

# Assessed Coursework Coversheet

For use with *individual* assessed work

<b>Student ID Number:</b>	2	0	1	8	0	1	2	9	5
<b>Module Code:</b>	LUBS5991M								
<b>Module Title:</b>	Creating Effective Data Visualisations								
<b>Module Leader:</b>	Aritad Choicharoon								
<b>Declared Word Count:</b>	3047								

Please Note:

Your declared word count must be accurate, and should not mislead. Making a fraudulent statement concerning the work submitted for assessment could be considered academic malpractice and investigated as such. If the amount of work submitted is higher than that specified by the word limit or that declared on your word count, this may be reflected in the mark awarded and noted through individual feedback given to you.

It is not acceptable to present matters of substance, which should be included in the main body of the text, in the appendices ("appendix abuse"). It is not acceptable to attempt to hide words in graphs and diagrams; only text which is strictly necessary should be included in graphs and diagrams.

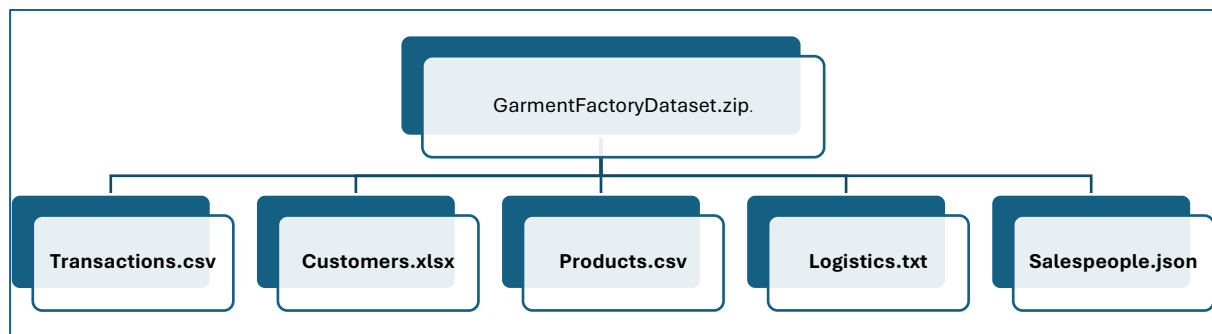
By submitting an assignment you confirm you have read and understood the University of Leeds **Declaration of Academic Integrity** ([http://www.leeds.ac.uk/secretariat/documents/academic\\_integrity.pdf](http://www.leeds.ac.uk/secretariat/documents/academic_integrity.pdf)).

## **Introduction**

Universal Export, a manufacturing company based in Southampton, United Kingdom, focuses on the garment business, specialising in producing plain, unmarked clothing items, including t-shirts, hoodies, and jackets, as it serves a diverse clientele of retailers, wholesalers, and other businesses. It supplies blank garments to retailers, who then customize them with their logos or designs before resale at a markup price.

## **Data Description**

The provided data includes:



1. **Transactions.csv:** This table provides information about each transaction, including the different products ordered, customers, logistics, and pricing.
2. **Customers.xlsx:** Information about customers, which enables analysis of customer relationships and categories.
3. **Products.csv:** Information about the products offered by Universal Export, which assists analysis of product lines and revenue generation.
4. **Logistics.txt:** Information about logistics service providers to help analyse tracking and managing shipping operations and communication with logistics partners.
5. **Salespeople.json:** Data about the sales team, which helps understand the sales squad's composition and traits.

## **Data processing**

ETLM (Extract, Transform, Load, and Manage) methodology is used to streamline data processing. It involves data extraction from various sources provided, transforming the data for better understandability, loading it into a data repository, and managing it by validating, correcting and standardising it for better understandability and analysis.

### **I. Data Extraction**

Each table was extracted using its corresponding file format and loaded into the Power BI environment.

### **II. Data Transformation**

1. Transactions –

- Total\_Price, Product\_Price, Product\_Cost- Format updated to Currency.
- Profit- New Column added that stores the difference between Product\_Price and Product\_cost and is set to £.
- Weeks- A new column was added to show the week number corresponding to transaction data throughout the year.
- Profit\_Margin- new measure, created by dividing the total profit by the total product\_price. It is expressed as a percentage and depicts the revenue proportions that translate into profit after accounting for the cost of goods sold.
- Unit\_Price- created a new column to store the division of Product\_Price and Quantity.
- Unit\_Cost\_Price- a new column created to store the division of Product\_cost and Quantity.

## 2. Products –

- Product\_Colour- a new conditional column was created, due to missing values. Using the If-Else clause we get the missing colours from the Product\_Name. The original column was deleted, while the new column was renamed to Product\_Colour.
- PRICE\_PER\_UNIT- Used DAX query to update the Price\_per\_unit field by the Transactions [Unit\_Price], so that missing and incorrect values are replaced. The format was further updated to currency (£).
- Cost- Using DAX query, to update the Cost by Transactions [Unit\_Cost\_Price], to replace the incorrect negative values. It is further renamed and formatted to currency (£).
- Custom\_Legend - Conditional column added to categorize product categories based on their sales order. T-shirts, Hoodie, Polo Shirt, Sweatshirt, Jacket, and Cardigan, are sorted in descending order of their sales.

## 3. Logistics –

- Contact\_Number, Contact\_Email – Replace the missing values with NULL.
- Logistic\_Office\_Location – Column split by delimiter (,) into Logistic\_Office\_City and Logistic\_Office\_Country.

## 4. Customers-

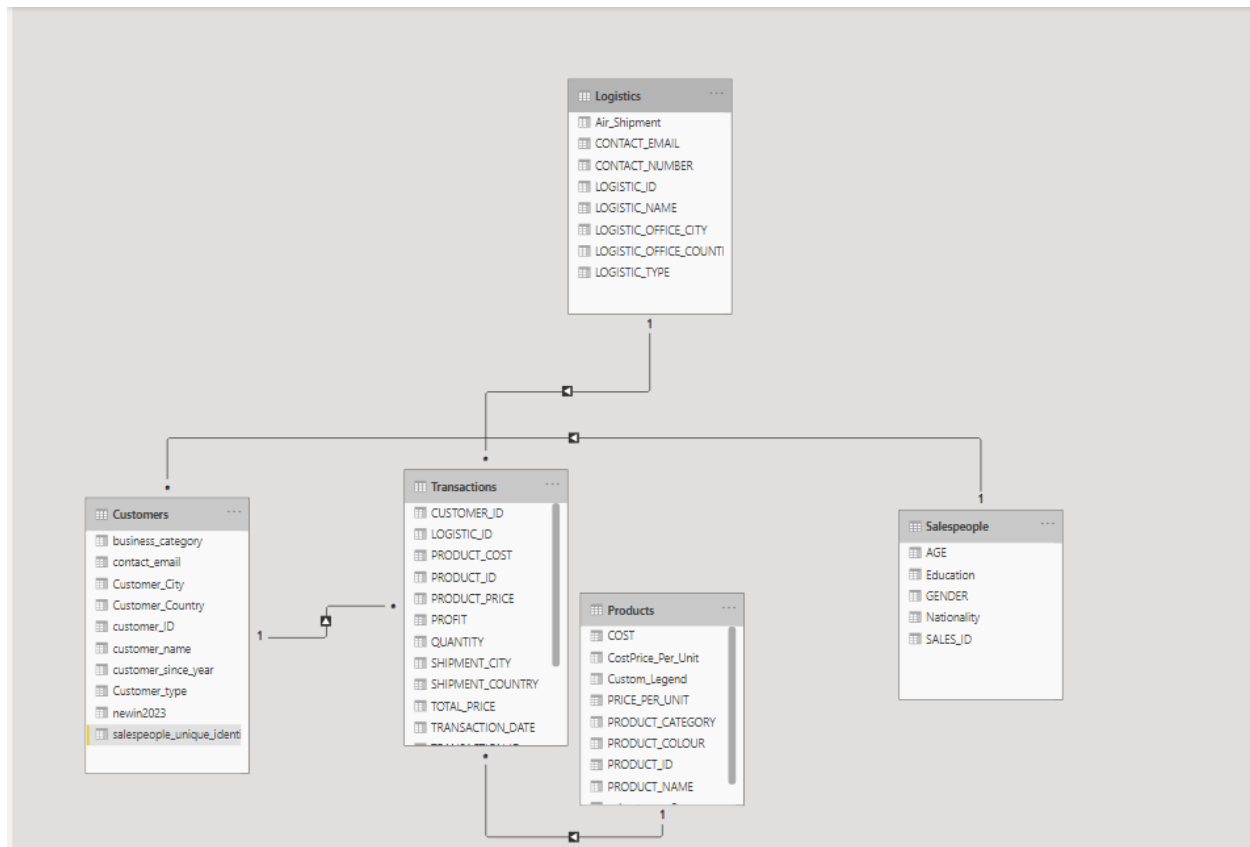
- Customer\_Address – Split column by delimiter (,) into Customer\_City and Customer\_Country.
- Customer\_Type – New conditional column added to showcase new and old customers based on true/false values of the newin2023 field.

