Pacmann

Optimizing Product Features and Pricing: A Conjoint Analysis

Pacmann's Quest for the Ideal Product Combination

Introduction

Finding out what users need is one of many challenging aspects when launching a product. If they do not need your product, they will not buy it. Furthermore, asking them what features they like does not necessarily represent their willingness to buy, e.g. asking which SSD to buy: 128 GB, 256 GB, 512 GB, most likely many will choose 512 GB (because of more storage they get). But, if we give users some hard options to choose, they will think which one has the most benefit to them. So, here comes the **conjoint analysis.**

Pacmann performs a choice-based conjoint analysis to find out which feature should Pacmann include in their new Product that will increase the buying potential.

Feature

There are several features that Pacmann test for its new product:

- **Daftar Skill:** Create Analytics Dashboard, Create Machine Learning Model, Deploy Machine Learning Model, Design AB Test Experimentation, Perform Customer Lifetime Analysis, Perform Churn Analytics, Perform Credit Scoring Analytics, Perform Customer Segmentation, Perform Price Optimization, and Designing Data Pipeline

- **Bentuk Program:** Tutorial based and Mentoring based

- **Harga Program:** Rp 250.000,0, Rp 300.000,0, Rp 350.000,0, Rp 400.000,0, Rp 450.000,0, Rp 500.000,0, and Rp 550.000,0

Conjoint Survey Overview

The survey consists of 12 questions with 10 main questions, like:

1. Produk manakah yang akan anda beli? (Anda bisa memilih membeli (klik) lebih dari 1 pilihan) *

A	B	C
SKILL	**SKILL**	**SKILL**
Create Analytics Dashboard	Perform Customer Segmentation	Design AB Test Experimentation
BENTUK PROGRAM	**BENTUK PROGRAM**	**BENTUK PROGRAM**
Tutorial Based	Mentoring Based	Mentoring Based
HARGA PROGRAM	**HARGA PROGRAM**	**HARGA PROGRAM**
Rp 500.000,0	Rp 350.000,0	Rp 300.000,0

- [ ] A
- [ ] B
- [ ] C
- [ ] D. Tidak memilih semua product

Survey Results

D	E	F	G	H	I	J	K
Anda bisa	Anda bisa	Anda bisa	Anda bisa	Anda bisa	Anda bisa	Anda bisa	Anda bisa
A	A	A	A	B	A	C	A
C, D. Tida	C	C	A, B	A, B	A	A	A
D. Tidak n	A, C	A	A	C	D. Tidak n	D. Tidak n	D. Tidak n
D. Tidak n	A, C	A	A	C	D. Tidak n	D. Tidak n	D. Tidak n
D. Tidak n	C	A	A	D. Tidak n	D. Tidak n	D. Tidak n	D. Tidak n
D. Tidak n	A, C	D. Tidak n	A	B	D. Tidak n	D. Tidak n	D. Tidak n
A	C	D. Tidak n	C	B	C	C	D. Tidak n
D. Tidak n	A, C	D. Tidak n	A	B	D. Tidak n	C	A
A	B	C	B, C	A	B	A	B
D. Tidak n	A, B, C	A, B	A	B	D. Tidak n	C	A
D. Tidak n	A, C	A, B	A	B	D. Tidak n	C	A, C
B	D. Tidak n	C	D. Tidak n	D. Tidak n	A, C	D. Tidak n	D. Tidak n
A	A, B	A	A	A, B	A	D. Tidak n	A, C
D. Tidak n	C	A	A	C	D. Tidak n	B	D. Tidak n
D. Tidak n	D. Tidak n	D. Tidak n	D. Tidak n	C	D. Tidak n	D. Tidak n	D. Tidak n
B, D. Tida	A, D. Tida	A, D. Tida	A, D. Tida	C, D. Tida	A, D. Tida	B, D. Tida	B, D. Tida
D. Tidak n	A, C	A, B	A	B, C	D. Tidak n	B, C	A
D. Tidak n	C	D. Tidak n	D. Tidak n	D. Tidak n	D. Tidak n	D. Tidak n	D. Tidak n
B	D. Tidak n	C	D. Tidak n	D. Tidak n	C	D. Tidak n	D. Tidak n
D. Tidak n	C	A	A	D. Tidak n	D. Tidak n	D. Tidak n	D. Tidak n

