Starbucks Customer Survey Evaluation - Presentation

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- our project is based on the Kaggle project: Starbucks Customer Survey.
- This dataset is composed of survey questions of over 100 respondents about their buying behavior at Starbucks.
- The main idea of our project is to reproduce the original findings using the original data and collect new data with Google form then replicate the results with the new data.
- A questionnaire was made using Google form, and 39 samples were collected. We use these samples to evaluate and report on customer profiling, areas of satisfaction, and demographics to target for potential growth opportunities. The questionnaire included 20 questions, the first four questions were personal information about the participants, and the remaining questions were about our topic: *Starbucks*.
- requirements to re-run the obtained results are:

R version 4.1.3, rmarkdown 2.14, tidyverse 1.3.2, tibble 3.1.8.

Gender distribution

```
## [1] Less than 25,000PLN     50,000PLN - 100,000PLN  25,000PLN - 50,0
## [4] More than 150,000PLN     100,000PLN - 150,000PLN
## 5 Levels: 100,000PLN - 150,000PLN ... More than 150,000PLN

##   Gender  n     Ratio
## 1 Female 16 0.4102564
## 2   Male 23 0.5897436
```
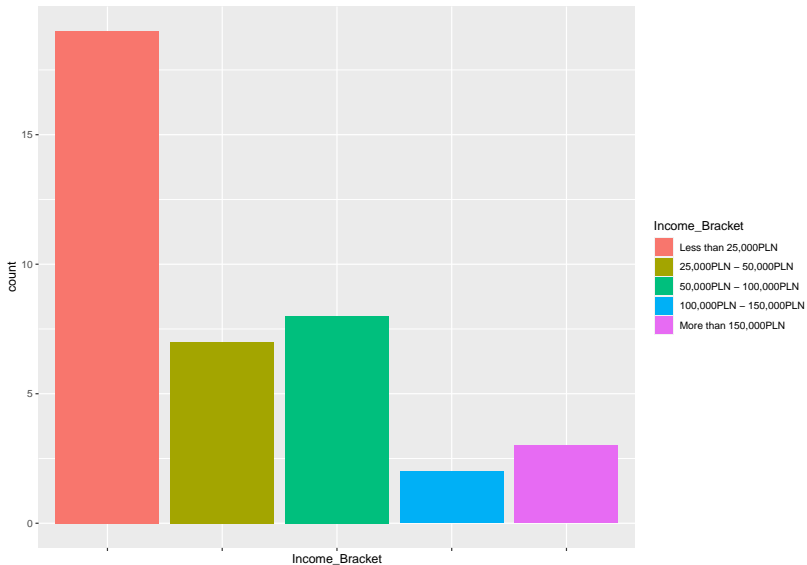
Gender distribution - original

```
  Gender  n      Ratio
1 Female 65 0.5327869
2   Male 57 0.4672131
```
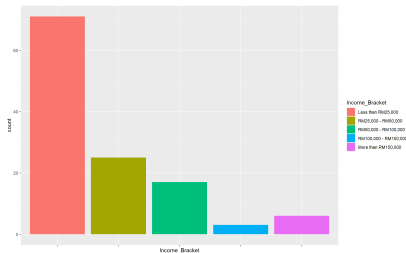
Source: Original data analysis figure.

- What we've gleaned is that gender is not distributed fairly, skew towards Male customers.

Income distribution (Feamle and Male)

