0022_Kunanon

Data Analysis Report
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Tuesday Morning Section

In United States of America, there is a lot of varieties of cuisine, which each Americans from each location might not have the same food preferences. The problem is that, we cannot find out where should we open a Thai resteraunt at which area.

Thai cuisines is not an American food nor European. As we are talking, we need to make sure that putting a resteraunt there will generate a profit. But we need more information about the customers also.

To find out, we use data from FiveThirtyThree that have surveys thousands of customers all around America.

Question from the data :
1. Where should a Thai resteraunt open at
2. What's the target group for that Thai resteraunt

1 Installing mandatory packages

Package that is not have been installed on the computer will be downloaded.
Package that have been installed will be skipped instead.

```
# It will only install a package THAT IS NOT IN USER COMPUTER.

if (!require("fivethirtyeight"))    install.packages("fivethirtyeight");
```

```
## Loading required package: fivethirtyeight
```

```
if (!require("tidyverse"))          install.packages("tidyverse");
```

```
## Loading required package: tidyverse
```

```
## ── Attaching packages ─────────────────────────────────────── tidyverse 1.2.1 ──
```

```
## ✔ ggplot2 2.2.1     ✔ purrr   0.2.4
## ✔ tibble  1.4.2     ✔ dplyr   0.7.4
## ✔ tidyr   0.8.0     ✔ stringr 1.3.0
## ✔ readr   1.1.1     ✔ forcats 0.3.0
```

```
## ── Conflicts ────────────────────────────────────── tidyverse_conflicts() ──
## ✖ dplyr::filter() masks stats::filter()
## ✖ dplyr::lag()    masks stats::lag()
```

```
if (!require("gapminder"))          install.packages("gapminder");
```

```
## Loading required package: gapminder
```

```
if (!require("knitr"))              install.packages("knitr");
```

```
## Loading required package: knitr
```

2 Introduction to the dataset

Showing the dataset `food_world_cup` in table

```
# Show the data tibble of the dataset `food_world_cup`
food_world_cup
```

```
## A tibble: 1,373 x 48
##    respondent_id knowledge     interest gender age    household_income
##            <dbl> <ord>         <ord>    <chr>  <chr>  <fct>
##  1    3308895255. Intermediate Some     Male   18-29  $100,000 - $149,999
##  2    3308891308. Novice       Some     Male   18-29  $100,000 - $149,999
##  3    3308891135. Intermediate A lot    Male   30-44  $50,000 - $99,999
##  4    3308879091. Novice       Not much Male   45-60  $0 - $24,999
##  5    3308871671. Novice       Not much Male   30-44  $25,000 - $49,999
##  6    3308871406. Advanced     A lot    Female 30-44  $50,000 - $99,999
##  7    3308866182. Novice       Some     Male   45-60  <NA>
##  8    3308857114. Advanced     A lot    Male   45-60  $0 - $24,999
##  9    3308856510. Novice       Not much Female 30-44  $50,000 - $99,999
## 10    3308846915. Novice       Some     <NA>   <NA>   <NA>
## # ... with 1,363 more rows, and 42 more variables: education <ord>,
## #   location <chr>, algeria <chr>, argentina <chr>, australia <chr>,
## #   belgium <chr>, bosnia_and_herzegovina <chr>, brazil <chr>,
## #   cameroon <chr>, chile <chr>, china <chr>, colombia <chr>,
## #   costa_rica <chr>, croatia <chr>, cuba <chr>, ecuador <chr>,
## #   england <chr>, ethiopia <chr>, france <chr>, germany <chr>,
## #   ghana <chr>, greece <chr>, honduras <chr>, india <chr>, iran <chr>,
## #   ireland <chr>, italy <chr>, ivory_coast <chr>, japan <chr>,
## #   mexico <chr>, nigeria <chr>, portugal <chr>, russia <chr>,
## #   south_korea <chr>, spain <chr>, switzerland <chr>, thailand <chr>,
## #   the_netherlands <chr>, turkey <chr>, united_states <chr>,
## #   uruguay <chr>, vietnam <chr>
```

Which is mostly a customer information and their ratings on the scale of 1 (as not favorable) to 5 (most favorable).

