DATA SCIENCE ACADEMY

CAPSTONE PROJECT

RIDE HAILING INTERNET PACKAGE

GROUP 12

Yustinus Kunta Wibisana
Shelby Marsa Istiqomah
Wahyu Sejati Roso
Rizaldy Al Kautsar Utomo

Executive Summary of DSA -Ride Hailing Internet Package for Driver

Business Background

1. The growth of online ride-hailing business in Indonesia is potential market to get more data users for Telkomsel
2. Telkomsel launched a special combo data package for online ride-hailing drivers with IDR 75K for price
3. Competitor offered merely same package for “mitra driver” with competitive price (IDR 20K – 75K)

Problems Statements

1. Only **41.77% (547 K subscriber) takers** from 1.2 Mio mitra driver who use Telkomsel number
2. How to **identify takers from potential mitra driver**?
3. How much **affordable price for combo package** for mitra driver?

Objective

1. Build **supervised model that can predict takers**
2. **Create segment of customer** with clustering
3. Develop **subsegment** based on ARPU

Proposed Solutions

1. Identify potential takers with **random forest** classification algorithm
2. Clustering:
    1. **Economic Customer** = Lowest ARPU & data consumption, Usage primarily for Ojol apps.
    2. **Mid Spender** = Medium ARPU & payload, highest voice mou & transaction
    3. **Data Addict** = High data consumption & dominant video & social app usage.
3. Create package based on selected sub-segment

Result

1. There are **potential 55k new numbers of takers** based on this algorithm. **In total there are 406k potential package takers. 44.2% taker rate, uplift +4%** from previous data.
   - AUC 93.8%, F1-Score 91% with **random forest**
2. Develop **3 main cluster with 0.63 silhouette score**, and distinctive usage of data, voice, and sms
   - The cluster are Economic Customer, Mid Spender, and Data Addict
3. Created **4 package out of 9 sub-segment** that can bring **uplift of IDR 4937/subs**

Business Benefit

1. 55,026 new takers (based on FP) can bring additional **IDR 4.12 Billions**
2. Median revenue of each cluster summed up into IDR **9.35 Billion from 78,917 subs**
3. 4 New Package Offering: **Ojol Hemat A, Ojol Hemat B, Ojol Gaspol, and Ojol Juara** that can bring **IDR 9.82 Billions** from 78,917 subs. **+67%** of revenue compared to baseline IDR 75k package
   - Average **uplift per subscriber reach IDR 4937**

GROUP 12

By : Yustinus Kunta Wibisana
Shelby Marsa Istiqomah
Wahyu Sejati Roso
Rizaldy Al Kautsar Utomo

CRISP-DM

RIDE-HAILING INTERNET PACKAGE

1 Business Understanding

Understand objective and requirement from business perspective

2 Data Understanding

Getting familiar with the data to form hypotheses

3 Data Preparation

Construct dataset from raw data

4 Modelling

Building the model for desired output

5 Evaluation

Assess the quality of the model based on requirement

6 Deployment

Put the result to work and achieve the goals

BUSINESS UNDERSTANDING

Ride-Hailing is **multi billion business** in Indonesia, and the driver stand as partner which plays crucial role, represent **0.9% of Telkomsel Population**

Active Ride-Hailing Drivers

1.48 Million

Serving

Driver to Consumer Ratio

1:11

Active Ride-Hailing Users

16.86 Million

Gojek drivers as a partner contribute to **IDR 8 Trillion annually (2018)**

34% of them have monthly income of > IDR 3.5 million after joined as ride hailing driver, only 8% of them already have it before join as a partner

Daily income of IDR 150-200k/day, communication expense can be a burden if **Telco** company don't provide the **best offering**

*Telkomsel MSIGHT January 2020 Data
** Lembaga Demografi FEB UI (2018)

Telkomsel as connectivity provider stand as **enabler** to make the **driver experience with ride-hailing app** more **seamless**

XL

	Bulanan 1	Bulanan 2	Mingguan
Harga	Rp50.000	Rp75.000	Rp20.000
Masa Aktif	30 Hari	30 Hari	7 Hari
Kuota	11 GB	20 GB	2 GB
Gratis Aplikasi	Gojek/GoCar Driver & Waze	Gojek/GoCar Driver & Waze	Gojek/GoCar Driver & Waze
Kuota telepon ke sesama operator	Unlimited	Unlimited	Unlimited
SMS ke sesama operator	Unlimited	Unlimited	Unlimited
Kuota telepon ke operator lain	50 Menit	50 Menit	15 Menit
SMS ke operator lain	100 SMS	100 SMS	-

Price/GB IDR 3750

Telkomsel

Tipe Layanan	Paket Swadaya Telkomsel
Biaya per bulan	Rp75.000
Masa periode aktif	30 Hari
Kuota telepon ke sesama operator	Tidak terbatas atau unlimited
Kuota telepon ke semua operator	200 menit
SMS	500 SMS
Kuota internet	15 GB

Price/GB IDR 5000

Indosat

Tipe Layanan	Paket Gaspol Swadaya Indosat
Biaya per bulan	Rp50.000
Masa periode aktif	30 hari
Kuota internet	10 GB
Telepon ke sesama Indosat	Gratis
Telepon ke semua operator	Gratis 100 menit

Price/GB IDR 5000

Telkomsel has several competitor with **more competitive price for ride-hailing driver package.** We need to **enhance value proposition** to improve the takers of package

Understanding **driver needs and usage of connectivity** with **data science** can be the key to drive **more takers in Ride-Hailing package**

Driver Workflow

Internet Data Access

Legacy Communication (SMS & Voice)

Connectivity

gojek Grab waze Google Maps

CORE APP

YouTube

SUPPORTING APP

Productivity

Balanced transport supply-demand

Service Excellence

Boost Economic Growth

Data Collection

Package Offering

1 Assessing Driver's need of connectivity based on historical data

2 Understand package takers behaviour

Data Science Modelling

A Prediction of package takers

B New opportunity of package pricing based on segment (cluster)

Telkomsel's Business Opportunity

... based on previous business problem, **3** objective and key result can be derived with data science process (classification & clustering)

Problem Statement

Telkomsel already have **ride-hailing package** for drivers, priced at IDR 75k/month.

The package are targeted for whitelisted MSISDN, as October'19 there are **1.31 mio of whitelist with 547k takers (41.7%)**

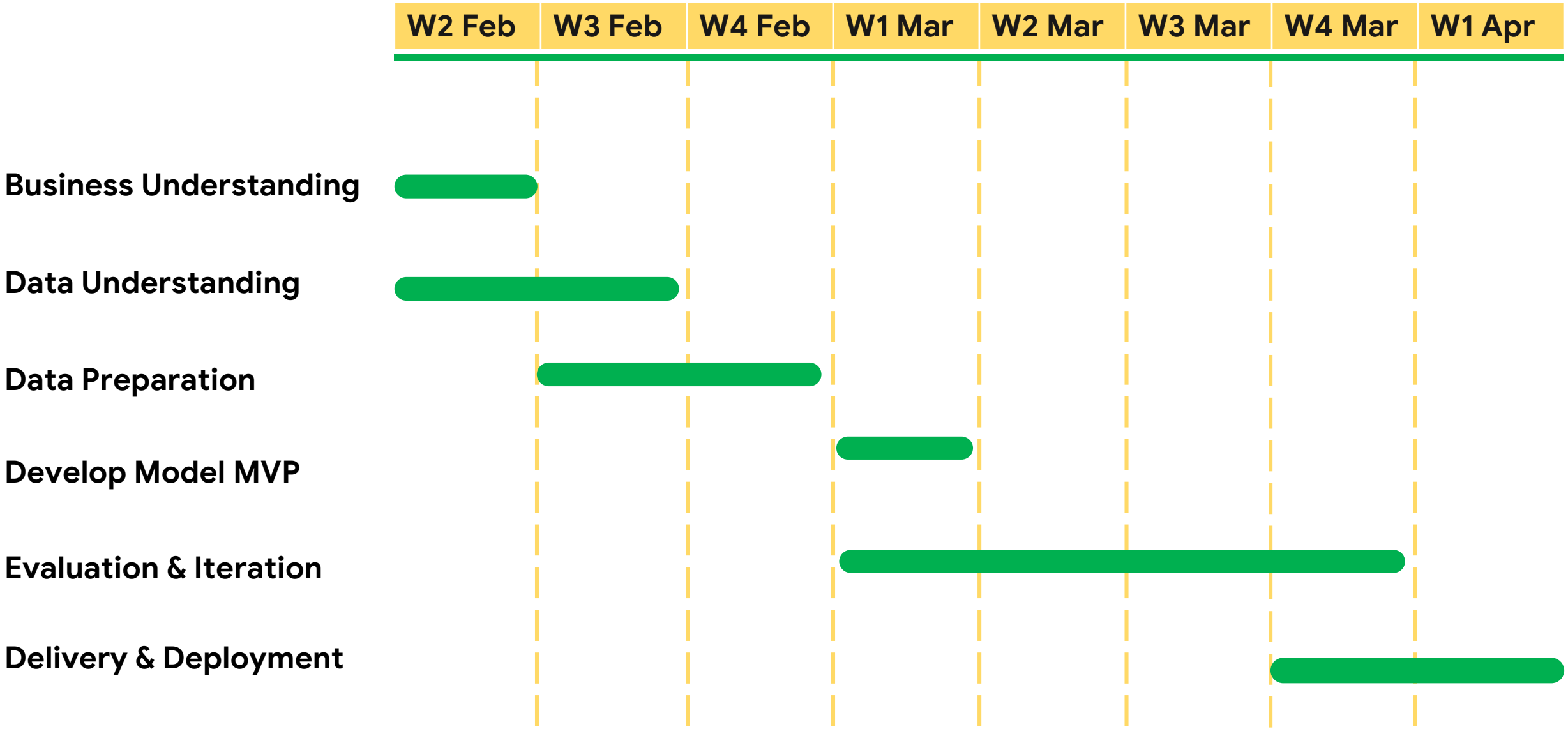
Objective

1. Build **supervised model that can predict takers**
2. **Create segment of customer** with clustering
3. Develop **subsegment** based on ARPU

Key Result

1. Achieve 80% Area Under the Curve (AUC) and 70% F1-Score
2. Reach Silhouette Score of >0.6 to determine cluster size
3. Achieve IDR 3000 ARPU uplift/subs by offering subsegment

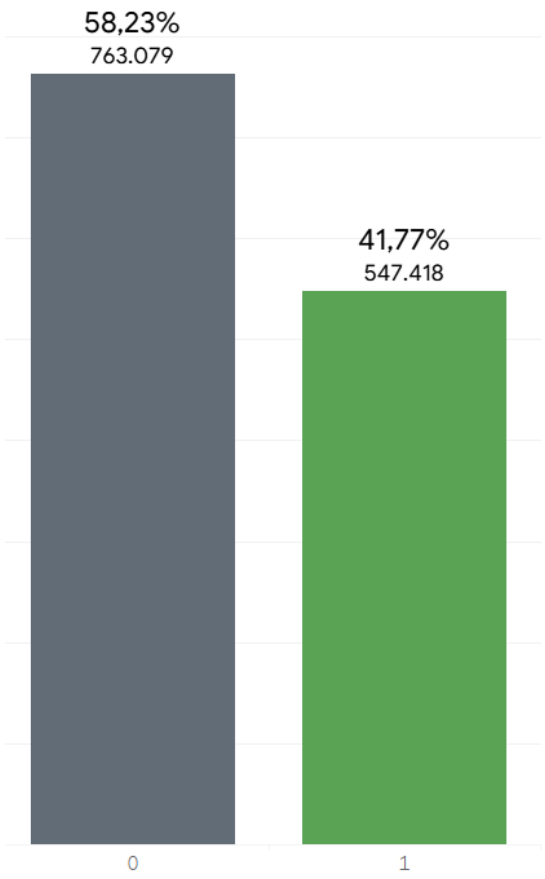
... to achieve the result, expected timeline is **2 months** of CRISP-DM complete cycle



