

MINI PROJECT #1

Analyzing eCommerce Business Performance with SQL

by
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ABOUT ME



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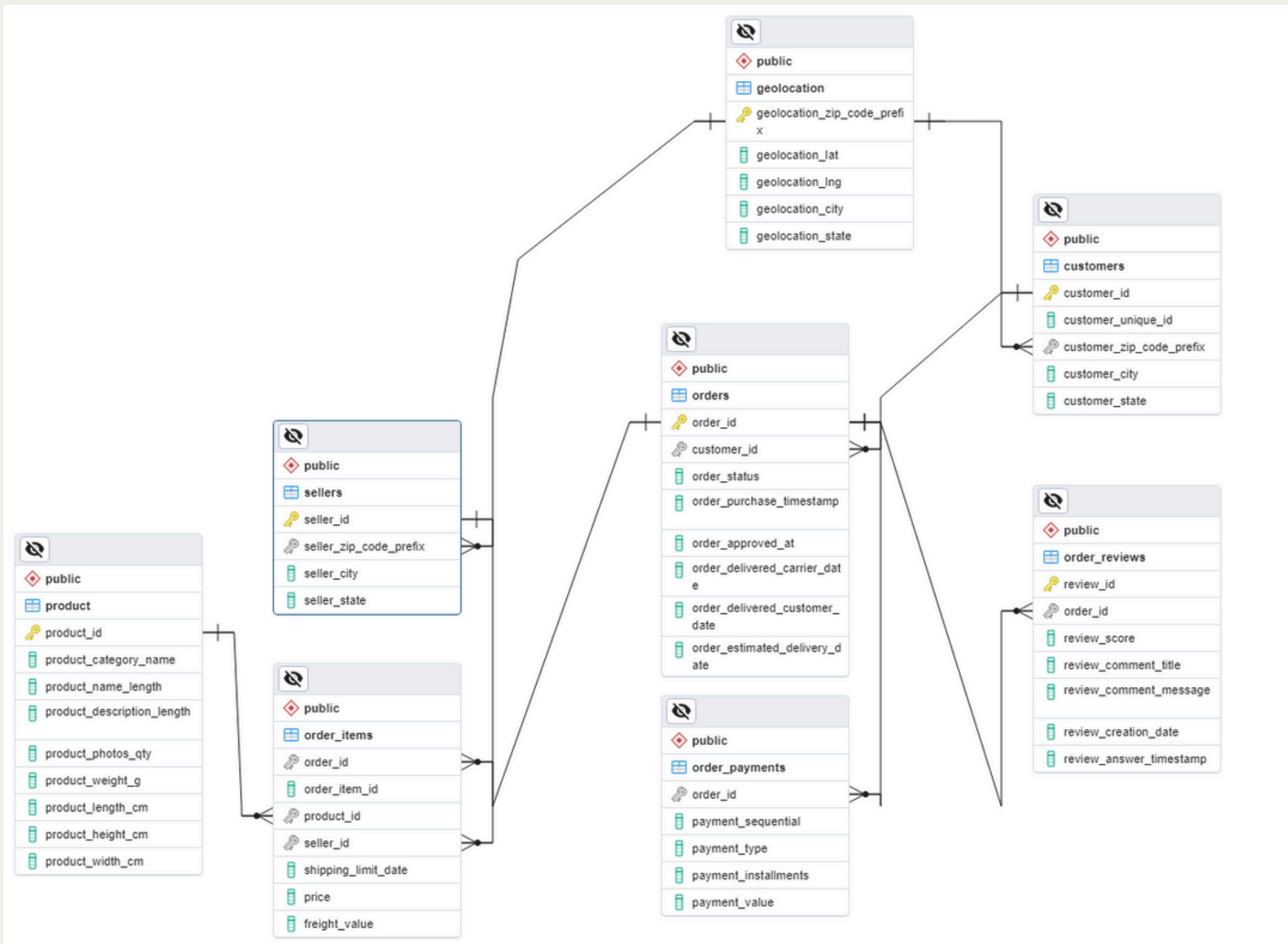
Regita Afifah

“Aspiring beginner in data science with an understanding of the fundamentals of statistics, data analysis, and machine learning. Recently completed a bootcamp in Data Science and developed basic skills in SQL, Python, and BI Tools (Google Looker Studio), also familiar with essential data science libraries such as Pandas, NumPy, and Scikit-learn. Seeking an entry-level position in data science to gain new experiences and challenges.”

