Balanced Tree Clothing Sales Analytics Case-Study

☰ Tags	Analytics & Reporting Data Excel SQL Sales
📎 Files & media	sales.sql schema.sql

Project Background

Balanced Tree Clothing Company prides themselves on providing an optimised range of clothing and lifestyle wear for the modern adventurer!

Danny, the CEO of this trendy fashion company has asked you to assist the team's merchandising teams analyze their sales performance and generate a basic financial report to share with the wider business.

Available Data

`balanced_tree.product_details` includes all information about the entire range that Balanced Clothing sells in their store.

product_id character varying (6)	price integer	product_name character varying (32)	category_id integer	segment_id integer	style_id integer	category_name character varying (6)	segment_name character varying (6)	style_name character varying (19)
c4a632	13	Navy Oversized Jeans - Womens	1	3	7	Womens	Jeans	Navy Oversized
e83aa3	32	Black Straight Jeans - Womens	1	3	8	Womens	Jeans	Black Straight
e31d39	10	Cream Relaxed Jeans - Womens	1	3	9	Womens	Jeans	Cream Relaxed
d5e9a6	23	Khaki Suit Jacket - Womens	1	4	10	Womens	Jacket	Khaki Suit
72f5d4	19	Indigo Rain Jacket - Womens	1	4	11	Womens	Jacket	Indigo Rain
9ec847	54	Grey Fashion Jacket - Womens	1	4	12	Womens	Jacket	Grey Fashion
5d267b	40	White Tee Shirt - Mens	2	5	13	Mens	Shirt	White Tee
c8d436	10	Teal Button Up Shirt - Mens	2	5	14	Mens	Shirt	Teal Button Up
2a2353	57	Blue Polo Shirt - Mens	2	5	15	Mens	Shirt	Blue Polo
f084eb	36	Navy Solid Socks - Mens	2	6	16	Mens	Socks	Navy Solid

`balanced_tree.sales` contains product level information for all the transactions made for Balanced Tree including quantity, price, percentage discount, member status, a transaction ID and also the transaction timestamp.

prod_id character varying (6)	qty integer	price integer	discount integer	member boolean	txn_id character varying (6)	start_txn_time timestamp without time zone
c4a632	4	13	17	true	54f307	2021-02-13 01:59:43.296
5d267b	4	40	17	true	54f307	2021-02-13 01:59:43.296
b9a74d	4	17	17	true	54f307	2021-02-13 01:59:43.296
2feb6b	2	29	17	true	54f307	2021-02-13 01:59:43.296
c4a632	5	13	21	true	26cc98	2021-01-19 01:39:00.3456
e31d39	2	10	21	true	26cc98	2021-01-19 01:39:00.3456
72f5d4	3	19	21	true	26cc98	2021-01-19 01:39:00.3456
2a2353	3	57	21	true	26cc98	2021-01-19 01:39:00.3456
f084eb	3	36	21	true	26cc98	2021-01-19 01:39:00.3456
c4a632	1	13	21	false	ef648d	2021-01-27 02:18:17.1648

Case Study Questions

The following questions can be considered key business questions and metrics that the Balanced Tree team requires for their monthly reports.

High Level Sales Analysis

1. What was the total quantity sold for all products?

2. What is the total generated revenue for all products before discounts?

3. What was the total discount amount for all products?

Transaction Analysis

1. How many unique transactions were there?

2. What is the average unique products purchased in each transaction?

3. What are the 25th, 50th and 75th percentile values for the revenue per transaction?

4. What is the average discount value per transaction?

5. What is the percentage split of all transactions for members vs non-members?

6. What is the average revenue for member transactions and non-member transactions?

Product Analysis

1. What are the top 3 products by total revenue before discount?

2. What is the total quantity, revenue and discount for each segment?

3. What is the top selling product for each segment?

4. What is the total quantity, revenue and discount for each category?

5. What is the top selling product for each category?

6. What is the percentage split of revenue by product for each segment?

7. What is the percentage split of revenue by segment for each category?

8. What is the percentage split of total revenue by category?

9. What is the total transaction "penetration" for each product? (hint: penetration = number of transactions where at least 1 quantity of a product was purchased divided by total number of transactions)

10. What is the most common combination of at least 1 quantity of any 3 products in a 1 single transaction?

Insights Deep Dive

Sales Overview

Over the Q1 period, the company generated **$1.29M** in total revenue from over **45,000 units sold** and **15,095(with 17% unique) transactions**. The **average transaction value** was approximately **$515.80**, with an **average discount of 12%** applied.