DATA UNDERSTANDING

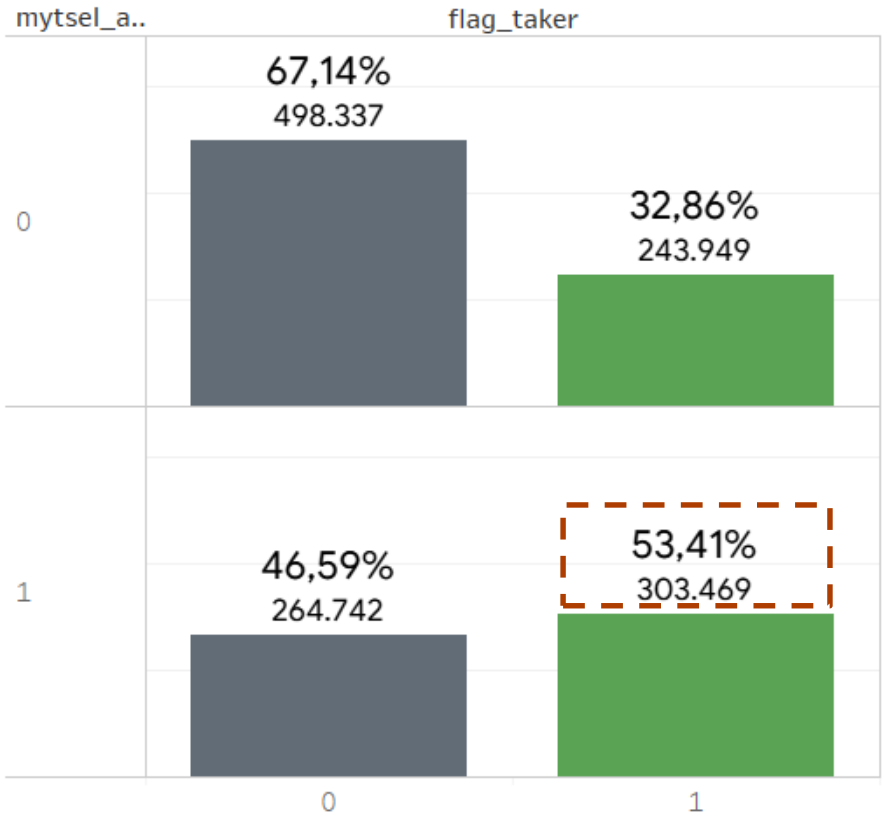
547k subscriber from whitelist took the package, and users with active MyTelkomsel app have higher rate of takers

Overall Takers



41.77% subscriber from cleaned dataset, take the package in previous month

MyTsel Flag



Users with activity in MyTelkomsel, have **higher rate of takers (53.41%)**

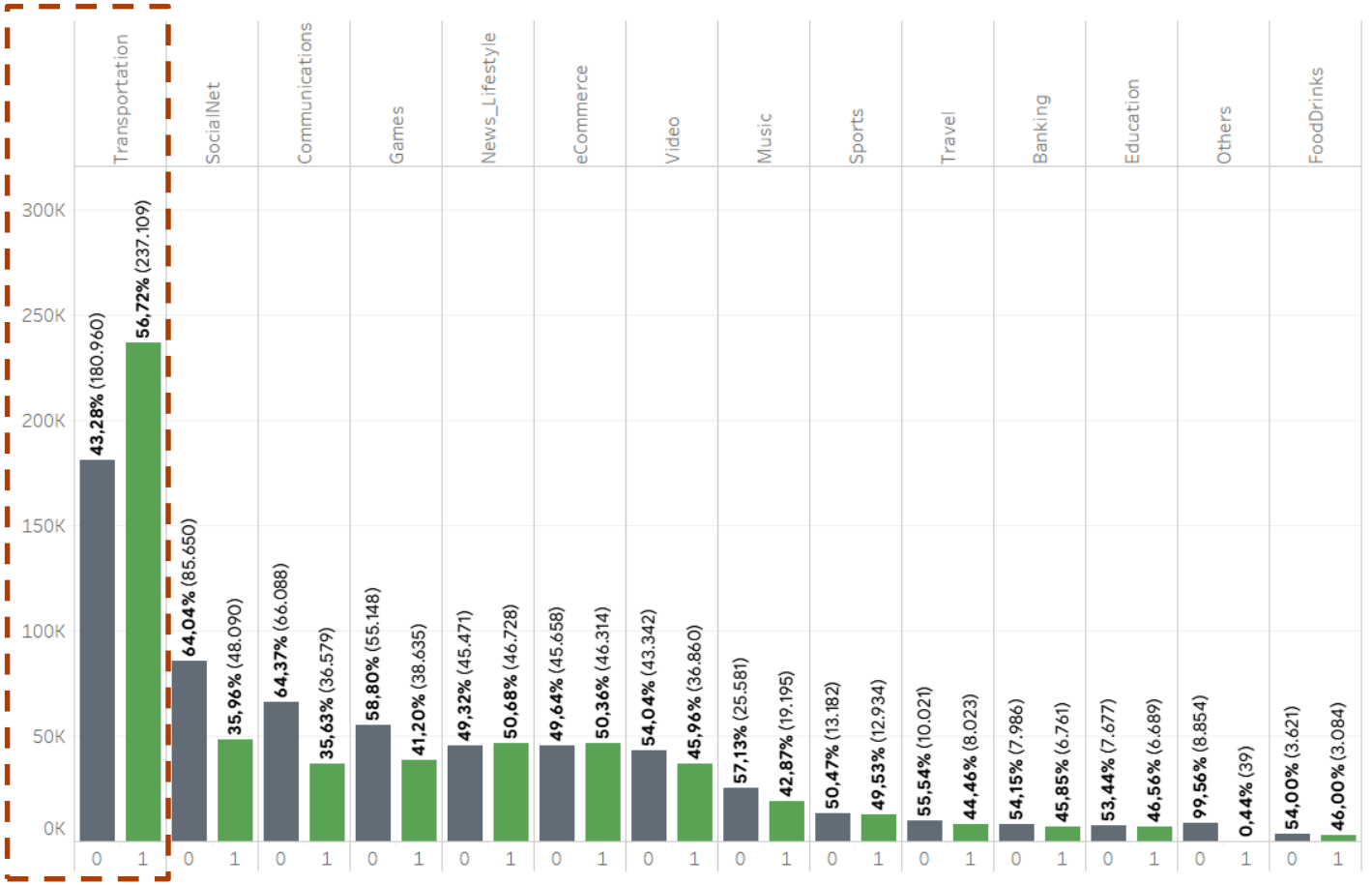
Region and most frequent app category of users also have distinguish rate of takers

Region

region	flag_taker 0	flag_taker 1
05.Central Jabotabek	55,51% 149.041	44,49% 119.466
06.Eastern Jabotabek	56,59% 113.907	43,41% 87.375
09.Jatim	60,63% 77.088	39,37% 50.047
04.Western Jabotab..	55,50% 62.758	44,50% 50.318
08.Jateng	59,68% 66.788	40,32% 45.123
07.Jabar	58,42% 64.582	41,58% 45.971
01.Sumbagut	62,51% 53.797	37,49% 32.259
12.Sulawesi	55,78% 46.965	44,22% 37.228
03.Sumbagsel	61,75% 40.749	38,25% 25.240
02.Sumbagteng	58,46% 35.487	41,54% 25.211
11.Kalimantan	65,16% 27.624	34,84% 14.768
10.Balinusra	65,15% 19.819	34,85% 10.600
13.Puma	53,99% 4.474	46,01% 3.812

Users from **Jabotabek contribute to highest number of users** and **high takers rate (>43%)**

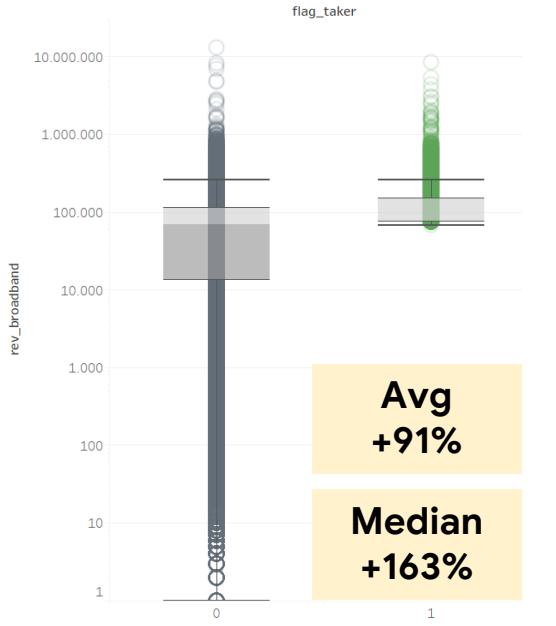
First Rank Category



Users with high activity on **Transportation Apps have the highest rate of takers** with 56.72%

Revenue Analysis – Package Taker have much higher revenue on the **data revenue** but fall short on **voice revenue** and **sms revenue**

Revenue Data



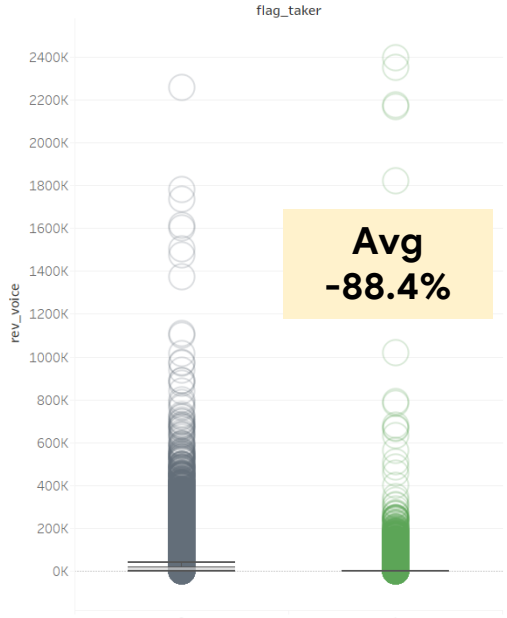
Count:	547418
SUM(rev_broadband)	
Average:	116,096
Minimum:	69,116
Maximum:	8,499,000
Median:	77,400
First quartile:	75,000
Third quartile:	150,000

Taker

Count:	763079
SUM(rev_broadband)	
Average:	60,655
Minimum:	0
Maximum:	13,225,000
Median:	29,320
First quartile:	0
Third quartile:	91,028

Non-Taker

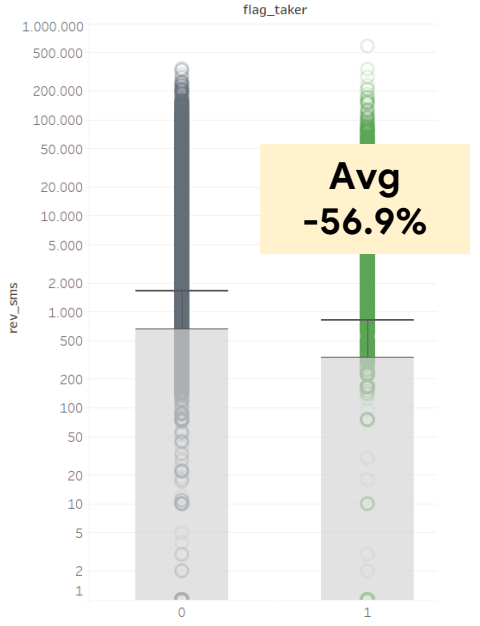
Revenue Voice



Count:	547418
SUM(rev_voice)	
Average:	1,754
Minimum:	0
Maximum:	2,395,500
Median:	0
First quartile:	0
Third quartile:	0

Count:	763079
SUM(rev_voice)	
Average:	15,157
Minimum:	0
Maximum:	2,255,775
Median:	3,750
First quartile:	0
Third quartile:	16,840

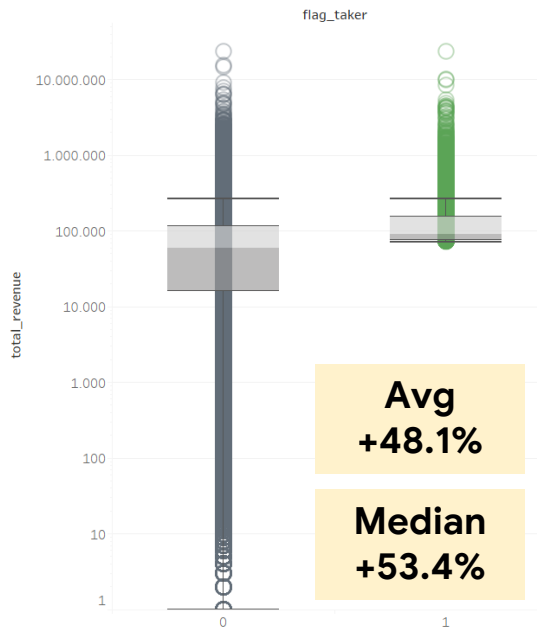
Revenue SMS



Count:	547418
SUM(rev_sms)	
Average:	431
Minimum:	0
Maximum:	591,000
Median:	0
First quartile:	0
Third quartile:	330

Count:	763079
SUM(rev_sms)	
Average:	1,001
Minimum:	0
Maximum:	343,035
Median:	0
First quartile:	0
Third quartile:	660