OVERVIEW

Measuring business performance is crucial for tracking, monitoring, and evaluating the success or shortcomings of various business processes within a company. This analysis will explain the performance of an eCommerce company, focusing on key business metrics such as customer growth, product quality, and payment methods. There are 3 main analyzes of this data, namely Annual Customer Activity Growth Analysis, Annual Product Category Quality Analysis, and Annual Payment Type Usage Analysis.

DATA PREPARATION



Full ERD image [here](#)

Full query [here](#)

1.

Create tables & Import CSV files

Import CSV files into tables created in PostgreSQL using the query tool with the 'CREATE TABLE' command while adding a primary key to each table, and then using 'COPY' command to import csv files to the tables.

2.

Add constraints & build ERD

Add constraints to each table using the 'ALTER TABLE' command and define foreign keys and references to make the ERD (Entity Relationship Diagram) between the tables.

ANNUAL CUSTOMER ACTIVITY GROWTH ANALYSIS

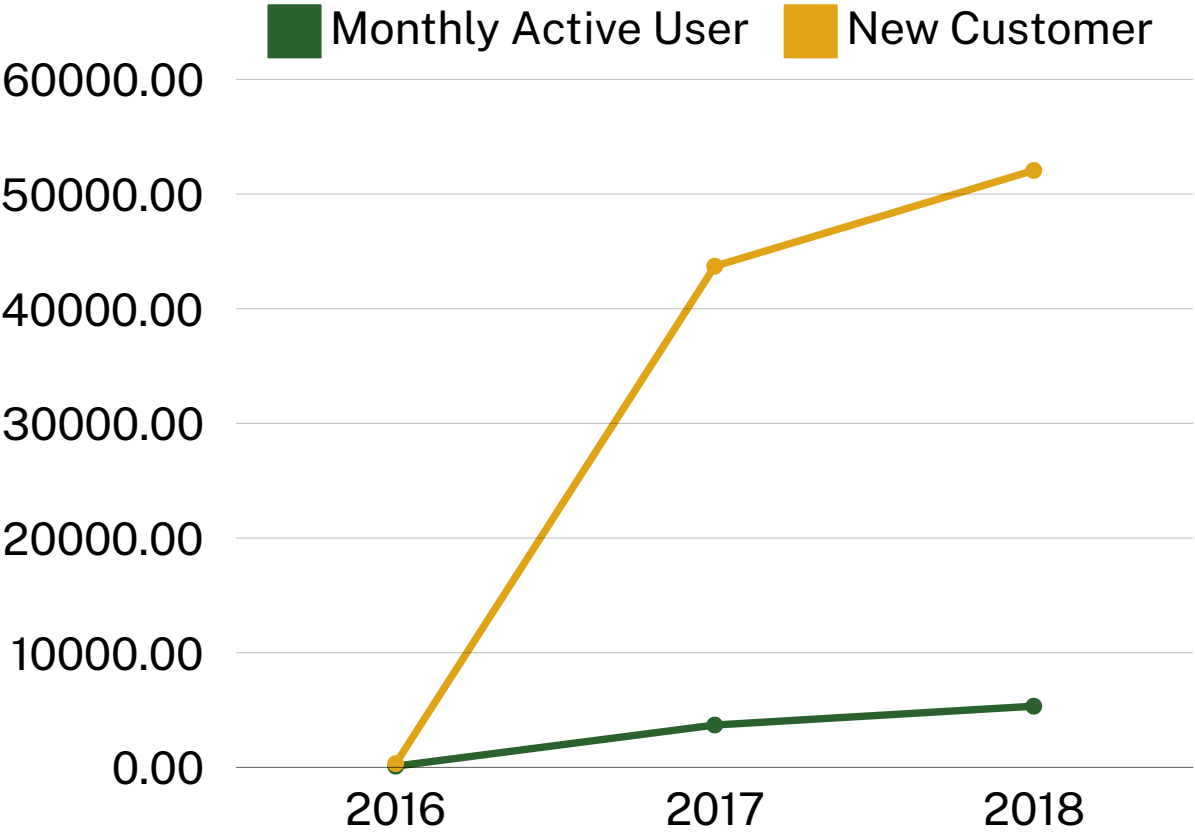
Annual customer activity growth analysis contains the data of monthly active users, new customers, customers who make repeat orders, and the average number of orders per year.