> Only $40K in revenue came from full-priced sales, highlighting a high dependency on discounts.

Month-on-Month Growth: Revenue & Sales Steady Climb

Monthly trends
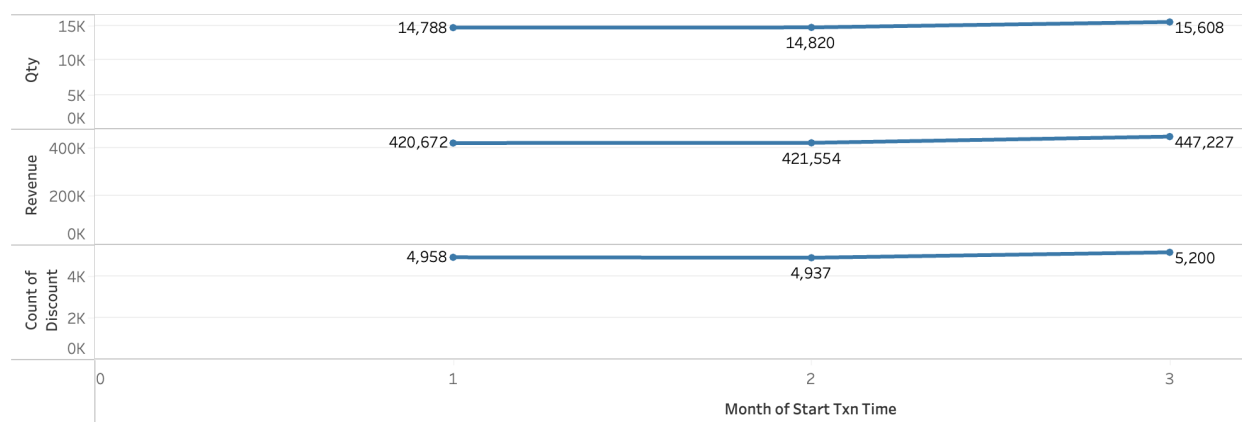
- **Revenue trend:** Grew consistently from **$420K in January to $447K in March**.
- **Quantity sold:** Increased marginally, ending at **15,608 units** in March.
- **Discount counts:** Fairly stable, suggesting no dramatic promotional surges were needed to fuel growth.
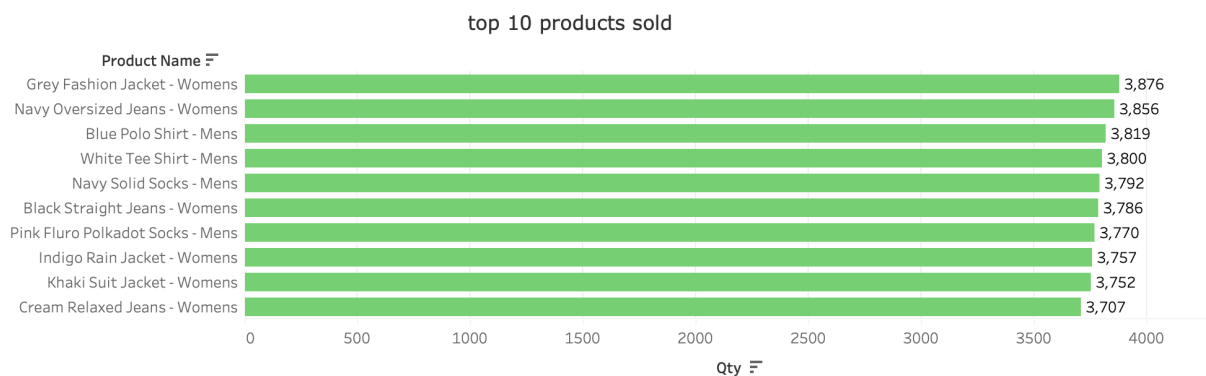
> Positive momentum without increased discounting suggests healthy organic demand.