Total

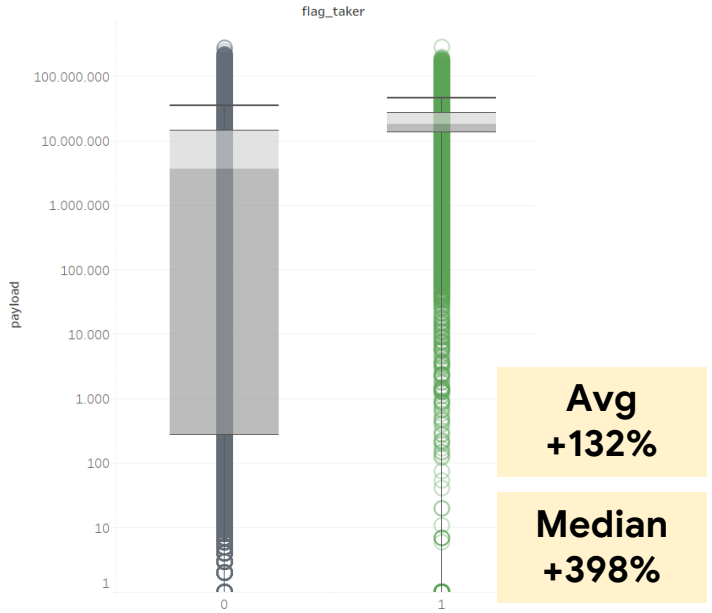


Count:	547418
SUM(total_revenue)	
Average:	125,530
Minimum:	72,009
Maximum:	23,335,085
Median:	92,115
First quartile:	75,700
Third quartile:	154,260

Count:	763079
SUM(total_revenue)	
Average:	84,752
Minimum:	1
Maximum:	23,756,492
Median:	60,010
First quartile:	16,000
Third quartile:	116,999

Usage Analysis – Package Taker consistently have heavier usage on data payload, minutes of voice and number of sms

Payload (Data)



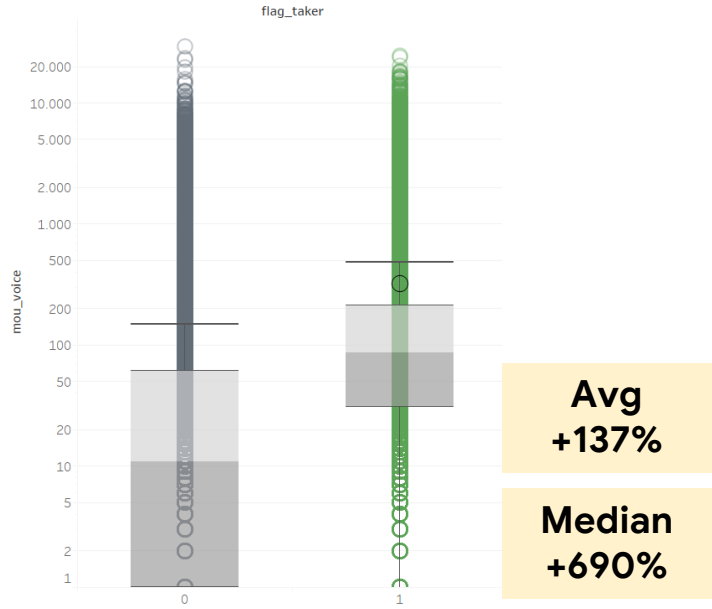
Avg +132%

Median +398%

Taker	
Count:	547418
SUM(payload)	
Average:	21,571,468
Minimum:	0
Maximum:	289,082,688
Median:	18,589,548
First quartile:	13,511,747
Third quartile:	27,054,636

Non-Taker	
Count:	763079
SUM(payload)	
Average:	9,260,389
Minimum:	0
Maximum:	281,128,320
Median:	3,730,634
First quartile:	277
Third quartile:	14,368,719

Minutes (Voice)



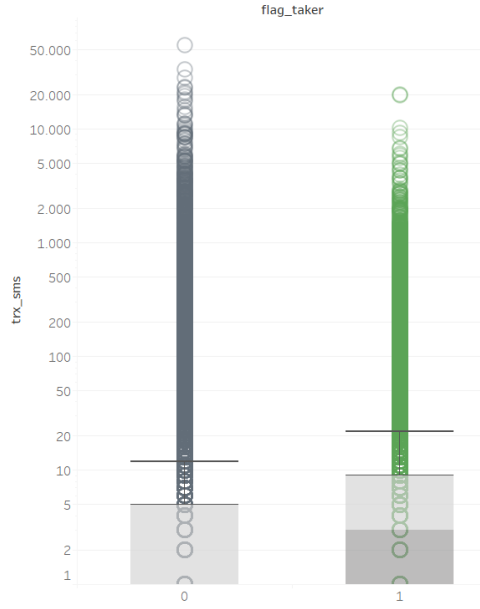
Avg +137%

Median +690%

Taker	
Count:	547418
SUM(mou_voice)	
Average:	195
Minimum:	0
Maximum:	24,798
Median:	87
First quartile:	31
Third quartile:	213

Non-Taker	
Count:	763079
SUM(mou_voice)	
Average:	82
Minimum:	0
Maximum:	29,296
Median:	11
First quartile:	1
Third quartile:	61

SMS (Trx)



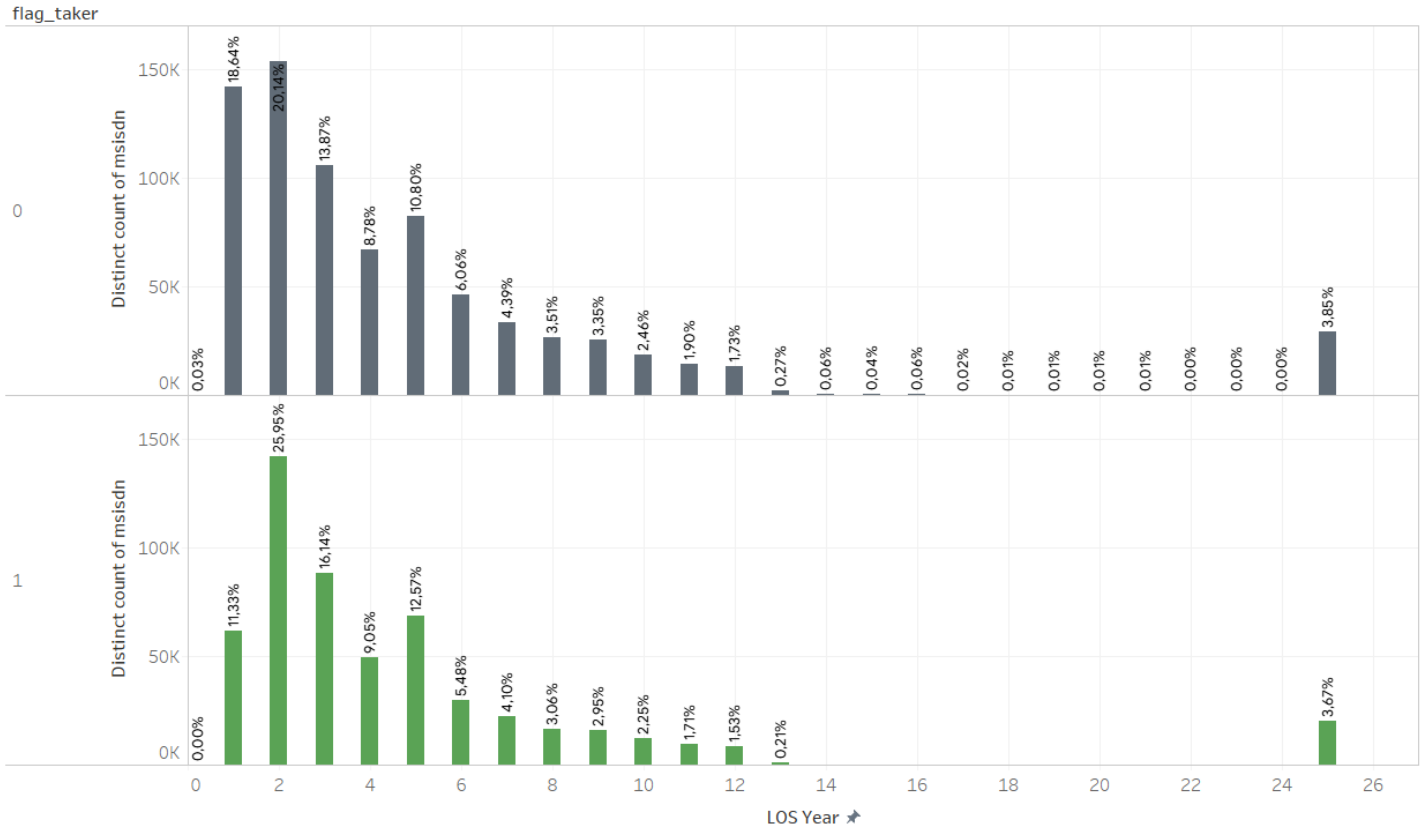
Avg +33%

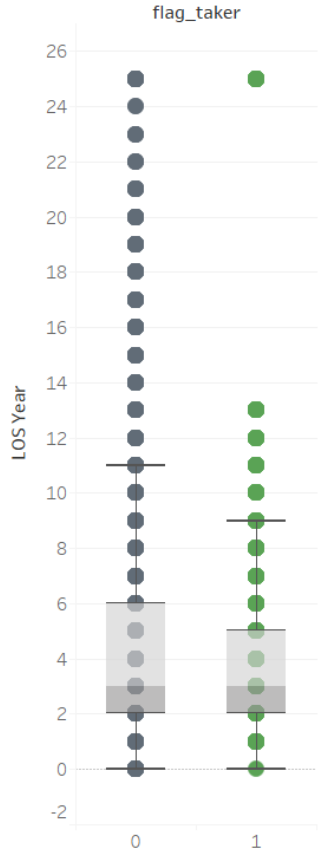
Median +200%

Taker	
Count:	547418
SUM(trx_sms)	
Average:	12
Minimum:	0
Maximum:	20,103
Median:	3
First quartile:	0
Third quartile:	9

Non-Taker	
Count:	763079
SUM(trx_sms)	
Average:	9
Minimum:	0
Maximum:	54,819
Median:	1
First quartile:	0
Third quartile:	5

Length of Stay – Package Taker relatively have skew to younger stay in Telkomsel as the 3rd Quartile is 5 years





1st Quartile
2

Median
3

3rd Quartile
6

1st Quartile
2

Median
3

3rd Quartile
5

DATA PREPARATION

Data Pipeline and Integration – Encoding, Ratio, Flag, Binning are used for feature extraction

Data Source:

MySQL

5 Tables:

ojol_mytelkomsel
ojol_bcp
ojol_recharge
ojol_baseline
ojol_usage

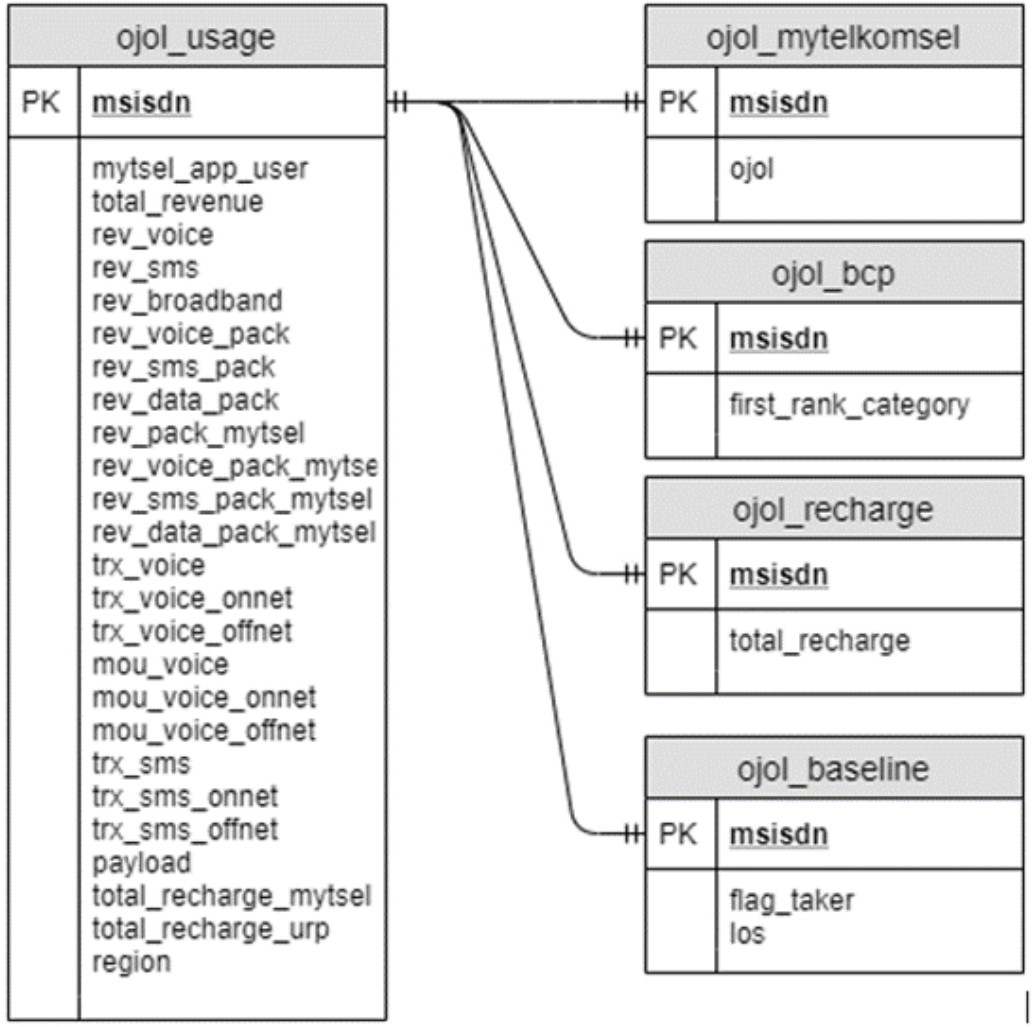
Table Integration:

ojol_joined

Data Cleaning:

ojol_joined_cleaned

Remove msisdn with zero usage, **achieve 1.31 million MSISDN** of cleaned dataset

