**Power BI Ecommerce Sales Report**

This analysis uses the Kaggle [E-commerce Sales](https://www.kaggle.com/datasets/gabrielramos87/an-online-shop-business/data) dataset, a sales transaction data of UK-based e-commerce (online retail) for one year. The project covers creating **Power BI dashboard** and **reports** for analyzing **sales performance** across **various products and regions**.

**About Dataset**

This London-based shop has been selling gifts and homeware for adults and children through their website since 2007. Their customers come from all over the world and usually make direct purchases for themselves. There are also small businesses that buy in bulk and sell to other customers through retail outlet channels.

The dataset contains 536350 records and 8 attributes. The following is the description of each column:

1. **TransactionNo**: a six-digit unique number that defines each transaction. The letter “C” in the code indicates a cancellation.
2. **Date**: the date when each transaction was generated.
3. **ProductNo**: a five or six-digit unique character used to identify a specific product.
4. **Product**: product/item name.
5. **Price**: the price of each product per unit in pound sterling (£).
6. **Quantity**: the quantity of each product per transaction. Negative values are related to cancelled transactions.
7. **CustomerNo**: a five-digit unique number that defines each customer.
8. **Country**: name of the country where the customer resides.

**Preparation**

I imported the sales data into Power BI, then used the Power Query Editor to clean, organize and do further transformations:

* The CostumerNo column contains 55 Null Value which are cancellation transactions. To calculate the accurate sales amount, these rows were not dropped.
* Changed data type for columns “TransactionNo” and “CustomerNo” from numeric to text to avoid errors.
* Created a new column *Sales* (Price\*Quantity).
* Created new measure *Average Sales per Customer* (Total Sales/Total Number of Customers)

**Data Visualization and Analysis**

When creating visualizations for Dashboard, Sales. Product and Customer Reports, I looked for answers to the following questions:

1. How was the sales trend over the months?

2. What are the most frequently purchased products?

3. How was the sales amount by country?

4. What are the most profitable segment customers?

5. Based on the findings, what strategy could be recommended to the business to gain more profit?

The visualizations included:

* Area chart for tracking sales trends, to spot seasonality and growth patterns over time
* Stacked bar charts to uncover top customers and topmost products
* For a global view, used a filled world map of product orders per country
* Pie chart of sales by customers to visualize the strong performers
* Sales by country using a stacked column chart
* Yearly sales amount using a pie chart
* Gauge of the average sales per customer

**Power BI Dashboard Observations**

*Q1. How was the sales trend over the months?*

Sales data starts from December 2018 to December 2019. The sales trend was mostly stagnant until August, then started to increase in September, reaching a peak in November and decreased again in December.

*Q2. What are the most frequently purchased products?*

The product with the highest sales was “Popcorn Holder” which was about twice as high as “Mini paint set vintage” in the top 10 most popular products.

The highest number of product orders was for “10 Color Spaceboy Pen”, popular in North America, Europe, and Australia, followed by “12 Colored Party Ballons”, mostly in North America.

*Q3. How was the sales amount by country?*

There are 38 countries in total that purchased products from this e-commerce. Of all countries, UK has the highest sales income, followed by Netherlands, EIRE, Germany, but with a significant difference. UK also has the highest average sales per customer.

*Q4. What are the most profitable segment customers?*

The top customer based on sales amount is14646. It’s followed by few other customers with half of its sales, then the sales figure decreases for the rest of the customers.

The month with the highest number of customers, as well as the highest average sales per customer, was November.

The e-commerce business has a total number of 4738 customers. Of these, there are 17 customers (that is 0.3%) who account for 25% of all sales generated during the entire year. This amount suggests that they represent the top customers for the e-commerce business.

*Q5: Based on the findings, what strategy could be recommended to the business to gain more profit?*

Providing the top customers with the products they usually buy, also offering new products and services they might be interested in, would be a good strategy for e-commerce to make more profit.

Seasonal marketing (such as Christmas time) could also be an effective way to increase sales, providing special offers for products or services.

This sales data analysis project could serve as a decision-making companion for sales and strategy teams, revealing high-impact products and regional opportunities.