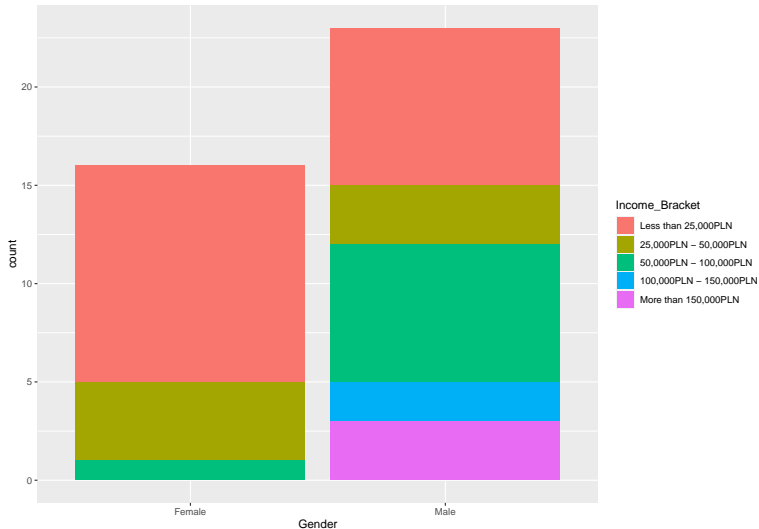### Income distribution (Feamle and Male) - original

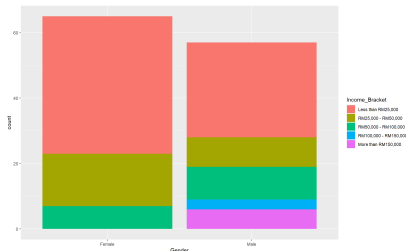Source: Original data analysis figure.

- We can see that incomes of many participants are less than 25,000PLN. High-income participants make up a small percentage.

Gender and income

- Then we combine gender and income to get a broader view.

Gender and income - original

Source: Original data analysis figure.

- So while customers that identify as 'female' outnumber 'male'-identifying customers, they also appear to fall into lower income brackets more frequently.
- We want to do some more quantitative measurements of the data. So we will create male and female income dataframes.

Gender and income

Females' income

```
##              Income_Bracket Percentage
## 1     Less than 25,000PLN       0.688
## 2  25,000PLN - 50,000PLN        0.250
## 3 50,000PLN - 100,000PLN        0.062
```

Gender and income

Females' income - original

```
        Income_Bracket Percentage
1   Less than RM25,000        0.646
2  RM25,000 - RM50,000        0.246
3 RM50,000 - RM100,000        0.108
```

Source: Original data analysis figure.

Gender and income

Males' income

```
##              Income_Bracket Percentage
## 1     Less than 25,000PLN        0.348
## 2   25,000PLN - 50,000PLN        0.130
## 3  50,000PLN - 100,000PLN        0.304
## 4 100,000PLN - 150,000PLN        0.087
## 5    More than 150,000PLN        0.130
```

Males' income - original

```
          Income_Bracket Percentage
1      Less than RM25,000      0.509
2    RM25,000 - RM50,000       0.158
3   RM50,000 - RM100,000       0.175
4  RM100,000 - RM150,000       0.053
5     More than RM150,000      0.105
```

Source: Original data analysis figure.

Gender and income

Combine income and gender (1/2)

- Then we combine income and gender.

```
##              IncomeBracket   Gender Percent
## 1  100,000PLN - 150,000PLN Percent_M    8.7
## 2    25,000PLN - 50,000PLN Percent_M   13.0
## 3   50,000PLN - 100,000PLN Percent_M   30.4
## 4      Less than 25,000PLN Percent_M   34.8
## 5     More than 150,000PLN Percent_M   13.0
## 6  100,000PLN - 150,000PLN Percent_F    0.0
## 7    25,000PLN - 50,000PLN Percent_F   25.0
## 8   50,000PLN - 100,000PLN Percent_F    6.2
## 9      Less than 25,000PLN Percent_F   68.8
## 10    More than 150,000PLN Percent_F    0.0
```