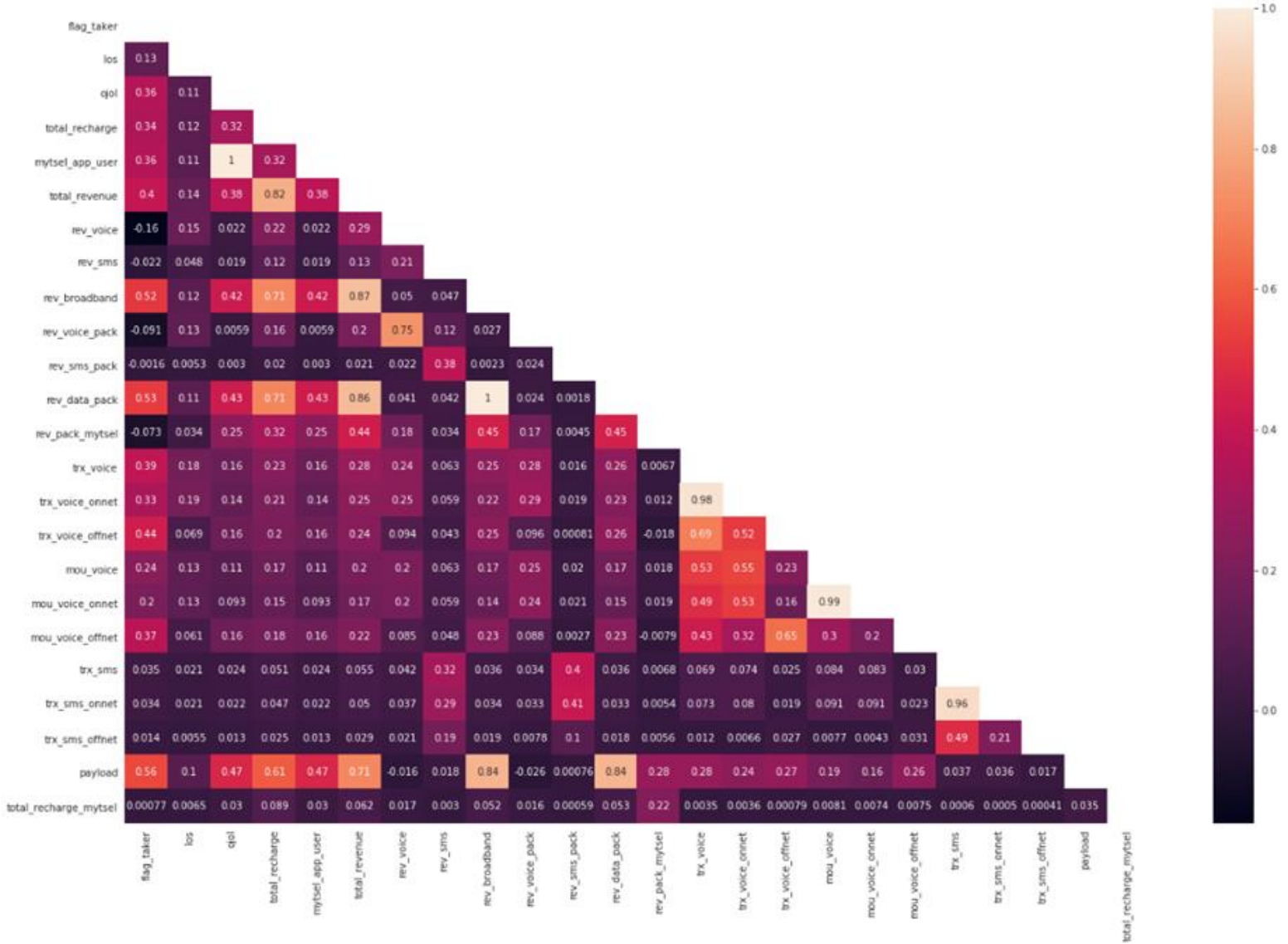


Understanding the Correlation

Top 10 Correlation

Feature	Abs Correlation
payload	0.559477
rev_data_pack	0.528849
rev_broadband	0.518248
trx_voice_offnet	0.436402
total_revenue	0.399883
trx_voice	0.390107
mou_voice_offnet	0.374851
ojol	0.358926
mytsel_app_user	0.358926
total_recharge	0.342274

Based on the exploration on **correlation,** variable from data usage such as **payload, revenue data package, and revenue broadband** have the highest absolute correlation to flag



Feature Extraction and Engineering – Encoding, Ratio, Flag, Binning are used for feature extraction

One Hot Encoding

- One Hot Encoding on columns first_rank_category and region

Missing Value Handling

- Impute missing value on 'first_rank_category' with string 'Missing Value'
- Drop columns that only contain 0 values

Binning and Log Value

- Add mou/trx ratio
- Add ratio for each service type revenue / total revenue
- Add ratio for each service type trx * los
- Add revenue/recharge ratio
- Add recharge - revenue ratio

Flag

- Add flag whether customer have voice, sms, data transaction

Ratio

- Add log revenue due to large skewness on revenue data distribution
- Binning revenue on interval (250k,500k,1M,2.5M,5M,10M,15M,20M)

Total Features after Feature Engineering:

134

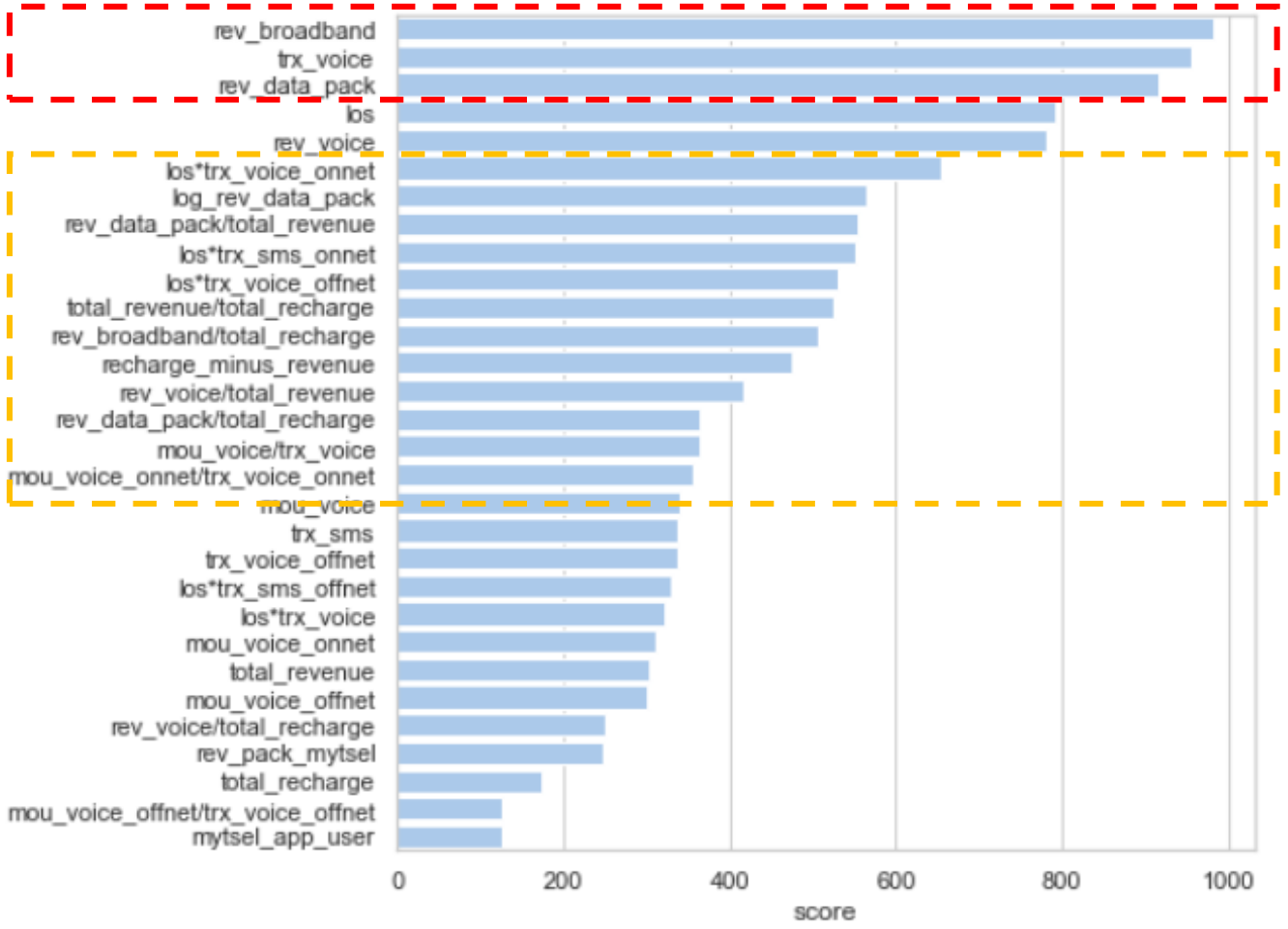
MODELLING

30 top feature ingested into the model, **feature selection** conducted using **XGBoost algorithm**

```
figsize=(7,7)
fig, ax = plt.subplots(figsize=figsize)

# Top 30 features
importances = importances.head(30)

sns.set(style="whitegrid")
sns.set_color_codes("pastel")

sns.barplot(y=importances.index, x=importances['score'],
            label="Feature Importance", color="b",)
```

Revenue of **data usage (rev_broadband & rev_data_pack)** managed to get into **top 3**

Feature that created from **feature engineering** managed to have high score



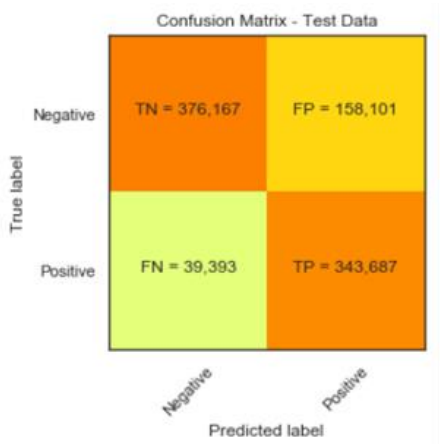
To ensure we get the best performing model, we train the model in several iteration. **Iteration 3 have best overall performance (f1 score)** compared to previous iterations.

