

# SPRINT 6

## ANÀLISI AVANÇAT DE LES VISUALIZALITZACIONS INTERACTIVES AMB POWER BI



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In this exercise, I practiced creating various visualizations in Power BI. During this sprint, I focused on organizing the information efficiently and clearly, ensuring that each chart aligned with its objectives. At level 1, I generated visualizations to help understand the sales patterns by country for the companies.

# LEVEL 1

## EXERCISE 1

The company needs to evaluate sales performance internationally. As part of this process, you are asked to choose a graph detailing average sales broken down by country and year in a single visual presentation. Averages of less than 200 euros per year should be noted.

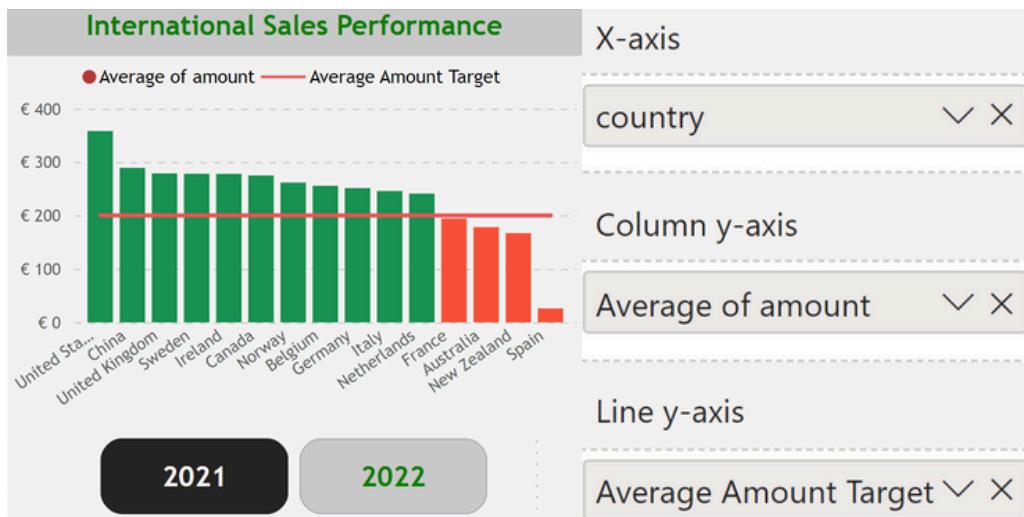


Figure 1.1.1 International Sales Performance : Average amount of transaction per country

## VISUALIZATION

To display the necessary data, a stacked column chart was used. The Country column from the country table and the Amount from transactions were selected, and a new measure was created to show the company's Average Amount Target.

**Line and stacked column chart:** This graph clearly displays the average transaction amount per country and helps visually identify which countries have an average of less than 200 euros.

**Year Slicer:** This slicer allows easy comparison of transaction amounts per country for the years 2021 and 2022.

The graphs display the average transaction amount per country, arranged from greatest to least. In 2021, the United States had the highest transaction amount, exceeding 300 euros, while Spain had the lowest, under 100 euros. Additionally, two other countries had an average transaction amount of less than 200 euros in 2021.

In 2022, there was a significant shift. New Zealand had the highest average transaction amount, and Italy, which was among the countries with less than 200 euros in 2021, made it to the top 3. However, Spain remained at the bottom.

The team should identify the underlying issues that caused Spain to perform poorly in both years and develop a personalized approach to improve future results, including tailored marketing strategies and client engagement for this market.

# LEVEL 1

## EXERCISE 2

The company is interested in getting an overview of the transactions made by each country. Your task is to create a view that identifies the percentage of sales by country.

