

Credit Card Intelligence

Leveraging customer
financial data for business
growth

Group 3 – Grandmasters

Garcia | Legaspi | Mamangun | Reguyal | Tolentino



Credit Card popularity **on the rise** in the Philippines

Credit card billings swell by 47% in first quarter

By CNN Philippines Staff

Published May 16, 2023, 8:18:31 AM



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Metro Manila (CNN Philippines, May 16) — Post-lockdown revenge spending among Filipinos continued to fuel the domestic economy as seen by the surge in credit card use in the first quarter of 2023, the Credit Card Association of the Philippines (CCAP) said on Monday.

Data from the CCAP showed a 47% gross billings surge that totaled to ₱410 billion during the first three months of the year, the highest since the COVID-19 pandemic started in 2020. In the same period in 2022, billings reached ₱279 billion.

Latest from 1



Govt to rele
admin's flag



Card payments in Philippines to grow by 10.1% in 2023, forecasts GlobalData

Philippines card sector revives post-Covid but is now confronted with the challenge of rising inflation

By Douglas Blakey



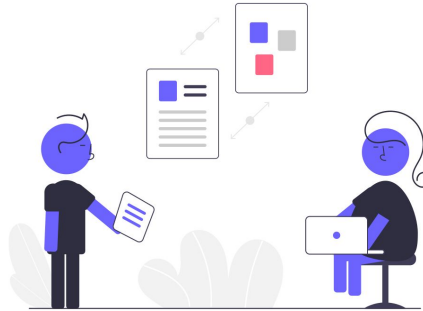
Card payments in the Philippines are set to grow by 10.1% in 2023 to reach PHP2.5 trillion (\$45.3 billion) in 2023, forecasts [GlobalData](#).

GlobalData's [Payment Cards Analytics](#) reveal that the card payments market in the Philippines registered a growth of 12.3% in 2022 to reach a value of PHP2.3trn (\$41.1bn), supported by the economic rebound and rise in post-pandemic consumer spending.

Who are we?

A team of data enthusiasts specializing in customer financial data. Our group devised a **business-ready, easy-to-absorb** analysis for credit card companies.

We aim to use this tool to leverage their data into **profitable, action-oriented** analysis.



Adobo Advantage Cards seeks our help to make better **data-driven decisions**

They want to:

- Take advantage of credit card fever
- Understand customer behavior and spending patterns
- Uncover customer segments and discover untapped opportunities