	1. Raw feature (26 Features)	**2. Feature engineering:** (134 Features)	**3. Feature engineering & feature selection** (30 Features)
Logistic Regression	precision recall f1-score 0 0.92 0.71 0.80 1 0.70 0.92 0.79	precision recall f1-score 0 0.91 0.72 0.80 1 0.70 0.91 0.79	precision recall f1-score 0 0.91 0.70 0.79 1 0.68 0.90 0.78
Decision Tree	precision recall f1-score 0 0.90 0.91 0.90 1 0.87 0.86 0.87	precision recall f1-score 0 0.90 0.91 0.90 1 0.87 0.86 0.87	precision recall f1-score 0 0.90 0.91 0.91 1 0.87 0.86 0.87
Random Forest	precision recall f1-score 0 0.94 0.87 0.91 1 0.84 0.93 0.88	precision recall f1-score 0 0.95 0.85 0.90 1 0.82 0.94 0.88	precision recall f1-score 0 0.94 0.90 0.92 1 0.86 0.92 0.89
	Overall F1 Score = 85.8	Overall F1 Score = 85.7	Overall F1 Score = 86

For 1st Objective (Classification), Random Forest achieved highest score, compared to Logistic Regression and Decision Tree

Logistic Regression

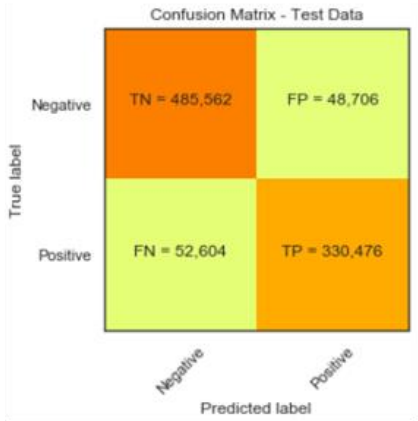
	precision	recall	f1-score	support
0	0.91	0.70	0.79	534268
1	0.68	0.90	0.78	383080
accuracy			0.78	917348
macro avg	0.80	0.80	0.78	917348
weighted avg	0.81	0.78	0.79	917348



F1 Score= 79%

Decision Tree

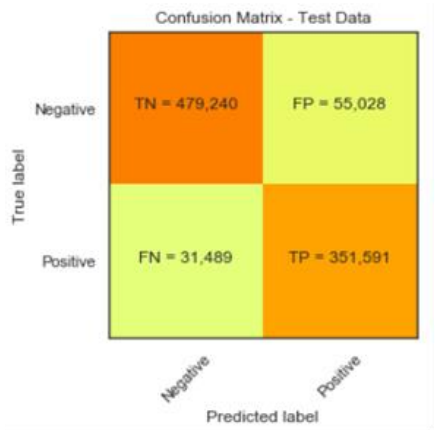
	precision	recall	f1-score	support
0	0.90	0.91	0.91	534268
1	0.87	0.86	0.87	383080
accuracy			0.89	917348
macro avg	0.89	0.89	0.89	917348
weighted avg	0.89	0.89	0.89	917348



F1 Score= 89%

Random Forest

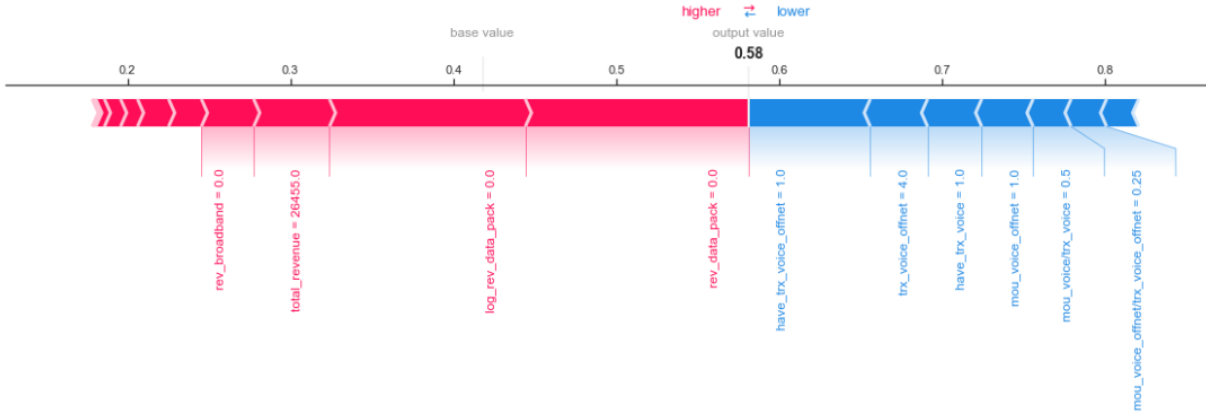
	precision	recall	f1-score	support
0	0.94	0.90	0.92	534268
1	0.86	0.92	0.89	383080
accuracy			0.91	917348
macro avg	0.90	0.91	0.90	917348
weighted avg	0.91	0.91	0.91	917348

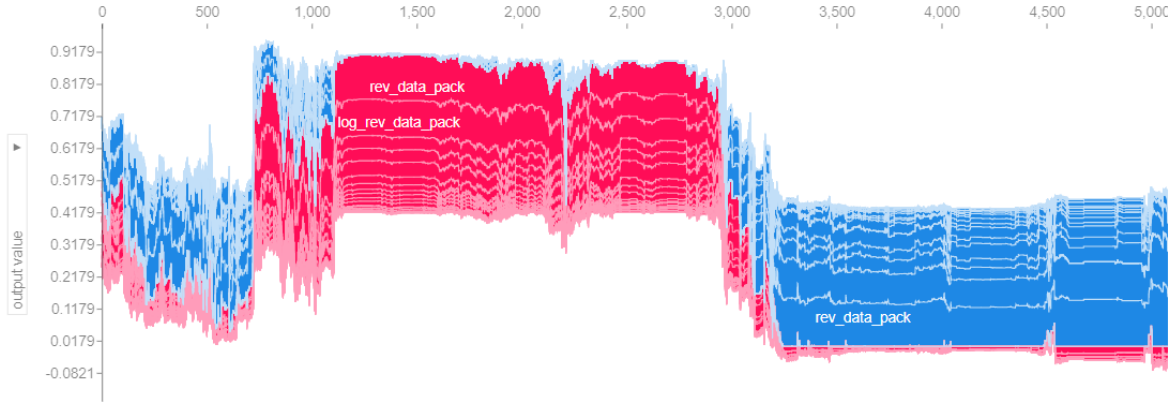


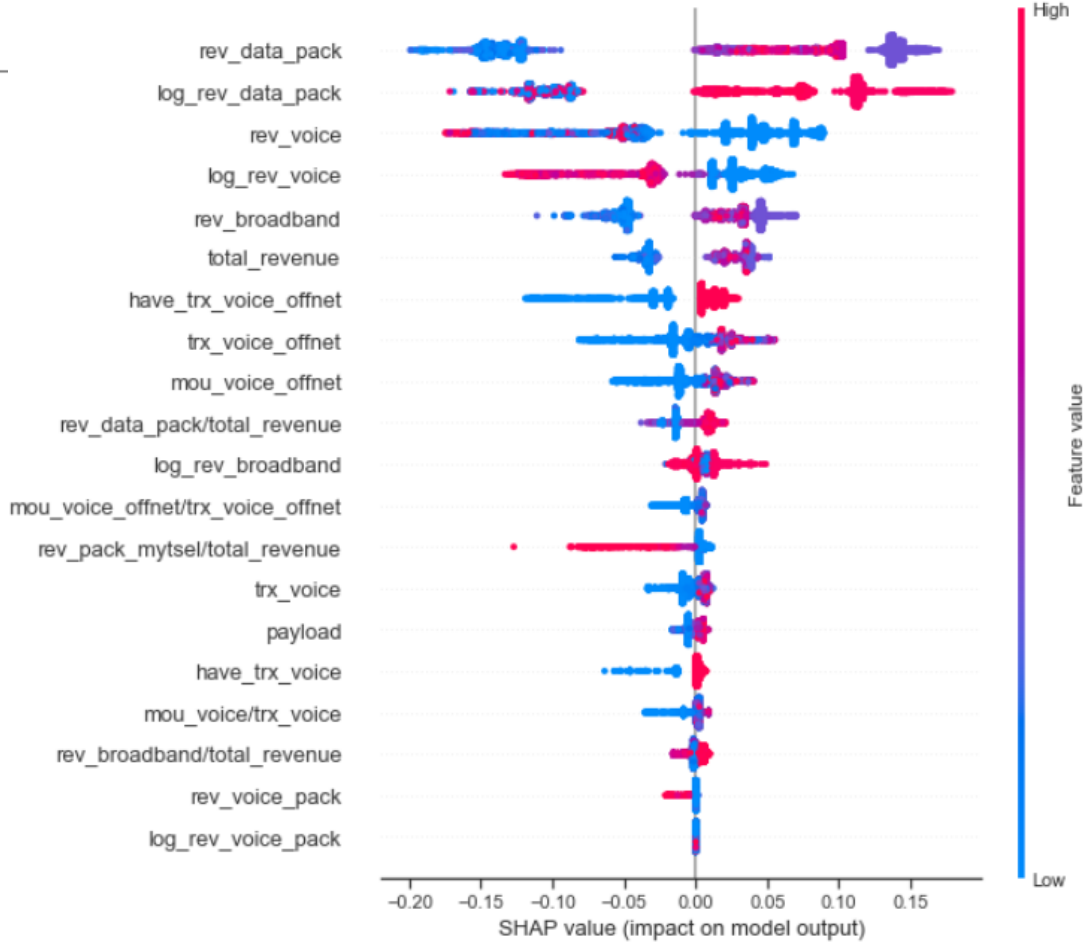
F1 Score= 91%

All algorithm managed to achieve **key result of F1-Score above 70%,** we decided to went with **Random Forest** that managed to have high precision and recall resulting with **high F1-Score (91%)**

SHAP Value also determined that **data_package** is the most important feature, followed by **voice**







Output from 1st **Objective (Classification) will be used for determining cluster** and final **deliverable for package offering**

Input

Predicted Takers from Classification (55k MSISDN)

36 Features

```
cluster_feature = ['los', 'mytsel_app_user', 'total_revenue',
           'rev_voice', 'rev_sms', 'rev_broadband', 'rev_voice_pack',
           'rev_sms_pack', 'rev_data_pack', 'rev_pack_mytsel', 'trx_voice',
           'trx_voice_onnet', 'trx_voice_offnet', 'mou_voice', 'mou_voice_onnet',
           'mou_voice_offnet', 'trx_sms', 'trx_sms_onnet', 'trx_sms_offnet','total_recharge_mytsel',
           'first_rank_category_Transportation', 'region_05.Central Jabotabek',
           'region_06.Eastern Jabotabek', 'mou_voice/trx_voice',
           'mou_voice_onnet/trx_voice_onnet', 'mou_voice_offnet/trx_voice_offnet',
           'have_trx_sms', 'have_trx_sms_onnet', 'have_trx_sms_offnet',
           'log_total_revenue', 'log_rev_voice', 'log_rev_sms',
           'log_rev_broadband', 'log_rev_voice_pack', 'log_rev_data_pack',
           'log_rev_pack_mytsel']
```

Output from classification is used for clustering, as a foundation to build potential package offering based on segmentation

Process

Determining Optimal # of Cluster (Elbow Method & Silhouette Score) → 3D visualization of cluster

Number of cluster is determined with silhouette score & elbow method, also visualization is needed to make sure cluster grouping is not overfit and consistent across the features

Output

N-number of Cluster (determined from optimum number)

↓

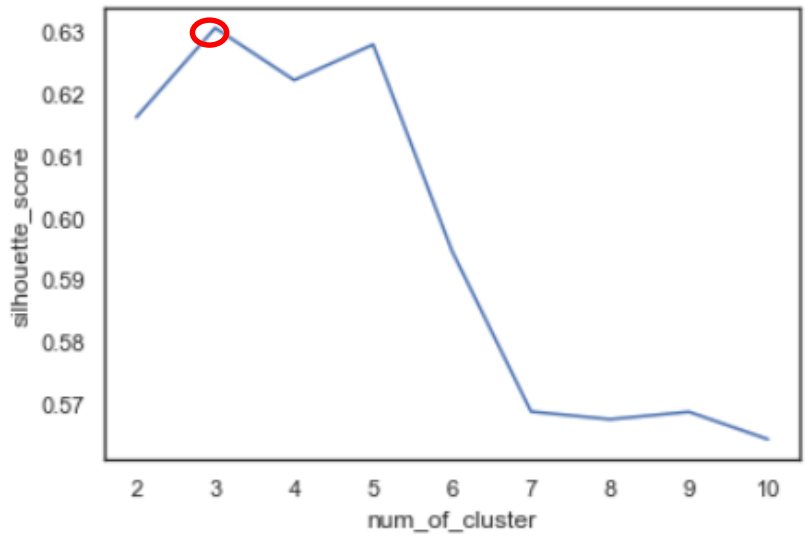
Sub-Cluster based on price segment (ARPU)

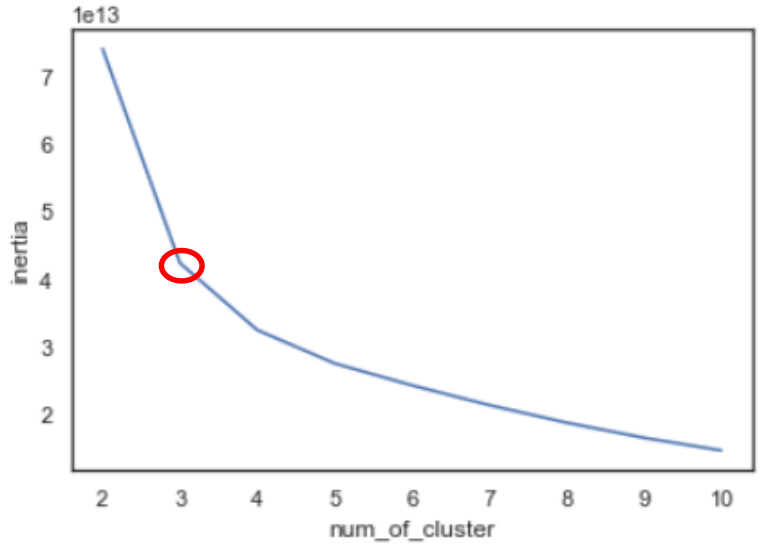
↓

Potential Package Offering based on best sub-cluster and respective consumer segment