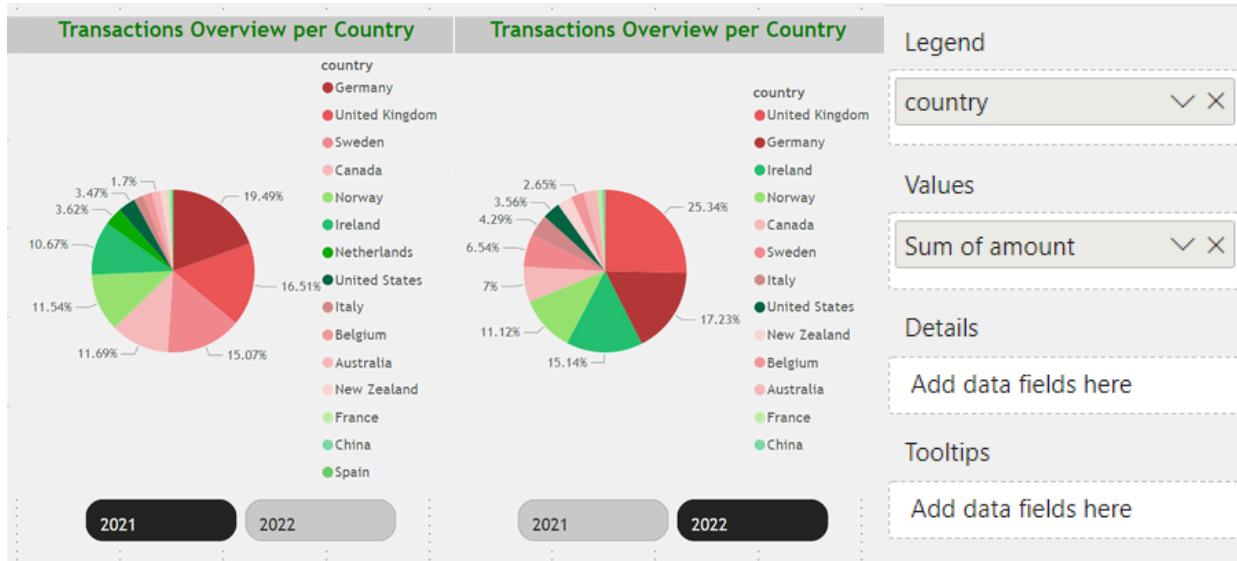


Figure 1.2 Transaction Overview Per Country

## VISUALIZATION

To display the company's transactions overview as a percentage, a pie chart was used. The Country column from the companies table and the Amount column from the transactions table were selected, and the sum of the Amount was calculated.

**Pie Chart:** This chart shows the sum of transactions per country, represented as a percentage. It provides both an overall view and the individual percentage of transactions for each country.

**Year Slicer:** This allows for an easy comparison of transaction amounts per country for the years 2021 and 2022.

## REPORT

The graphs display the sum of transactions per country as a percentage, with the countries arranged in descending order to highlight the top performers and the least-performing countries.

In both years, the United Kingdom and Germany performed well. In contrast, China and France were among the lowest performers, and Spain did not appear in 2022.

To bridge the performance gap in China, France, and Spain, a review of marketing strategies and client management is recommended. A personalized approach should be considered to enhance the services and products offered to these underperforming countries.

This could involve tailoring marketing strategies to align with the specific cultural and economic needs of each country, offering customized promotions, and developing localized versions of products to better meet client preferences.

By understanding the unique challenges and preferences of these markets, the company can create more targeted solutions that resonate with customers and ultimately drive increased engagement and sales.

# LEVEL 1

## EXERCISE 3

Design a visual indicator in Power BI to analyze the difference in sales between 2022 and 2021 in each country. The company is interested in understanding how sales have varied in different countries during this period and wants to identify any significant decreases or increases in sales.