VARIAN

```
{1: {'A': ['Create Analytics Dashboard', 'Tutorial Based', '500.000'],
  'B': ['Perform Customer Segmentation', 'Mentoring Based', '350.000'],
  'C': ['Design AB Test Experimentation', 'Mentoring Based', '300.000'],
  'D': ['', '', '']},
 2: {'A': ['Create Analytics Dashboard', 'Tutorial Based', '500.000'],
  'B': ['Design Data Pipeline', 'Mentoring Based', '300.000'],
  'C': ['Perform Credit Scoring Analytics', 'Mentoring Based', '550.000'],
  'D': ['', '', '']},
 3: {'A': ['Perform Customer Segmentation', 'Mentoring Based', '350.000'],
  'B': ['Perform Customer Segmentation', 'Tutorial Based', '450.000'],
  'C': ['Design Data Pipeline', 'Mentoring Based', '250.000'],
  'D': ['', '', '']},
 4: {'A': ['Design AB Test Experimentation', 'Mentoring Based', '500.000'],
  'B': ['Perform Price Optimization', 'Tutorial Based', '350.000'],
  'C': ['Perform Credit Scoring Analytics', 'Mentoring Based', '350.000'],
  'D': ['', '', '']},
 5: {'A': ['Design Data Pipeline', 'Mentoring Based', '400.000'],
  'B': ['Perform Customer Lifetime Analysis', 'Tutorial Based', '300.000'],
  'C': ['Design AB Test Experimentation', 'Tutorial Based', '300.000'],
  'D': ['', '', '']},
 6: {'A': ['Perform Churn Analytics', 'Tutorial Based', '450.000'],
  'B': ['Perform Customer Segmentation', 'Mentoring Based', '300.000'],
  'C': ['Create Machine Learning Model', 'Mentoring Based', '300.000'],
  'D': ['', '', '']},
 7: {'A': ['Perform Customer Lifetime Analysis', 'Tutorial Based', '500.000'],
  'B': ['Design Data Pipeline', 'Mentoring Based', '550.000'],
  'C': ['Deploy Machine Learning Model', 'Tutorial Based', '350.000'],
  'D': ['', '', '']},
```