Package offering based on sub-cluster is expected as the final output, and with cluster analysis each MSISDN is segmented into correct package which match the usage behaviour

For 2nd Objective (Clustering), silhouette score is used to determine number of cluster. **The optimal number of cluster is 3**





Determining number of cluster

	num_of_cluster	silhouette_score
0	2	0.616277
1	3	0.630718
2	4	0.622290
3	5	0.628041
4	6	0.594673
5	7	0.568776
6	8	0.567535
7	9	0.568733
8	10	0.564309

Total MSISDN in each cluster

```
pd.DataFrame(cluster, columns=['cluster'])\
['cluster'].value_counts()
```

```
0    46537
2    26699
1     5681
Name: cluster, dtype: int64
```

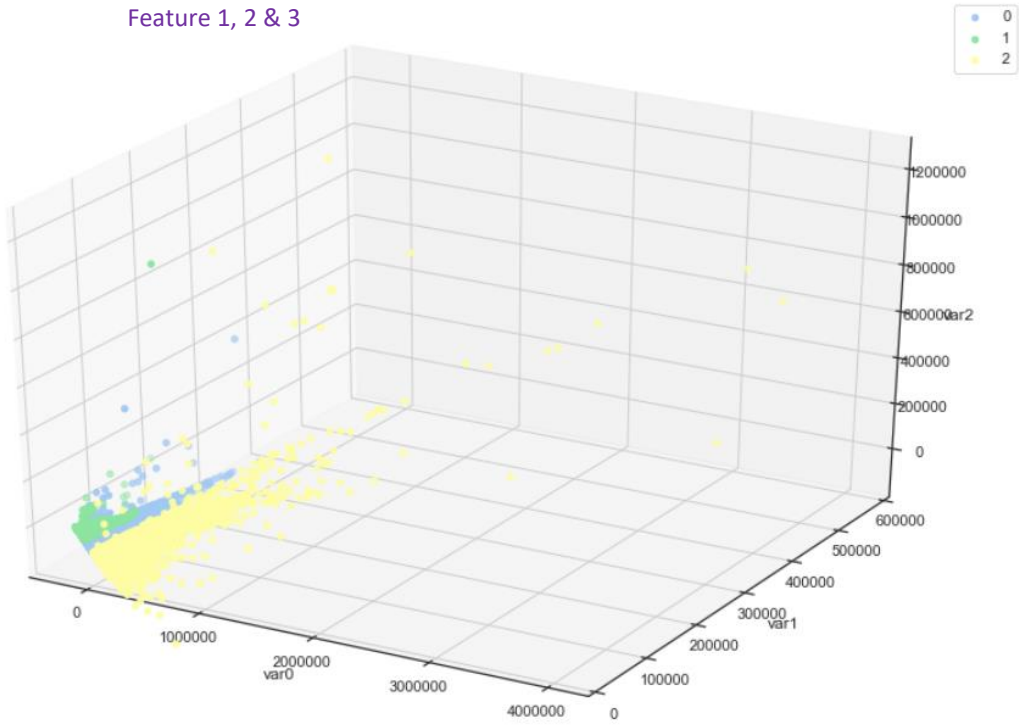
For 2nd Objective (Clustering), using PCA Analysis and 3D Viz, cluster looks have consistent grouping

3D Cluster Visualization using PCA Analysis

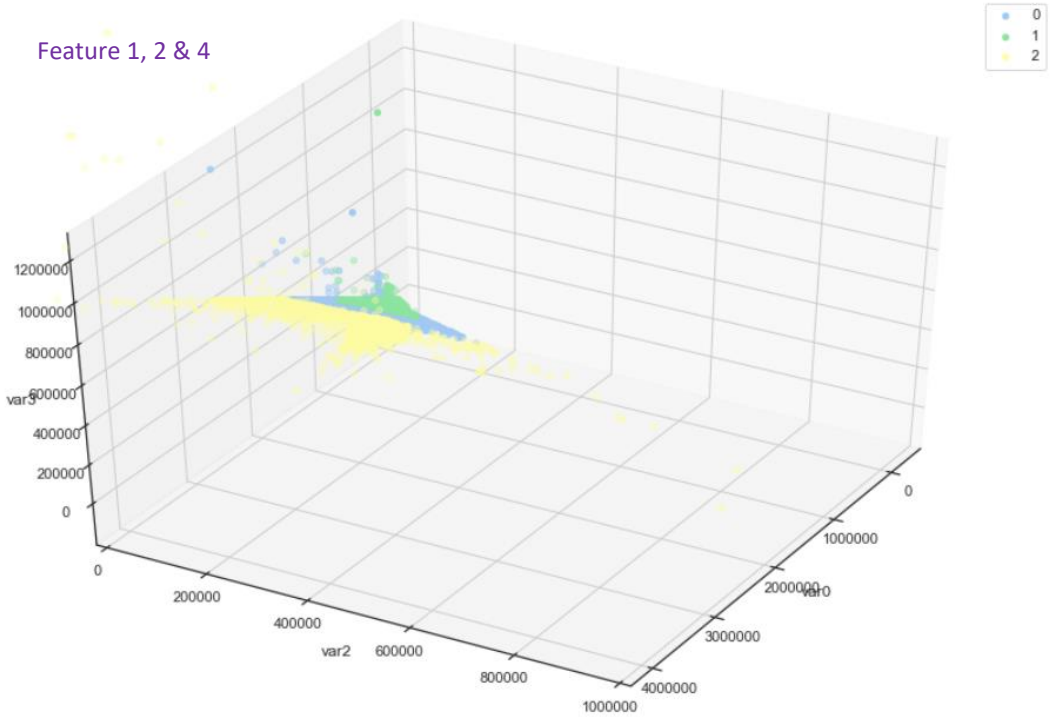
Cluster seems have consistent grouping (not underfit/overfit) based on 3D visualization.

Cluster 0 have the largest number of MSISDN (46k), followed by cluster 2 (26k) and cluster 1 (3k)

Feature 1, 2 & 3



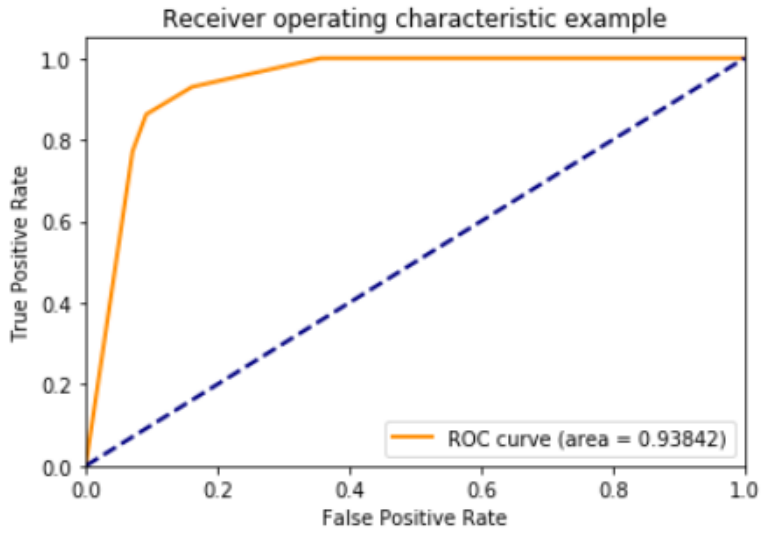
Feature 1, 2 & 4

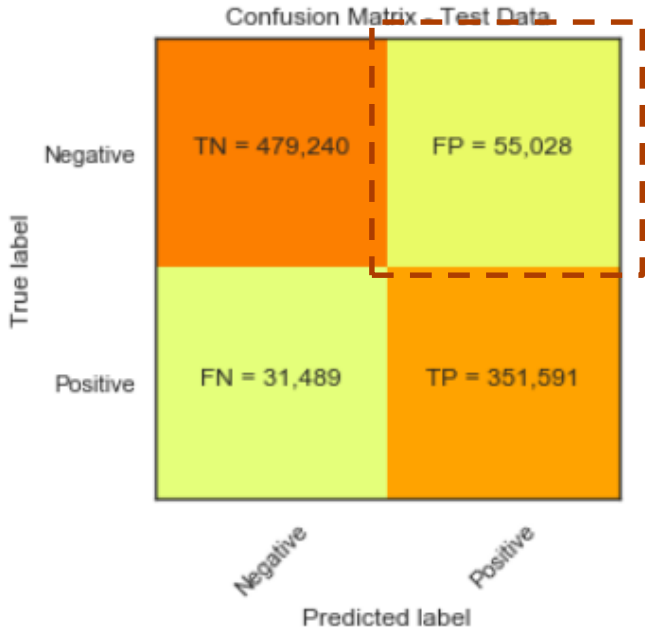


EVALUATION

Random Forest successfully meet the **1st objective for classification with 93.8% of AUC and 91% of F1-Score**

	precision	recall	f1-score	support
0	0.94	0.90	0.92	534268
1	0.86	0.92	0.89	383080
accuracy			0.91	917348
macro avg	0.90	0.91	0.90	917348
weighted avg	0.91	0.91	0.91	917348





There are potential **55k new numbers of takers** based on this algorithm. In total there are **406k potential package takers.**

44.2% taker rate, uplift +4% from previous data

For the 2nd Objective, there are 3 main cluster with different behaviour and usage, resulting in different package price

Economic Customer
46.5k subs
IDR 100k
11 GB

Mid Spender
26.7k subs
IDR 155k
25 GB

Data Addict
5.68k subs
IDR 275k
51 GB

	ARPU	ARPU Data	Payload	Voice mou	Voice trx	Video & Social Media	Transportation Apps	Description
Economic Customer	100.5k	92k	11 GB	112 Min	77	8.7%	52.8%	Lowest **ARPU & data consumption.** Usage primarily for **Ojol apps**.
Mid Spender	155k	144k	25 GB	144 Min	92	19%	37.7%	Medium **ARPU & payload**, highest **voice mou & transaction**
Data Addict	275k	253k	51 GB	139 Min	84	43.7%	18.2%	High **data consumption** & dominant **video & social app** usage.

For the 3rd **Objective, main cluster derived into each 3 sub-cluster** each, resulting in **9 different sub-cluster**

	Lower ARPU (< IDR 75k)	Middle ARPU (IDR 75k – IDR 150k)	Top ARPU (>IDR 150k)
Economic Customer	**3.9k subs** IDR 39k 9 GB	**35.8k subs** IDR 90k 11 GB	**6.8k subs** IDR 188k 13 GB
Mid Spender	**405 subs** IDR 45k 23 GB	**10.8k subs** IDR 99k 23 GB	**15.5k subs** IDR 198k 27 GB
Data Addict	**38 subs** IDR 42k 50 GB	**306 subs** IDR 117k 49 GB	**5.3k subs** IDR 285k 51 GB

Cluster	Subsegment	count msisdn	total revenue	rev broadband	payload	trx voice	mou voice	video & social media	first rank category Transportation
Economic Customer	< 75k	3,905	39,434	37,079	9,390,430	67	91	7.810%	54.366%
	Between 75k and 150k	35,807	90,432	84,548	11,666,051	79	116	9.051%	52.400%
	> 150k	6,825	188,698	166,820	13,440,510	71	101	7.897%	54.505%
Mid Spender	< 75k	405	44,987	41,941	23,055,692	79	137	17.284%	32.840%
	Between 75k and 150k	10,794	98,828	92,451	23,460,466	92	146	17.612%	38.614%
	> 150k	15,500	198,487	183,510	27,443,753	92	142	20.213%	37.200%
Data Addict	< 75k	38	42,810	39,188	50,200,170	111	159	57.895%	10.526%
	Between 75k and 150k	306	117,133	105,623	49,436,040	82	108	41.503%	18.301%
	> 150k	5,337	285,669	263,442	51,643,722	84	141	43.676%	18.269%

DEPLOYMENT

Revenue projection from 1st Objective can be seen from predicted takers, that add **4.12 billion rupiah** of additional revenue

Baseline	With Modelling
547,418 Takers	**+55,028** Takers
IDR 75,000 Price	**IDR 75,000** Price
IDR 41.05 B Revenue	**IDR 4.12 B** Add Revenue

For the 2nd Objective with changes in price offering based on ARPU we can even get additional revenue up to **IDR 9.35 Billions**