John Johnson
AAC CEO

Methodology



**Data Cleaning
and
Preprocessing**



**Exploratory
Data Analysis**



**RFM
Segmentation
and Clustering**



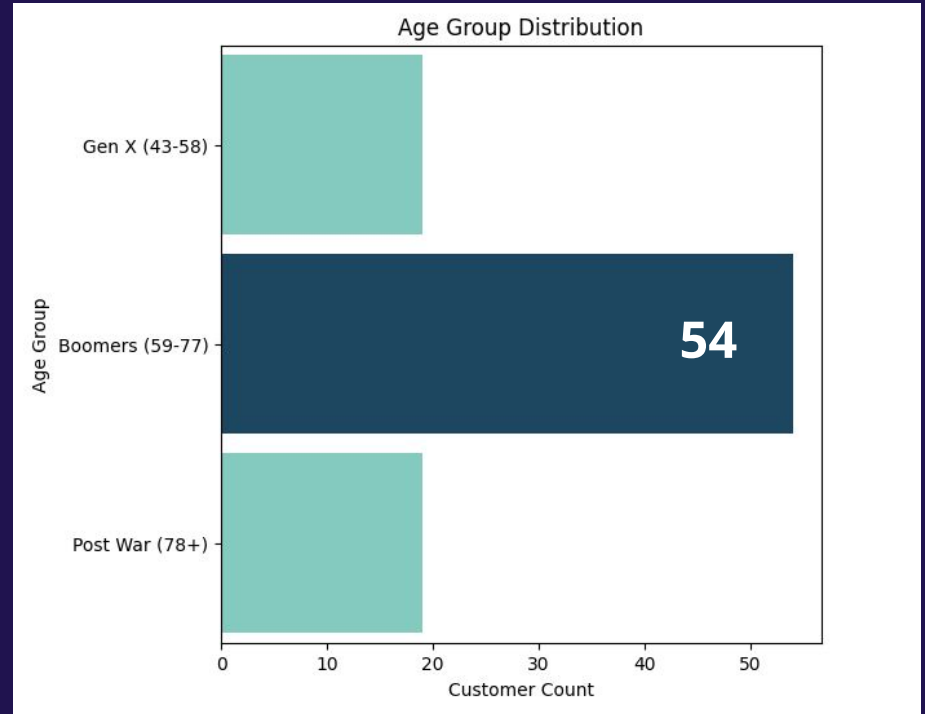
**Interpretation
of Results**

Data Used: 100K Transactions
89 Customers

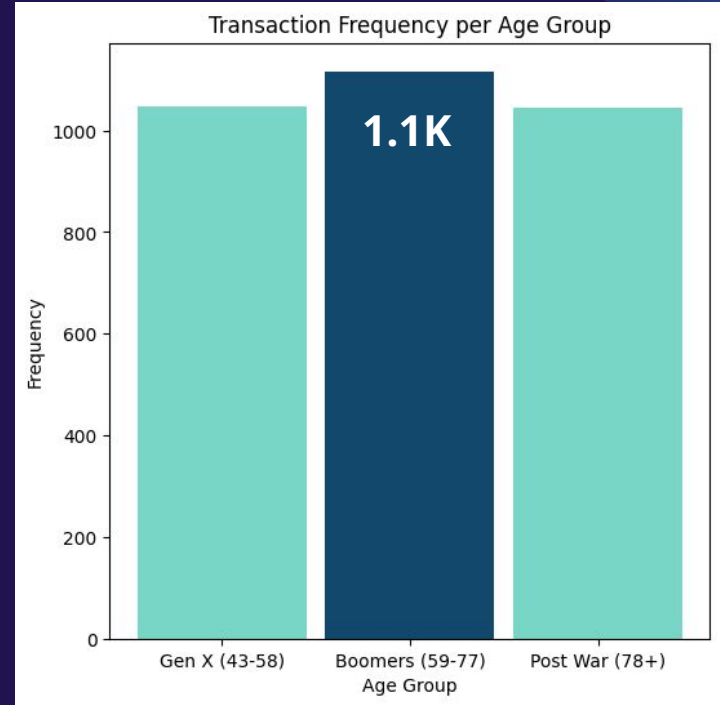
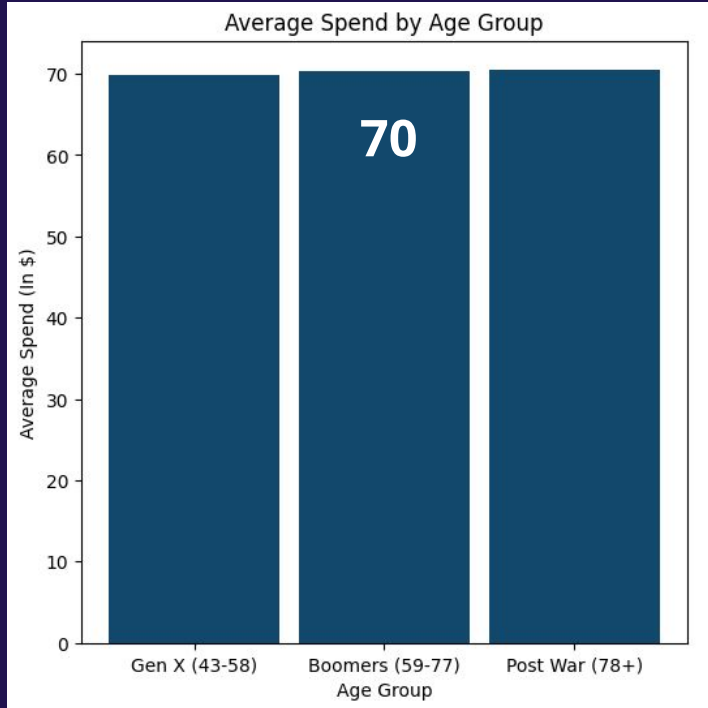
Exploring the Dataset

What is the Age Distribution of our customers?