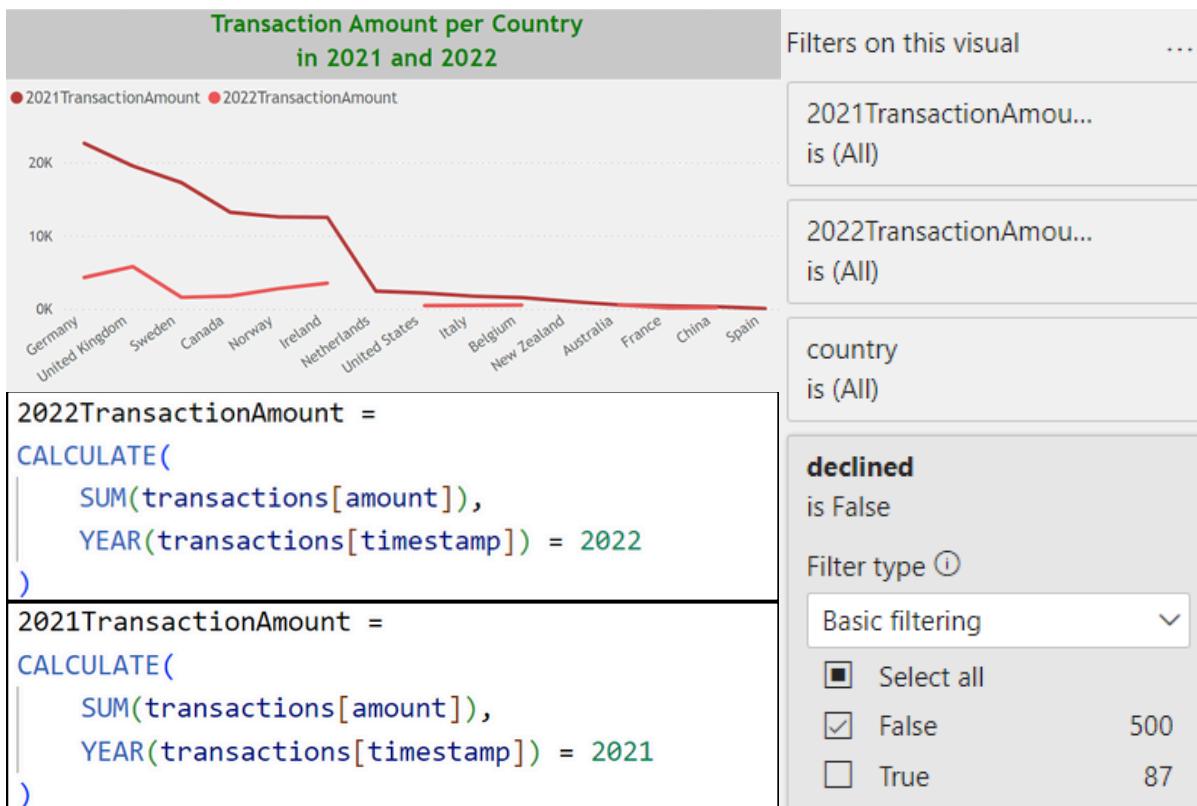


Figure 1.3 Transaction Amount per Country

## Visualization

**Line Chart:** To clearly display the transaction amounts per country between 2021 and 2022, a line graph is used. This visually highlights the increases and decreases in sales, as well as which country had the lowest or highest transaction amounts.

**DAX Measure:** A measure was created to separately calculate the total transaction amounts for 2021 and 2022, allowing for easier plotting.

**Plotting:** As shown above, the X-axis contains the Country column from the country table, which lists all countries where the company has transactions. The newly created DAX measures are plotted on the Y-axis to display the sum of transactions for each country in 2021 and 2022.

## REPORT

The line graph illustrates the increase and decrease in transactions between 2021 and 2022. However, the comparison may not be entirely valid since the 2022 data is based only on the first trimester.

We can observe that Germany had the highest transaction amounts in both years, while Spain had the lowest in 2021. Additionally, two countries, the Netherlands and Spain, had no transactions recorded in 2022.

In the coming months of 2022, the marketing team should conduct an in-depth investigation into the decline in transactions in these countries and strengthen strategies to retain future business.

To gather more information from customers about why there are declined transactions, the marketing team can take the following steps:

**Customer Feedback Surveys:**

Send out short, focused surveys to customers who experienced declined transactions.

**Social Media Polls and Engagement:**

Use social media platforms to create polls or open-ended questions asking for feedback on the transaction process.