# III. Data Loading

After data transformation, gets loaded into the Power BI environment, for easy accessibility for analysis.

#### IV. Data Management

A univariate relationship is established between the salespeople and customers table, utilizing sales\_id and salespeople\_unique\_identification as keys, set to "many to one" cardinality.



# External Report

## Introduction

This report conducts an analysis of Universal Export's revenue and sales for the year 2023. It provides a concise yet comprehensive overview of the company's performance throughout. Sales and revenue are considered crucial markers of a company's profitability and financial well-being as they signify growth potential and customer satisfaction. This report will help shareholders make investment decisions and assess the company's long-term value.

## Sales, Profit & Revenue

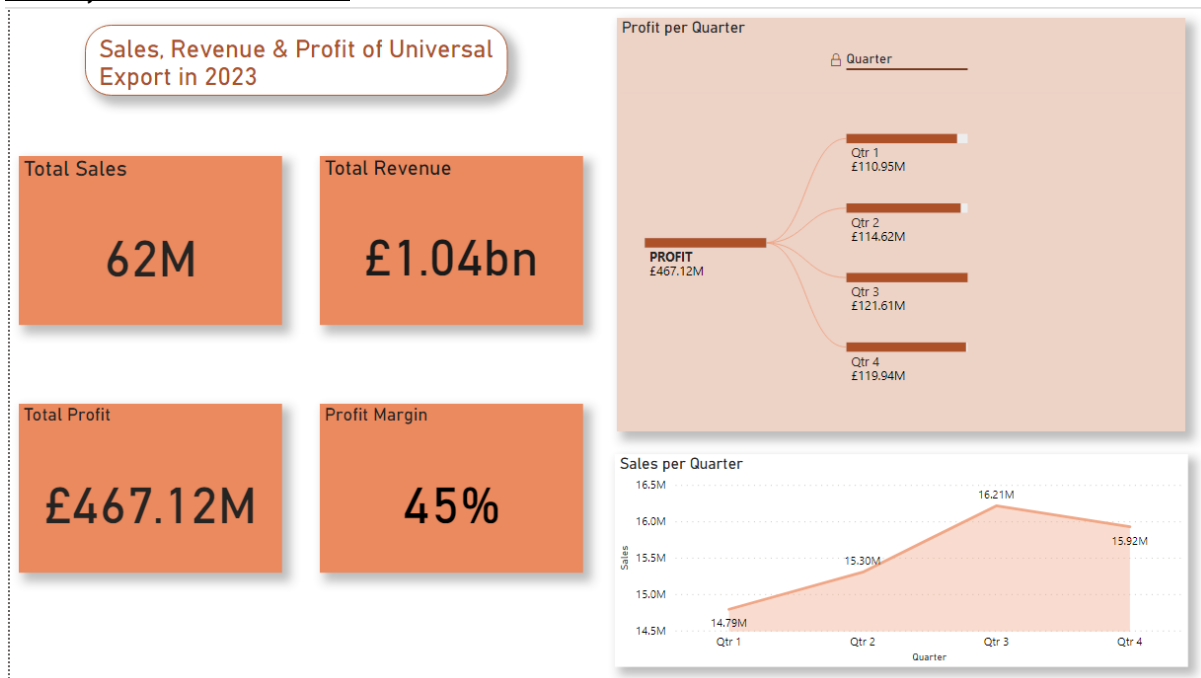


Figure1

Universal Export generated a total revenue of £1.04billion and sales of 62million in the year 2023. These sales depict the different products sold by the company in the European market. The relation between them suggests that Universal Expert has achieved a healthy revenue-to-sales ratio. This could be because of the efficient pricing strategies and strong market demand. The total profit generated by the company was seen to be £467.12millions, which suggests, that the company's operations are generating substantial income after deducting all expenses. The profit margin was observed to be 44.9%, which suggests that the company is managing its costs effectively and generating robust profits. Quarterly, the highest sales and profit were noted in the third quarter standing at 16.21million and £121.61million respectively.

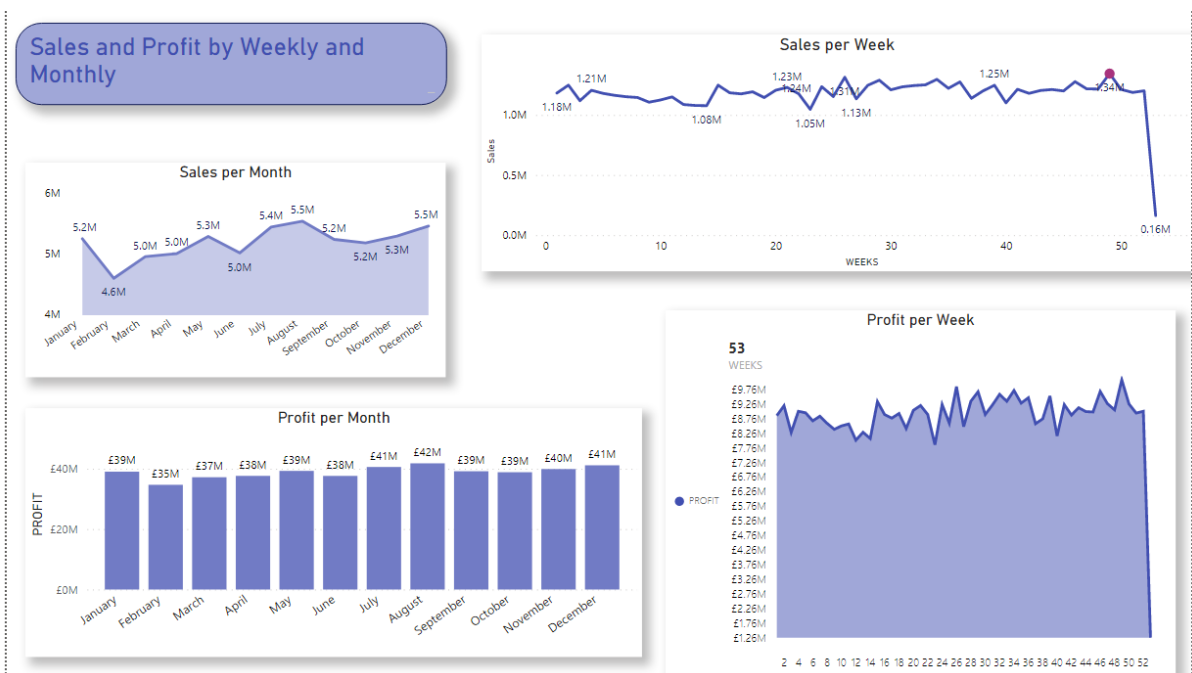


Figure1.1

The monthly sales have been recorded as maximum for August at 5.5million, while February, showed the lowest at 4.6million. Meanwhile, peak weekly sales reached 1.34 million in the 49th week, contrasting with the lowest point of 0.16 million in the 53rd week, indicating significant weekly fluctuations.

