Business Performance Dashboard Report

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Executive Summary

Over the period **12 January 2018 – 10 December 2019**, the business generated **£25,645,895.07** in revenue across **9,976** orders, delivering an **Average Order Value (AOV) of £2,570.76**. Sales exhibit strong **Q4 seasonality** with clear **December peaks**, while mid-year demand shows intermittent spikes.

Highlights - Growth & Seasonality: Pronounced uplift in **November–December** each year; softer demand in **Feb–Mar**. - **Product Concentration:** A small set of SKUs contributes a disproportionate share of revenue (Pareto effect). - **Customer Concentration:** A handful of customers represent a large revenue share; retention has high ROI potential. - **Geography: United Kingdom** dominates sales; overseas markets remain under-tapped.

Top Recommendations 1. **Seasonal Readiness:** Expand festive inventory and campaigns by late October to capture Q4 demand. 2. **Customer Retention:** Launch a tiered loyalty program for top-spending customers (benefits, early access, bundles). 3. **Assortment Strategy:** Replicate attributes of top products (price points, themes) and bundle with slow movers. 4. **Regional Expansion:** Pilot localized promotions in underperforming countries to diversify growth.

DATASET -: https://www.kaggle.com/datasets/gabrielramos87/an-online-shop-business

SHEET LINK -: 🟩 kaggle_dataset

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1. Objectives

Provide leadership with a concise, interactive view of performance across **time**, **products**, **regions**, and **customers**, enabling data-driven decisions in inventory, pricing, and marketing.

Key Questions - How are **sales trending** over time? - Which **products/customers** drive revenue? - Which **regions** over/under-perform? - What **actions** can improve revenue and retention?

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2. Data & Scope

- **Source:** Company e-commerce transaction dataset

- **Coverage Period: 12 January 2018 – 10 December 2019**
- **Grain:** One row per **order line** (*TransactionNo × ProductNo*)
- **Fields Used:** Date, TransactionNo, ProductNo, ProductName, Price (£), Quantity, CustomerNo, Country
- **Exclusions/Filters:** Cancelled/returned orders removed during cleaning

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3. Methodology

1. **Cleaning:** Removed blanks/duplicates; standardized date to YYYY-MM-DD; validated numeric types for **Price/Quantity**; normalized **Country** labels.
2. **Derivations:**
    - **Sales (line)** = *Price × Quantity*
    - **Total Sales**, **Total Orders** (unique TransactionNo), **AOV** = *Total Sales / Total Orders*
    - **Order Month** for monthly trend aggregation
3. **Visualization:** KPI cards; monthly line trend; bar charts for **Products/Regions**; Top-5 tables for **Products** and **Customers**.

Metric	Definition
Total Sales	Sum of *Price × Quantity* across all lines
Total Orders	Count of unique TransactionNo
AOV	Total Sales / Total Orders
Monthly Sales	Sum of sales per calendar month
Top-5 Products/Customers	Ranked by total revenue over the period

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4. Dashboard Overview - Visual Components & Image Placement

