



BUSINESS QUESTIONS



- Predictive:** What **factors** are most likely to influence customer loyalty?
- Descriptive:** What is the **level** of customer satisfaction with the pricing of our products based on their characteristics?
- Another:** What are the **differences** in spending patterns of each visiting frequency?



4 BI Capabilities

Organizational Memory

Customer Relationship Management (CRM)
Enterprise resource planning (ERP)

I/P: Demographic, transactional, and customer feedback data

O/P: Customer-structured data

Information Integration

Text Mining

I/P: Customer Surveys

O/P: Integrated data for analysis

Insight Creation

Logistic regression to predict the probability of a customer being loyal or disloyal

I/P: Integrated data

O/P: Level of influence of various factors on customer loyalty, ranked in order

Presentation

Using **PowerBI** to solve business questions and gain insight

I/P: Integrated data

O/P: Visualization

Insight Creation Capability using an ML canvas

Value Propositions

To help the end-user(s) **make informed decisions** that will improve customer loyalty and drive business performance.
To **identify the factors** that are most likely to influence customer loyalty in order to improve customer satisfaction and retention.

Data Sources

Internal:

- CRM tool
- Payments database
- Customer feedback/Survey

External

- Social media data
- Market research data

Collecting Data

Use survey form tools like **Google Forms**. We will be **getting the survey data from database every month**.

Features

- Demographic data
- Transactional data
- Customer feedback

Building Models

Update the model monthly by **using the data from previous month**.

Decisions

By providing **insights into the key factors** that influence customer loyalty. Based on the results of the model, businesses can prioritize their efforts and resources.

ML task

I/P: Customer Survey data

O/P: Level of influence of various factors on customer loyalty, ranked in order

Problem: Regression model

Marketing Predictions

Utilize a model to **predict the loyalty and impact of various factors every month**, enabling us to detect any changes and make necessary adjustments.

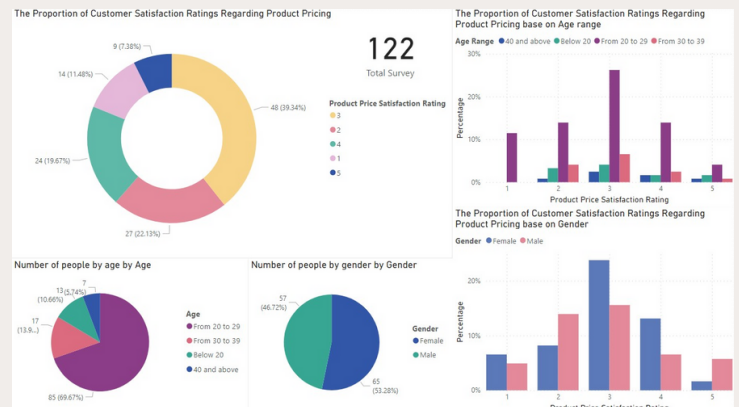
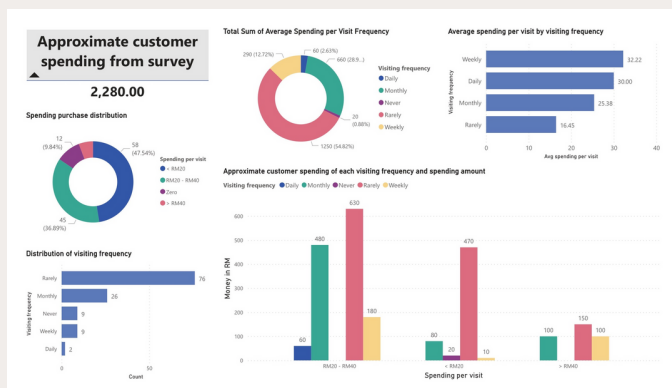
Offline Evaluation

- Correlation matrix
- R-squared (R^2) value
- Mean squared error
- Mean absolute error
- Cross-validation

Live Evaluation and Monitoring

- Customer loyalty
- Monitor churn rate
- Customer satisfaction surveys
- Check the Evaluation measurement
- A/B testing

Dashboard



Level of customer satisfaction with the pricing of our products based on their characteristics