August and December saw the highest monthly profits, at £42 million and £41 million respectively. This could be due to the increased customer spending during holidays and festival seasons, unlike February, which just follows the holiday season, where the customer spending may alter after the holiday peak.

The highest weekly sales are encountered during the 49<sup>th</sup> week, reaching 1.34million, while the lowest is observed in the 53<sup>rd</sup> week, with sales totalling only 0.16million. This may be because of seasonal factors, promotions, marketing campaigns etc, while the drop may be because of the reduced marketing efforts during holiday seasons, less inventory remaining, or due to the end of the fiscal year. Similarly, the weekly profit has seen rise in the 49<sup>th</sup> week, reaching £10.88million, while in the 53<sup>rd</sup> week, made the least profit, maybe due to lower consumer spending around the holiday season.

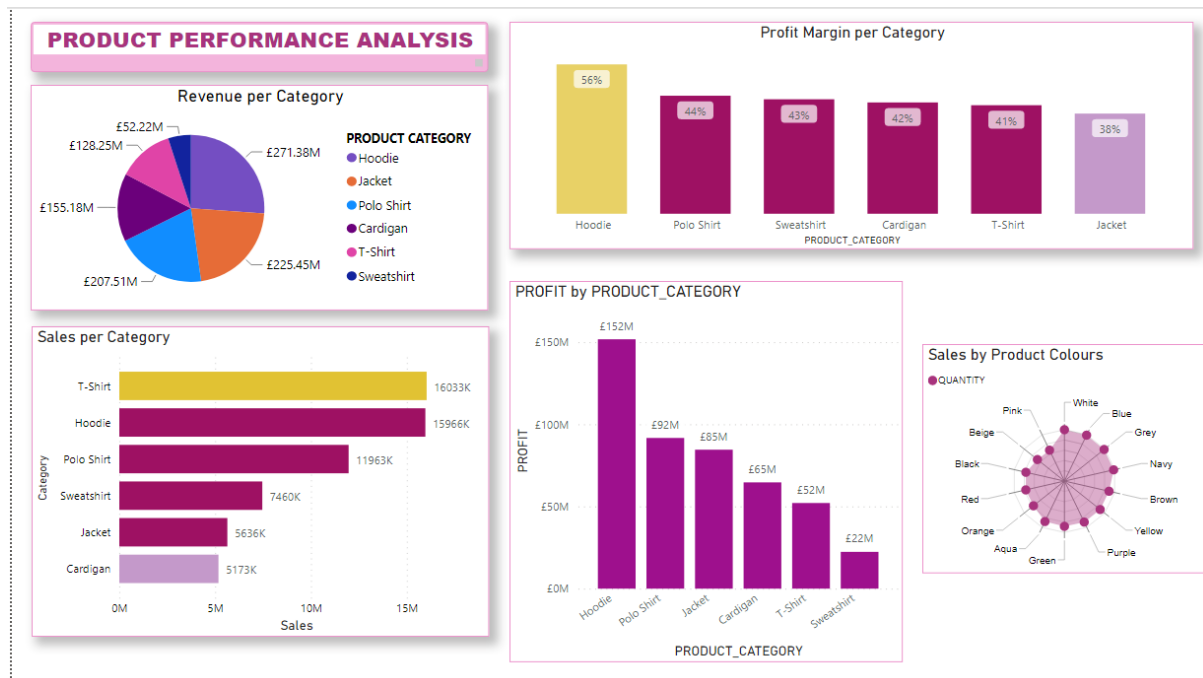


Figure2

### Insights About Products

During 2023, Universal Export distributed approximately 62million units of 109 distinct products, resulting in a revenue of £1.04billion. The main contributors were Hoodies and Jackets, with Polo Shirts and Cardigans following closely behind, possibly due to their versatile designs and appeal across different demographics. Sweatshirts generated £52.22 million, representing just 5.02% of total revenue from product categories.

The sales breakdown for 2023, reveals that T-shirts topped the charts with 16.03million units sold, followed by Hoodies at 15.96million units. Cardigans trailed behind with the lowest sales volume, at 5.17million units.

These variations could be due to the popularity of T-shirts and Hoodies when compared with cardigans. Hence highlighting the customer preference and market demand for different clothing items.

Among the six categories, Hoodies made the maximum profit of £152million, while Sweatshirts yielded the lowest profit at £22 million. Additionally, Hoodies boast the highest profit margin of 55.9%. This higher profit margin likely contributes to the increased profitability of Hoodies, as compared to other product categories.

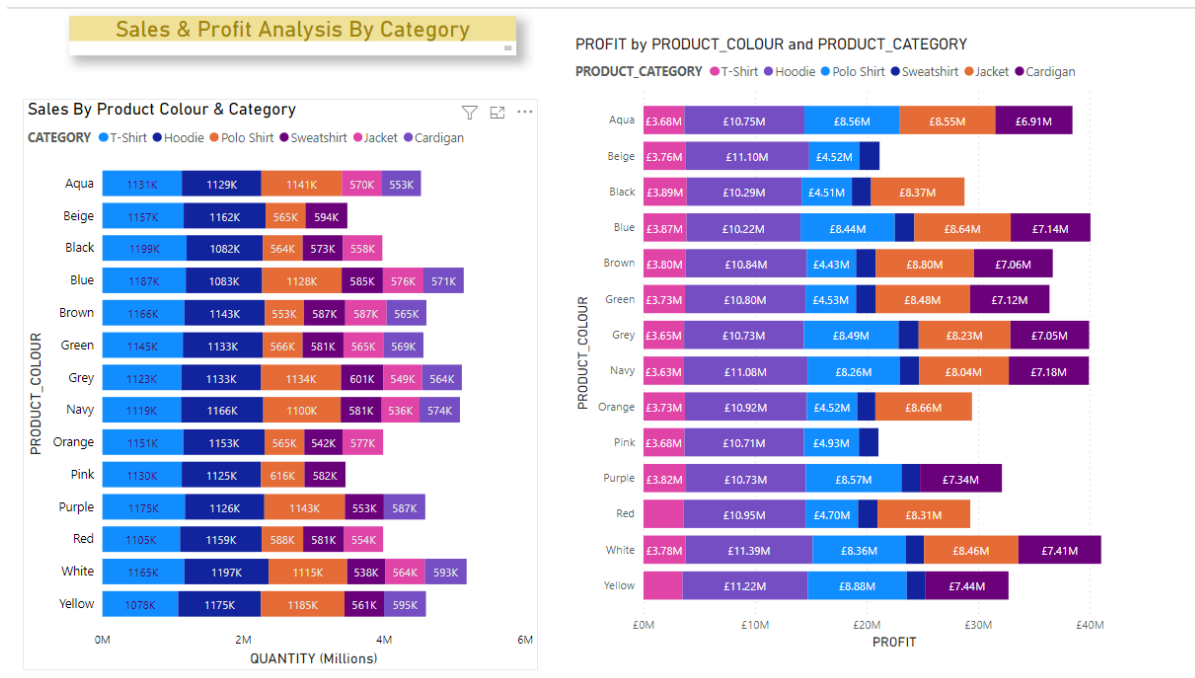


Figure2.1

The colour white emerges as the best-selling option, with a total of 5.17 units sold across all product categories, indicating a strong customer preference for this colour over others. Hoodies predominantly contribute to these white sales, while T-shirts were more popular in black hues. Subsequently, Polo Shirts are preferred in Purple, Sweatshirt in beige, Jackets in Brown and cardigans in Yellow respectively. It's also notable, that no sweatshirt was manufactured in Aqua colour, jackets and cardigans were not sold in either beige & pink colour possibly due to limited customer demand. White hoodies show the highest profitability of £11.39million, followed by Yellow Polo Shirts which earned £8.88million.

