

TheAnalyticsTeam

Sprocket Central Pty Ltd

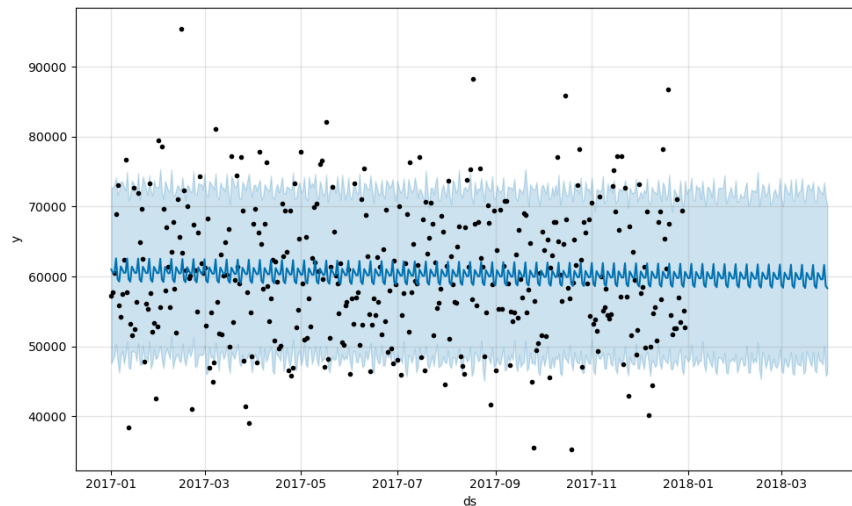
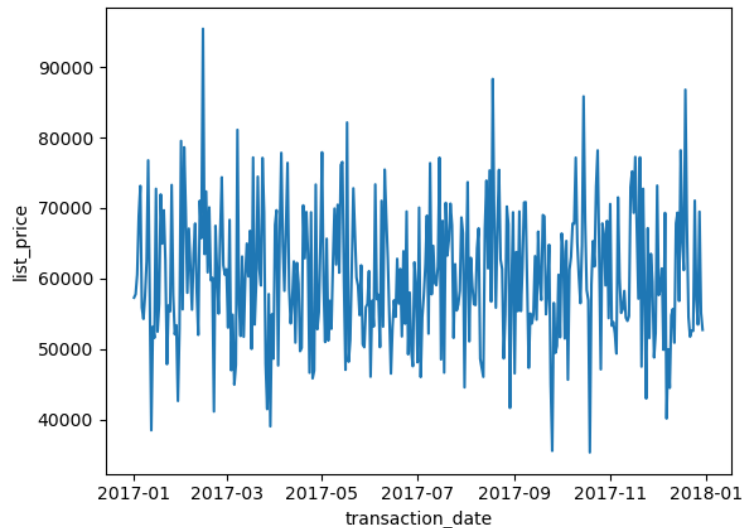
Data analytics approach
Muhammad Hanif Fajari

