company is performing on a global scale, excluding the potentially skewed influence of the UK market.

This is the output of this action:




We've noticed a big gap in revenue between **EIRE**, **Netherlands**, **Germany**, and **France** compared to other countries. What's interesting is that these countries are similar to the UK and they're all in the same geographic area, neighboring the UK. Here are some questions to consider:

1. Did we apply the same marketing strategies in these countries as we did in the UK?

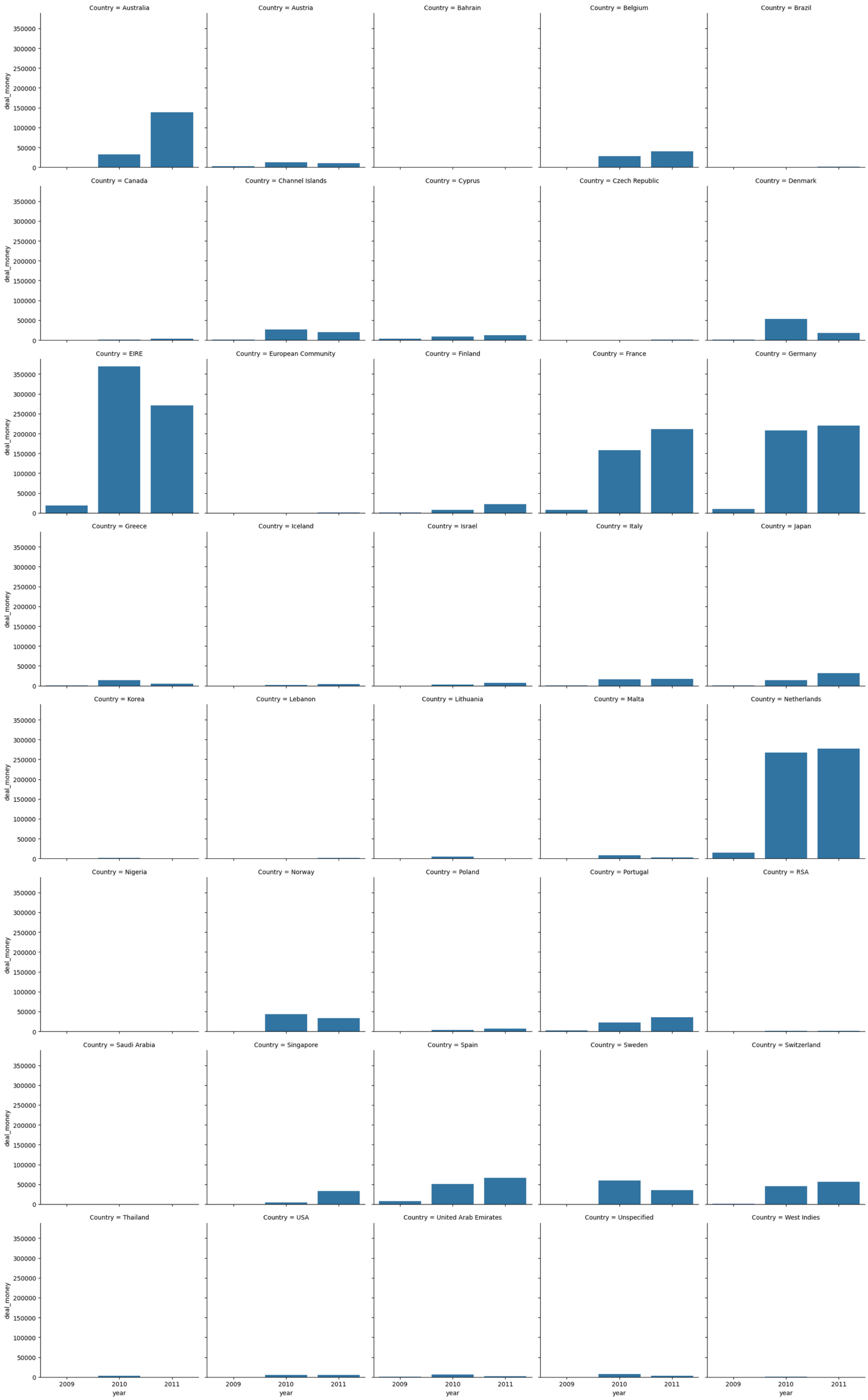
2. If we didn't use the same strategies, what marketing approaches did we use in these countries?