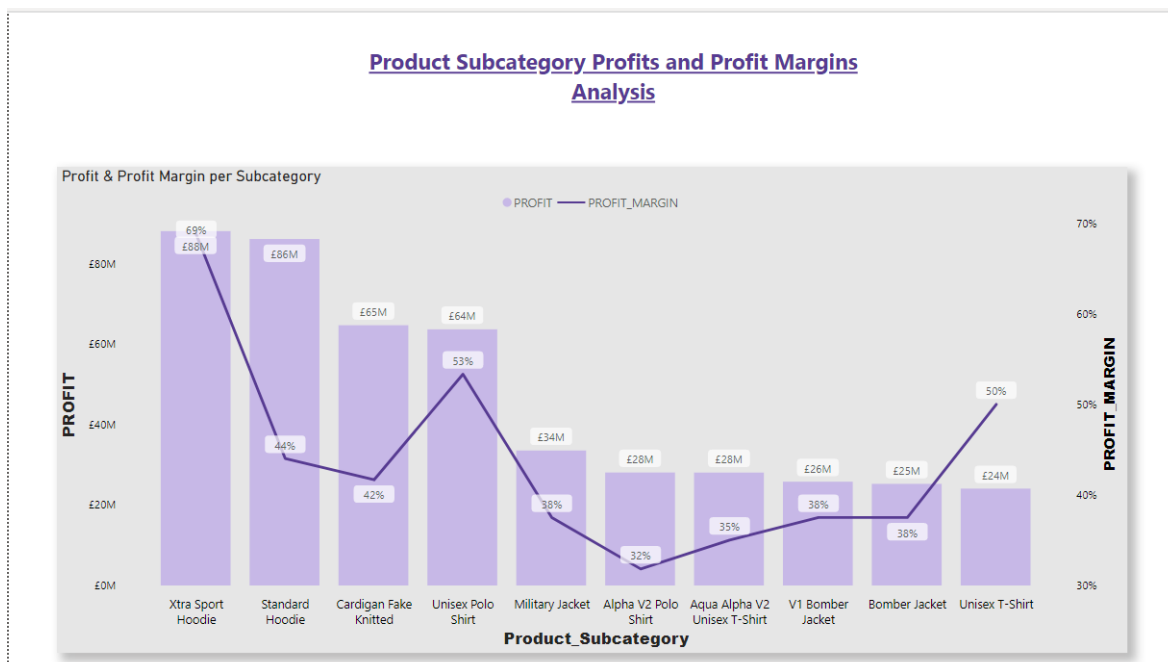


Figure2.2



Xtra Soft Hoodie and Standard Hoodie have shown almost similar profit values, while Unisex T-shirt represents the least profit made. The profit margin for the Xtra Soft Hoodie, is the highest, while for the Unisex T-shirt, the profit margin is higher even though the profit generated is low. This shows, that even though the product generates a relatively small amount of profit per unit sold, a significant portion of the revenue from each sale translates into profit. This scenario indicates that the product has low production or operational costs compared to its selling price, resulting in a higher profit margin despite the lower overall profit. Alpha V2 Polo Shirt, suggests that due to competitive pricing or higher production costs lower profit margins are generated.

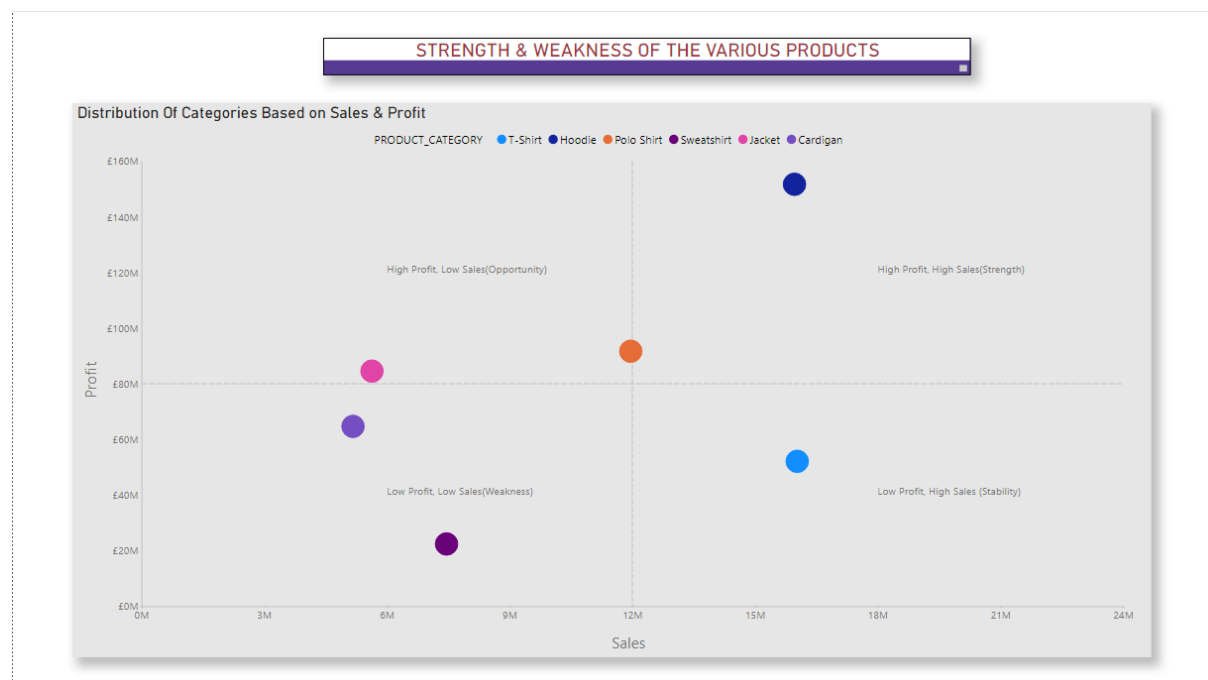


Figure2.3

Figure2.3 provides insights into the product strengths and weaknesses of the company

- **High Profit & High Sales–**  
Hoodies have turned out to be the best asset of Universal Exports, around all European countries demonstrating high profitability (£151.73million) and Sales (15.96million), indicating strong performance.
- **Low Profit & Low Sales–**  
Cardigan achieved £64million as profit from sales of 5.12million and Sweatshirt gained £22million as profit out of 7.45million sales. Having low sales units for these categories, could not match the profitability, possibly due to factors like insufficient demand, pricing strategies or high manufacturing costs, that may need reassessment.