Combine income and gender (1/2) - original

```
            IncomeBracket    Gender  Percent
1     Less than RM25,000  Percent_M     50.9
2    More than RM150,000  Percent_M     10.5
3  RM100,000 - RM150,000  Percent_M      5.3
4     RM25,000 - RM50,000  Percent_M     15.8
5   RM50,000 - RM100,000  Percent_M     17.5
6     Less than RM25,000  Percent_F     64.6
7    More than RM150,000  Percent_F      0.0
8  RM100,000 - RM150,000  Percent_F      0.0
9     RM25,000 - RM50,000  Percent_F     24.6
10  RM50,000 - RM100,000  Percent_F     10.8
```
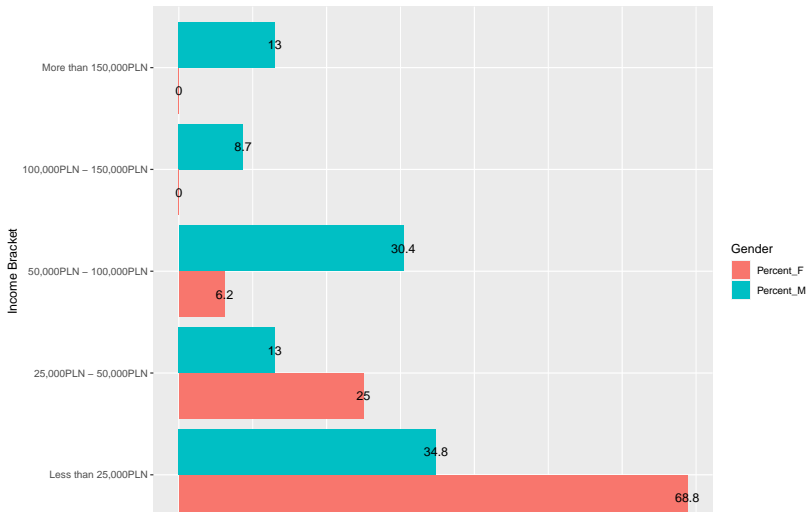
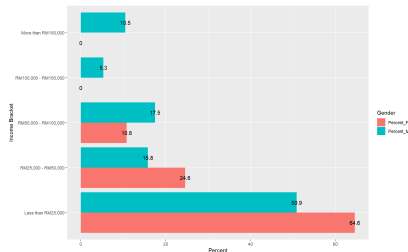Source: Original data analysis figure.

Gender and income

Combine income and gender (2/2)

- We can show them in a barplot.

Combine income and gender (2/2) - original

Source: Original data analysis figure.

- We can see from this barplot, over 40% males occupy the higher income brackets (any more that 50,000PLN), most of females occupy the lower income brackets.

- So we can assume that when the gender distribution is fairly even female-identifying customers lean more towards the lower income brackets, while more males occupy the higher income brackets.

7 rated questions and Gender (1/3)

- Here are 7 more survey questions to score, and we'll analyze them next with gender.

```
##   Female     Male
## 3.491071 3.546584
```

7 rated questions and Gender (1/3) - original

```
    Female      Male
 3.571429 3.456140
```

Source: Original data analysis figure.

- Males are slightly more favorable overall towards the brand (3.55), but not much more than women (3.49).
- In general, the feelings are leaning on the 'satisfied' side of 'neutral'.

7 rated questions and Gender (2/3)

- We can create a collated dataframe of all the surveyed, ranked variables by gender.

```
##    Gender AmbRat Sales_Promo_Rating Quality_Rating Price_Rating WiFi
## 1 Female 3.68750           3.812500       3.625000     2.937500    3
## 2   Male 3.73913           3.434783       3.956522     3.086957    3
##    Service_Rating Meetup_Rating
## 1        3.75000      3.250000
## 2        3.73913      3.478261
```

7 rated questions and Gender (2/3) - original

	Gender	AmbRat	Sales_Promo_Rating	Quality_Rating	Price_Rating	Service_Rating	Meetup_Rating
1	Female	3.861538	3.923077	3.676923	2.907692	3.846154	3.461538
2	Male	3.631579	3.649123	3.649123	2.877193	3.631579	3.578947

Source: Original data analysis figure.