3. Can we implement these strategies in the UK as well?

4. What are the differences in target audiences in each of these countries compared to the UK?

# Separate Revenue Based on Country and Year

Let's see what is the revenue of each country in each year.



## For countries with increased revenue over the years and never decreased:

1. What were our strategies for these countries that consistently experienced revenue growth?

2. How did we maintain customer engagement and retention in these regions?

3. Did we introduce any new products or services that contributed to this sustained growth?

4. What market factors or consumer behaviors in these countries influenced our strategies?

## For countries that had an increase over a year and then fell in the next year:

1. What decisions were made following the initial increase in revenue?

2. Were there any identifiable reasons for the subsequent decline in revenue?

3. How did we respond to market changes or shifts in consumer preferences?

4. Did we implement any corrective measures to address the decline?

## For countries experiencing a decrease in revenue over the years:

1. What decisions were made in response to the declining revenue trend?

2. Were there any attempts to revitalize or adapt our strategies in these regions?

3. Did we explore alternative markets or adjust our product offerings to better suit local demands?

4. How did we manage operational costs and investments in these countries during the revenue decline?

## For countries with very low revenue:

1. Did we implement any marketing plans in these countries?

2. If so, what were the reasons our strategies failed to generate significant revenue?

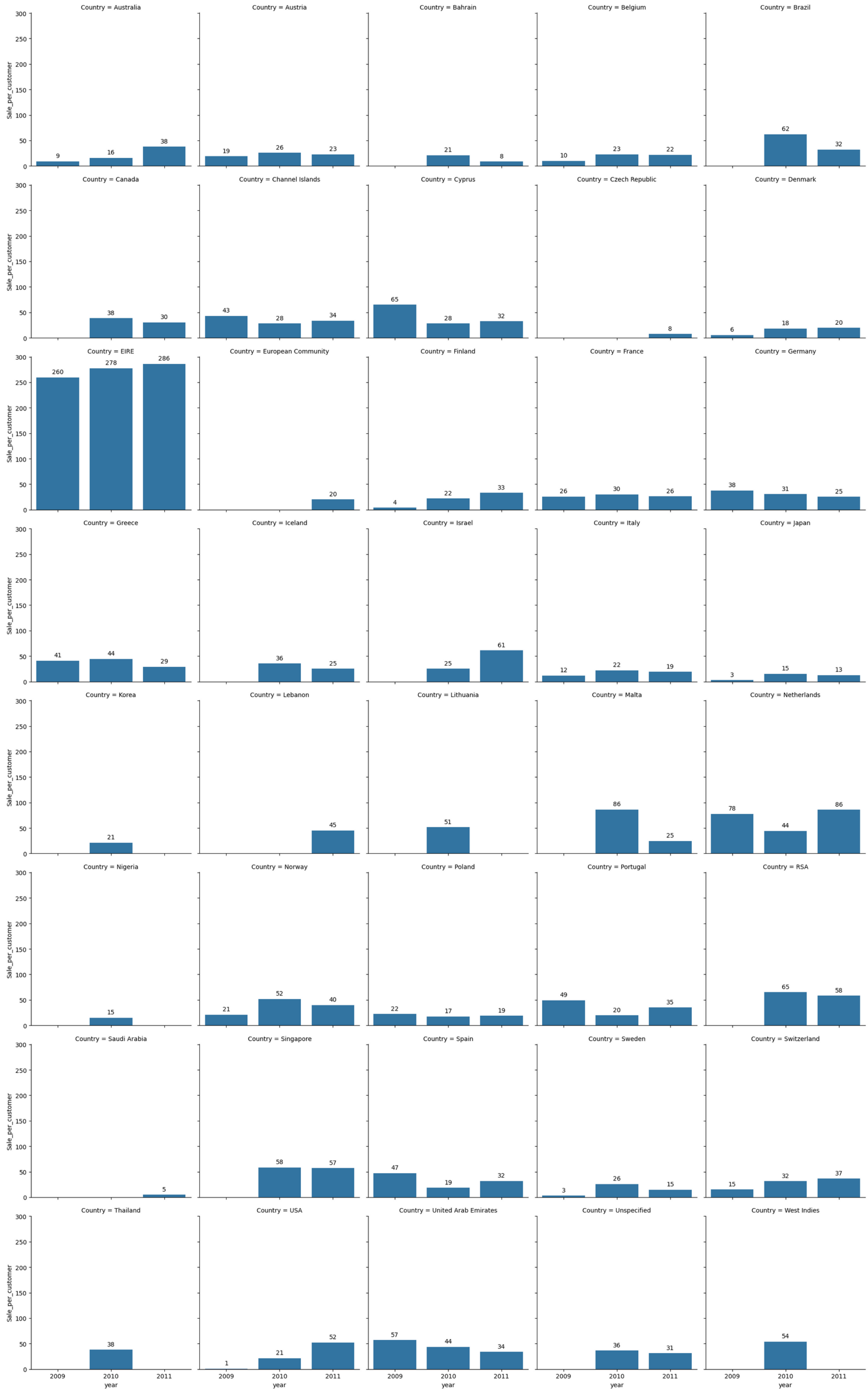
3. If no marketing efforts were made, why not, considering the potential profitability of these regions?