Sales across Countries

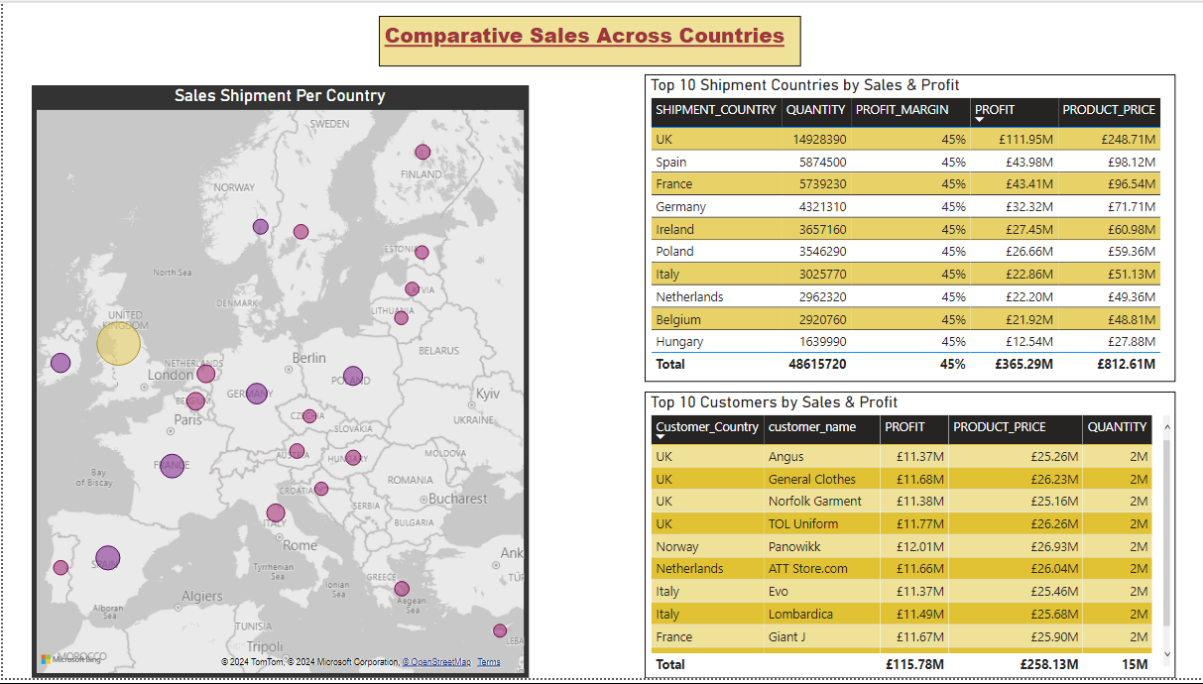


Figure3

The analysis of the company’s market in European countries, illustrates that the UK was the company's largest market, accounting for 45% of its profit margin, and a profit of £111.95million was generated which shows that the business had a sizable consumer base and presence in this area. With a profit margin of 44.8%, Spain was the second-largest market which shows that the business had a solid market position and could outpace the UK if new strategies were implemented.

Of the top 10 customers by profit value, 4 were UK-based. Together they contributed 41.2% to the total profit generated by UK. Italy’s total profit was a result of only 2 customers namely Evo and Lombardica, which generated profits of £11.37million and £11.49million.

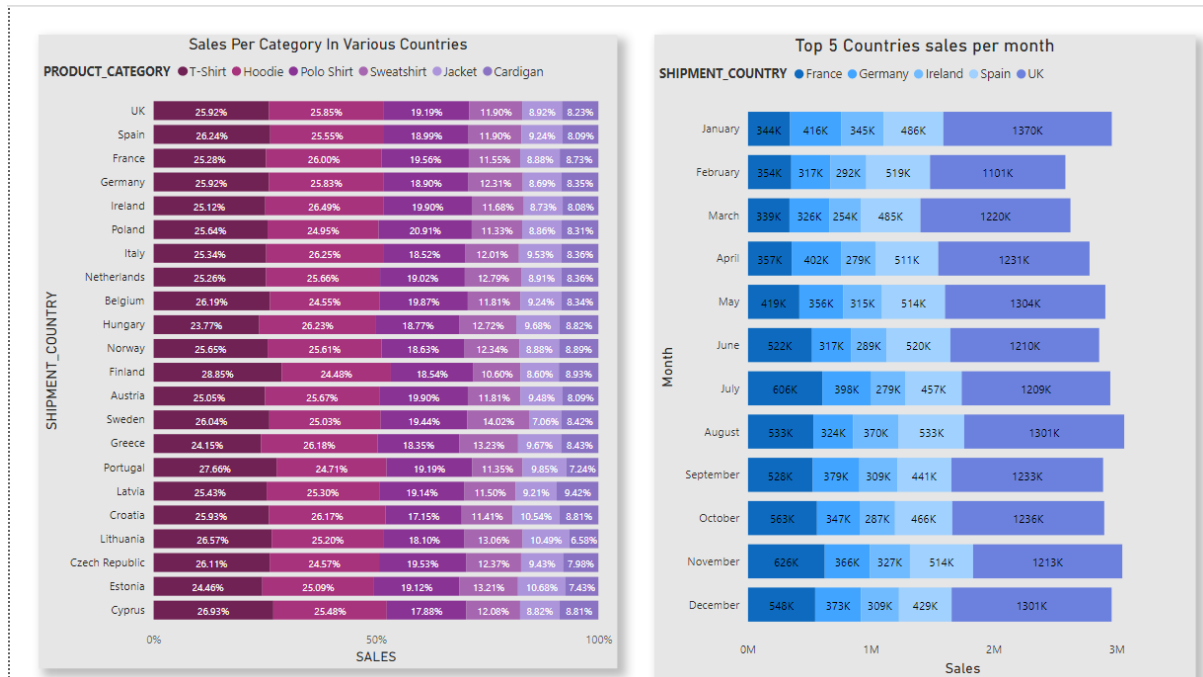


Figure3.1

European countries' sales have also been analysed at the product category level. T-shirts and Hoodies demonstrated significant sales percentages in all countries, ranging between 20-30% respectively. Conversely, Cardigans showed rates below 10%, suggesting that T-shirts and Hoodies were popular across various countries, with sales accounting for a portion of total sales. Cardigans had lower demand than T-shirts and Hoodies across all countries. The top 5 profit-generating countries received shipments: UK (1,370K units in January), Spain (533K pieces in August), Ireland (370K units), Germany (416K units in January), and France (626K units in November).

## AIR Shipments

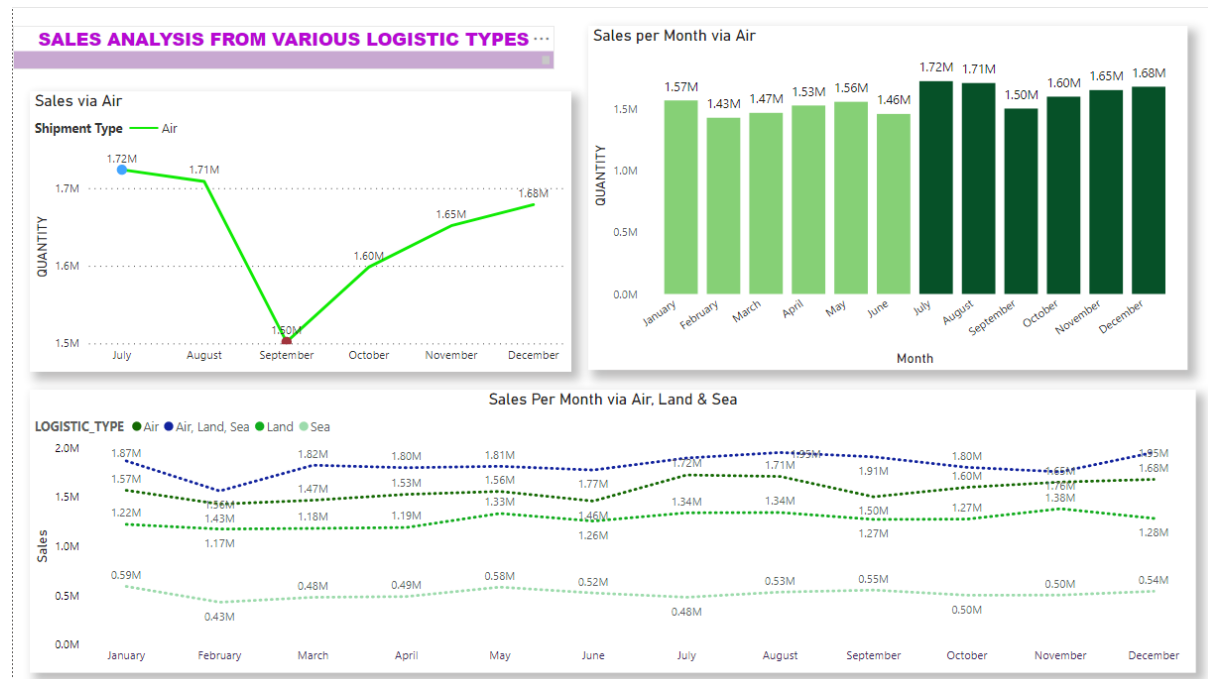


Figure4

Regarding the impact of Universal Exports' sustainable commitment to reduce exclusive air shipments from July 1st, 2023, until the year's end, the data illustrates a fluctuating trend.