**Offer Incentives for Feedback:**

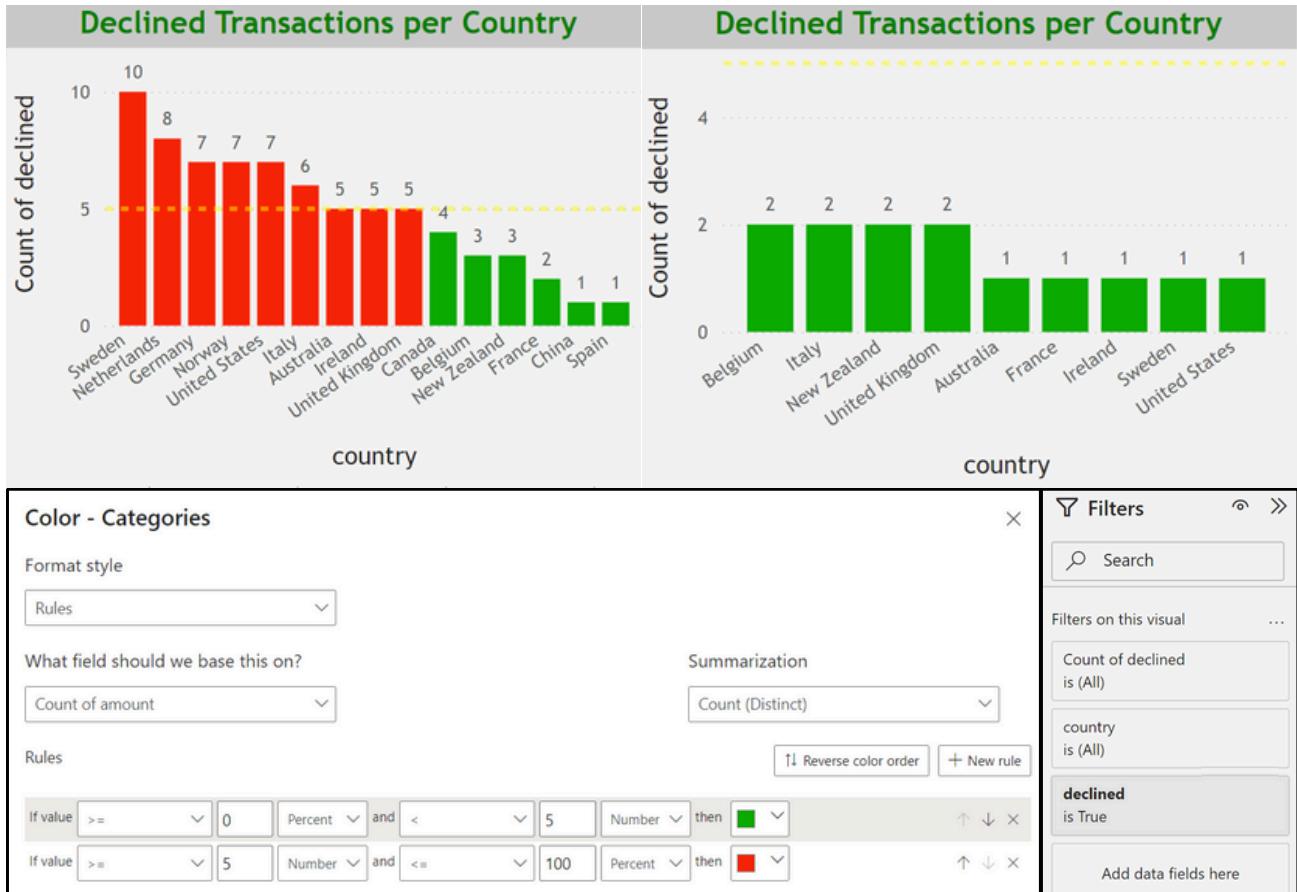
Encourage customers to provide feedback on declined transactions by offering a small incentive, such as a discount on their next purchase.

By using these methods, the company can better understand the root causes of declined transactions and take actionable steps to improve the customer experience.

# LEVEL 1

## EXERCISE 4

Create a visualization where the number of rejected transactions in each country can be counted to measure the efficiency of operations. Remember that the company expects to have less than 5 rejected transactions per country.



## VISUALIZATION

**Stacked Column Chart:** This chart is used to display the number of declined transactions per country and highlight the countries that exceeded the limit for declined transactions.

**Filters:** A filter is applied to count only the declined transactions. It should be marked as TRUE.

**Column Format:** The column colors are adjusted to easily differentiate between countries that had more than 5 declined transactions and those that did not.

## REPORT

In 2021, more than six countries had over five declined transactions, while six countries had fewer than five. In the first trimester of 2022, all countries had either one or two declined transactions.

Based on the 2021 data, most of the companies with high rates of declined transactions are from Europe. However, when looking at the transaction charts, the majority of successful transactions also come from this continent. This suggests that a higher number of transactions correlates with a higher probability of declined transactions.

If that's the case, reducing declined transactions in Europe could lead to increased profits. To achieve this, it's important to investigate the root causes of the declines and gather customer feedback to better understand the reasons on a more personal level. Surveys and polls can be used to gather this data.

# LEVEL 1

## EXERCISE 5

The company seeks to understand the geographic distribution of sales to identify specific patterns and opportunities in each region. Select the best view to display this information.