4. What opportunities exist for future marketing campaigns and initiatives in these countries?

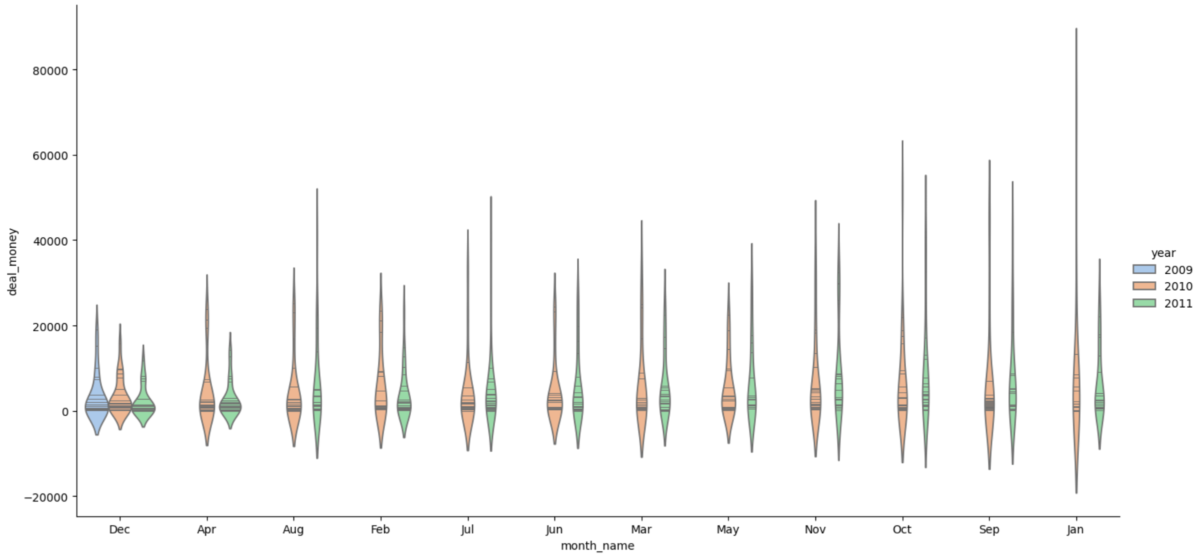
5. How can we leverage existing customer bases to drive growth in these regions?

## KPI Track: Deal per Customer

In this diagram, we're examining the distribution of sales per customer for each country. Each bar represents the average of the **KPI deals per customer** over the months of each year. Overall, it illustrates the trend of this KPI rate in each country over the years.


Country = Australia
9
16
38
Country = Austria
19
26
23
Country = Bahrain
21
8
Country = Belgium
10
23
22
Country = Brazil
62
32
Country = Canada
38
30
Country = Channel Islands
43
28
34
Country = Cyprus
65
28
32
Country = Czech Republic
8
Country = Denmark
6
18
20
Country = EIRE
260
278
286
Country = European Community
20
Country = Finland
4
22
33
Country = France
26
30
26
Country = Germany
38
31
25
Country = Greece
41
44
29
Country = Iceland
36
25
Country = Israel
25
61
Country = Italy
12
22
19
Country = Japan
3
15
13
Country = Korea
21
Country = Lebanon
45
Country = Lithuania
51
Country = Malta
86
25
Country = Netherlands
78
44
86
Country = Nigeria
15
Country = Norway
21
52
40
Country = Poland
22
17
19
Country = Portugal
49
20
35
Country = RSA
65
58
Country = Saudi Arabia
5
Country = Singapore
58
57
Country = Spain
47
19
32
Country = Sweden
3
26
15
Country = Switzerland
15
32
37
Country = Thailand
38
Country = USA
1
21
52
Country = United Arab Emirates
57
44
34
Country = Unspecified
36
31
Country = West Indies
54
Sale_per_customer
0
50
100
150
200
250
300
2009
2010
2011
year