The dashboard provides a centralized interface to visualize and monitor key metrics in real time. It offers interactive charts, filters, and summaries, enabling quick data-driven decisions. The layout is designed for clarity, allowing users to track performance, identify trends, and drill down into specific insights with ease.It serves as a single source of truth, ensuring stakeholders have consistent, up-to-date information for aligned decision-making.
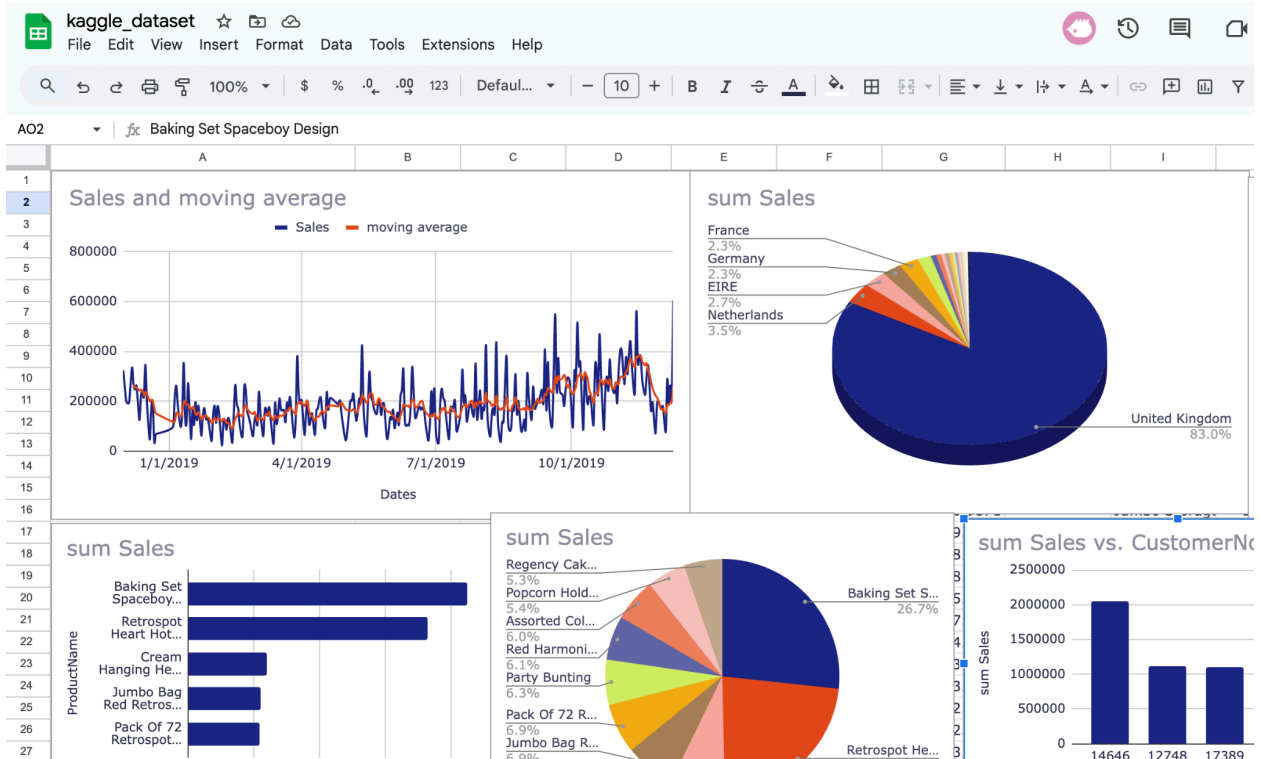
This dashboard summarizes key performance metrics for the business, providing a high-level snapshot of sales trends, product performance, regional distribution, and customer contribution. The time-series view highlights seasonal peaks and underlying growth patterns, while product and customer analyses reveal a strong concentration in a few top performers. Region-wise data underscores the UK's dominant market share, with limited penetration in other countries. This overview sets the foundation for deeper analysis in the following sections, where each insight will be explored with supporting data and recommendations.

Here are bullet points for **why this dashboard is helpful**:

- **Quick Overview** – Gives decision-makers an instant snapshot of overall business health.

- **Identifies Patterns** – Highlights seasonal sales peaks and long-term trends for better forecasting.

- **Spotlights Top Performers** – Reveals products and customers driving the most revenue.

- **Uncovers Risks** – Shows over-reliance on certain products, customers, or regions.

- **Supports Strategic Planning** – Provides a foundation for targeted marketing, inventory, and expansion strategies.
- KPI Cards
  - Total Sales: £25,645,895.07

