

Inventory Analysis in Tableau

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Project Objective

- Company: Acropolis Retail Inc.
- Objective: To communicate insights for renewal of items
- Tasks:
 - Analyze inventory turnover and revenue performance
 - Identify high-value and low-value products
 - Optimize stock levels for improved efficiency
 - Provide insights for better inventory management

What is Inventory Analysis?

- Optimizing the management of inventory
- Benefits:
 - Reduces
 - storage expenses
 - purchase costs
 - unused goods
 - Increases
 - profit

Dataset

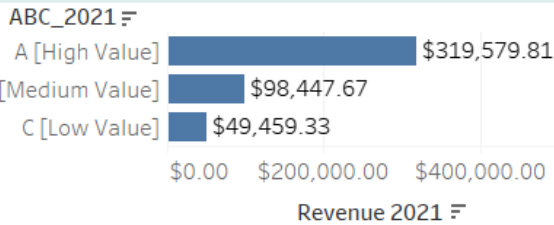
- Two tables with information on item description, initial stock, orders, dates, countries, and prices

| Stock |
|------------------------------|
| SKU-ID |
| Description |
| 2020_units_sold |
| 2021_start_stock |
| Raw_Material_Cost |
| Factory_Labor_Costs |
| Factory_Equipment_Rent_Costs |
| Distribution_Costs |
| Advertisement_Costs |
| Retail_Price |
| Category |

| Orders |
|------------------|
| Invoice_No |
| SKU-ID |
| Quantity |
| Invoice_Date |
| Customer_Country |