Agenda

1. Introduction
2. Data Exploration
3. Model Development
4. Interpretation

Introduction

Transaction in 2017

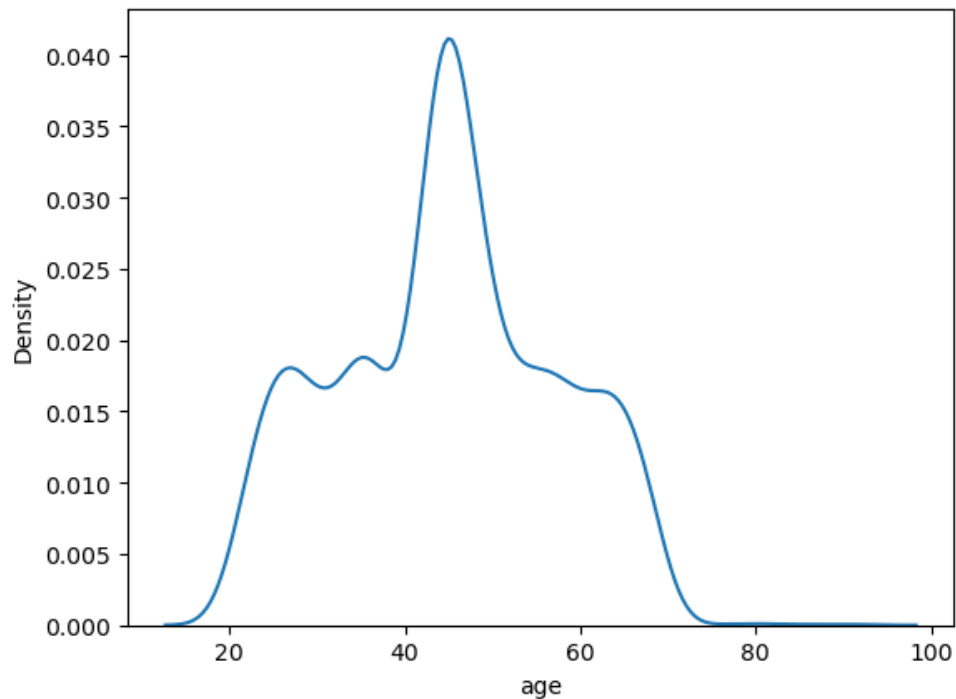


Transaction in 2017 become to be stagnation phase. Forecasting for first quarter in 2018 continue this pattern.

Introduction

Sprocket Central Pty Ltd is KPMG client whom specializes in high quality bikes and accessible cycling accessories to riders. **Sales in 2017** come to **stagnation phase**. With our **forecasting in first quarter in 2018** will continue **this stagnation phase**. Their marketing given us **1000 potential customer**. Sprocket Central Pty Ltd want to boost business by analysing their customer. Data Analytics in KPMG AU will **develop model to segmentation their customer**. Objective of this model, want to increasing the sales with **effective and efficient marketing strategies** with precision target marketing.

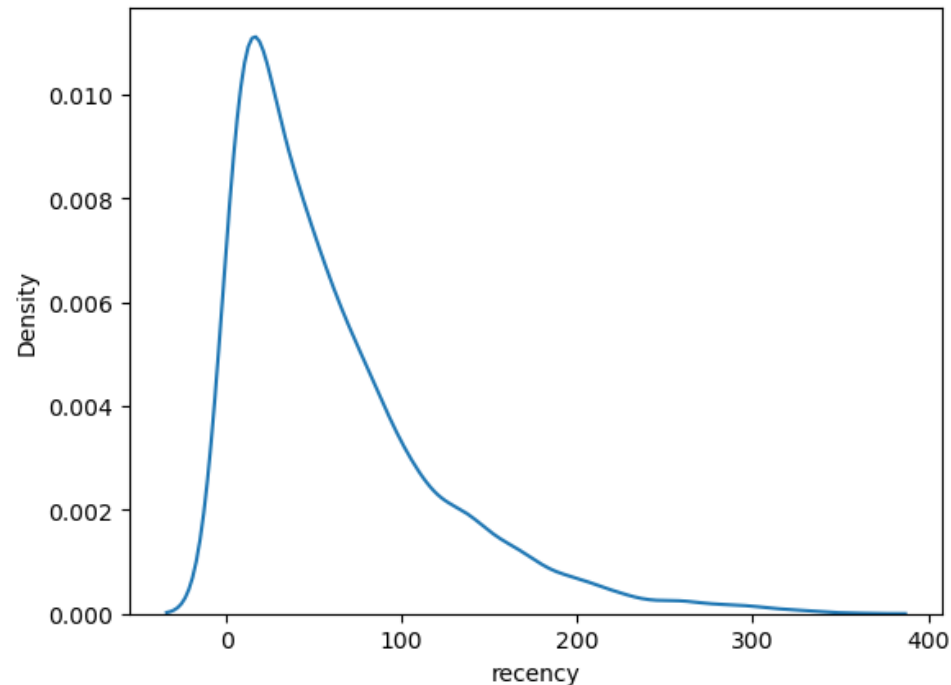
Data Exploration



index	age
count	3491
mean	44.83357
std	12.44951
min	20
25%	36
50%	45
75%	54
max	91

Mean of old customer is 43 years.75% of customer older than 34 yrs .50% of customer older than 45 years.