78,917 Takers

Economic Customer

46.5k subs
IDR 100k
11 GB

IDR 3.88 Billion

Mid Spender

26.7k subs
IDR 155k
25 GB

IDR 4.02 Billion

Data Addict

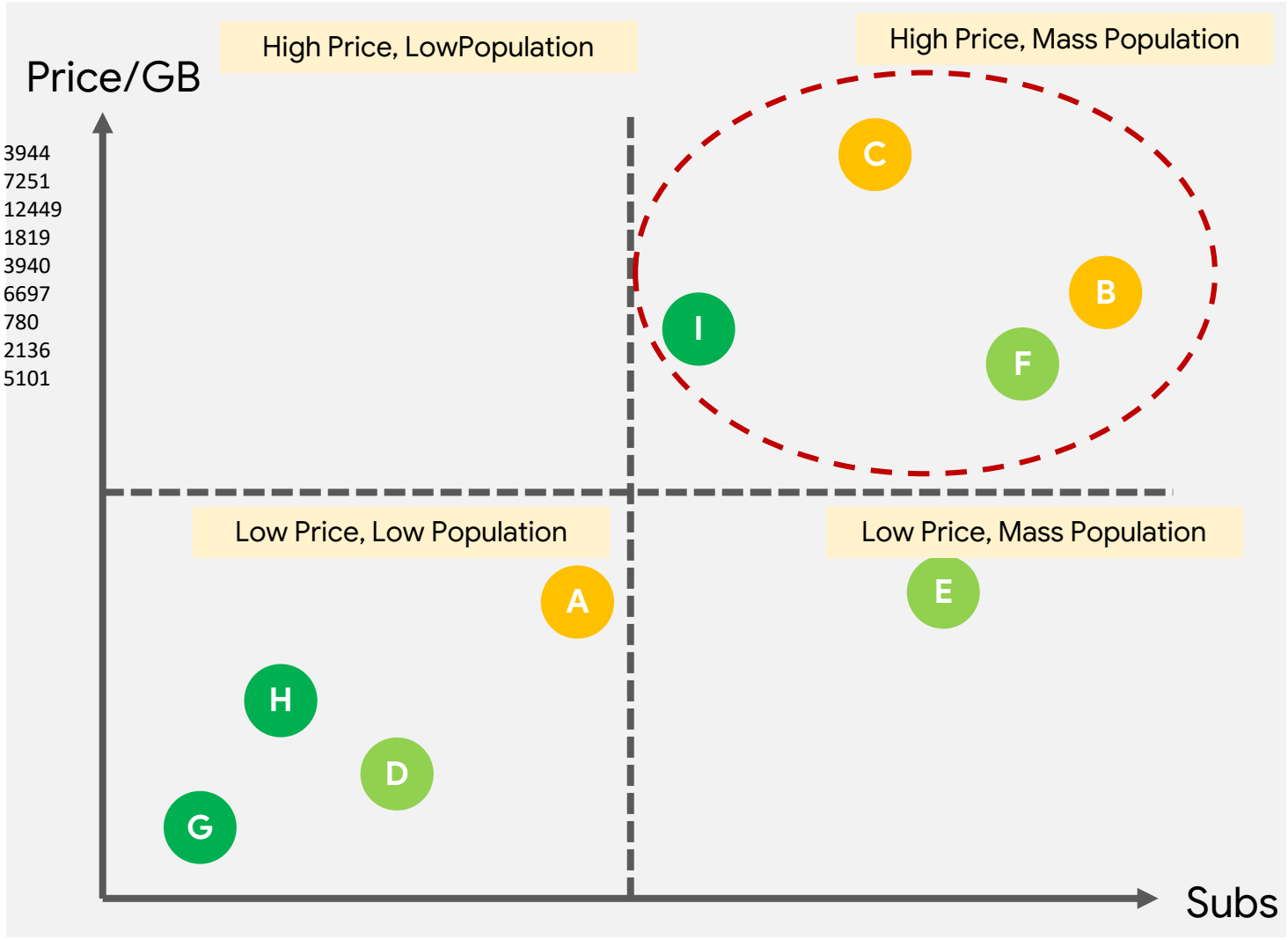
5.68k subs
IDR 275k
51 GB

IDR 1.44 Billion

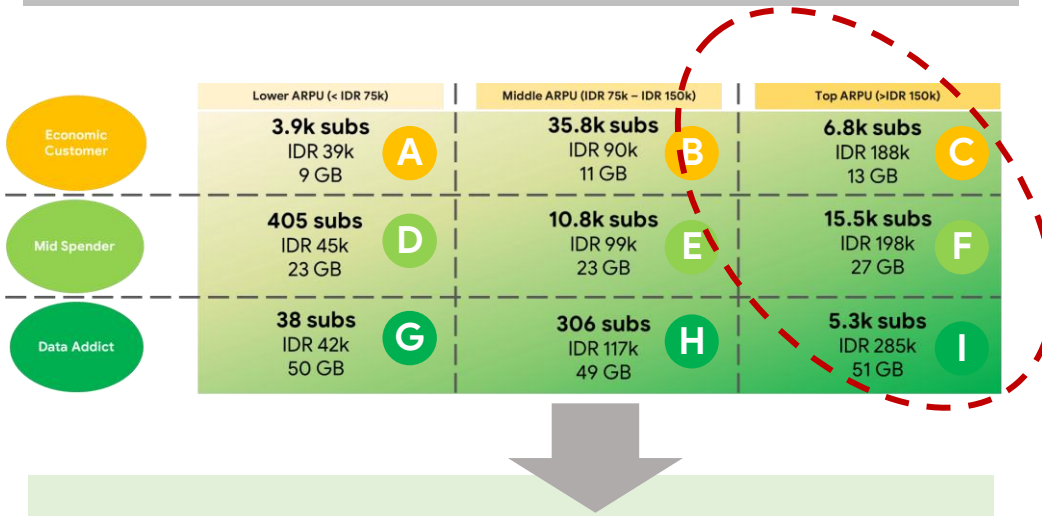
IDR 9.35 Billions

For the deployment of 3rd objective, there are **5 sub-cluster selected based on price and population size**

Matrix of Sub-Cluster Based on Population and Pricing



Choose Sub-Cluster to be deployed into Internet Package



Ojol Hemat

B F

Ojol Gaspol

C

Ojol Juara

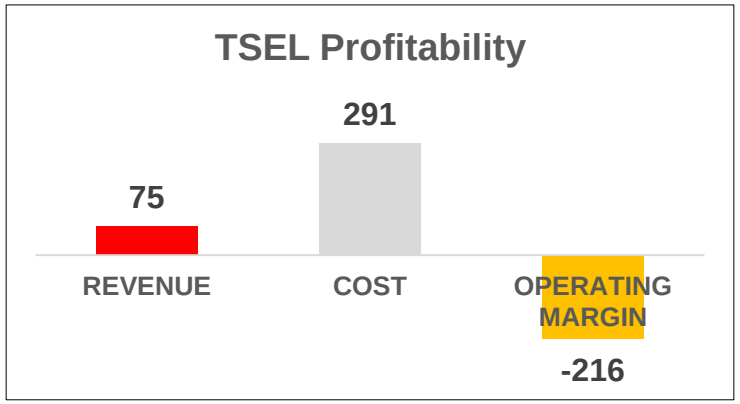
I

There are 5 sub-cluster that have high potential as the population is mass and the arpu/gb is high

.. before deciding package offering, we need to understand **profitability of baseline package** from each operator

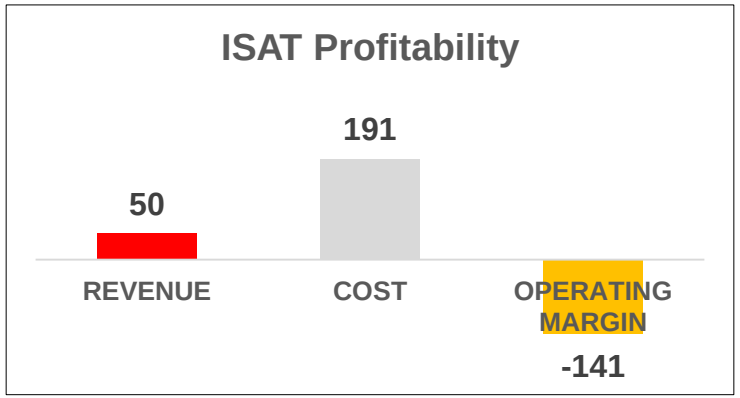
Cost/Minute = 45.02 ; Cost/SMS = 5.3 ; Cost/MB= 18.2 (data from TRACY Application)

TSEL



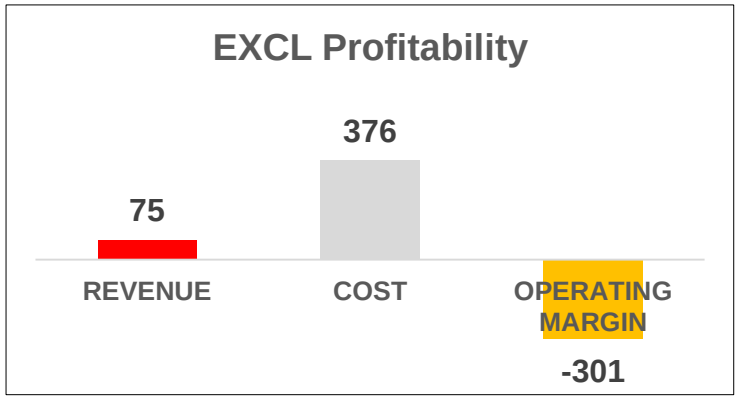
ISAT

Tipe Layanan	Paket Gaspol Swadaya Indosat
Biaya per bulan	Rp50.000
Masa periode aktif	30 hari
Kuota internet	10 GB
Telepon ke sesama Indosat	Gratis
Telepon ke semua operator	Gratis 100 menit



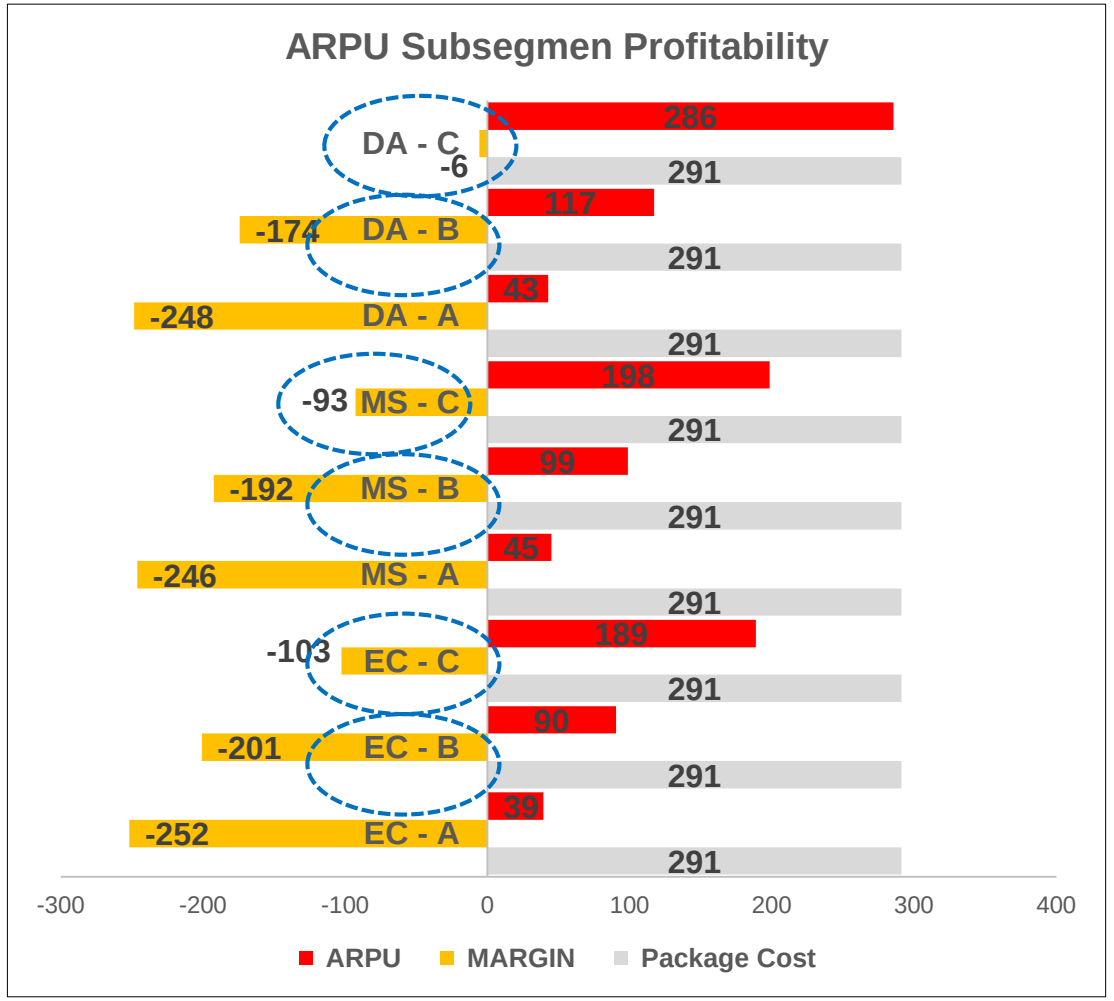
EXCL

	Bulanan 1	Bulanan 2	Mingguan
Harga	Rp50.000	Rp75.000	Rp20.000
Masa Aktif	30 Hari	30 Hari	7 Hari
Kuota	11 GB	20 GB	2 GB
Gratis Aplikasi	Gojek/GoCar Driver & Waze	Gojek/GoCar Driver & Waze	Gojek/GoCar Driver & Waze
Kuota telepon ke sesama operator	Unlimited	Unlimited	Unlimited
SMS ke sesama operator	Unlimited	Unlimited	Unlimited
Kuota telepon ke operator lain	50 Menit	50 Menit	15 Menit
SMS ke operator lain	100 SMS	100 SMS	-