Calculations & Metrics

ABC Revenue 2021



Average Inventory Turnover

0.9405

Total COGS 2021

\$268,920.59

Total Items

104

Revenue = quantity of units sold \times selling price

COGS = (Raw materials + Labor + Factory overhead) \times units sold

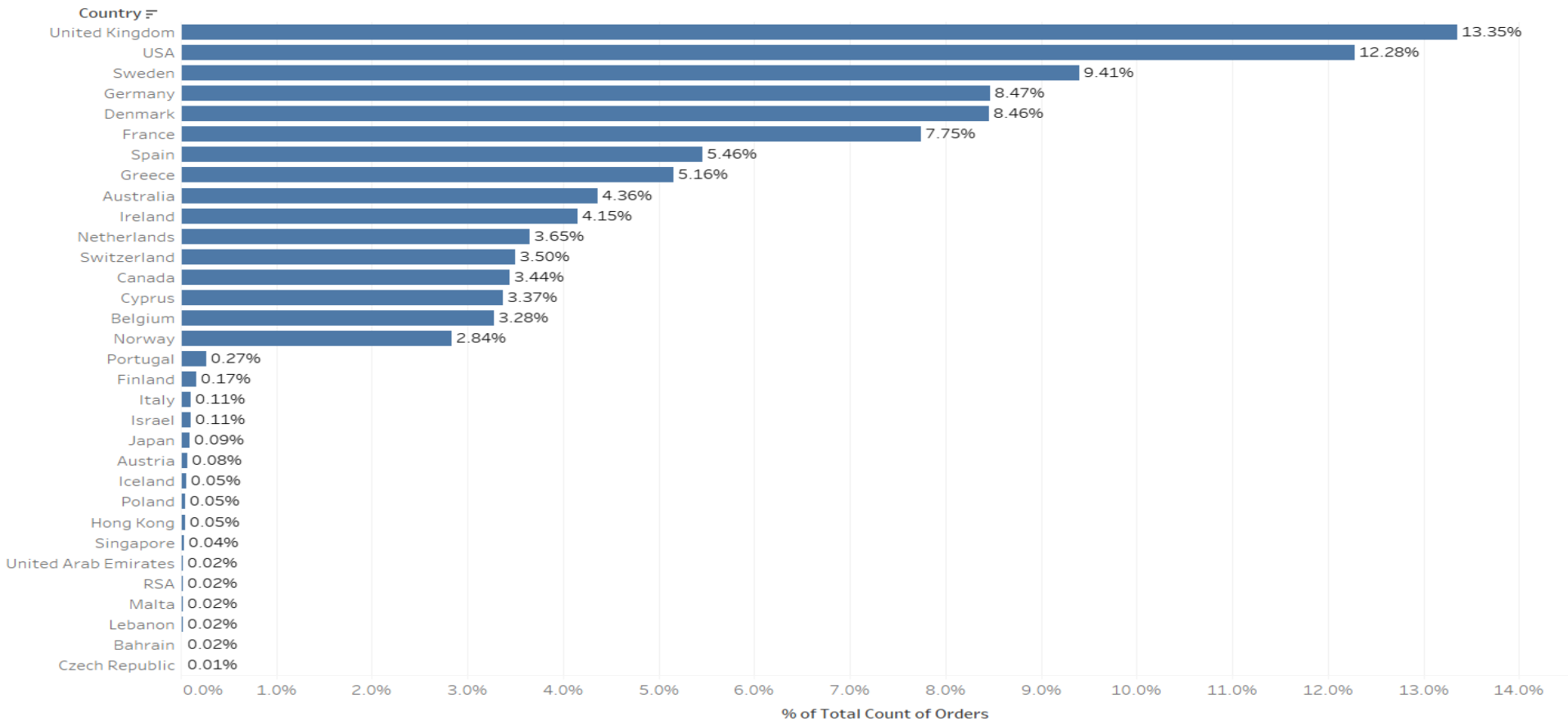
Gross Profit = Revenue – COGS

Average inventory value =
$$\frac{\text{Starting value} + \text{Ending value}}{2}$$

Inventory turnover =
$$\frac{\text{COGS}}{\text{Average inventory value}}$$

Orders by country

Orders Check



- Top - UK (1780), US(1637)

Product Revenue Comparison

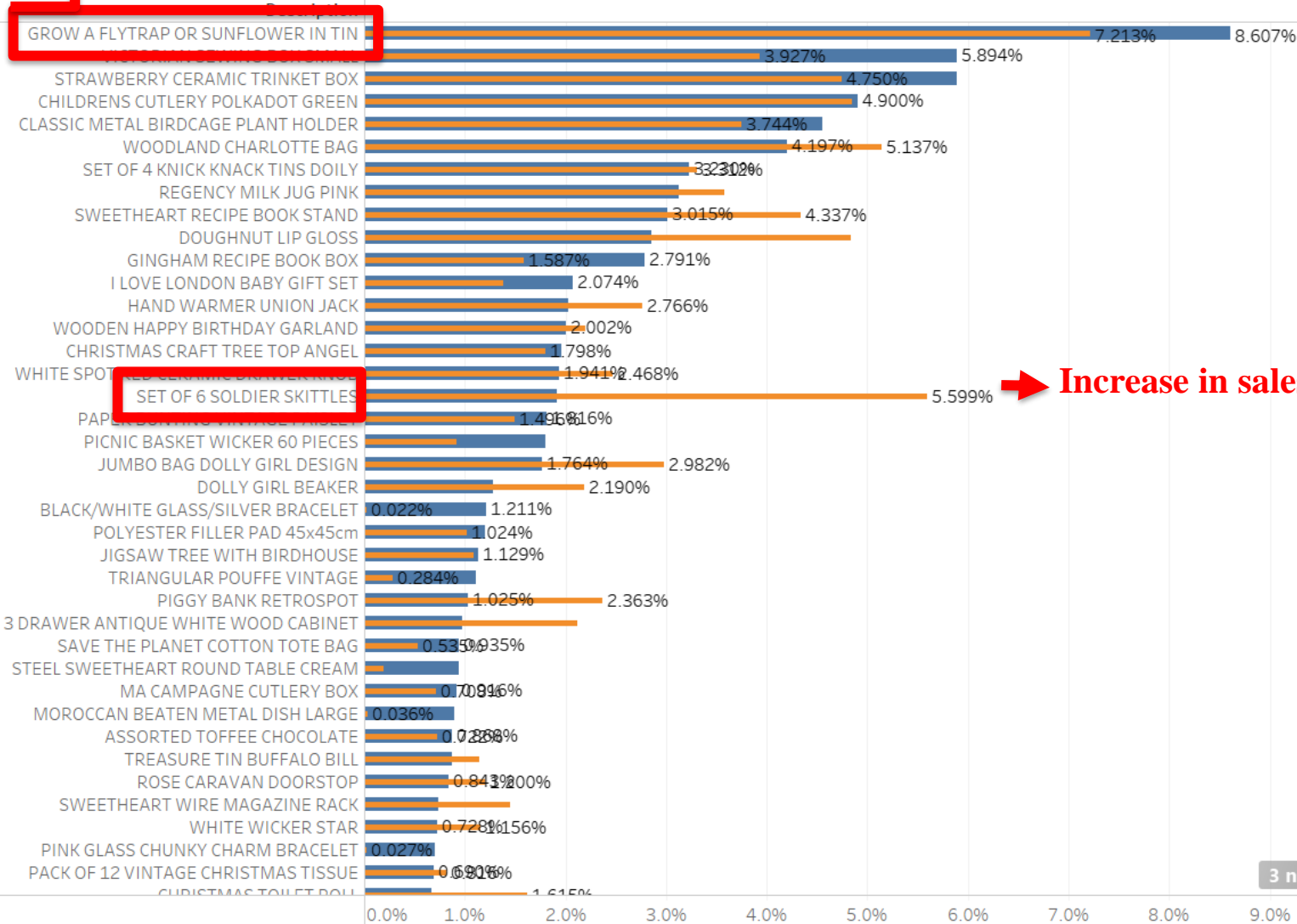
Leads in sales (A -high)