## Sale per month and year

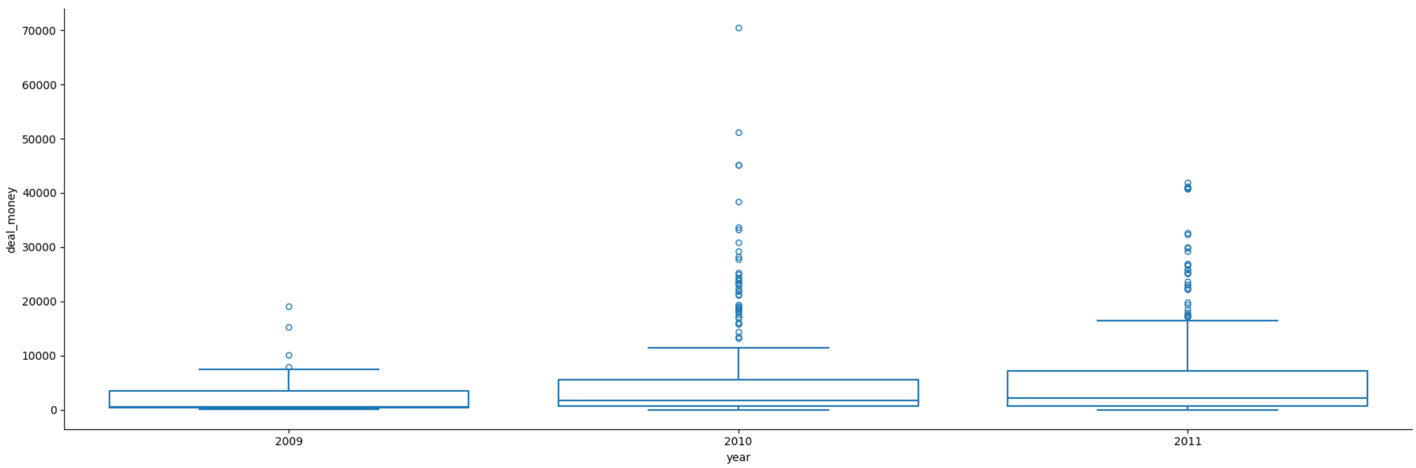



There isn't a big difference between the sales revenue for each month in 2010 and 2011, except for a few months where there are some big outliers. In 2010, most of the recorded sales were close to the average, but in 2011, there were some extreme values. Overall, the sales for each month in separate years are quite similar, with no significant variation in revenue.

there is a huge outlier in the month Jan of 2010 we must see who is it and where this customer belongs.