- All the customers are **above the age of 50**
- **Boomers (Ages 59 – 77)** are **61%** of the customers

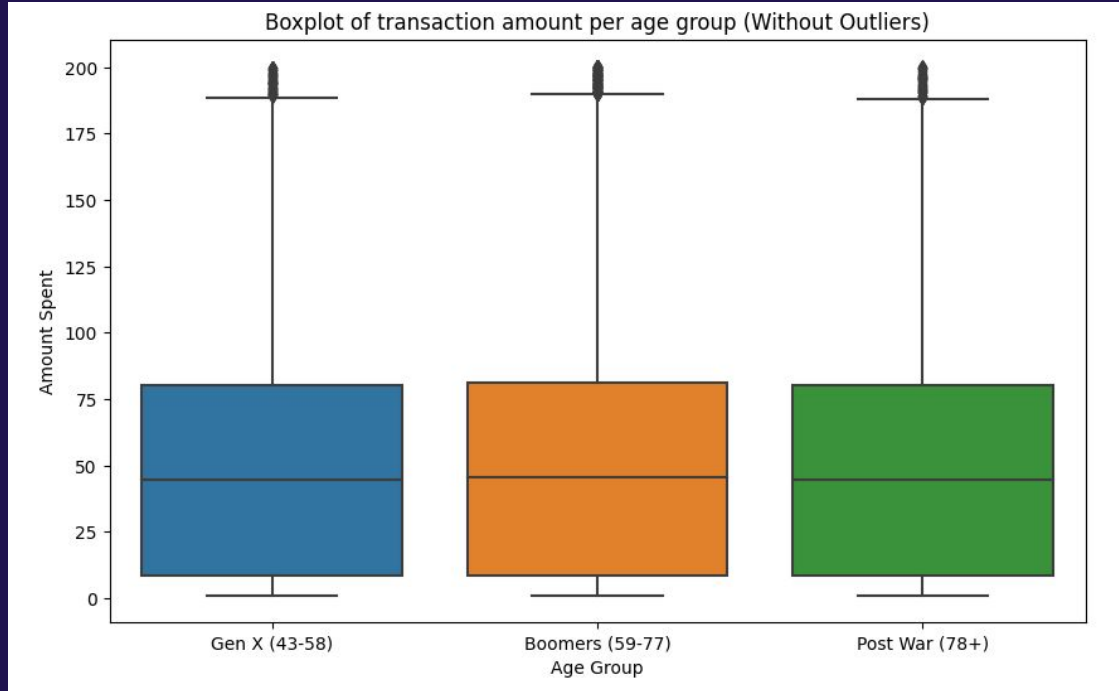


What is the Average Spend and Frequency of each generation?