Revenue Comparison

Measure Names

% of Total Revenue 2020.

% of Total Revenue 2021.



Increase in sales (A - high)

3 nulls

% of Total Revenue

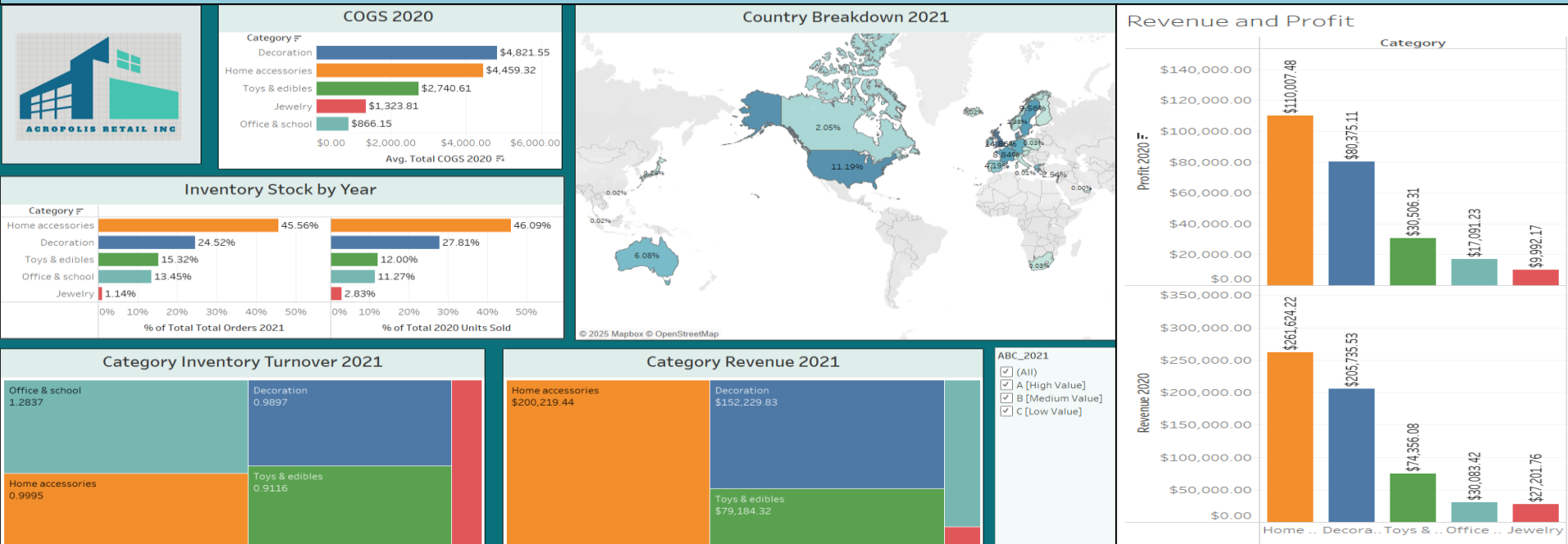
Inventory Turnover

 Sells fastest (A-high)