In July, there were 1.72million sales exclusively via air, marking the start of the company's commitment. August saw a slight fall in exclusive air shipment, followed by a substantial drop in September to 1.50million. However, from October to December, there was a resurgence in shipments via air. Even though the number of air shipments was comparatively less in December than July, there was no consistency between these months. This increase could be attributed to holiday seasons or evolving customer demands in European countries, prompting the company to resume air shipments to meet demand.

On comparing air shipments from January to June with those from July to December, it's notable that July recorded maximum exclusive air transportation for the year. February made the least air shipments of 1.43million, maybe due to its shorter duration. Interestingly, after announcing the commitment to reduce air shipments, there was rise in exclusive air transportation, showcasing deviation from the intended reduction strategy.

The maximum shipments have been sent through Air, Land & Sea routes combined in December at 1.95million. Specifically, the highest exclusive air shipments occurred in July, reaching 1.72 million, while land transportation peaked at 1.38 million, and sea shipments were at their highest in January with 0.59 million.

**Conclusion –**

The analysis of Universal Export's performance in 2023 revealed both strengths and areas for improvement. Hoodies and T-shirts contribute significantly to revenue and profitability, showcasing the company's market strength. However, challenges such as low profitability in certain product categories and fluctuations in air shipments highlight areas for strategic focus and improvement.

To capitalize on its strengths and address weaknesses, Universal Export might consider:

1. Enhancing T-shirt profitability through cost-saving measures and strategic pricing.
2. Drive Cardigan sales and profitability with targeted marketing and innovation.
3. Re-evaluating air shipment sustainability for environmental alignment and customer satisfaction.

By leveraging its strengths, addressing weaknesses, and implementing strategic initiatives, Universal Export can position itself for sustained growth and increased shareholder value in the future.

# **SALESPERSONS PERFORMANCE REPORT**

## **Introduction**

As part of, Universal Export's ongoing commitment to recognising and advancing talents within the organization, a thorough evaluation is initiated based on various key areas critical for departmental success. A visualisation report has been compiled, from the company's 2023 operation to provide a detailed analysis of each salesperson.

This report assesses various aspects including

- sales and profit generated by each salesperson,
- ability to acquire new customers in 2023
- understanding the company's margins

which helps in making informed decisions regarding promotions to head and deputy head of sales. Profit generation being the most important parameter, this report provides variable insights.

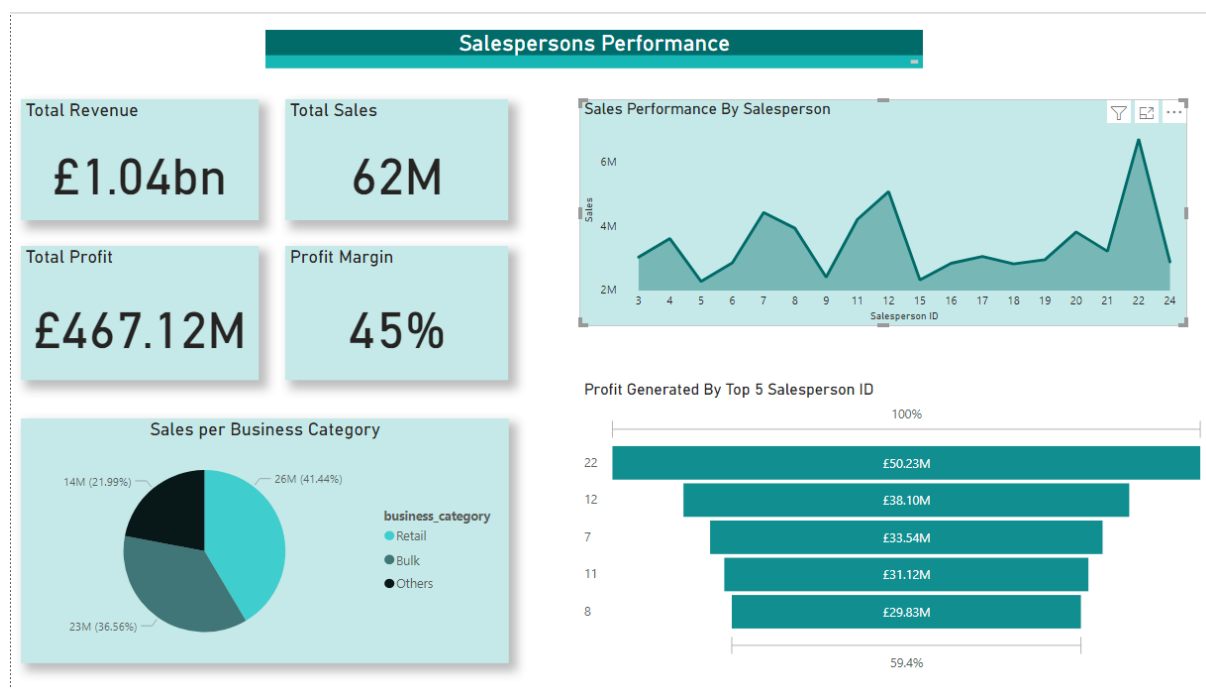


Figure 1

## **Sales Performance Analysis**

In 2023, Universal Export's sales team comprising 18 employees generated a total revenue of £1.04billion and achieved a profit margin of 44.9% resulting in sales of £62million, and a profit of £467.12 million.

Notably, salesperson ID 22 excels as a top performer by achieving the highest sales of 7million, accounting for 11% of the total sales. Subsequently, salesperson ID 12, demonstrates a total of 8% of the sales achieved. From the top 5 profitable salespersons, salesperson ID 22 tops the leaderboard by generating a profit of £50M.

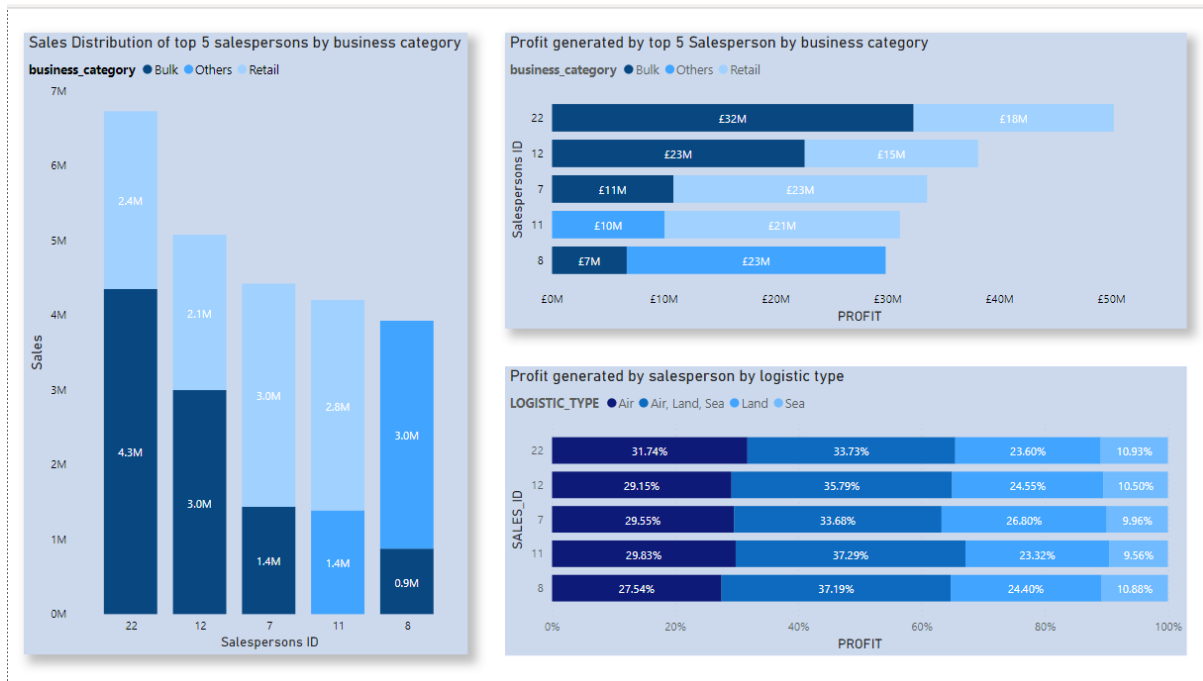


Figure1.1

An understanding of the sales distribution, across business segments like retail, bulk and others is worth noting, as most of the sales are for the “Retail” business category, which constitutes 41.44% of the total sales. While “Others” and “Bulk” have smaller yet significant roles.