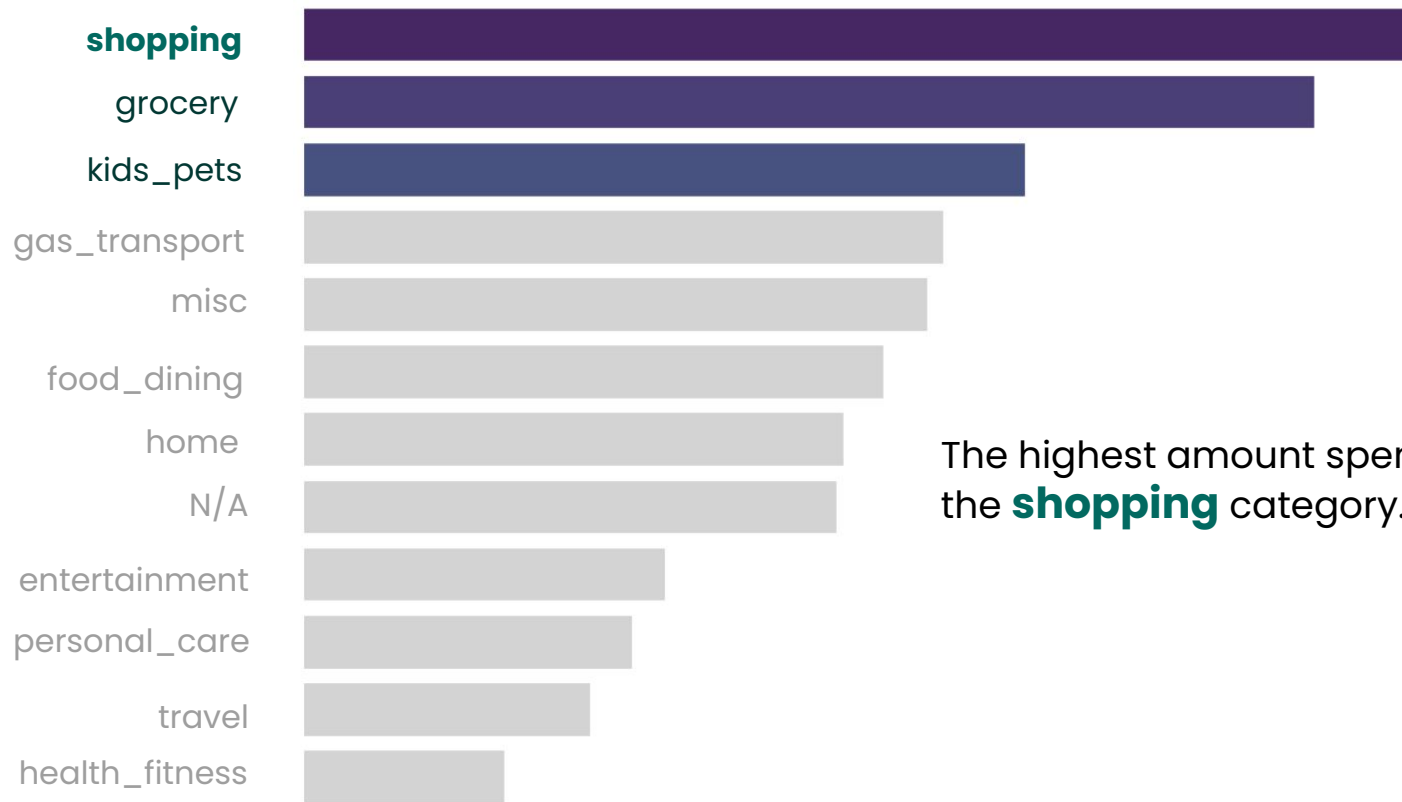
Each generation has roughly the same average spend and transaction frequency

What is the Spending Range of our Customers?



- Each generation has roughly the same amount spent on most transactions (~ \$20 - \$75)
- Good opportunity to increase the spend per transaction for each generation.

What is the Total Amount Spent per Category?



The highest amount spent is on the **shopping** category.