Inventory Turnover - Top 20

| Product Name | ABC_2021 | Turnover |
|-------------------------------------|------------------|----------|
| DOUGHNUT LIP GLOSS | A [High Value] | 1.969 |
| DOLLY GIRL BEAKER | A [High Value] | 1.908 |
| JAZZ HEARTS ADDRESS BOOK | C [Low Value] | 1.883 |
| REGENCY MILK JUG PINK | A [High Value] | 1.868 |
| PAPER BUNTING VINTAGE PAISLEY | B [Medium Value] | 1.839 |
| SET OF 4 KNICK KNACK TINS DOILY | A [High Value] | 1.818 |
| CHILDRENS CUTLERY POLKADOT GREEN | A [High Value] | 1.780 |
| JUMBO BAG DOLLY GIRL DESIGN | A [High Value] | 1.762 |
| WOODLAND CHARLOTTE BAG | A [High Value] | 1.760 |
| PACK OF 12 VINTAGE CHRISTMAS TISSUE | B [Medium Value] | 1.746 |
| TREASURE TIN BUFFALO BILL | B [Medium Value] | 1.741 |
| VICTORIAN METAL POSTCARD SPRING | B [Medium Value] | 1.741 |
| WHITE WICKER STAR | B [Medium Value] | 1.738 |
| WHITE SPOT RED CERAMIC DRAWER KNOB | A [High Value] | 1.714 |
| incorrectly credited C550456 see 47 | C [Low Value] | 1.671 |
| WOODEN HAPPY BIRTHDAY GARLAND | A [High Value] | 1.605 |
| POPART RECT PENCIL SHARPENER ASST | C [Low Value] | 1.584 |
| POLYESTER FILLER PAD 45x45cm | B [Medium Value] | 1.560 |
| MA CAMPAGNE CUTLERY BOX | B [Medium Value] | 1.535 |
| PIGGY BANK RETROSPOT | A [High Value] | 1.521 |
| MULTICOLOUR SPRING FLOWER MUG | C [Low Value] | 1.519 |
| EASTER TIN KEEPSAKE | C [Low Value] | 1.517 |
| JIGSAW TREE WITH BIRDHOUSE | B [Medium Value] | 1.512 |
| A PRETTY THANK YOU CARD | C [Low Value] | 1.510 |
| RIBBON REEL FLORA + FAUNA | C [Low Value] | 1.508 |
| CHRISTMAS CRAFT TREE TOP ANGEL | B [Medium Value] | 1.491 |
| SWEETHEART RECIPE BOOK STAND | A [High Value] | 1.487 |
| MINI TAPES | C [Low Value] | 1.470 |
| STRAWBERRY CERAMIC TRINKET BOX | A [High Value] | 1.459 |
| PORCELAIN BUDAH INCENSE HOLDER | C [Low Value] | 1.453 |
| DOILEY STORAGE TIN | B [Medium Value] | 1.447 |
| FAIRY CAKES NOTEBOOK A7 SIZE | C [Low Value] | 1.437 |
| FRENCH BLUE METAL DOOR SIGN 2 | C [Low Value] | 1.436 |
| GROW A FLYTRAP OR SUNFLOWER IN TIN | A [High Value] | 1.420 |
| FAIRY DREAMS INCENSE | C [Low Value] | 1.416 |
| POLYESTER FILLER PAD 45x30cm | C [Low Value] | 1.416 |
| SET OF 6 SOLDIER SKITTLES | A [High Value] | 1.400 |
| CLASSIC METAL BIRDCAGE PLANT HOLDER | A [High Value] | 1.375 |
| 3 DRAWER ANTIQUE WHITE WOOD CABINET | A [High Value] | 1.350 |