The differences in spending patterns of each visiting frequency

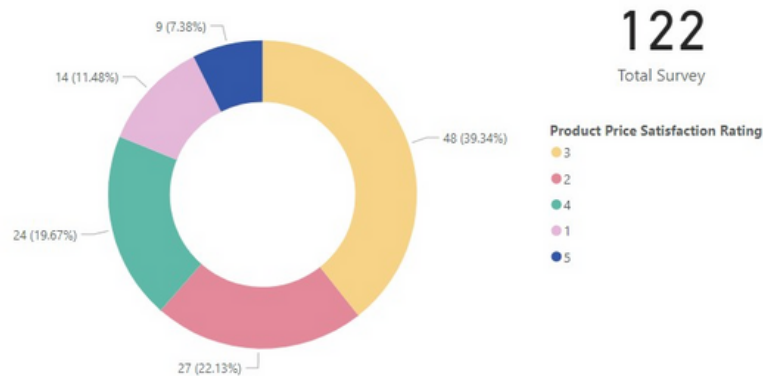
*Noted that: RM is Malaysian Ringgit (~8 THB)



Dashboard I

"What is the level of customer satisfaction with the pricing of our products based on their characteristics?"

The Proportion of Customer Satisfaction Ratings Regarding Product Pricing



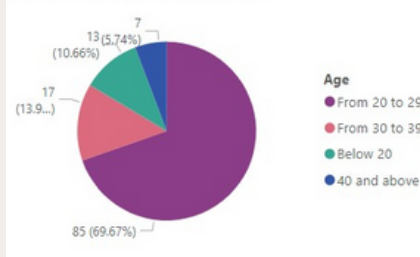
The Proportion of Customer Satisfaction Ratings Regarding Product Pricing base on Age range



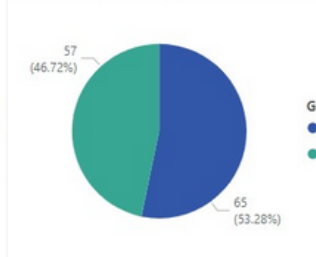
The Proportion of Customer Satisfaction Ratings Regarding Product Pricing base on Gender



Number of people by age by Age



Number of people by gender by Gender



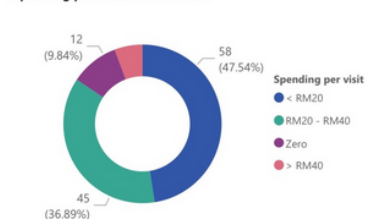
Dashboard II

"What are the differences in spending patterns of each visiting frequency?"

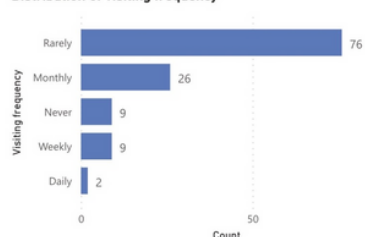
Approximate customer spending from survey

2,280.00

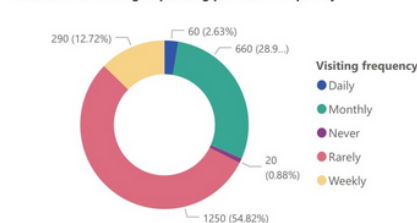
Spending purchase distribution



Distribution of visiting frequency

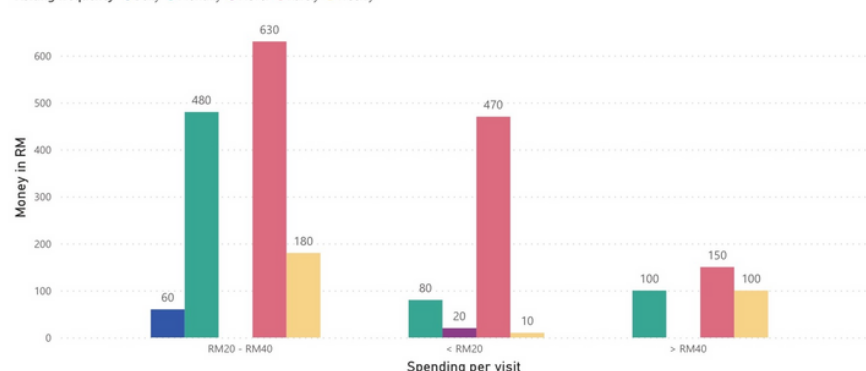


Total Sum of Average Spending per Visit Frequency



Approximate customer spending of each visiting frequency and spending amount

Visiting frequency: Daily (Blue), Monthly (Green), Never (Purple), Rarely (Red), Weekly (Yellow)



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