Main Objectives



**Increase Amount Spent
per Transaction**



**Increase Number
of Transactions**

There are two data science-powered approaches to reach these objectives

RFM Segmentation



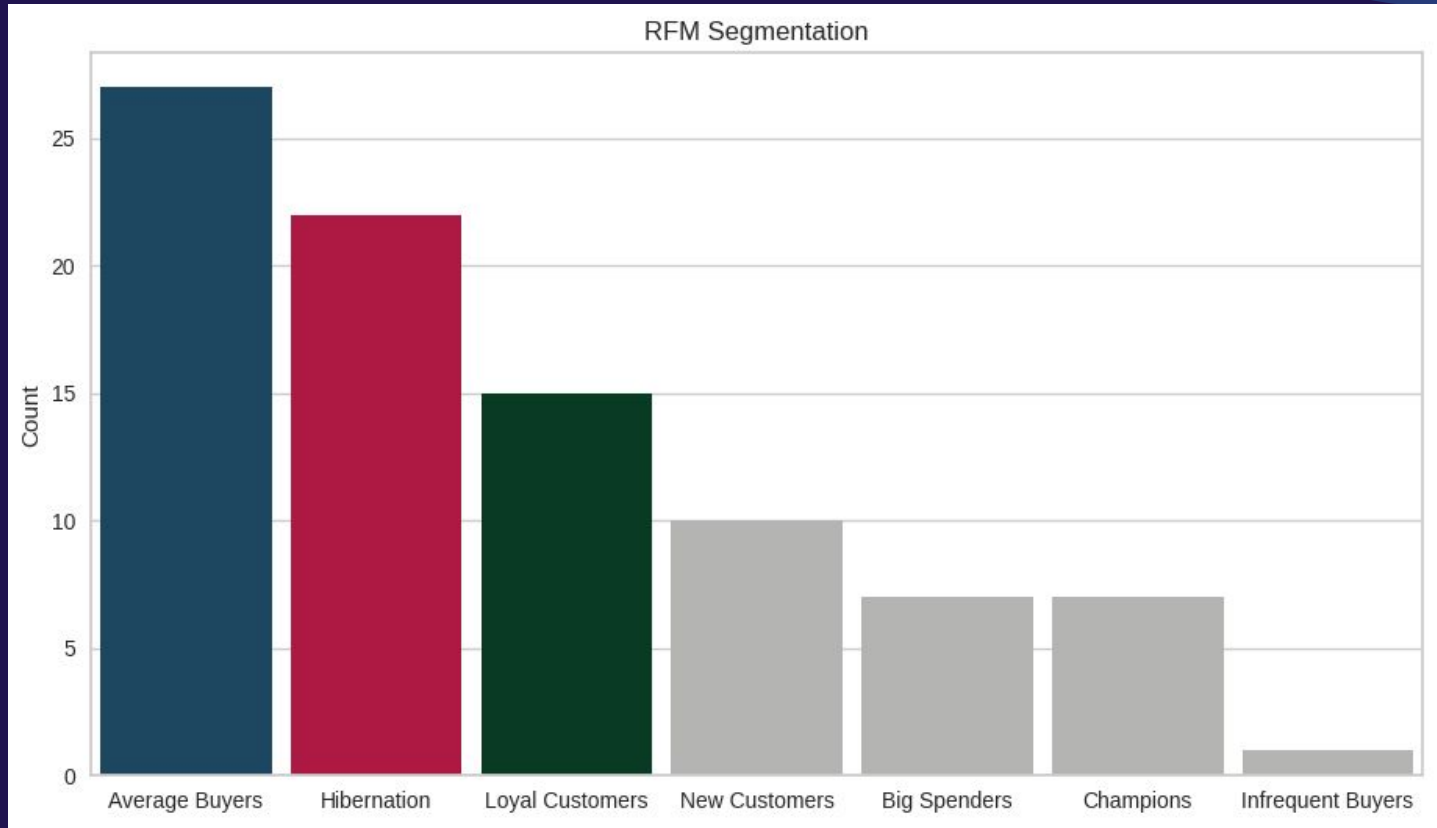
K-Means Clustering



RFM Segmentation

Segmentation	Definition
Champions	Customers who have bought the most recent, the most often, and spent the most.
Loyal Customers	Customers who buy the most often
Big Spenders	Highest paying customers
Infrequent Buyers	Customers who don't buy often
New Customers	First time buyers
Average Customers	Customers who have average spending, and buys regularly
Hibernation	Customers who bought the least amount, least often, and have not bought for a long time

RFM Segmentation



Recommendations using RFM Segmentation



Average Buyers

Send **personalized product recommendations** based on their past purchases

Offer **loyalty rewards** or **discounts** to encourage more frequent purchases



Hibernation

Send **reactivation campaigns** with special offers or discounts to bring them back