7 rated questions and Gender (3/3)
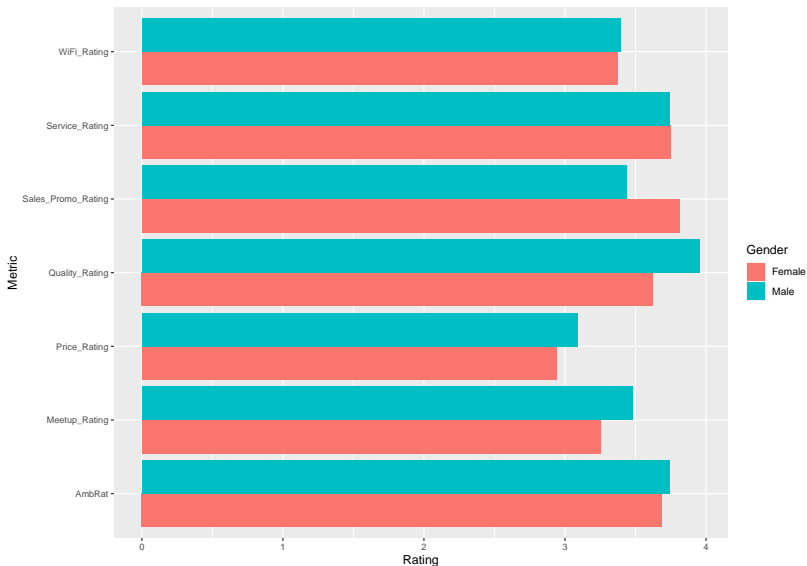
7 rated questions and Gender (3/3) - original
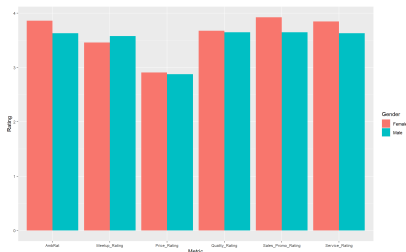
Source: Original data analysis figure.

- The results are not very different by gender. Men and women are fairly similar in their ratings, but there are some difference in a few areas: Women are more satisfied with *Sales/Promotions*, while men are more satisfied with *the use of Starbucks for meetings/get-togethers* and *quality of coffee*.

Spending and Gender (1/2)

- Check which gender spends more per trip: "Spending".

```
##   Gender          Spending  n
## 1 Female              0 PLN  3
## 2 Female  20 PLN - 40 PLN   4
## 3 Female Less than 20 PLN   9
## 4   Male  20 PLN - 40 PLN  13
## 5   Male Less than 20 PLN   8
## 6   Male More than 40 PLN   2
```

Spending and Gender (1/2) - original

```
  Gender            Spending   n
1 Female Around RM20 - RM40   22
2 Female       Less than RM20 34
3 Female       More than RM40  2
4 Female                 Zero  7
5   Male Around RM20 - RM40   23
6   Male       Less than RM20 24
7   Male       More than RM40  5
8   Male                 Zero  5
```
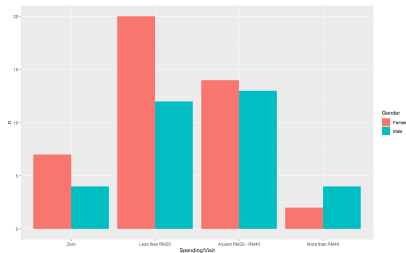
Source: Original data analysis figure.

Spending and Gender (2/2)
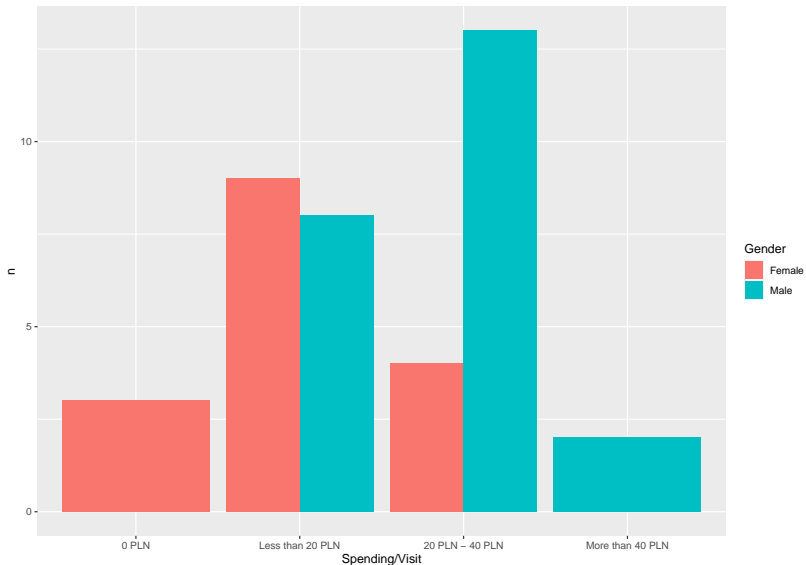
Spending and Gender (2/2) - original

Source: Original data analysis figure.