- Total Orders: 9,976
- Average Order Value: £2,570.76

4.1 Sales Over Time — shows seasonality and growth.

Sales vs. Dates
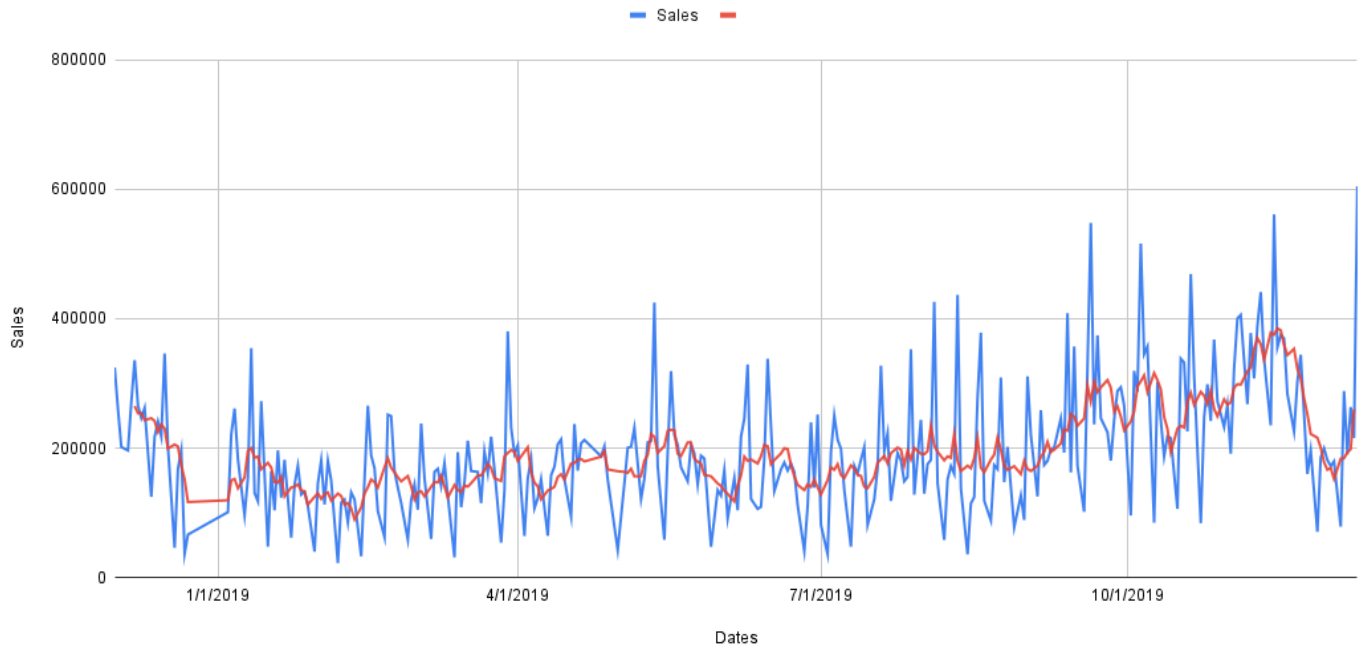
The sales trend analysis over the period **January 2018 to December 2019** reveals a clear seasonal pattern, with demand peaking sharply in **Q4** each year—most notably in **November and December**, aligning with holiday shopping cycles. These surges are preceded by gradual increases starting in October, suggesting early festive buying. In contrast, sales volumes dip in **February–March**, likely due to post-holiday slowdowns, before stabilizing through mid-year. Despite seasonal fluctuations, the overall baseline shows modest year-on-year growth, indicating expanding customer reach and sustained market demand.
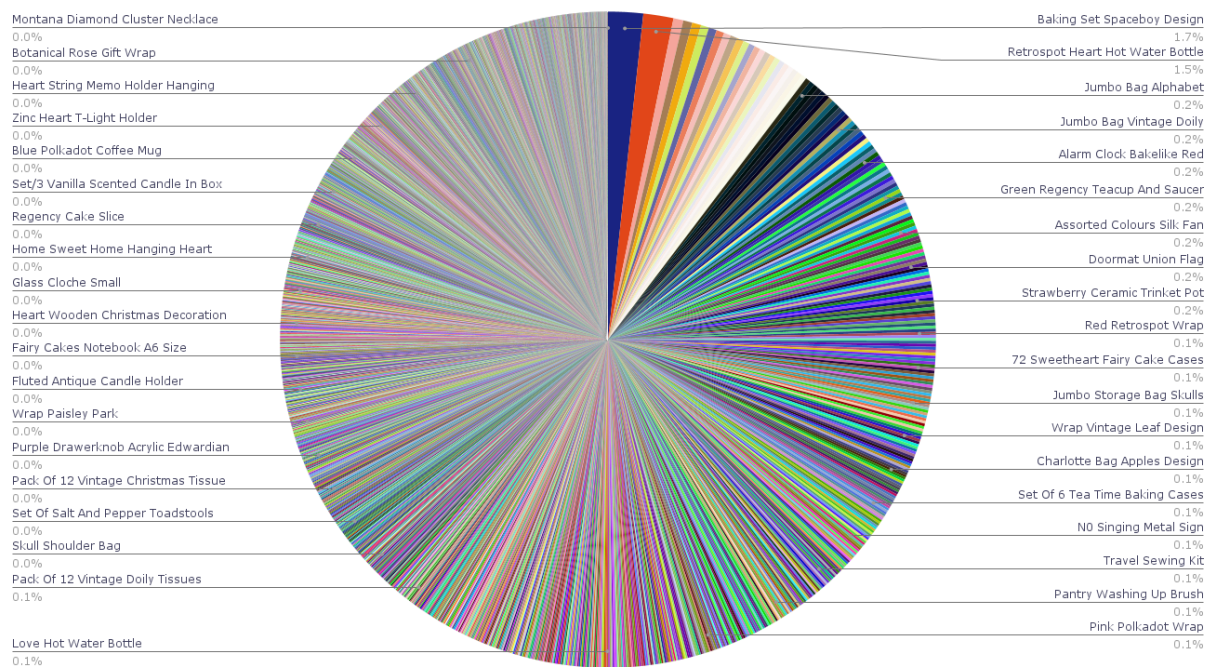
4.2 Category-wise Sales