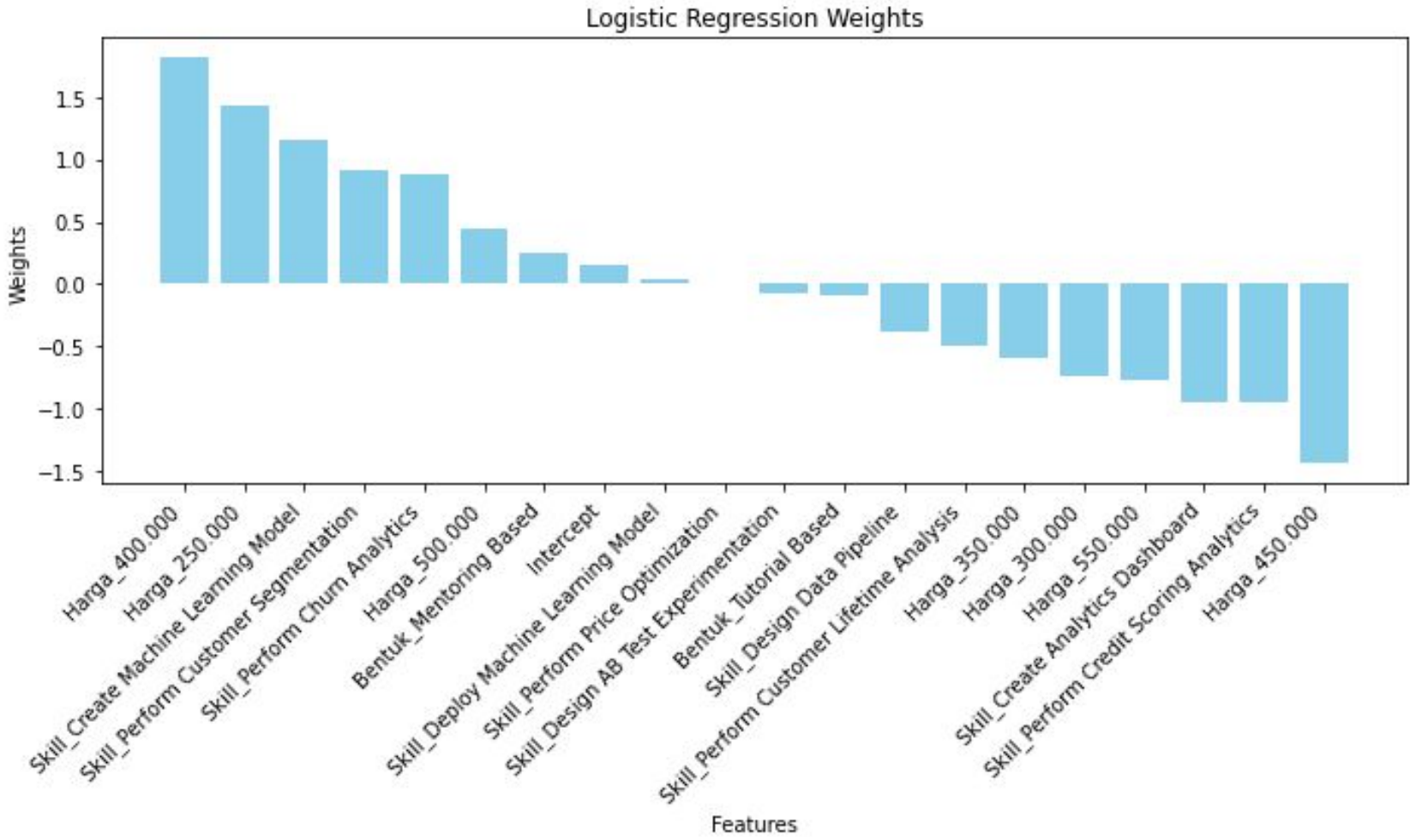
Logistic Regression Model & Weight

```
F1 Score (Train): 0.5234899328859062
F1 Score (Test): 0.5408163265306122
```