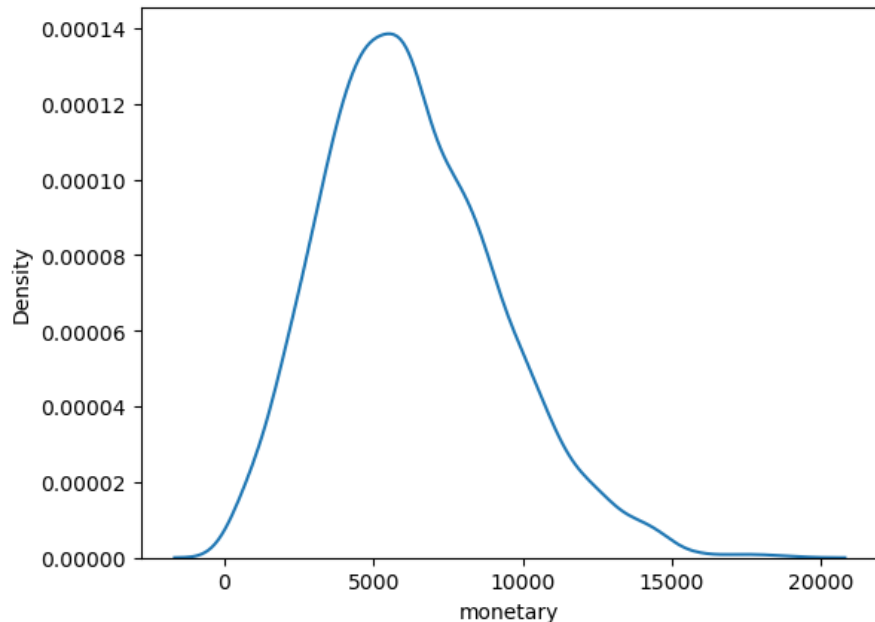
Data Exploration



count	mean	25%	50%	75%
3493	61.23	17	44	86

Recency showed us **how recently** a customer has made purchase. KDE plot of recency, distribution of recency is **positive skewness**. This distribution showed us many of recent customer who buy bicycles or accessories in our store. **25% customer buy our product within 17 days.**