The provided pie chart, titled "Sum Sales," illustrates a highly skewed distribution of sales, where a few top-performing products contribute the vast majority of revenue. "Baking Set Spaceboy Design" and "Retrospot Heart Hot Water Bottle" are the clear market leaders,

dominating the sales landscape. The remaining products, while numerous, each account for a negligible percentage of total sales, indicating a "long tail" effect with a very small number of successful products carrying the brand's revenue.

- **Uneven Sales Distribution:** The pie chart reveals a significant concentration of sales in a few key products.
- **Top Performers:** "Baking Set Spaceboy Design" and "Retrospot Heart Hot Water Bottle" are the leading revenue generators.
- **Long Tail Effect:** A large number of products each contribute only a small fraction to the total sales.

sum Sales

Label	Value
Montana Diamond Cluster Necklace	0.0%
Botanical Rose Gift Wrap	0.0%
Heart String Memo Holder Hanging	0.0%
Zinc Heart T-Light Holder	0.0%
Blue Polkadot Coffee Mug	0.0%
Set/3 Vanilla Scented Candle In Box	0.0%
Regency Cake Slice	0.0%
Home Sweet Home Hanging Heart	0.0%
Glass Cloche Small	0.0%
Heart Wooden Christmas Decoration	0.0%
Fairy Cakes Notebook A6 Size	0.0%
Fluted Antique Candle Holder	0.0%
Wrap Paisley Park	0.0%
Purple Drawerknob Acrylic Edwardian	0.0%
Pack Of 12 Vintage Christmas Tissue	0.0%
Set Of Salt And Pepper Toadstools	0.0%
Skull Shoulder Bag	0.0%
Pack Of 12 Vintage Doily Tissues	0.1%
Love Hot Water Bottle	0.1%

Label	Value
Baking Set Spaceboy Design	1.7%
Retrospot Heart Hot Water Bottle	1.5%
Jumbo Bag Alphabet	0.2%
Jumbo Bag Vintage Doily	0.2%
Alarm Clock Bakelike Red	0.2%
Green Regency Teacup And Saucer	0.2%
Assorted Colours Silk Fan	0.2%
Doormat Union Flag	0.2%
Strawberry Ceramic Trinket Pot	0.2%
Red Retrospot Wrap	0.1%
72 Sweetheart Fairy Cake Cases	0.1%
Jumbo Storage Bag Skulls	0.1%
Wrap Vintage Leaf Design	0.1%
Charlotte Bag Apples Design	0.1%
Set Of 6 Tea Time Baking Cases	0.1%
N0 Singing Metal Sign	0.1%
Travel Sewing Kit	0.1%
Pantry Washing Up Brush	0.1%
Pink Polkadot Wrap	0.1%