3 Search for solution

Starts with getting the data from the dataset and find which area in US loves Thai food the most

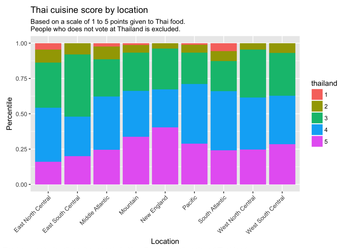
```
# Filtering the data from food_world_cup with no null data set from location or thailand
b2 <- ggplot(data = subset(subset(food_world_cup, thailand != "N/A"),
                           location != "NA"),
             aes(x = location, fill = thailand)) +

    # Create a stack bar graph
    geom_bar(position = "fill") +

    # Labe a stack bar graph
    labs(x = "Location",
         y = "Percentile",
         title = "Thai cuisine score by location",
         subtitle = "Based on a scale of 1 to 5 points given to Thai food.
People who does not vote at Thailand is excluded.") +

    # Align a lable to 45 degrees + adjust a lable location
    theme(axis.text.x = element_text(angle = 45,
                                     hjust = 1))

b2
```



The bar graph visualizes that people in New England really enjoyed Thai food.
So we will dig down with the data on "Which type of people really loved Thai food".

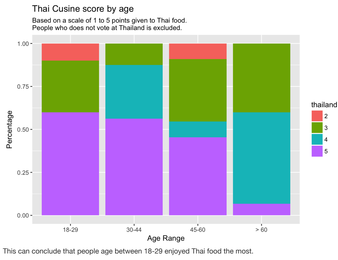
This graph will shows which age range from New England loves Thai Food.

```
# Filtering data from food_world_cup with no null dataset and location is 'New England'
b1 <- ggplot(data=subset(subset(food_world_cup, thailand!="N/A"),
                         location == 'New England'),
             # Using the data age as x-axis and thailand as y-axis
             aes(x = age, fill = thailand)) +

# Create Stacked Bar Graph
       geom_bar(position = "fill") +

# Label for the Bar Graph
       labs(x = "Age Range",
            y = "Percentage",
            title = "Thai Cusine score by age",
            subtitle = "Based on a scale of 1 to 5 points given to Thai food.
People who does not vote at Thailand is excluded.")

b1
```



This can conclude that people age between 18-29 enjoyed Thai food the most.

So another question is that "which gender from 18-29 and lives in New England loves Thai cuisine the most?".

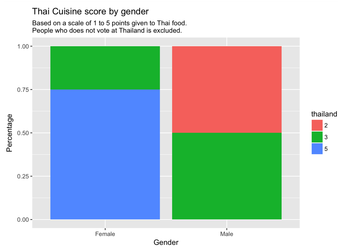
```
# Filtering data from food_world_cup with no null dataset and location is 'New England'
b3 <- ggplot(data = subset(subset(subset(food_world_cup, thailand != "N/A"),
                                  location == "New England"),
                           age == "18-29"),

             # Using gender as x-axis and thailand as y-axis
             aes(x = gender, fill = thailand)) +

    # Create a stack bar graph
    geom_bar(position = "fill") +

    # Label a stack bar graph
    labs(x = "Gender",
         y = "Percentage",
         title = "Thai Cuisine score by gender",
         subtitle = "Based on a scale of 1 to 5 points given to Thai food.
People who does not vote at Thailand is excluded.")

b3
```



Conclusions

When about to open a Thai resteraunt, there is a good chance that open at New England is the best deal.
Main customer ages about 18-29 Female.

With this data, we can safely sure that New England does have a lot of strong demand in Thai food. This confirms by the Google review made by user in New England area.

By the overall looks, Thai cuisine does have a lot of demands at USA. (with the average score of)

References

Data Reference
https://cran.r-project.org/web/packages/fivethirtyeight/index.html
https://fivethirtyeight.com/features/what-is-americans-favorite-global-cuisine/
https://fivethirtyeight.com/features/the-fivethirtyeight-international-food-associations-2014-world-cup/
https://github.com/fivethirtyeight/data/tree/master/food-world-cup

Code Reference
Creating stack bar graph
http://rstudio-pubs-static.s3.amazonaws.com/3256_bb10db1440724dac8fa40da5e658ada5.html
Left data text alignment
https://www.statmethods.net/advgraphs/axes.html