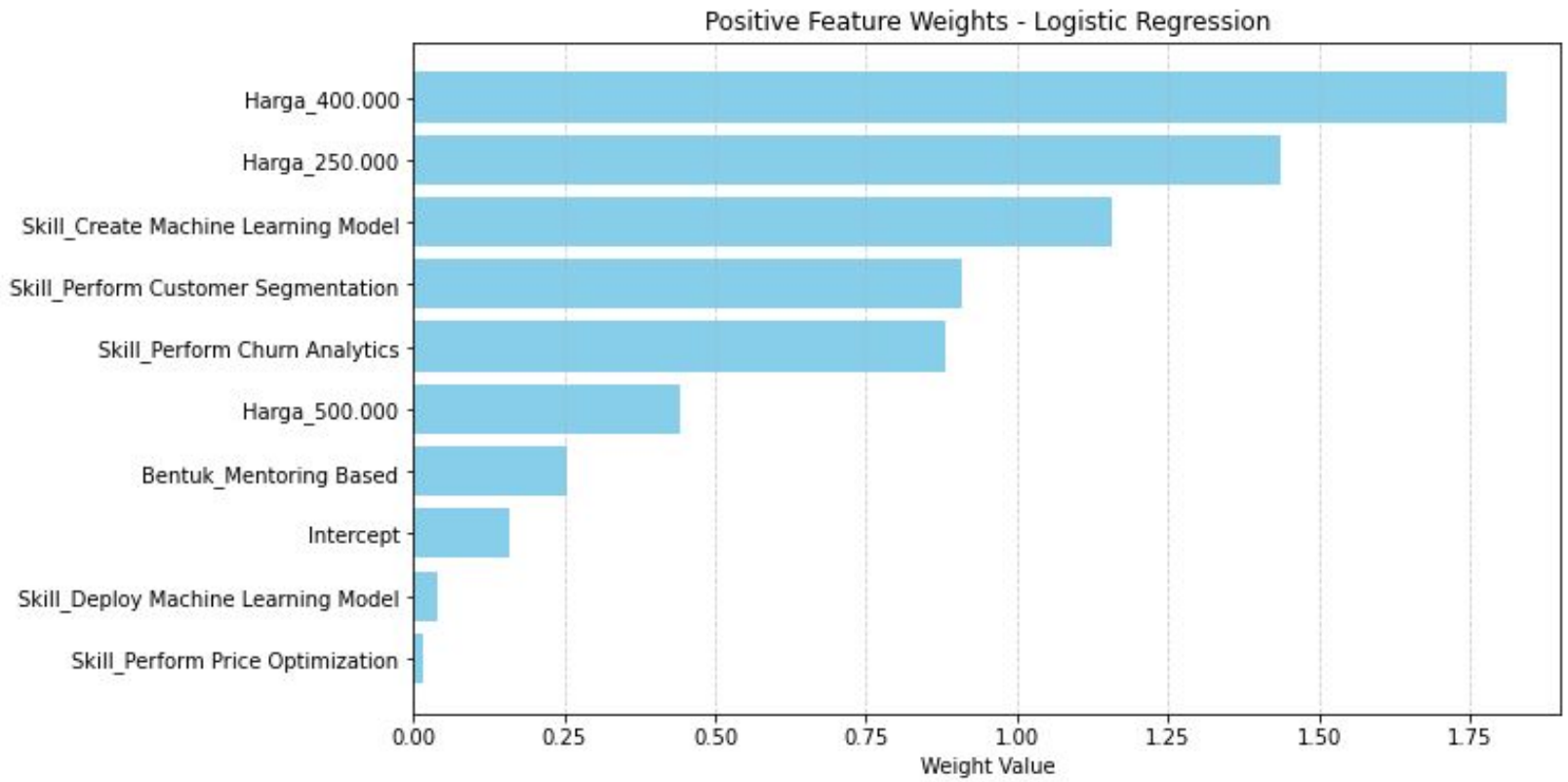
Weight Summary:

	Features	Weights
15	Harga_400.000	1.811438
12	Harga_250.000	1.437586
1	Skill_Create Machine Learning Model	1.157283
8	Skill_Perform Customer Segmentation	0.907636
5	Skill_Perform Churn Analytics	0.881878
17	Harga_500.000	0.441249
10	Bentuk_Mentoring Based	0.254601
19	Intercept	0.157511
2	Skill_Deploy Machine Learning Model	0.039763
9	Skill_Perform Price Optimization	0.014363
3	Skill_Design AB Test Experimentation	-0.075706
11	Bentuk_Tutorial Based	-0.097089
4	Skill_Design Data Pipeline	-0.379408
7	Skill_Perform Customer Lifetime Analysis	-0.490530
14	Harga_350.000	-0.597721
13	Harga_300.000	-0.733733
18	Harga_550.000	-0.761467
0	Skill_Create Analytics Dashboard	-0.948492
6	Skill_Perform Credit Scoring Analytics	-0.949276
16	Harga_450.000	-1.439841

Logistic Regression Model & Weight



Logistic Regression Model & Weight



Recommendation

- **Daftar Skill:** Create Machine Learning Model, Perform Customer Segmentation, Perform Churn Analytics.
- **Bentuk Program:** Mentoring based
- **Harga Program:** Rp 400.000 or Rp 250.000

Reference

- **pacmann.io/cource/**
- **https://ariepratama.github.io/How-to-do-conjoint-analysis-in-python/**
- **https://medium.com/tentang-data/petunjuk-perancangan-dan-analisis-dalam-survei-conjoint-analysis-bag-1-78009233bd6a**
- **https://towardsdatascience.com/modeling-consumer-decisions-conjoint-analysis-f4eda531ecf6**