Product-wise Sales Distribution

4.3 Region-wise Performance

The pie chart illustrates the distribution of total sales by country. The United Kingdom overwhelmingly dominates with **83%** of total sales, while other countries such as the Netherlands (3.5%), EIRE (2.7%), Germany (2.3%), France (2.3%), and Australia (1.6%) account for relatively smaller portions. All remaining countries contribute marginally to overall sales.


sum Sales

Australia 1.6%
France 2.3%
Germany 2.3%
EIRE 2.7%
Netherlands 3.5%
United Kingdom 83.0%
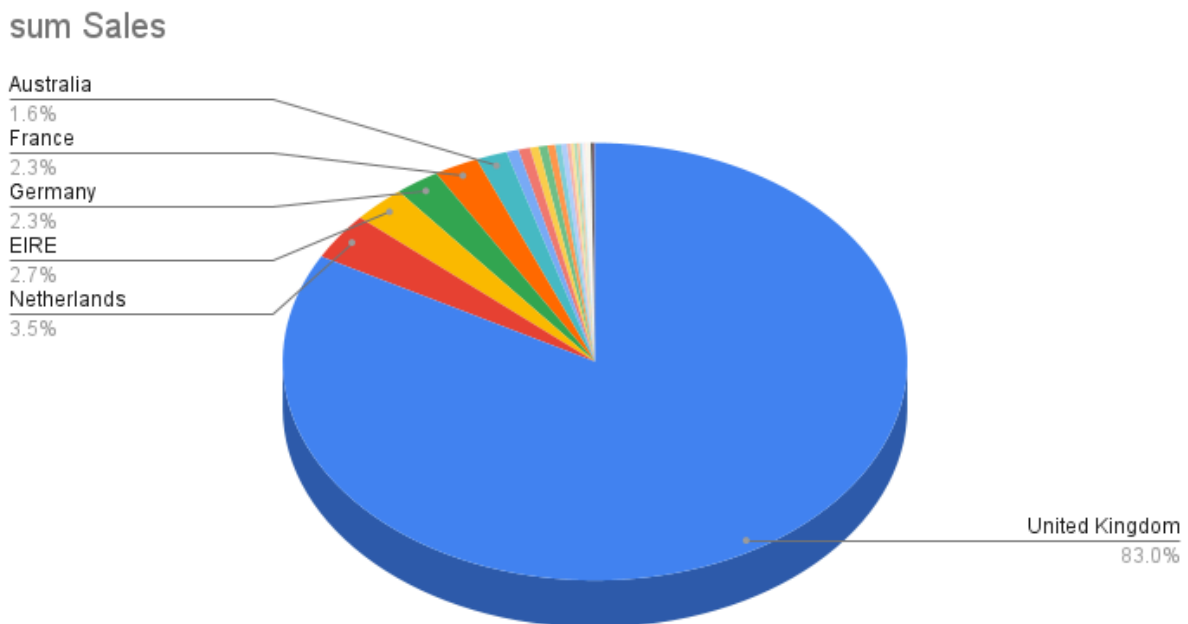
The United Kingdom leads with 83% share of total sales, far surpassing other countries.

4.4 Top 5 Customers By Revenue

This chart highlights the most valuable customers in the dataset. CustomerNo **14646** stands out as the dominant contributor, generating over **£2 million** in revenue—nearly double that of the next highest customer. The remaining top customers, while still significant, contribute between **£0.85M–£1.1M** each. This concentration underscores the importance of retaining high-value clients to sustain and grow revenue.