year	avg_mau	new_customer	repeat_customer	avg_customer_order
2016	108.67	326	3	1.01
2017	3694.83	43708	1256	1.03
2018	5338.20	52062	1167	1.02

Full query [here](#)

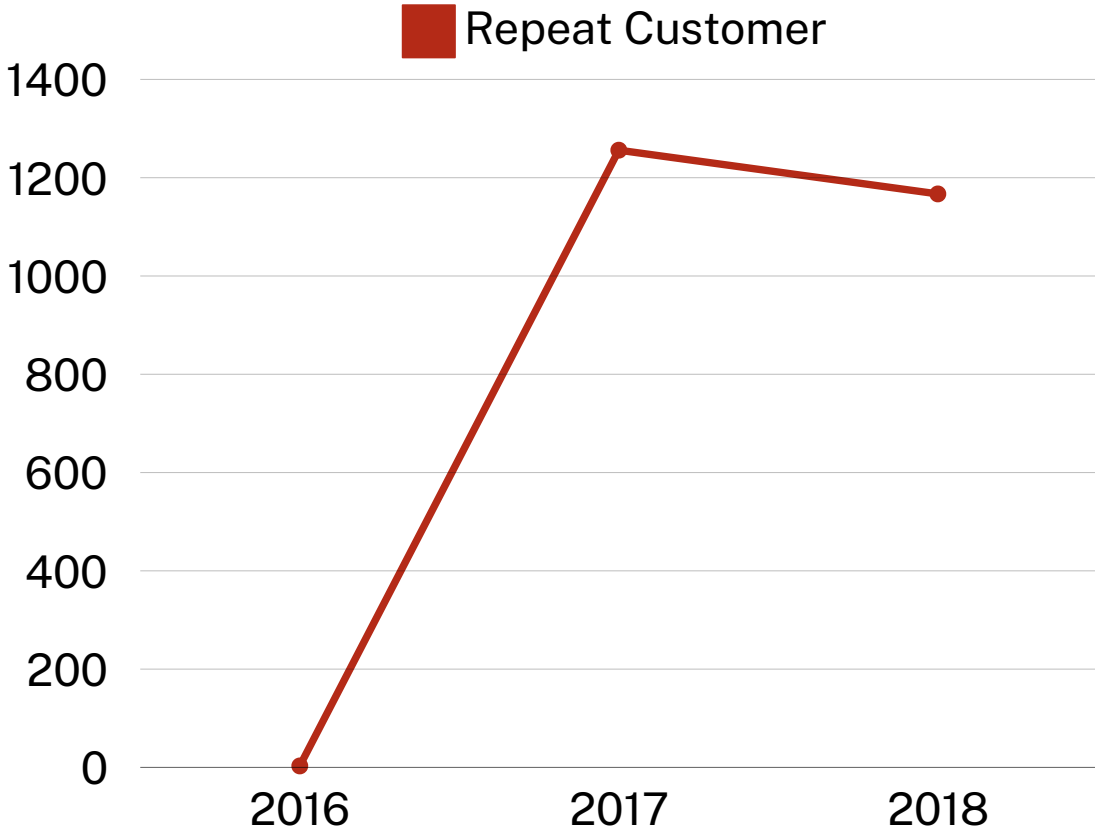
ANNUAL CUSTOMER ACTIVITY GROWTH ANALYSIS

Growth of Monthly Active Users
and New Customers



The number of average monthly active users and the number of new customers grew at similar rate.

Growth of Repeat Customers



There was an extreme increase in new customers from 2016 to 2017, but there was a decline in 2018.