Customer Segments: Members Drive Stronger Revenue

Member vs non member revenue
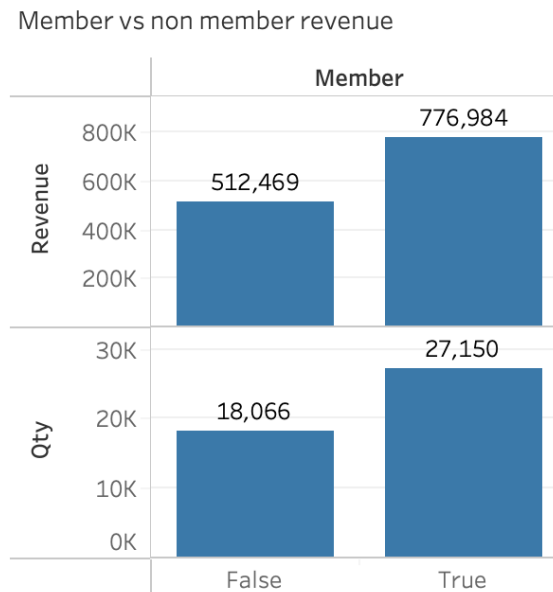

- **Members vs Non-Members:**
  - Members contributed **$776.9K**, Non-members only **$512.5K**.
  - Members also bought more — **27,150 units vs 18,066**.

top 10 products sold

Product Name	Qty
Grey Fashion Jacket - Womens	3,876
Navy Oversized Jeans - Womens	3,856
Blue Polo Shirt - Mens	3,819
White Tee Shirt - Mens	3,800
Navy Solid Socks - Mens	3,792
Black Straight Jeans - Womens	3,786
Pink Fluro Polkadot Socks - Mens	3,770
Indigo Rain Jacket - Womens	3,757
Khaki Suit Jacket - Womens	3,752
Cream Relaxed Jeans - Womens	3,707

## Product Insights: Women's Fashion Wins in Volume

- **6 out of top 10 best-sellers** were women's products.

- **Top product:** *Grey Fashion Jacket - Women's* (3,876 units sold).

Gender-Based Performance: Men's Items Have Higher Value

revenue and quantity by gender
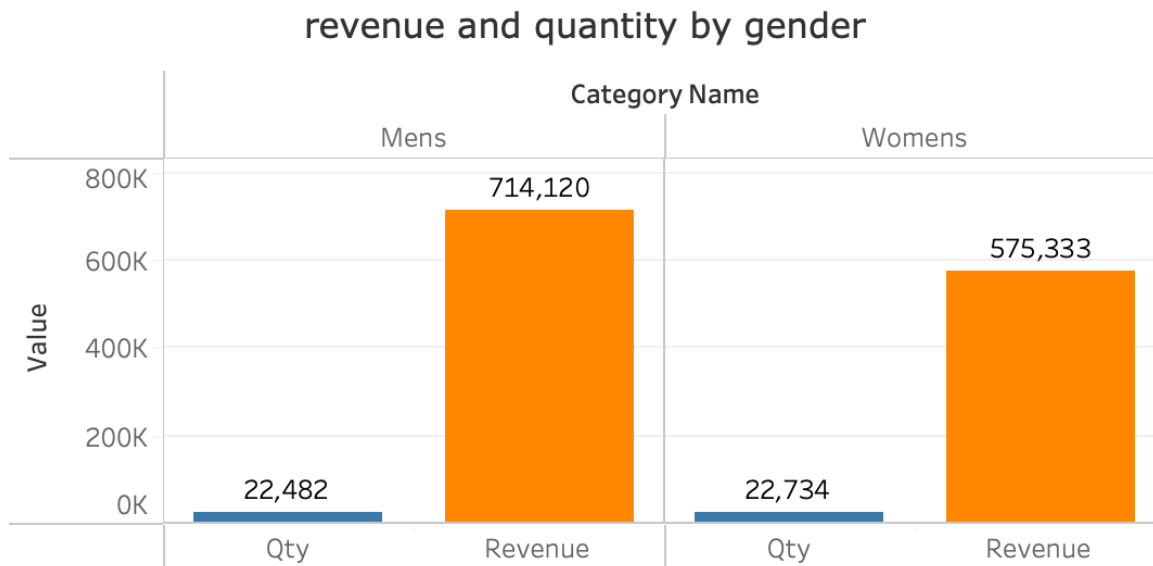
- **Men's revenue:** $714.1K from 22,482 units.