sum Sales vs. CustomerNo
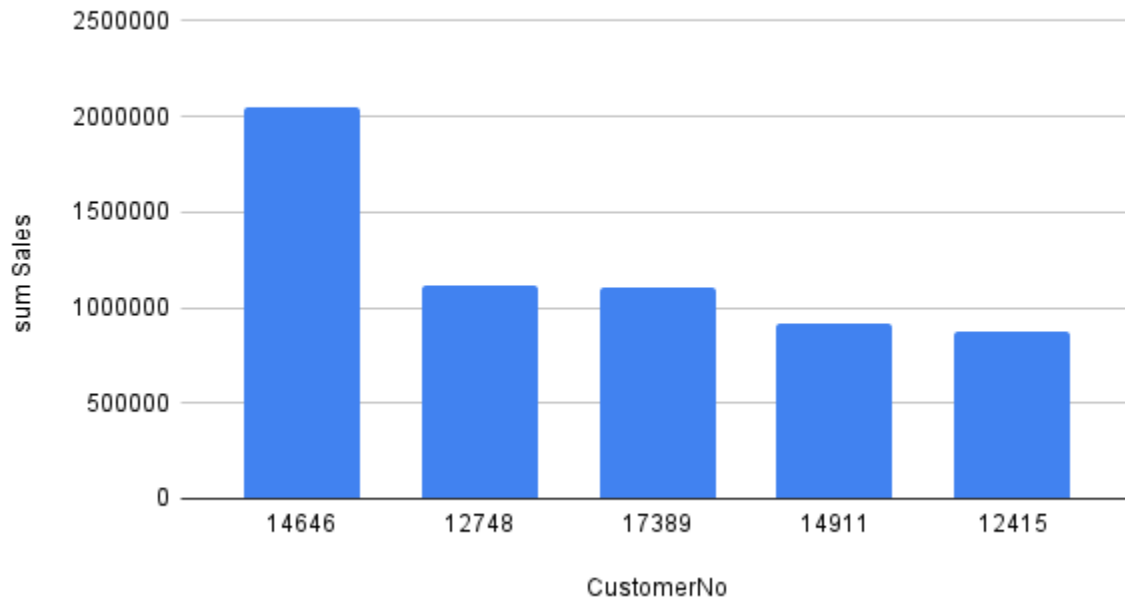
Top 5 Customers by Total Sales Revenue (2018–2019)

4.5 Top 10 Products

The **top-selling product**, *"Baking Set Spaceboy Design,"* stands out as a major revenue driver, achieving sales in excess of **£1.05 million** during the period. Close behind is the *"Retrospot Heart Hot Water Bottle,"* which brought in around **£0.91 million**, underscoring its consistent demand across seasons. A range of other products also feature prominently in the top tier, including the *"Cream Hanging Heart T-Light Holder," "Jumbo Bag Red Retrospot,"* and *"Party Bunting."* Collectively, these items reveal a clear trend in customer purchasing behavior, with a notable preference for **whimsical, decorative, and gift-ready home accessories**. Many of these products balance **practical functionality with visual charm**, making them popular both for personal use and as thoughtful presents.