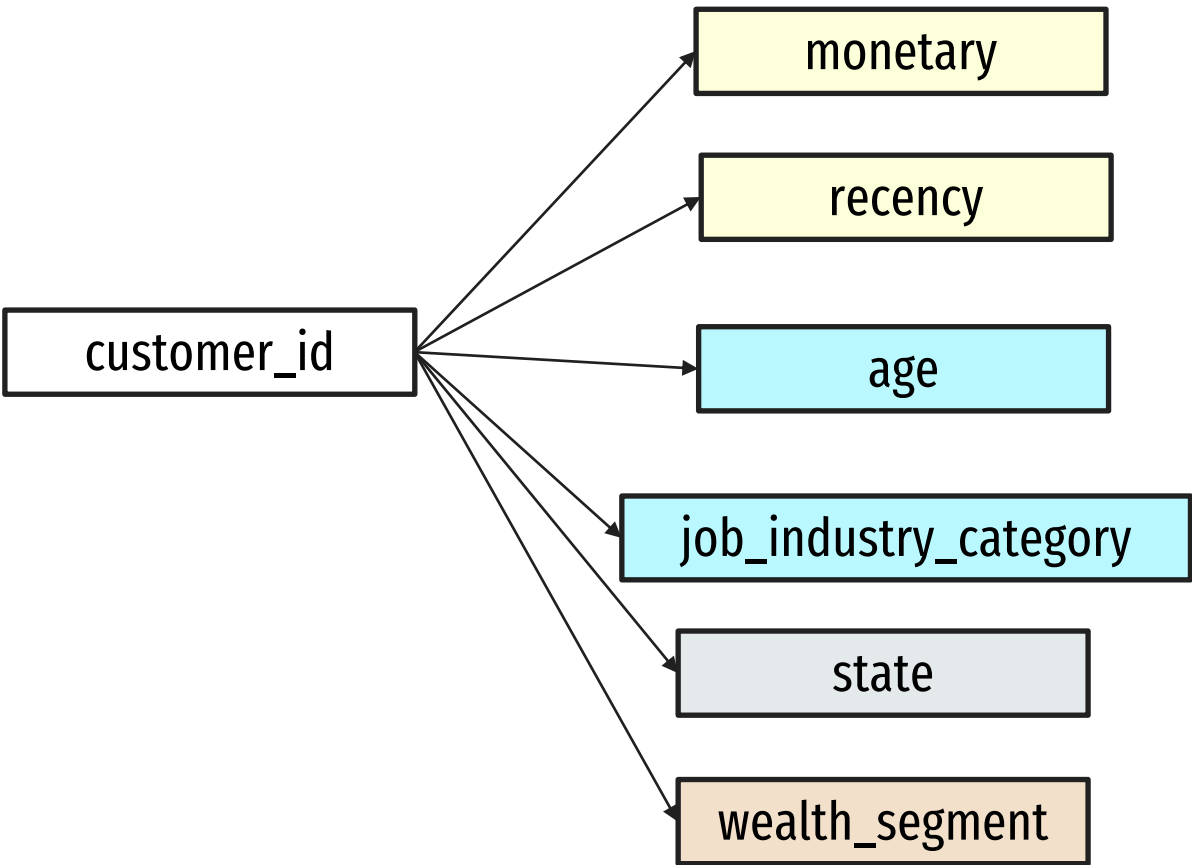
Data Exploration



Distribution of monetary customer is almost normal distribution which is customer have **high spending many in our store**. Mean of monetary is A\$ 6285.19. More than **75% customer** spending their money **larger than A\$ 4162** to bought bicycle or accessoris

count	mean	25%	50%	75%
3493	6285.19	4162.96	5974.77	8157.72

Feature Selection



	Demographic
	Geographic
	Psychographic
	Behavioral

Model Development

1. Handling Missing Value

- Filling Null values in numerical column with median
- Filling Null values in categorical column with mode

1. Feature Selection

- Multicollinearity Prevention

3. Scalling

- MinMax Scaler
- Standard Scaler

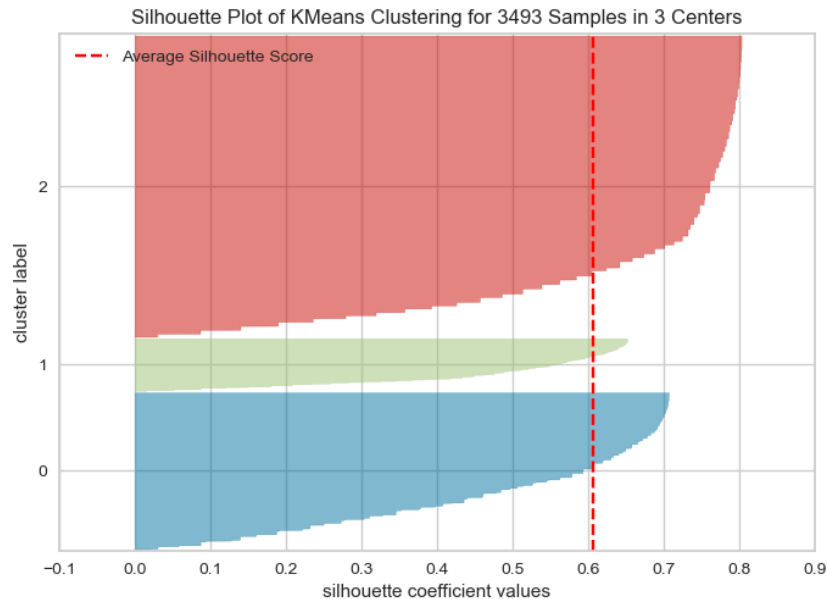
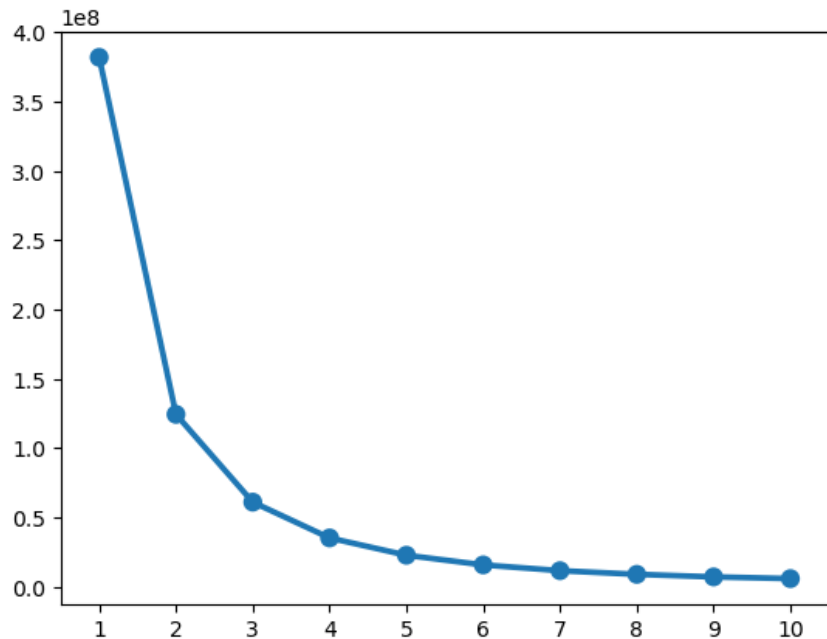
4. Encoding