ANNUAL PRODUCT CATEGORY QUALITY ANALYSIS

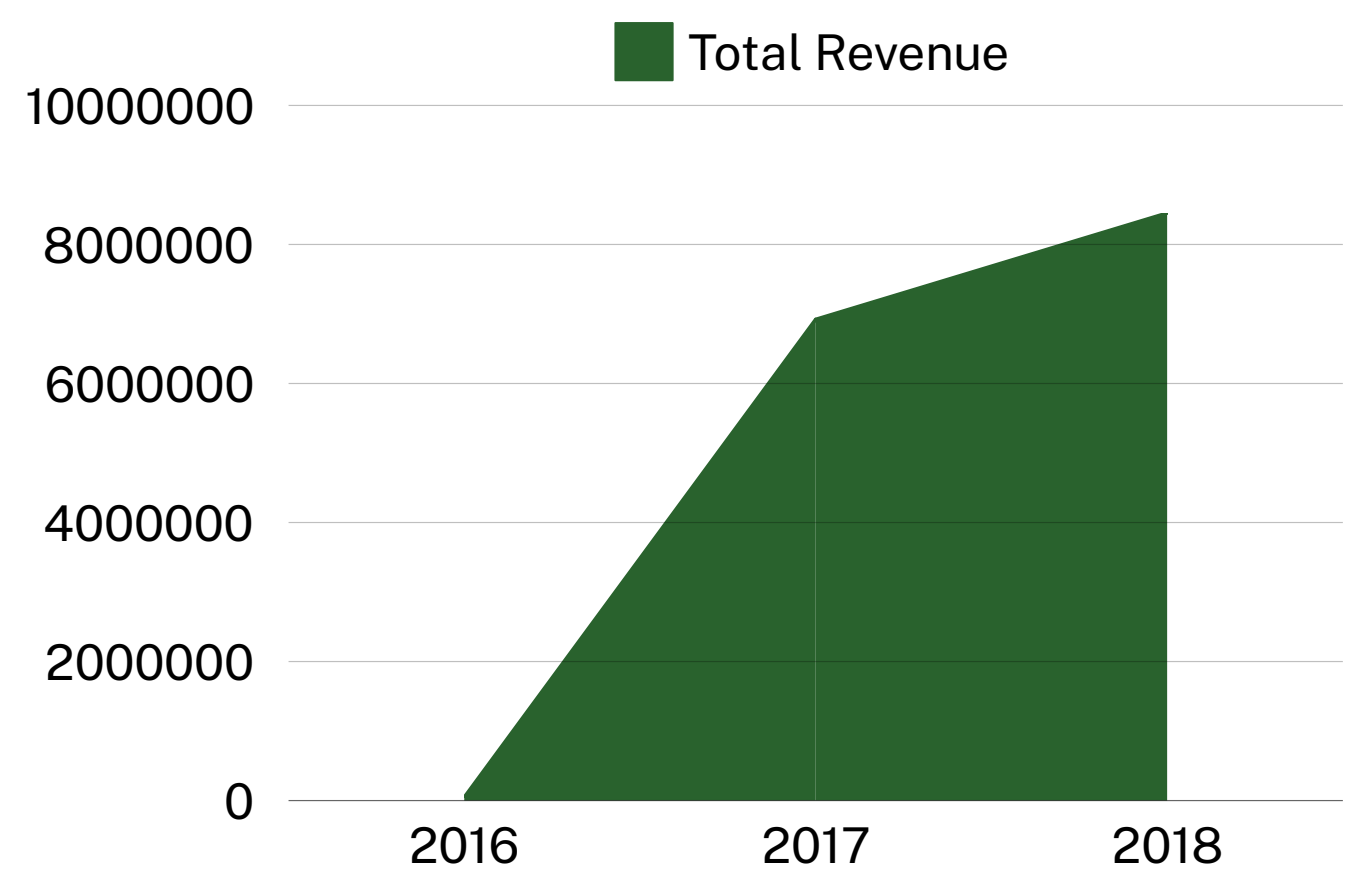
Annual product category quality analysis contains the data of total revenue, number of cancel orders, product categories with the highest sales, and product categories with the most cancel orders each year.