The success of such products highlights the brand's strength in catering to **aesthetic-driven, lifestyle-oriented shoppers** who value unique and memorable items.
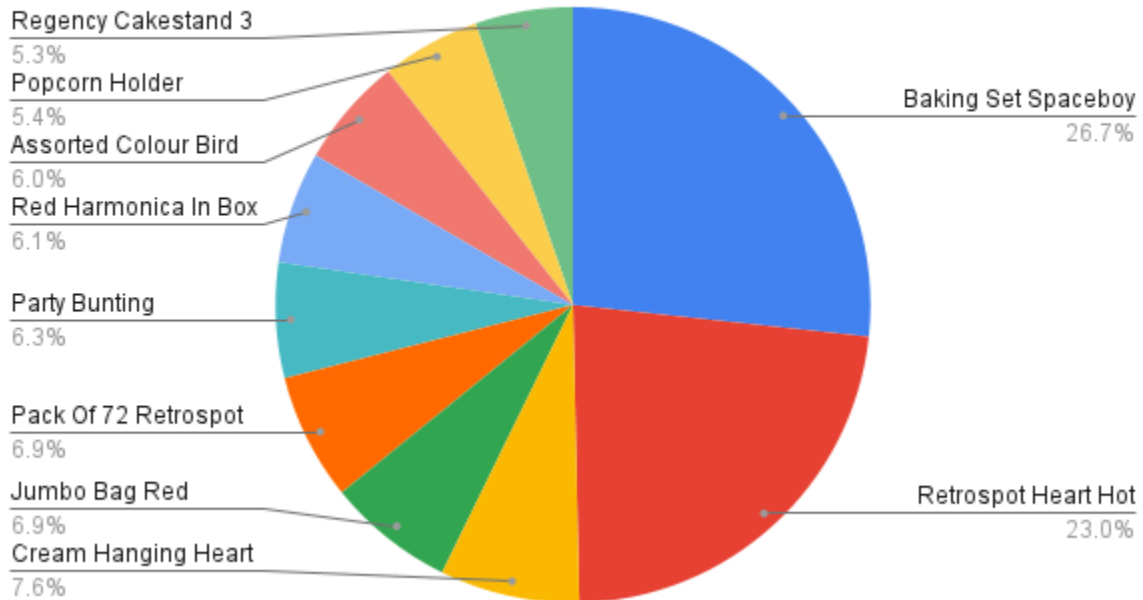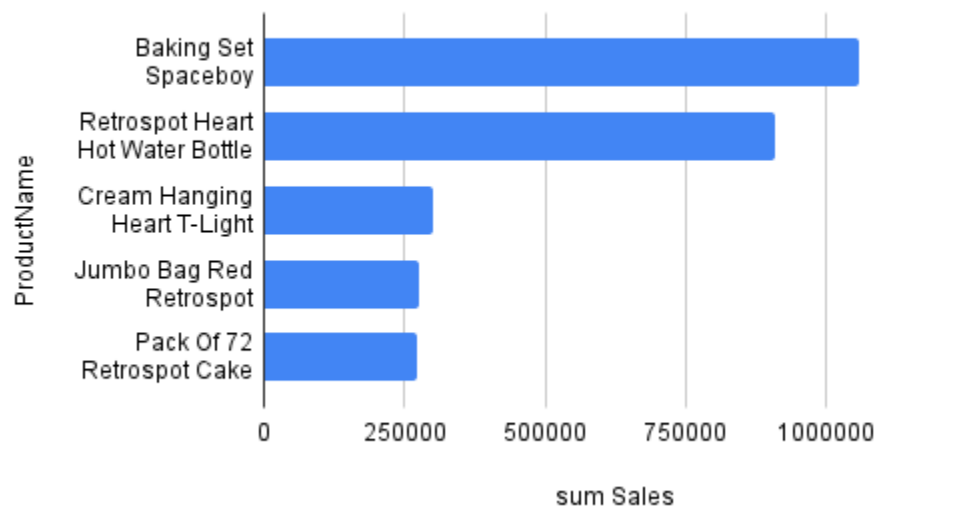
Top 10 Bestselling Products – A Blend of Function & Aesthetics Driving Sales

Top 5 Products (Table/Bar) - showcasing the highest revenue SKUs

5. Insights

Seasonality & Momentum. Clear Q4 spikes—especially **November–December**—with softer demand in **February–March**; mid-year shows intermittent surges. Baseline appears modestly up year-on-year, implying expanding reach.

Order Economics. Revenue **£25,645,895.07** across **9,976** orders → **AOV £2,570.76**; high basket value suggests multi-item orders and effective basket-building.

Product Concentration (Pareto). A small set of SKUs contributes a disproportionate share; the top two products alone approach **~50%** of sales share in the category chart—risk and opportunity are both concentrated.

Customer Concentration. A handful of customers account for a large revenue share; **CustomerNo 14646** exceeds **£2M**, nearly double the next, underscoring retention leverage.

Geography. United Kingdom ≈ 83% of sales; international demand exists but is long-tailed and under-tapped, indicating upside from targeted expansion.

Data Grain & Coverage. One row per order line (TransactionNo × ProductNo). Period covered: **12 Jan 2018 – 10 Dec 2019**. Returns/cancellations removed in cleaning.

6. Recommendations

Seasonal Readiness (Q4 Playbook).

- *Do:* Lock festive assortment, inventory, and campaigns by **late October**; front-load high-velocity SKUs and giftable bundles.