Loyal Customers

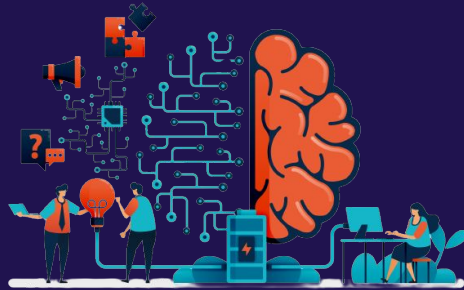
Show appreciation with **exclusive offers** and early access to new products

Cross-sell other categories to increase their spend

Clustering the transactions

Method: K-Means Clustering

- Simple but effective Machine Learning algorithm
- Groups similar data points together into clusters



Transaction
Amount Time of Day
Shopping Category

K-means clustering was used to segment customers based on transaction amount, hour, and category.

Prevailing Clusters

Cluster n=100,000	Average Spend	Item Category	Time of Day	Frequency per person
Cluster 0 n=39,775	Low Spend	Personal Care	Evening, Afternoon	High
Cluster 1 n=59,040	Low Spend	Home Essentials	Morning	High
Cluster 2 n=1,176	Medium Spend	Non Essential	Evening, Morning	Low
Cluster 3 n=9	High Spend	Travel	Afternoon, Morning	Low

*n = number of transactions

Home and Personal Care Transactions

Cluster	Average Spend	Category	Time of Day	Frequency
Cluster 0 n=39,775	Low Spend	Personal Care	Evening, Afternoon	High

Cluster 0 Recommendations:

- **Bundle Deals:** Create **bundle deals** as an effective way to encourage clients to make larger purchases especially during night transactions.
- **Category-Based Rewards:** Create special **rewards** for kids and pets, home, and personal care products.
- **Limited-Time Offers:** Create **limited-time offers**, such as "double cashback weekends" or "flash sales, to generate excitement and motivate clients to spend especially during night transactions.



Home Essentials and Grocery Transactions

Cluster	Average Spend	Category	Time of Day	Frequency
Cluster 1 n=59,040	Low Spend	Home Essentials	Morning	High

Cluster 1 Recommendations:

- **Morning deals:** Offer special promotions or deals during the early morning hours to attract more customers from this cluster. Consider offering discounts on groceries or gas for their daily commute.
- **Personalized Recommendations:** Use data analytics to provide personalized product recommendations based on their shopping habits to encourage larger transactions.
- **Convenience:** Focus on providing convenience for these customers, such as easy online ordering and quick checkout options.



Shopping and Non-Essential Transactions

Cluster	Average Spend	Category	Time of Day	Frequency
Cluster 2 n=1,176	Medium Spend	Non Essential	Evening, Morning	Low

Cluster 2 Recommendations:

- **High-End Products:** Since this cluster has significantly higher average spend, consider offering high-end or luxury products that match their spending capacity and to increase spending frequency.
- **Exclusive Events:** Organize exclusive late-night shopping events or limited-time offers for this cluster to entice them to spend more.



Travel and Hotel Bookings

Cluster	Average Spend	Category	Time of Day	Frequency
Cluster 3 n=9	High Spend	Travel	Afternoon, Morning	Low

Cluster 3 Recommendations:

- **Travel Packages:** Since this cluster is focused on travel, offer tailored travel packages, discounts on flights, hotels, or vacation packages to cater to their interest.
- **Exclusive Travel Benefits:** Provide exclusive travel benefits or rewards programs for this cluster, such as access to airport lounges, or offer low-fare discounts/events.
- **Search Engine Optimization:** Improve search engine optimization to increase views that would eventually lead to ticket sales.



Further Research

- Once more clients subscribe to AAC and more **sample size of account numbers** can be analyzed, revisit analysis on RFM
- Widen the dataset to cover **younger** customers to achieve a more robust analysis
- Get more data from customers from the different cities to be able to better gauge spending patterns according to **location**
- Further drill down on each item category e.g. **subdivide shopping** to uncover additional insights
- Increase data gathered to cover other features such as **family income** or other demographics such as **marital status**, etc. that may affect spending patterns
- Include data spanning more years to improve **seasonality** analyses



Thank you!