year	total_revenue	total_canceled_orders	top_product_ctgr	top_product_revenue	top_canceled_product_ctgr	top_canceled_product_order
2016	46653.74	26	furniture_decor	6899.35	toys	3
2017	6921535.24	265	bed_bath_table	580949.20	sports_leisure	25
2018	8451584.77	334	health_beauty	866810.34	health_beauty	27

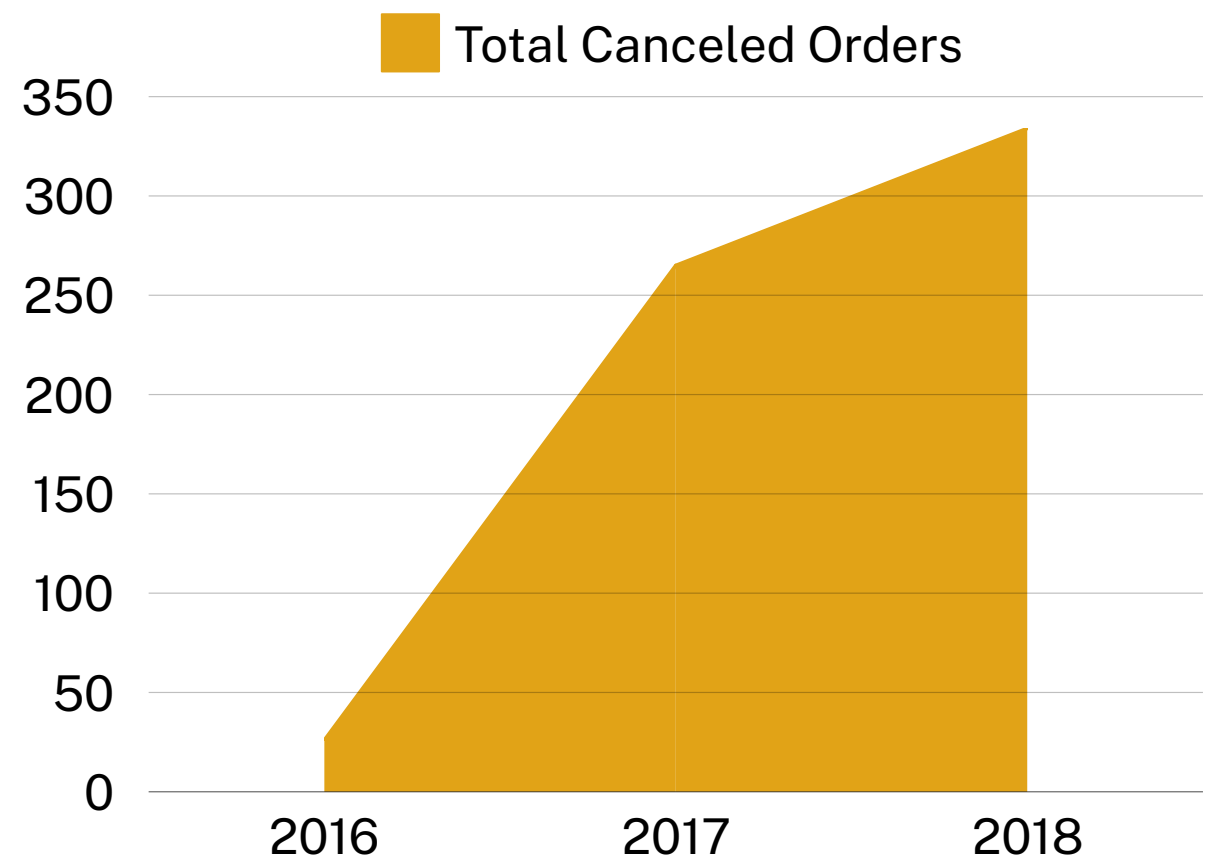
Full query [here](#)

ANNUAL PRODUCT CATEGORY QUALITY ANALYSIS

Growth of Total Revenue



Growth of Total Canceled Orders



The growth in total revenue and total canceled orders looks similar and shows a significant increase and it can be concluded that the company experienced an increase in sales.