- **Women's revenue:** $575.3K from 22,734 units.

Weekly Trends Reveal Campaign Impact

weekly trends
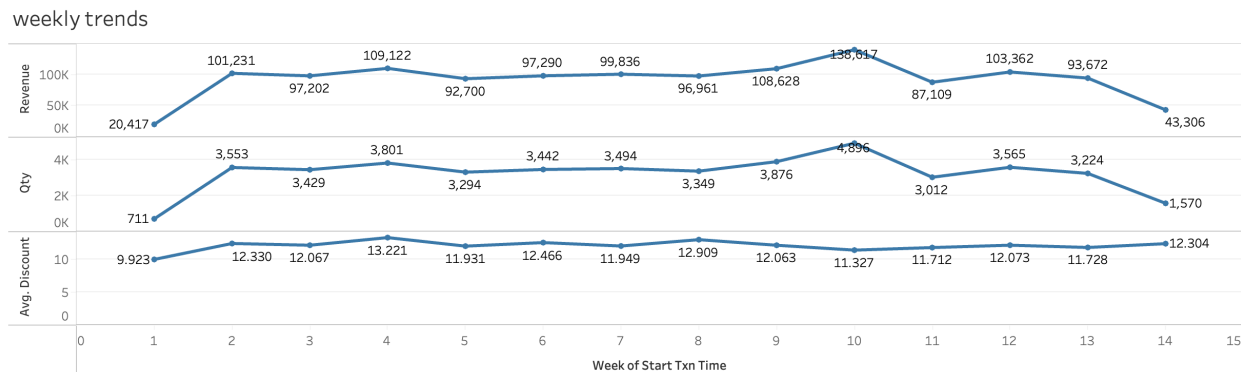
- **Week 10** was the peak: ~$138K in revenue, **4,896 units sold.**

- Weeks **2–9** had consistently strong performance (~$92K–109K/week).

- **Weeks 13–14** saw a sharp drop in both revenue and volume.

- **Discount levels** remained fairly consistent between **11–13%**.

Recommendations

Focus on Member-Driven Growth

- Members contributed **51% more revenue** and **50% more quantity sold**.

- Strengthen loyalty program benefits

- Offer personalized promotions

- Drive engagement through targeted communications

Prioritize Women's Product Expansion

- 6 of top 10 products sold are from the Women's category.

- Increase inventory for best-selling women's products

- Introduce more variations & style bundles

- Feature women's products prominently in marketing

Optimize Pricing for Women's Products

- Women's products sell in similar volumes as men's but generate **lower revenue**.

- Reassess pricing structure

- Explore premium product lines

- Position higher-value items more strategically

Maintain Current Discount%

- Average discount stayed consistent (~12%) while revenue and sales grew.

- Retain current discounting strategy

- Avoid deep discounts

- Test micro-targeted promotions for specific segments

Promote Top-Selling Items

- Items like *Grey Fashion Jacket - Women's* & *Blue Polo Shirt - Men's* are clear winners.

- Feature in digital ads, homepage banners, and email campaigns

- Offer limited-time bundles on top performers