- We can see that most of the cost are in the range greater than 0 PLN but not more than 40 PLN. The top overall spends 20 PLN - 40 PLN. While more men spend between 20 PLN and 40 PLN, and only men spend more than 40 PLN at a time in this survey.

- So we can conclude that *men are more willing than women to pay for a visit, regardless of the amount*.

Membership and Gender

- Next, we analyze whether membership is related to Gender.

```
##   Gender Membership  n
## 1 Female         No  9
## 2 Female        Yes  7
## 3   Male         No 10
## 4   Male        Yes 13
```

Membership and Gender - original

```
  Gender Membership  n
1 Female         No 35
2 Female        Yes 30
3   Male         No 27
4   Male        Yes 30
```

Source: Original data analysis figure.

- Men are more likely to have a membership than women.

Willingness to continue buying and Gender

- Now that we know that men and women rate Starbucks similarly but not identically, we will analyze whether there is a significant difference in the willingness to continue to buy between different genders.

```
##   Gender Cont_Buying  n
## 1 Female          No  3
## 2 Female         Yes 13
## 3   Male          No  2
## 4   Male         Yes 21
```

Willingness to continue buying and Gender - original

```
  Gender Cont_Buying  n
1 Female           No 15
2 Female          Yes 50
3   Male           No 13
4   Male          Yes 44
```

Source: Original data analysis figure.

- About 87% participants say they'll keep going to Starbucks. So most of men and women are willing to continue to buy Starbucks, regardless of variable gender.

Membership and Spending

- The difference in spending between members and non-members

```
##   Membership          Spending  n
## 1         No               0 PLN  3
## 2         No  20 PLN - 40 PLN  8
## 3         No Less than 20 PLN  7
## 4         No More than 40 PLN  1
## 5        Yes  20 PLN - 40 PLN  9
## 6        Yes Less than 20 PLN 10
## 7        Yes More than 40 PLN  1
```

Membership and Spending - original

```
  Membership             Spending  n
1         No Around RM20 - RM40 18
2         No     Less than RM20 32
3         No     More than RM40  1
4         No                Zero 11
5        Yes Around RM20 - RM40 27
6        Yes     Less than RM20 26
7        Yes     More than RM40  6
8        Yes                Zero  1
```

Source: Original data analysis figure.

- Members and non-Members are spending about the same.

Willing to continue buying and Membership

- We know that members' willingness to continue to buy is unquestionable, but we do not know the willingness of non-members to continue to buy, so we analyze the willingness of members and non-members to continue to buy.

```
##   Membership Cont_Buying  n
## 1         No          No  4
## 2         No         Yes 15
## 3        Yes          No  1
## 4        Yes         Yes 19
```

Willing to continue buying and Membership - original

```
  Membership Cont_Buying  n
1         No         No 23
2         No        Yes 39
3        Yes         No  5
4        Yes        Yes 55
```

Source: Original data analysis figure.

- In our survey, members and non-Members are spending about the same. However, members are generally the only group that will spend more than 40 PLN (that group is entirely men).

- Also, men are more likely to spend 20PLN - 40PLN, where as women are less likely to spend in the upper half of the spending brackets.

- Among non-members, the gap between who will continue to buy and who will not continue to buy is not large.

- Women are more satisfied with *Sales/Promotions*, while men are more satisfied with *the use of Starbucks for meetings/get-togethers* and *quality of coffee*.
- Men and women are in consensus that the factor from the survey in most need of improvement is pricing.
- Women are generally more satisfied about Starbucks across all measured metrics, except pricing.
- Males are more likely to have a membership than women.