This leads us to ask: **What is the revenue for each year?**

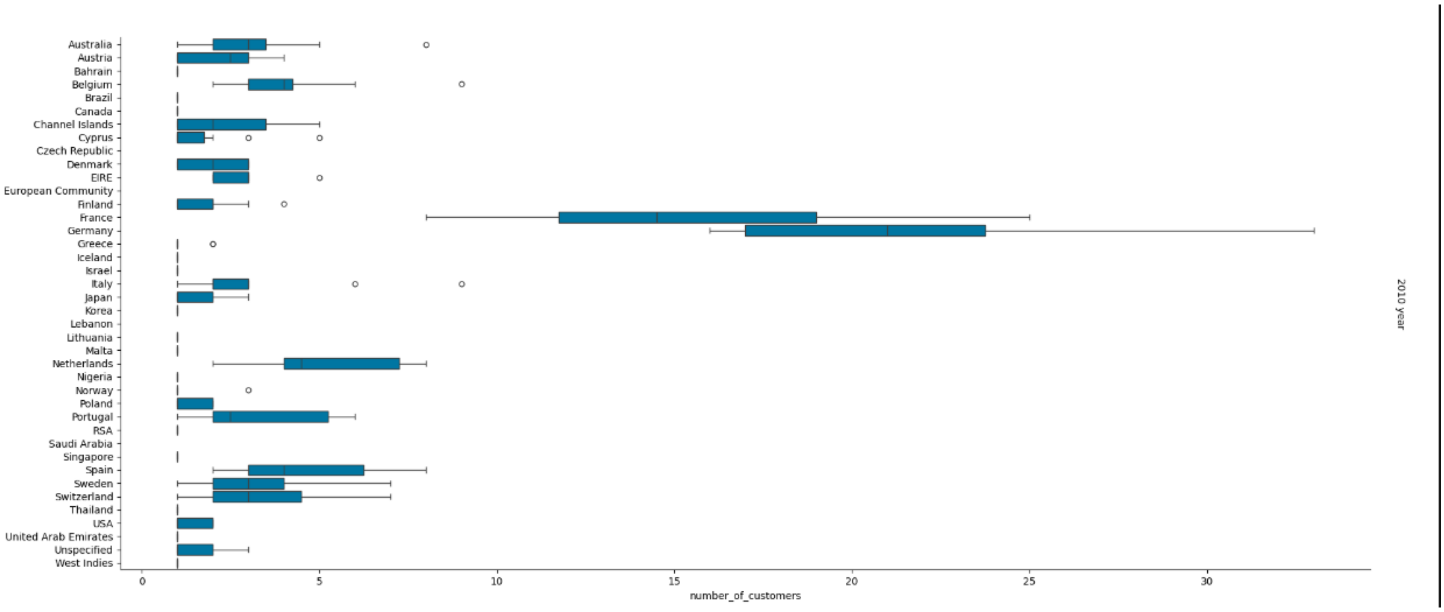
## Revenue VS Year



Overall, the revenue has shown growth over the years. In some instances, outliers from the year 2010 are positioned at the upper bound of the following year, indicating a sign of growth.

## Number of users in each country

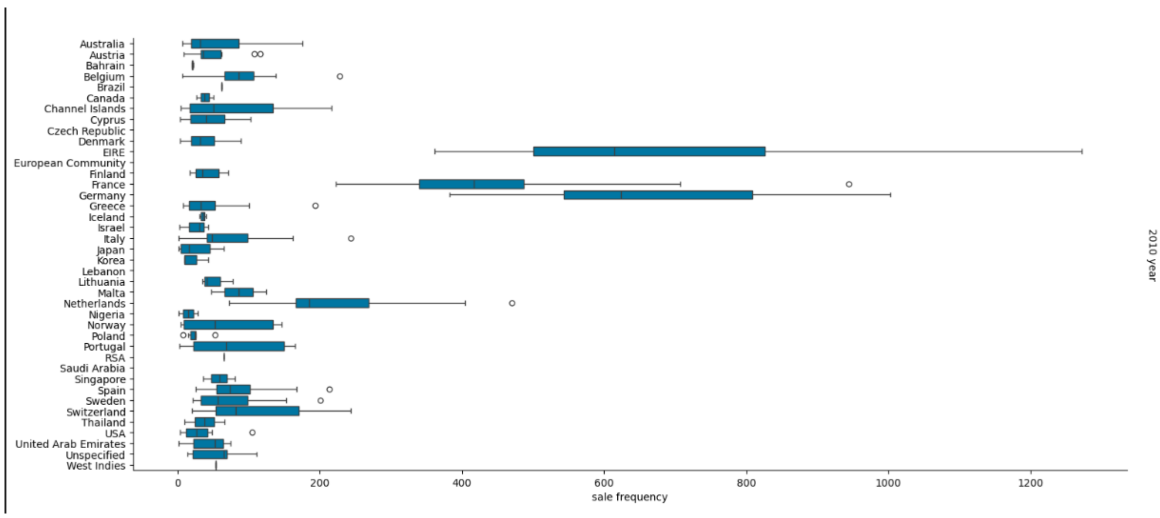
I aggregated the number of customers for each month of the year 2010 across various locations. Similarly, I observed the same pattern for the year 2011. (Different areas of the box plot correspond to different months.)