Category Analysis

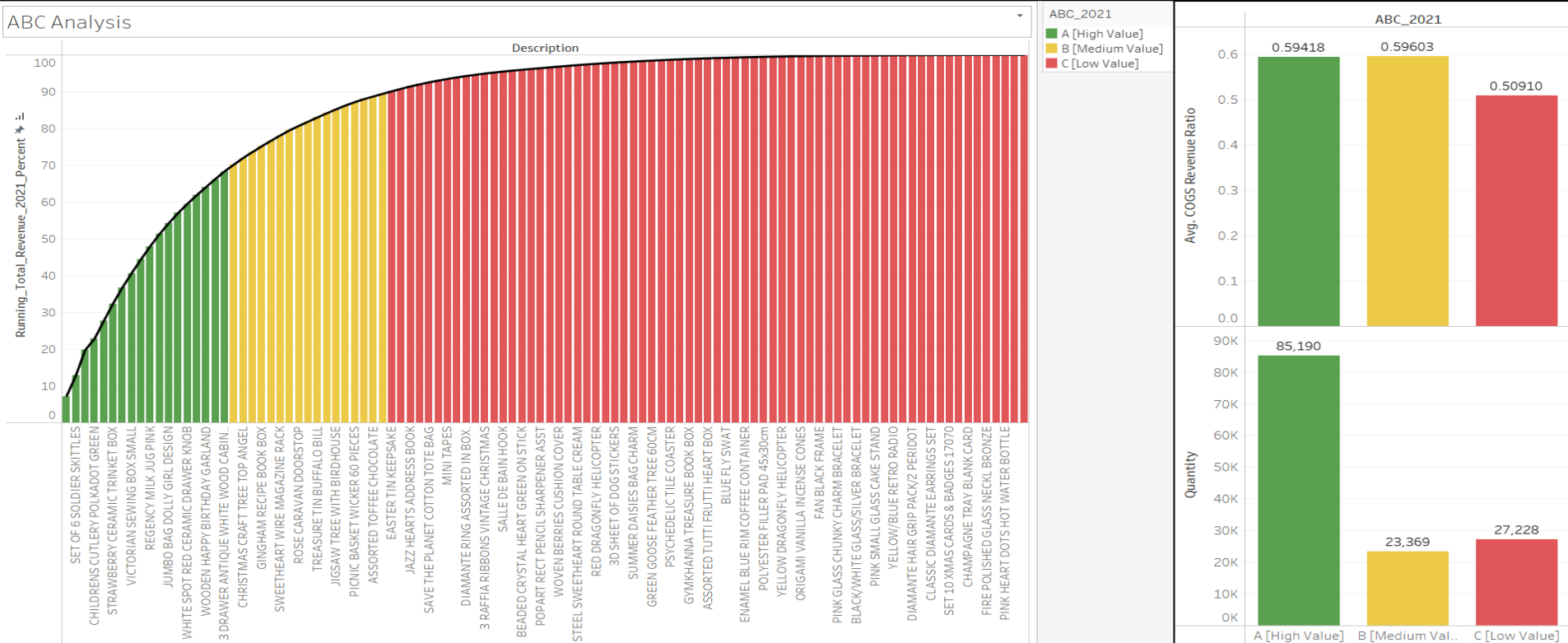


- Home accessories - highest revenue
- Inventory turnover rates < 1 for all categories (except Office & schools) => overstocking
- Decoration highest COGS - second-highest revenue => lower profit margin
- Significant percentage drops in Jewelry from 2020 to 2021 => reduced demand

ABC Analysis

- Technique for prioritizing the management of inventory
- Inventories are categorized into three classes - A, B, and C
 - Category A
 - bulk of the dollar volume
 - high-value, high-demand
 - most management efforts and oversights
 - Category C
 - a large number of items
 - small share of the dollar volume
 - low-value and low-demand
 - least attention
 - Category B - between A and C – number & dollar volume

ABC Analysis (cont.)



Four steps:

1. Revenue
2. Percent of total revenue
3. Cumulative increase
4. ABC

- Can increase class B stock since class A items have 3 times more stock but similar average inventory turnover rate
- Class A and B items have similar inventory turnover => sell almost equally fast, but class A items have a large amount of stock - results in big revenue

Recommendations

- Inventory turnover rates < 1.3 all categories
 - Reduce overstocking to lower costs
- B sells as fast as A but lesser stock
 - Increase stock of Class B items
- Home Accessories : top performer
 - Prioritize to maximize revenue
- Decorations: high COGS
 - Improve profit margins
- Jewelry: orders significantly decreased
 - Re-evaluate demand
- Implement ABC analysis
 - Focus on high-value items