

CUSTOMER BEHAVIOR ANALYSIS

By Abdallah AMR
Python | SQL | Power BI

PROJECT OVERVIEW

Goal

Understand customer shopping behavior and revenue patterns

Tools Used

Python, SQL Server, Power BI

Focus

How demographics, discounts, and subscriptions affect spending

Outcome

Clear insights into purchasing trends and top-performing segments

OBJECTIVES

Clean and prepare raw dataset for analysis

Identify top products and customer segments

Compare subscribers vs. non-subscribers

Analyze discount and rating relationships

Build an interactive BI dashboard

PYTHON **DATA CLEANING**

PROCESS

- Filled missing review ratings by median per category
- Standardized column names
- Created age group segments
- Mapped purchase frequency to numeric days
- Removed redundant columns

OUTPUT

- Cleaned dataset ready for SQL and BI modeling

SQL ANALYSIS

DATABASE

- Created database 'Customer'

KEY QUESTIONS

- Which gender generates more revenue?
- Do subscribers spend more than non-subscribers?
- What are the top 5 products by rating?
- How do discounts impact purchase value?
- How does revenue vary by age group?



POWER BI DASHBOARD



FEATURES

- KPIs: Total Revenue, Avg Purchase, Rating
- Slicers: Gender, Age Group, Subscription, Category
- Charts: Revenue by category, age, and subscription
- Interactive visuals for better exploration

KEY INSIGHTS

- Subscribers spend about 25% more than non-subscribers
- Clothing and Accessories drive the highest sales
- Young and middle-aged customers dominate revenue
- Discounts raise purchase count but not order value
- Express shipping = higher order value

FUTURE IMPROVEMENTS

Add predictive models
(LTV, churn)

Automate ETL for
dashboard refresh

Apply clustering for
customer segmentation

CONCLUSION

Delivered an end-to-end
analytics workflow

Translated raw data into
business insights

Demonstrated technical
and analytical skills with
clear visual impact

THANK YOU

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