**Germany** and **France** are the countries with the most number of customers.

## Sale frequency based on country

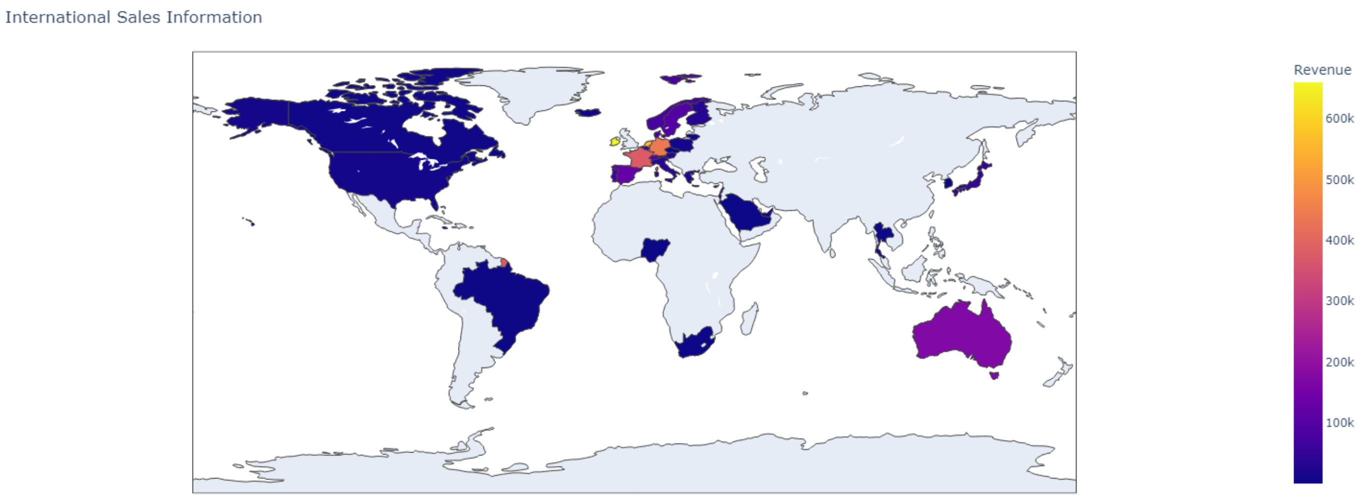
I aggregated the frequency of Sales for each month of the year 2010 across various locations. Similarly, I observed the same pattern for the year 2011. (Different areas of the box plot correspond to different months.)



**EIRE, Germany, and France** are the countries with the most Frequent sales.

## World Map

here we can see the total revenue of each country in one look:




**I want you to know that** the revenue of the **UK** is not shown in this picture.

Based on what is noticeable in the picture, it's evident that countries such as Germany, France, EIRE, and Australia contribute more to the company's revenue compared to others. I recommend enhancing our previous strategies to sustain and further increase revenue growth in these countries.