Top 10 customers by profit value, 4 are UK-based. Together they have a significant contribution of 41.2% to the total profit of UK has generated. Italy’s total profit was a result of only 2 customers namely Evo and Lombardica, which generated profits of 11.37million and 11.49million.

Salesperson IDs 22, 12, 7, and 11 primarily utilized the retail segment for profit. While ID 11, did not record any profit in bulk categories. Meanwhile, ID 8 exclusively generated profits through retail and other business categories. The highest overall quantity of sales, excelled in the “BULK” category by salesperson ID 22, while there were no sales in the “Others” category. Each of the top 5 salespersons, worked for exactly two different types of business segments. The maximum profit that the top 5 salespeople generated had logistic category as “Air, Land, Sea”. Sea was the least preferred transport type by the top-performing salespeople, maybe due to climatic conditions and longer transit times.

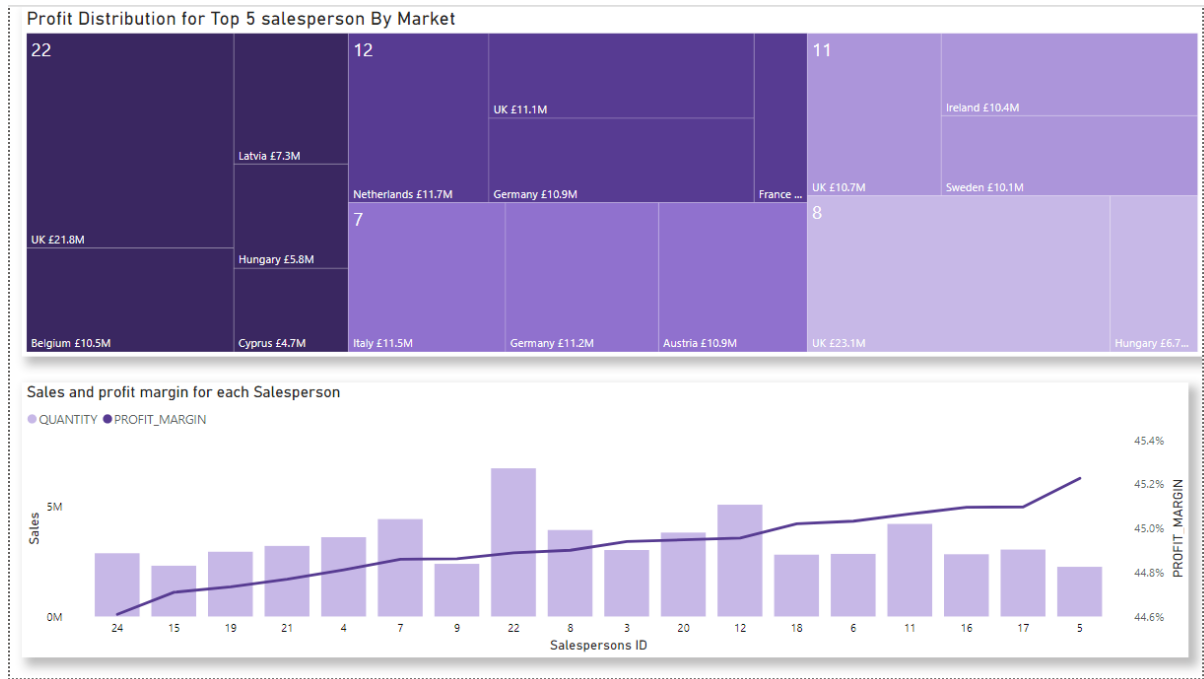


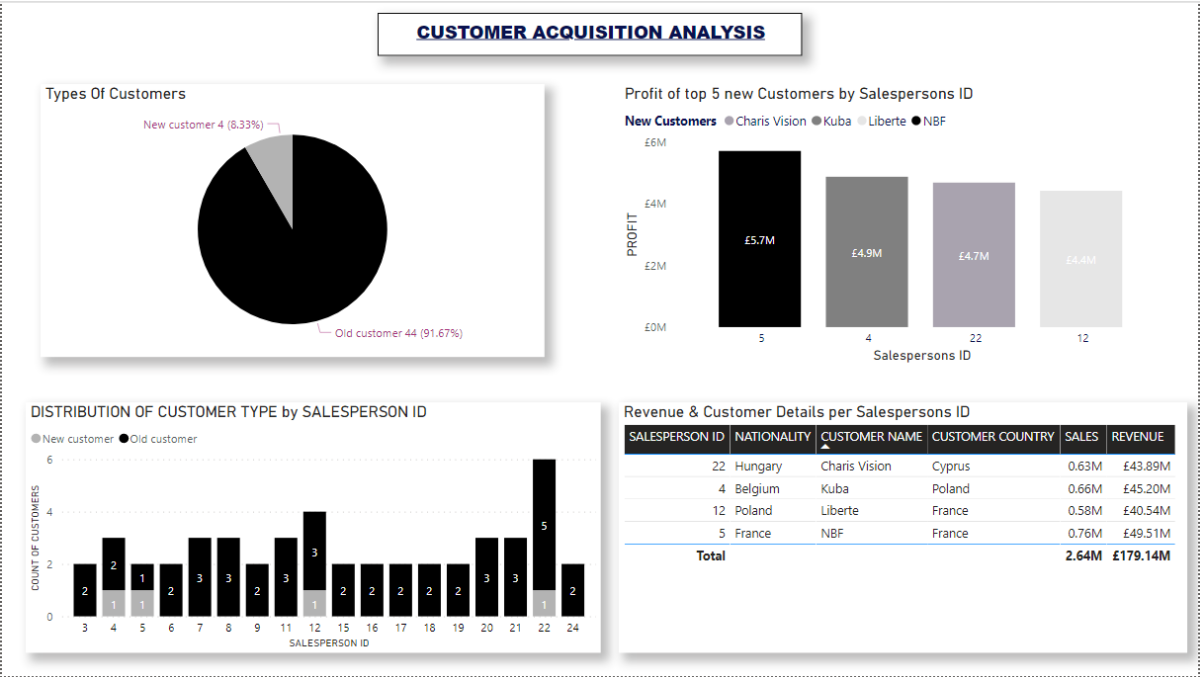
Figure1.2

Profit distribution for the top 5 salespeople across different markets, illustrates that the UK appears to be the most profitable market for all except salesperson ID 7. Other significant markets include Germany, Netherlands, and Italy. Salesperson ID 22 demonstrates the widest market distribution, covering five countries. ID 12 operates in four countries, while IDs 7 and 11 manage three markets each. In contrast, ID 8 is active in only two countries, the UK and Hungary.

Although EmployeeID 22 achieved the highest sales volume, their profit margin was relatively low at 44.9%. Conversely, ID 5 had the lowest sales but achieved the highest profit margin at 45.2%. This could be due to factors such as pricing techniques, or managing costs and expenses, causing variations in profitability despite differences in sales volume.