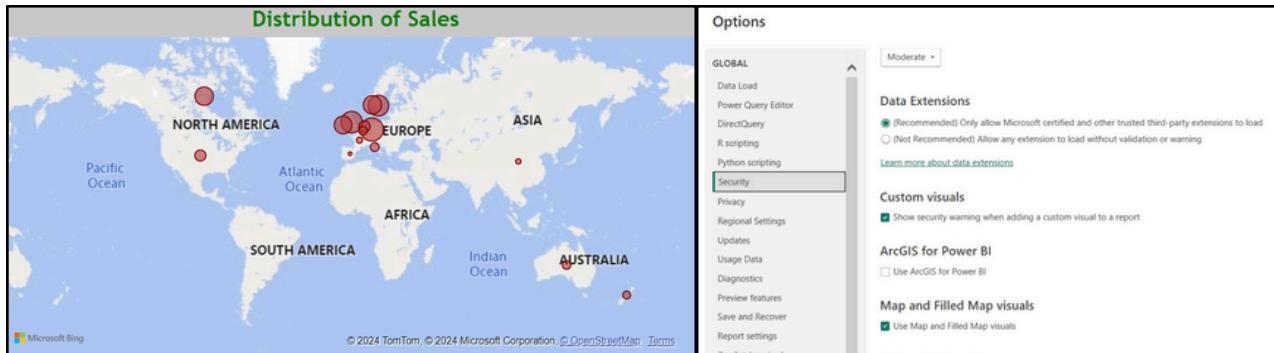


Figure 1.5 Map Distribution of Sales

## VISUALIZATION

**Map:** This is used to display the distribution sales per country and with bubbles, it is easier to visualize which country has the most amount of transactions and which continent do they belong.

## REPORT

This Distribution of Sales Map gives a visual overview of the performing countries and which continent they belong. In the above map, there is a great number of clients in Europe compared to Asia and no clients recorded in South America and Africa.

The company is performing well in Europe and should maintain this performance in 2022. And should look into other ways on how to offer more of its products and services in other continents. The marketing team should consider personalizing the products to cater the other cultural needs especially in South America and Africa.

To maintain great clientele in Europe and increase customers in low-performing continents, such as South America and Africa, the company can follow these steps:

**Strengthen Customer Relationships:** Continue to reward loyal customers with discounts, exclusive offers, or early access to new products.

**Customer Support:** Ensure that your European customers have access to round-the-clock support.

**Localized Campaigns:** Create marketing campaigns that resonate with local cultures, languages, and values.

# LEVEL 1

## EXERCISE 6

Your manager has asked you to prepare a presentation for your team detailing the information from all the graphs displayed so far. To fulfill this request, you must provide an interpretation of the visualizations obtained. The presentation can be made with general information or by selecting a particular element, such as the results for Spain.