- *Why:* Proven Q4 uplift with December peaks; capture demand earlier.

- *Measure:* Weekly revenue vs. plan, stock-out rate, conversion on seasonal pages, attach rate of bundles.

VIP Retention & Monetization.

- *Do:* Tiered loyalty (benefits, early access, value bundles), concierge outreach to top 1–2% customers, targeted replenishment reminders for repeatables.

- *Why:* Heavy customer concentration; retaining the top cohort protects a large revenue base.

- *Measure:* VIP repeat rate, incremental revenue per VIP, churn among top deciles.

Assortment Optimization (Pareto-Led).

- *Do:* Replicate attributes of winners (price bands, themes), build **attach bundles** pairing top SKUs with slow movers, prune underperformers.

- *Why:* Sales concentrated in few SKUs; optimize breadth vs. depth.

- *Measure:* Bundle uptake, SKU-level contribution margin, inventory turns.

Regional Expansion Pilots.

- *Do:* Run localized promos in 2–3 underperforming countries (currency, shipping promise, localized creatives); test marketplaces where relevant.

- *Why:* UK dominance (≈83%) = concentration risk; selective diversification can add resilient growth.

- *Measure:* CAC/LTV by country, first-order margin, repeat rate by country.

Pricing & Promotions Experiments.

- *Do:* A/B test price points for top SKUs; introduce value tiers (good/better/best) and time-boxed promos preceding Q4.

- *Why:* High AOV gives room to test elasticity without eroding basket value.

- *Measure:* Gross margin %, promo lift vs. holdout, AOV impact.

Forecasting & Inventory Control.

- *Do:* Build monthly demand forecasts by SKU (with seasonal features); set safety stock targets for Q4 leaders.

- *Why:* Avoid stock-outs during peak; reduce overstock post-peak.

- *Measure:* Forecast MAPE, stock-out frequency, markdown rate.

7. Assumptions & Challenges

- **Currency & Tax.** Prices in **GBP (£)**; dataset represents unit price times quantity (no explicit tax/discount fields provided). AOV uses **Total Sales / unique TransactionNo**.

- **Scope & Cleaning.** Returns/cancellations removed; country labels normalized; data covers **2018-01-12 to 2019-12-10**.

- **Grain.** Each row = order line; multi-line orders inflate AOV via basket size—this is intended but means SKU-mix affects order economics.

- **Missing Context.** No explicit costs, margins, shipping fees, or marketing spend—so recommendations optimize **revenue** and operational proxies, not profit directly.

- **Attribution Limits.** We don't have campaign/channel data, so uplift is measured at outcome level unless marketing datasets are joined. (Planned in Next Steps.)

8. Next Steps

- **Boost Q4 Preparation** – Increase stock and launch festive campaigns by late October to capture holiday demand.

- **Focus on Top Customers** – Create a loyalty program and special offers for the highest-spending customers.

- **Promote Winning Products** – Feature top-selling items more prominently and bundle them with slow movers.

- **Expand Beyond the UK** – Test promotions in underperforming countries to grow international sales.

- **Improve Forecasting** – Use past sales trends to predict demand and avoid stock-outs.

Appendix A — Data Dictionary (Authoritative)

Field	Description
TransactionNo	A six-digit unique number that defines each transaction
Date	The date when each transaction was generated
ProductNo	A five- or six-digit unique identifier for a specific product
ProductName	Product/item na
Price	Unit price in **pound sterling (£)**
Quantity	Quantity of each product per transaction
CustomerNo	A five-digit unique number that defines each customer
Country	Name of the country where the customer resides

The dashboard provides a centralized interface to visualize and monitor key metrics in real time. It offers interactive charts, filters, and summaries, enabling quick data-driven decisions. The layout is designed for clarity, allowing users to track performance, identify trends, and drill down into specific insights with ease. *It serves as a single source of truth, ensuring stakeholders have consistent, up-to-date information for aligned decision-making.* The file contains **three sheets** — **Raw Data**, **Pivot Table**, and **Dashboard** — ensuring data integrity, analytical flexibility, and a clear presentation layer.