The calculation suggest that it's the best to **have above IDR 75k pricing** based on sub-segment

BASELINE PACKAGE



Cluster 1	ARPU Segmentation		Sum of count msisdn	Sum of total revenue	Sum of payload	Sum of mou voice	Sum of trx sms
Economic Customer	<75k	EC - A	3,905	39,434	9,390,430	90.83	6.72
	Between 75k and 150k	EC - B	35,807	90,432	11,666,051	116.16	8.38
	>150k	EC - C	6,825	188,698	13,440,510	100.70	10.78
Economic Customer Total			**46,537**	**318,564**	**34,496,991**	**307.68**	**25.88**
Mid Spender	<75k	MS - A	405	44,987	23,055,692	136.53	10.52
	Between 75k and 150k	MS - B	10,794	98,828	23,460,466	146.26	11.42
	>150k	MS - C	15,500	198,487	27,443,753	142.49	12.70
Mid Spender Total			**26,699**	**342,302**	**73,959,911**	**425.28**	**34.64**
Data Addict	<75k	DA - A	38	42,810	50,200,170	158.53	8.95
	Between 75k and 150k	DA - B	306	117,133	49,436,040	107.52	11.85
	>150k	DA - C	5,337	285,669	51,643,722	140.91	12.71
Data Addict Total			**5,681**	**445,611**	**151,279,931**	**407**	**34**

PROPOSED CAMPAIGN :

1. *To improve margin we strongly suggest to offer this package to potential customer with > &% K ARPU*
2. *Pricing revamp / package need to be followed up to maintain price war in market*

Cost/Minute = 45.02 ; Cost/SMS = 5.3 ; Cost/MB= 18.2 (data from TRACY Application)

Our package offering based on sub-cluster splitted into **4 different package** that can bring home **uplift of IDR 5320/subs**

Current Telkomsel Offering

Baseline

Tipe Layanan	Paket Swadaya Telkomsel
Biaya per bulan	Rp75.000
Masa periode aktif	30 Hari
Kuota telepon ke sesama operator	Tidak terbatas atau unlimited
Kuota telepon ke semua operator	200 menit
SMS	500 SMS
Kuota internet	15 GB

Takers **78,197**

Price **IDR 75,000**

Revenue **IDR 5,864,775,000**

Ojol Hemat

A

Layanan	Harga
Harga	Rp80.000
Kuota	20 GB
SMS	50 SMS
Telepon	50 Menit

Taker **39712** | Revenue **IDR 3,17 B**

B

Layanan	Harga
Harga	Rp150.000
Kuota	25 GB
SMS	100 SMS
Telepon	100 Menit

Taker **26699** | Revenue **IDR 4,00 B**

Ojol Gaspol

Layanan	Harga
Harga	Rp175.000
Kuota	30 GB
SMS	200 SMS
Telepon	200 Menit

Taker **6825**

Revenue **IDR 1,19 B**

Ojol Gaspol

Layanan	Harga
Harga	Rp255.000
Kuota	50 GB
SMS	200 SMS
Telepon	200 Menit

Taker **5681**

Revenue **IDR 1,44 B**

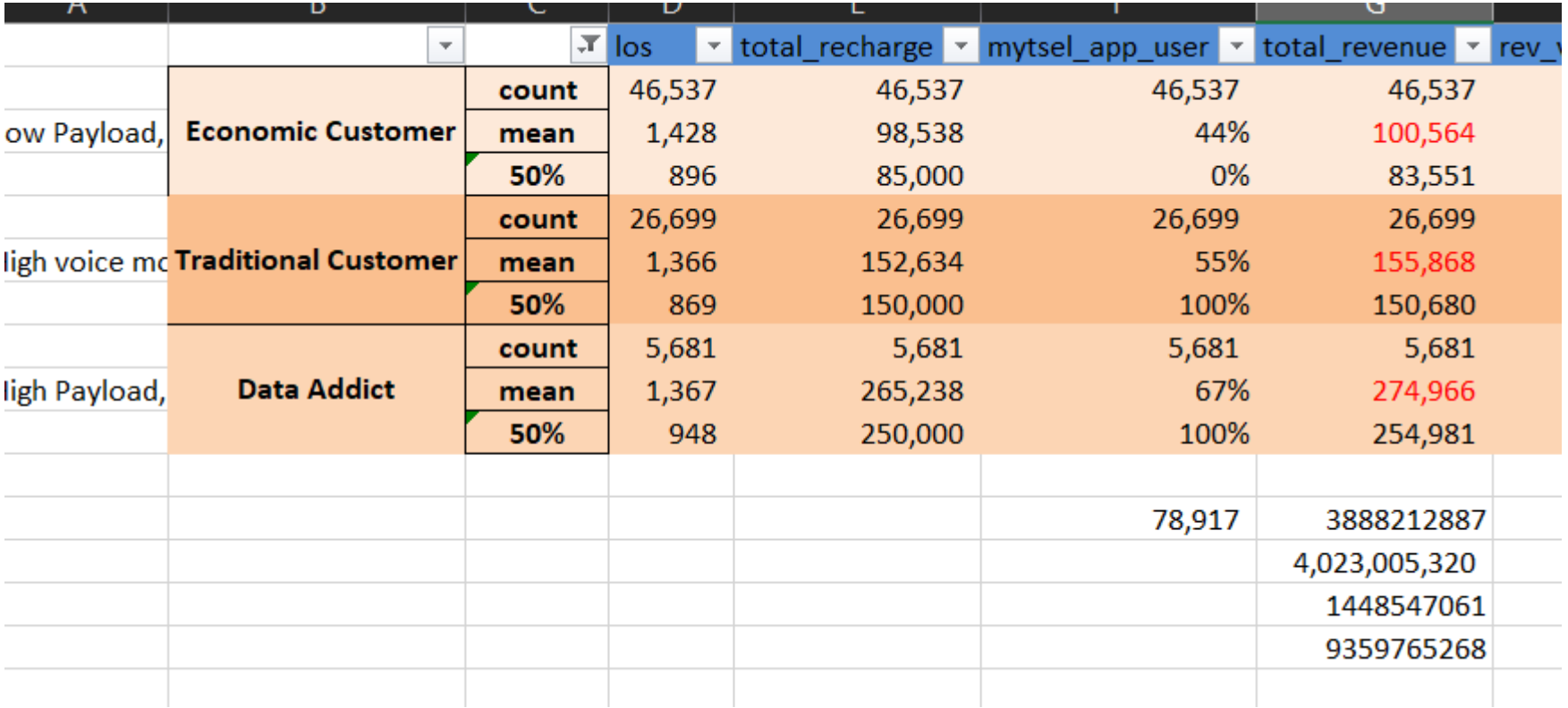
	Paket	Revenue	Data Revenue	Data Usage (Byte)	SMS Trx	Voice Minutes	Subs	Total Revenue
Sub A & B	**Ojol Hemat A**	76,853.78	71,115.39	12,183,935.62	42.10	45.51	39,712.00	3052017474
Sub C	**Ojol Gaspol**	168,296	152,394	14,670,167	34	34	6,825	1148620200
Sub D, E, F	**Ojol Hemat B**	141,800.13	130,011.77	24,931,172.58	53.45	65.21	26,699	3785921704
Sub G, H, I	**Ojol Juara**	252,491.96	235,912.93	47,044,447.69	47.08	60.04	5,681	1434406821
						SUM	**78,917.00**	**9420966199**

	Paket	Price	Data Usage (GB)	SMS Trx	Voice Minutes	Subs	Total Revenue	Add Revenue	Uplift/Subs
Package Pricing	**Ojol Hemat A**	80000	20 GB	50	50	39712	3176960000	124942526	3146.215905
	Ojol Gaspol	175000	30 GB	200	200	6825	1194375000	45754800	6704
	Ojol Hemat B	150000	25 GB	100	100	26699	4004850000	218928296	8199.868759
	Ojol Juara	255000	50 GB	200	200	5681	1448655000	14248179	2508.040662
					SUM	**78917**	**9824840000**	**389625622**	**4937.157038**

Total Revenue
IDR 9,824,840,000

+67%

Uplift/Subs **IDR 4937**



			los	total_recharge	mytsel_app_user	total_revenue	rev_
ow Payload,	Economic Customer	count	46,537	46,537	46,537	46,537	
		mean	1,428	98,538	44%	100,564	
		50%	896	85,000	0%	83,551	
ligh voice mc	Traditional Customer	count	26,699	26,699	26,699	26,699	
		mean	1,366	152,634	55%	155,868	
		50%	869	150,000	100%	150,680	
ligh Payload,	Data Addict	count	5,681	5,681	5,681	5,681	
		mean	1,367	265,238	67%	274,966	
		50%	948	250,000	100%	254,981	
					78,917	3888212887	
						4,023,005,320	
						1448547061	
						9359765268	

	Paket	Revenue	Data Revenue	Data Usage (Byte)	SMS Trx	Voice Minutes	Subs	Total Revenue
Sub A & B	**Ojol Hemat A**	76,853.78	71,115.39	12,183,935.62	42.10	45.51	39,712.00	3052017474
Sub C	**Ojol Gaspol**	168,296	152,394	14,670,167	34	34	6,825	1148620200
Sub D, E, F	**Ojol Hemat B**	141,800.13	130,011.77	24,931,172.58	53.45	65.21	26,699	3785921704
Sub G, H, I	**Ojol Juara**	252,491.96	235,912.93	47,044,447.69	47.08	60.04	5,681	1434406821
						SUM	**78,917.00**	**9420966199**

	Paket	Price	Data Usage (GB)	SMS Trx	Voice Minutes	Subs	Total Revenue	Add Revenue	Uplift/Subs
Package Pricing	**Ojol Hemat A**	80000	20 GB	50	50	39712	3176960000	124942526	3146.215905
	Ojol Gaspol	175000	30 GB	200	200	6825	1194375000	45754800	6704
	Ojol Hemat B	150000	25 GB	100	100	26699	4004850000	218928296	8199.868759
	Ojol Juara	255000	50 GB	200	200	5681	1448655000	14248179	2508.040662
					SUM	**78917**	**9824840000**	**389625622**	**4937.157038**

GO-JEK berkontribusi Rp 8,2 triliun per tahun ke dalam perekonomian Indonesia melalui penghasilan Mitra Pengemudi.

		Sebelum menjadi mitra			Setelah menjadi mitra			Total Pendapatan yang masuk dalam perekonomian per bulan (Ribu Rupiah)		
Penghasilan Sebelum menjadi Mitra	Nilai Tengah (Ribu Rp)	Jumlah Responden (Survei)	Proporsi	Jumlah Responden *Weighted***	Jumlah Responden (Survei)	Proporsi	Jumlah Responden *Weighted***	Total Sebelum	Total Sesudah	Selisih
<1 juta	500	133	4%	27,081	39	1%	7,941	13,540,723.98	3,970,588.24	
1-1,5 juta	1250	302	9%	61,493	203	6%	41,335	76,866,515.84	51,668,552.04	
1,5-2 juta	1,750	707	21%	143,959	296	9%	60,271	251,928,733.03	105,475,113.12	
2-2,5 juta	2,250	982	30%	199,955	475	14%	96,719	449,898,190.05	217,618,778.28	
2,5-3,5 juta	3,000	799	24%	162,692	1148	35%	233,756	488,076,923.08	701,266,968.33	
3,5-6 juta	4,750	213	6%	43,371	1041	31%	211,968	206,012,443.44	1,006,849,547.51	
>6 juta	6,500	51	2%	10,385	113	3%	23,009	67,500,000.00	149,558,823.53	
Tidak Bekerja Sebelumnya	-	128	4%	26,063	0	0	-	-	-	
Total		**3315**	**100%**	**675,000***	**3315**	**100%**	**675,000**	**1,553,823,529.41**	**2,236,408,371.04**	**682,584,841.63**

*http://tekno.kompas.com/read/2017/12/18/07092867/berapa-jumlah-pengguna-dan-pengemudi-GO-JEK

**Weight berasal dari hasil survei yang telah diolah