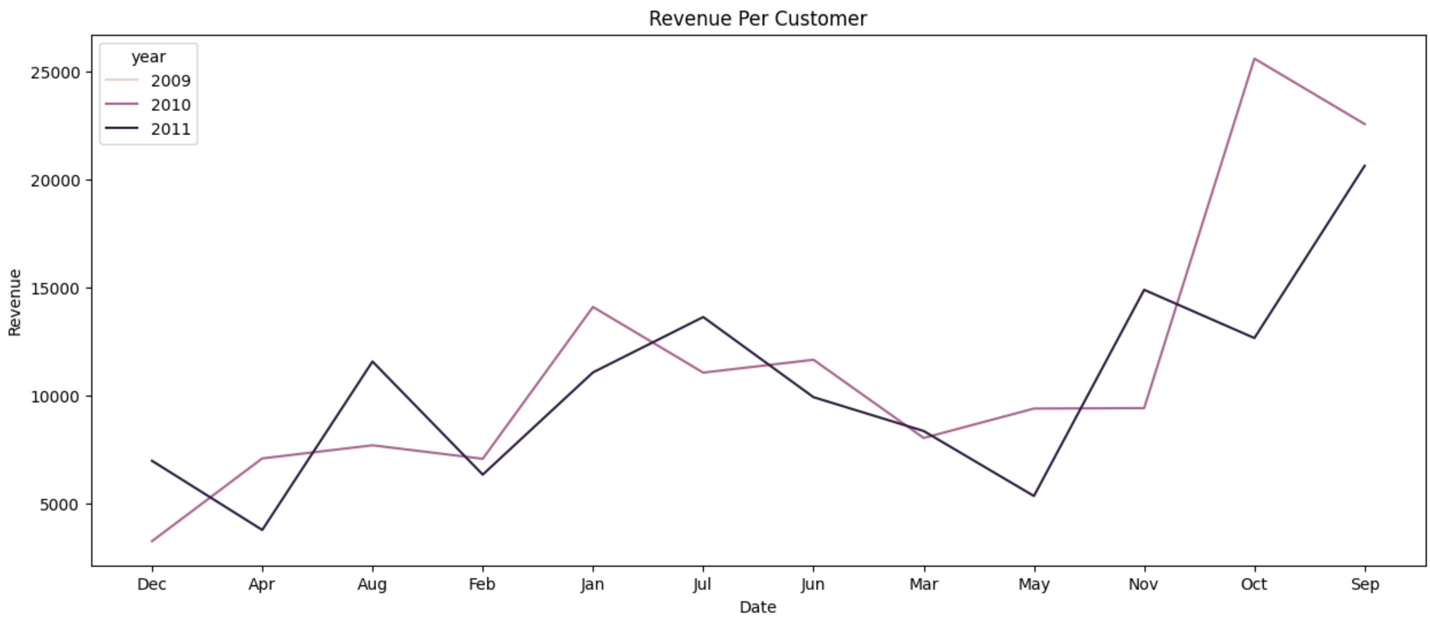
## KPI Track in EIRE

Among the top revenue-generating countries, Ireland stands out as having the highest revenue after the UK. Notably, it's also a neighboring country to the UK. Therefore, I recommend directing our focus towards Ireland to attract more customers and increase sales in this market.

This strategy seems promising due to the geographic proximity and cultural similarities between the UK and Ireland. We can leverage or adapt our successful strategies from the UK market to Ireland, potentially yielding favorable results. Additionally, by concentrating on Ireland, we can minimize shipping costs since goods can be easily transported from the UK. At present, establishing a warehouse in Ireland may not be necessary, given these logistical advantages.

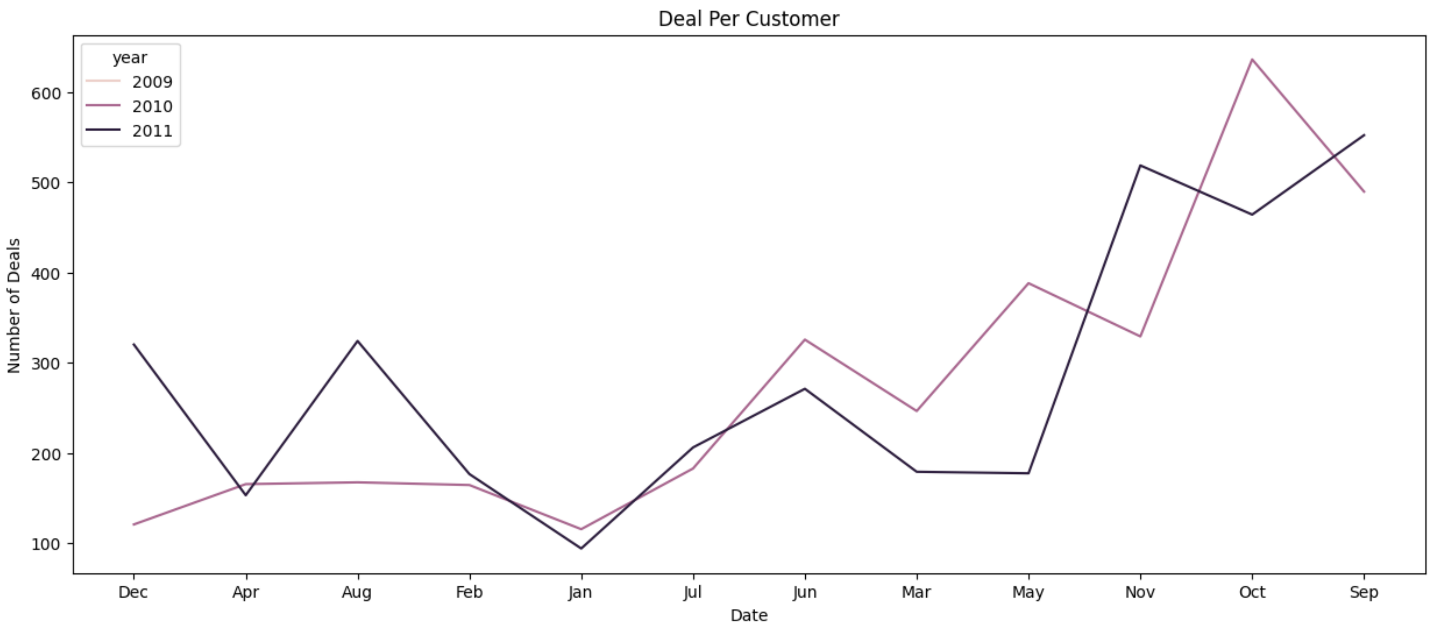
Here is a list of key performance indicators (KPIs) that I would like to track:

## 1. revenue per customer



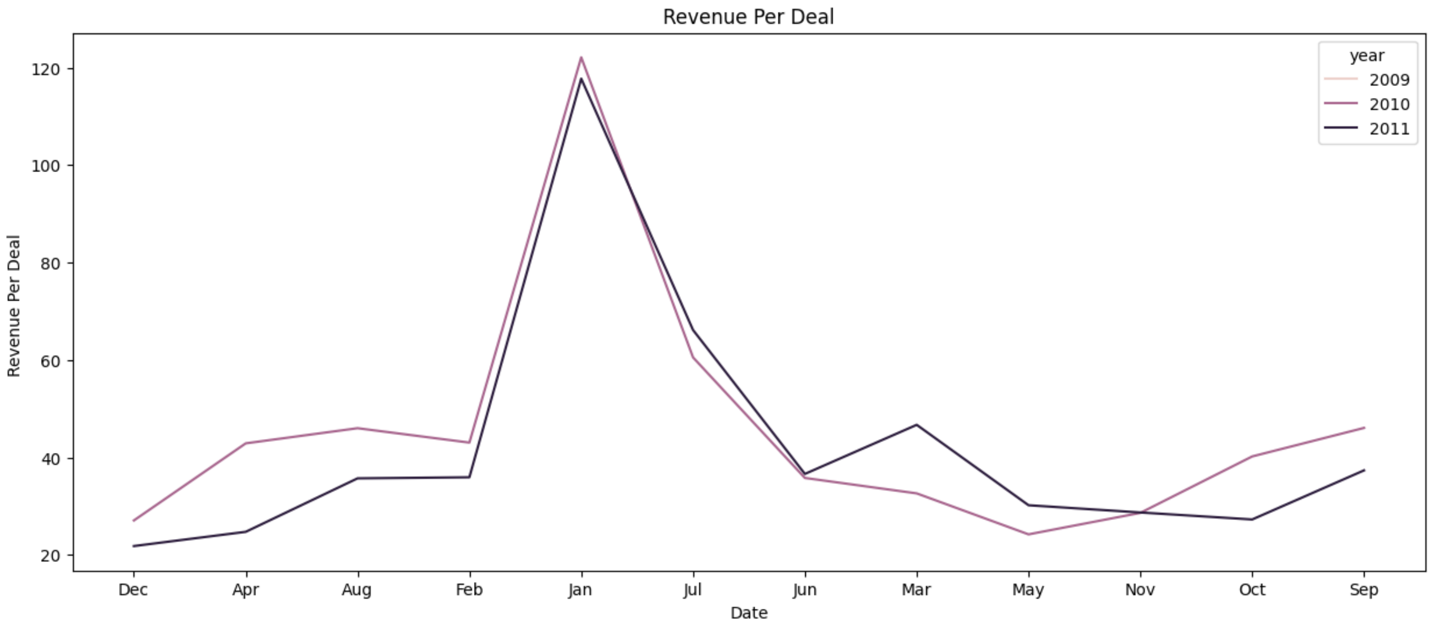

**With an approximation, the company had similar revenue per customer KPI in the month of August for both years. However, there was a noticeable increase in this KPI in August of 2011, alongside a decline in May and October of the same year compared to the previous year. As we analyze the entirety of 2010 in comparison to 2011, it's imperative to investigate the potential causes behind these fluctuations.**

## 2. deal per customer




**This KPI evaluates the average number of deals completed with each customer. At the beginning of the year 2011, the company's performance was notably poor, with the exception of the month of November. However, by the end of 2011, there was a substantial improvement in this KPI, indicating a significant positive shift in the company's performance.**

3. **Revenue per deal**




**This KPI measures the average revenue gained per deal. The company's performance in 2011 appears to be similar or even weaker compared to 2010, especially towards the end of the year. There's a notable gap between June and February, and this pattern is consistent in both 2010 and 2011. Identifying the causes of this phenomenon could assist us in enhancing this KPI and preparing for similar gaps in the upcoming years.**

# Suggestion:

**1.** It's crucial to encourage our customers to create user accounts. This enables us to track churn rates over time and calculate the customer lifetime value.

**2.** After ERIE, our best options are France and Germany. If, for any reason, the company cannot or does not wish to prioritize ERIE, France and Germany emerge as ideal alternatives. Their proximity to the UK and similarity in location and culture make them promising choices.