ANNUAL PRODUCT CATEGORY QUALITY ANALYSIS

Product Sales by Category

	2016	2017	2018
Top Product Category	Furniture & Decor	Bed, Bath, & Table	Health & Beauty
Most Cancelled Product Category	Toys	Sports & Leisure	Health & Beauty

The top product category and most canceled product category in 2018 are the same, namely the health & beauty category. It can be said that this category has the highest contribution to the overall sales in 2018.

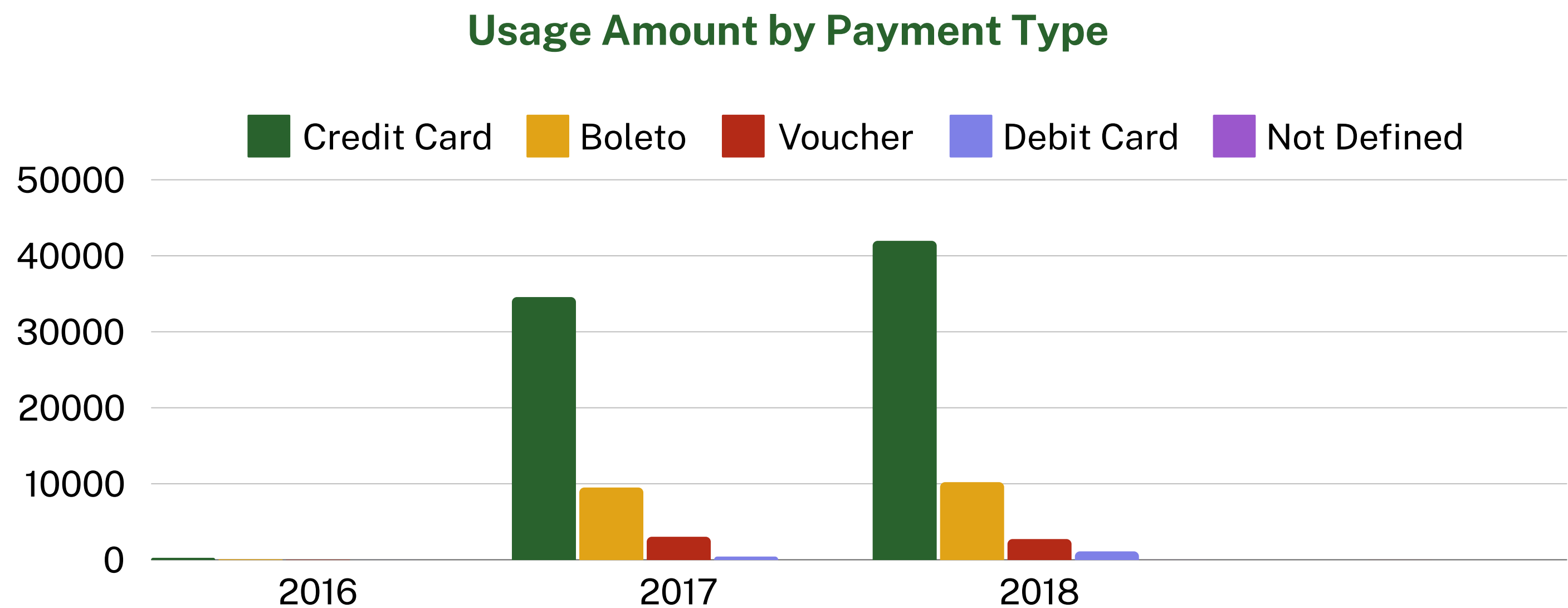
ANNUAL PAYMENT TYPE USAGE ANALYSIS

Annual payment type usage analysis consist of data that displays the amount of usage of each payment type all time sorted from the most favorite, and detailed information on the amount of usage of each payment type for each year.

payment_type	used_2016	used_2017	used_2018
credit_card	258	34568	41969
boleto	63	9508	10213
voucher	23	3027	2725
debit_card	2	422	1105
not_defined	0	0	3

Full query [here](#)

ANNUAL PAYMENT TYPE USAGE ANALYSIS



Credit card usage is the most widely used type of payment, in addition credit cards and boleto also experienced a significant increase from 2016 to 2017, and continued to increase in 2018.

Thank you!

- Regita -