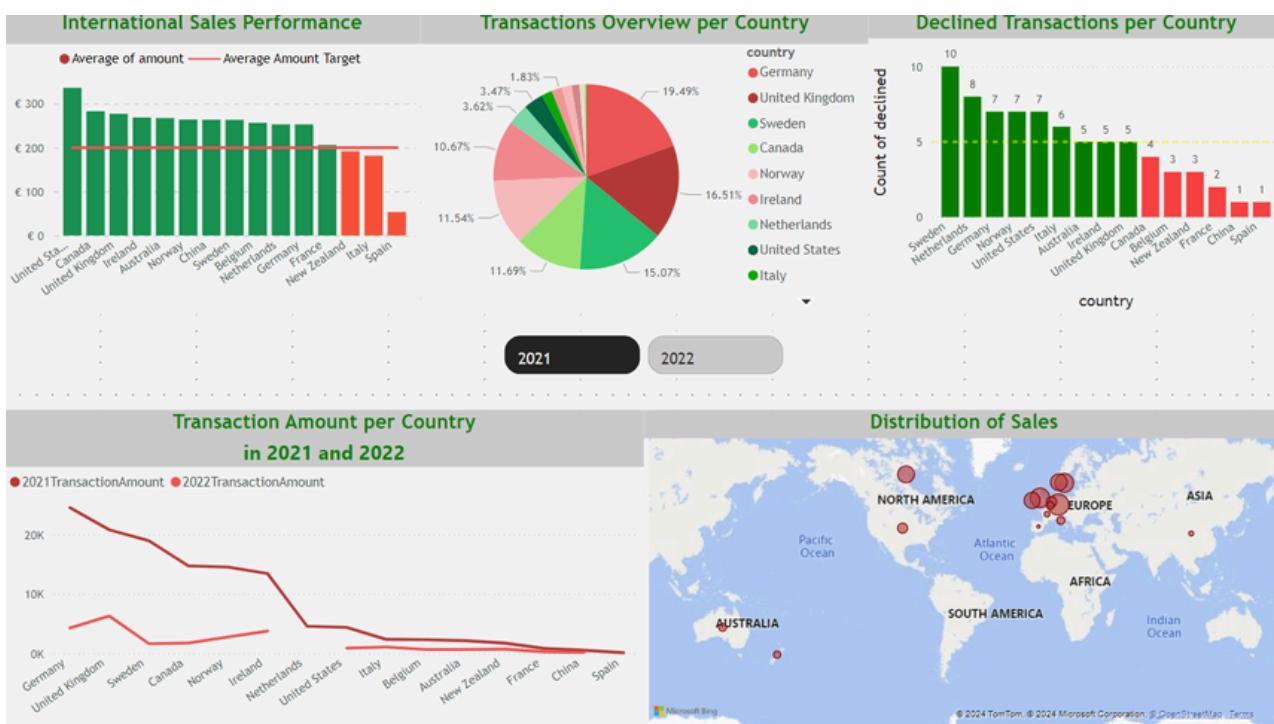


Figure 1.6 Sprint 6 Dashboard: Company's Sales Performance

## REPORT:

### Introduction:

This dashboard provides a comprehensive overview of the company's sales performance metrics. It is designed to track and visualize international transaction performance, including transaction overviews, declined transactions per country, the comparison of transactions between 2021 and 2022, and the distribution of sales. These insights are intended to support strategic decision-making and performance evaluation.

### The dashboard is organized into several key sections:

- Header: Contains the title and the year range for the data.
- Main Visualization Area: Features primary visualizations such as bar, pie, and line charts, as well as a map.
- Filter Panel: Allows users to filter data by year.

## Key Visualizations and Metrics:

- **Line and Stacked Column Chart:**

- International Sales Performance: Displays the average transaction amount per country, helping to identify which countries have an average of less than 200 euros.
- Declined Transactions per Country: Shows the number of declined transactions per country and highlights those that exceeded the set limit.

- **Pie Chart:**

- Transaction Amount per Country: Illustrates the sum of transactions per country, represented as a percentage. This provides both an overall view and individual percentages for each country.

- **Line Chart:**

- Transaction Amount per Country in 2021 and 2022: Displays the transaction amounts per country for both years, showing the increase or decrease in sales and identifying the countries with the highest and lowest transactions.

- **Map Chart:**

- Distribution of Sales: Visualizes the sales distribution per country, using bubbles to easily identify the countries with the highest number of transactions and their respective continents.

## Interactivity:

- **Slicer:** Allows users to filter data by year, enabling customized views.

**Insight and Analysis:** The dashboard provides valuable insights into the company's transactions across different countries and highlights those with the most declined transactions, as well as the continents with the highest sales volumes.

In 2021, Europe had the highest number of transactions, according to the company's sales distribution, but it also had the highest number of declined transactions. In contrast, the International Sales Performance report shows that countries in North America, such as the United States and Canada, exceeded the average target set for transactions, surpassing European countries like the United Kingdom and Ireland.

This trend continues into the first trimester of 2022, where most sales are concentrated. These findings highlight areas for improvement to boost performance in the coming years.

Here are some key points:

- **Reduce Declined Transactions in European Countries**

While many countries in Europe exceeded the target average for transactions, there was also a noticeable number of declined transactions, particularly in France and Spain.

The team should investigate the underlying issues that caused Spain's poor performance in both years and develop a personalized strategy to improve future results. This could include tailored marketing efforts and enhanced client engagement specific to the Spanish market.

Additionally, gathering interactive feedback from clients can provide genuine insights, which can be used to improve products and services.

- **Countries with Active Clients in 2021 but None in 2022**

In 2021, customers from 15 countries actively made transactions. However, by the first trimester of 2022, Spain and the Netherlands had become inactive.

To re-engage these clients, the company could send reminder emails highlighting its products and services, while also offering a loyalty program that rewards repeat customers.

By focusing on reducing declined transactions, re-engaging inactive clients, and maintaining strong performance in top-performing regions, the company can strengthen its global market presence and drive continued growth.