Customer Acquisition



## Company margin Analysis

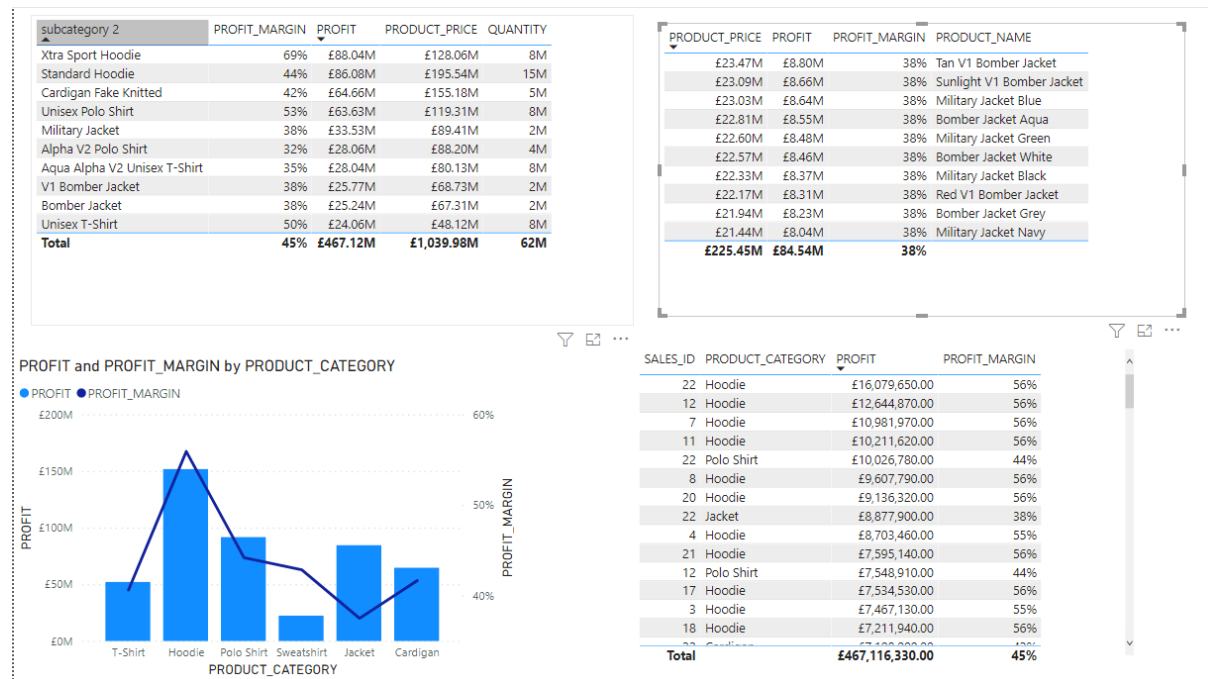


Figure2.1

Universal Exports' varied product categories have driven revenue and profit growth.

- The Xtra Sport Hoodie generates the highest profit margin at 68.8%, generating a profit of £88.04M.
- The Standard Hoodie and Unisex T-Shirt both at 8million marked the highest unit sales. Additionally, the Standard Hoodie generates a higher profit due to its higher product price.
- The Alpha V2 Polo Shirt has a profit margin of 31.8%, resulting in a profit of £28.06M despite selling 4 million units.
- Tan V1 Bomber Jacket generated £8.80M profit from £23.47M revenue, with a 38% profit margin, indicating a potential disparity between profit and profit margin.

The most profitable product, Hoodies, generated higher profits than other categories. While T-shirts aren't the most profitable, they boast the highest profit margin. This recommends a good pricing strategy or lower production costs for this category. Cardigans generated the lowest profit among all products, and its profit margin is also relatively low, indicating potential areas for improvement or reconsideration.

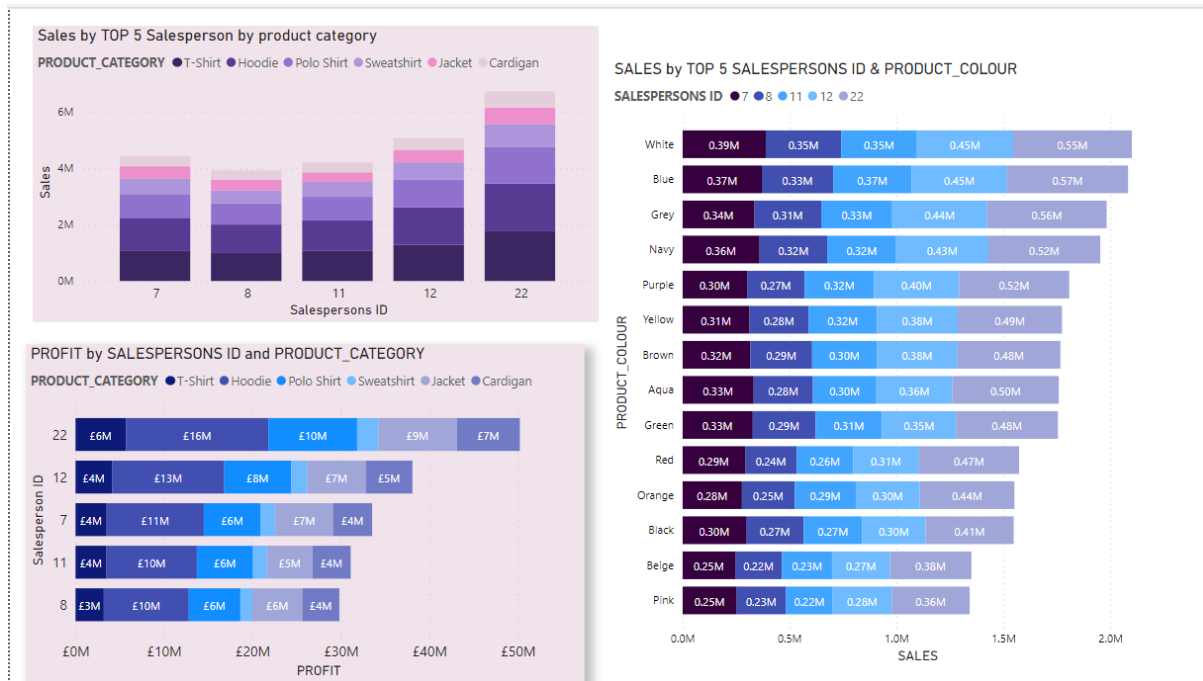


Figure2.2

In the case of sales distribution among the products, salesperson ID 22, has sold the maximum t-shirts, followed by hoodies and Cardigans, when compared to the top 5 salespersons categories. Employee ID 8, had the lowest sales in all product categories. 50% of the total profit generated by ID 22, came from Hoodies, Polo Shirts and Jackets, while sweatshirts recorded minimum profit across all salespersons IDs.

## Conclusion

The sales team excelled in 2023 by generating a significant amount of profit which covered all the operational costs. The retail market recorded the highest sales, trailed by wholesale.

Employee ID 22,12,7,11,8 ranked as the top five salespersons by profit value.

Employee ID 22 provided the highest profit while 8 had the lowest figure. In sales volume, employee ID 22 had the maximum sales followed by 12 & 7. Employee ID 5 had the lowest sales but recorded the highest average profit margin. Additionally, customers acquired by him in 2023, generated the most profit.

Employee ID 22 squeezed most of the profit from the wholesale channel, dealing in mixed-category shipments. Employee ID 8 did not utilise the retail channel while 11 did not utilise the wholesale channel. Hoodies were the main strength of all salespeople while sweatshirts were the weakness. Universal export could use these insights to identify the area of weakness of each salesperson and formulate new strategies accordingly to enhance staff productivity and hence achieve even higher goals in the future.