- One Hot Encoding

5. Modeling

- K-means
- Cluster optimization : Elbow Method
- Evaluation : Silhoutte Score

Model Development



Optimum cluster with elbow method : 3 clusters
Silhoutte score : 0.6

Interpretation

cluster	recency			monetary			customer_id
	mean	min	max	mean	min	max	count
0	89.08022	57	140	5900.432	71.49	15091.91	1072
1	192.0167	141	353	3972.986	60.34	10936.2	360
2	23.90005	0	56	6889.208	142.98	19071.32	2061

Cluster : 0

Average Customer

Average customer with money spending normally
To **decrease recency and increase monetary** we can
implemented **loyalty program**

Cluster : 2

Best Customer

Recent customer with high money spending
Offering and testing new product to encourage their
hobby

Cluster : 1

Churn Customer

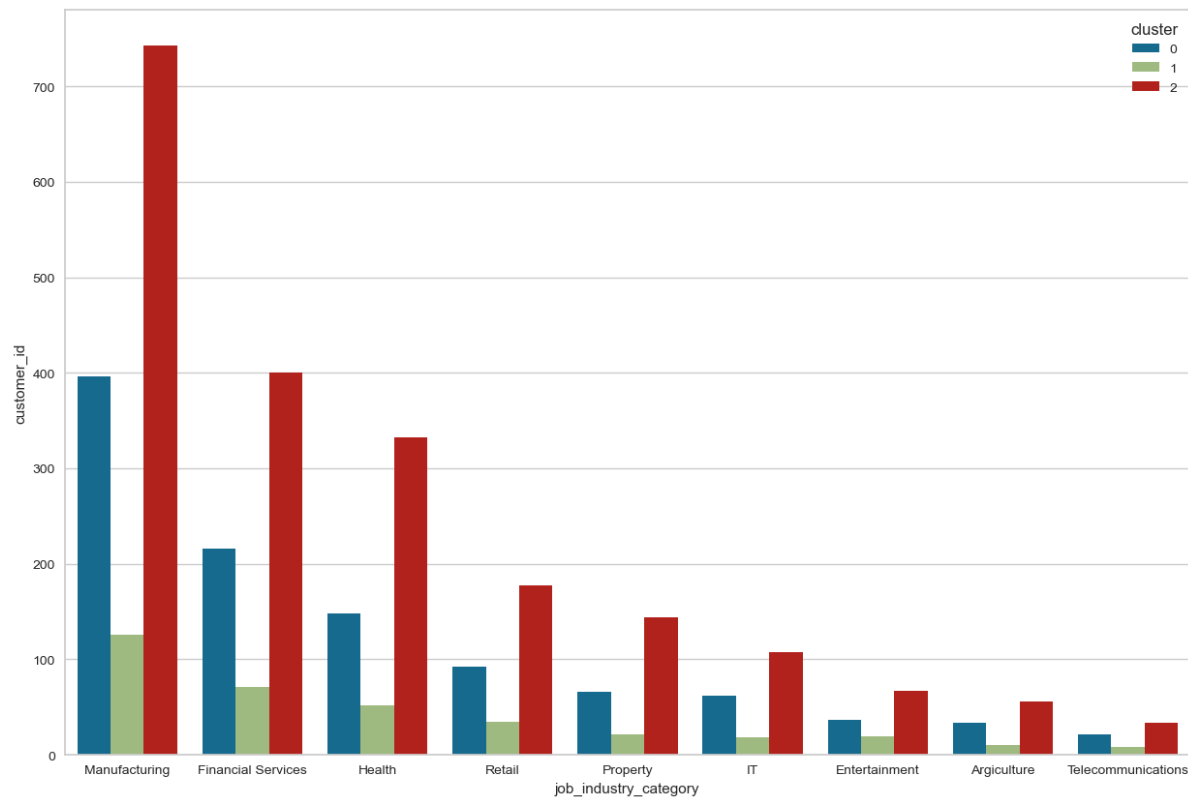
Old customer with low money spending
research why they don't use out service again

Interpretation

JOB INDUSTRY

Business Recommendation :

- Direct marketing promotion in manufacturing, financial service and health
- Cooperate project with industry
- Advertising in that industry



Interpretation

GEOGRAPHY

Business Recommendation :

- Focused marketing offering new product in NSW because that base our loyal customer

