SCHOOL OF COMPUTING

Faculty of Engineering

Group Project

SECI2143

PROBABILITY & STATISTICAL DATA ANALYSIS

SECTION   :   04 - 1SECR

COURSE   :   BACHELOR OF COMPUTER SCIENCE (COMPUTER NETWORKS
AND SECURITY)

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DUE DATE   : 30$^{\text{TH}}$ APRIL 2020

I. INTRODUCTION

As we all know, in Universiti Teknologi Malaysia (UTM), there a lot of cafés within the university area to make it easy for students to have breakfast, lunch and dinner without having to go to cafes far from their block or faculty. Every students have their own favorite café based on several factors. Therefore our team planned to conduct a survey regarding KTDI student's chosen café and the factors of their choice.

The title of our survey is "Chosen café among KTDI student". Our team decided to conduct a study on the preference of KTDI student only. KTDI only have two cafés which are Mak Ngah Café and Arked Angkasa. We were interested to conduct this topic because we are curious about the students who live in KTDI that have their own favorite café. We also wanted to find out about the main reason why they choose that particular café.

II. METHODOLOGY

We gave the link to fill up our form among KTDI student and a total of 56 respondants fill up the form. The method we used to collect the data is by creating an online survey form called Google Form. It is easy to use this method because we don't need to print out the form and pass it to any particular student whereby we just share the link of the form through WhatsApp's groups of KTDI students.

The parameter and variables of the questions asked and data collected:

| Data collected	Level of measurement	Description
Gender	Nominal	Male, Female
Year	Nominal	1,2,3,4
Block	Nominal	Filled by respondents M16,M17,M21,M22,M23,M25,M27,MA1,MA4,MA5,MA6,MA7
Café	Nominal	Mak Ngah Café, Arked Angkasa, other.
Average minutes taken to arrive at cafe from residential block	Interval	0-2 3-4 5-6
Average time waiting for food to be served	Ratio	Filled by respondents
Average time spend at café	Ratio	Filled by respondents

frequently times go to café in a week	Ratio	Filled by respondents
Food variation	Ordinal	1(least) - 5(most)
Average of food's price	Ordinal	1(cheap) – 5(expensive)
Average amount of money spend at café in a week	Ratio	Filled by respondents
Food's portion	Ordinal	1(least) - 5(most)
Food's tastiness	Ordinal	1(least) - 5(most)
Cafe's cleanliness	Ordinal	1(least) - 5(most)

III.   RESULT AND DISCUSSION

GENDER OF RESPONDENTS
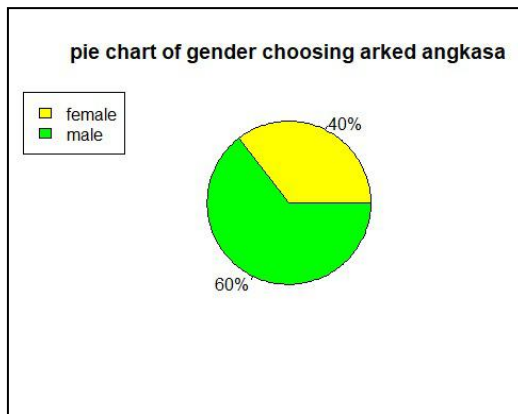
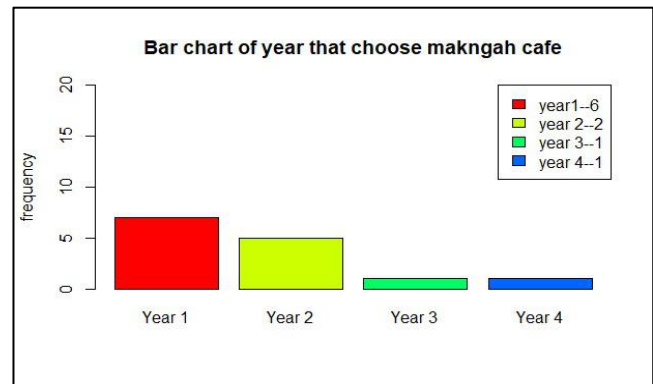*(Pie chart 1: Respondents of Arked Angkasa's Gender)*
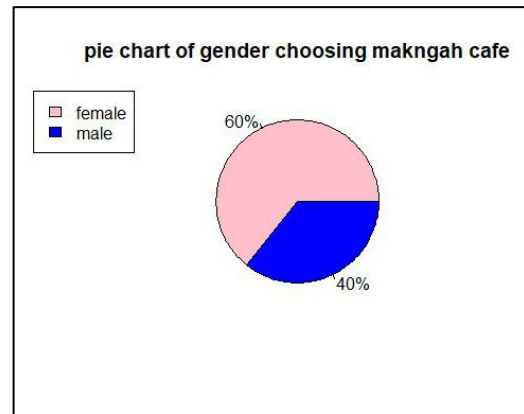
(Pie chart 2: Respondents of Mak Ngah Cafe's Gender)

From the data collected, the number of students choosing Arked Angkasa, Mak Ngah Cafe and others are 31 students, 14 students and 11 students respectively. According to pie chart 1, the number of male students choosing Arked Angkasa is higher than the number of female students choosing Arked Angkasa by 6:4 ratio. On the other hand, from Mak Ngah Cafe's pie chart, it was shown to be the opposite of the gender ratio of Arked Angkasa which is 60% of the students choosing Mak Ngah Cafe seems to be female students while the remaining 40% is the male students.

YEAR OF RESPONDENTS
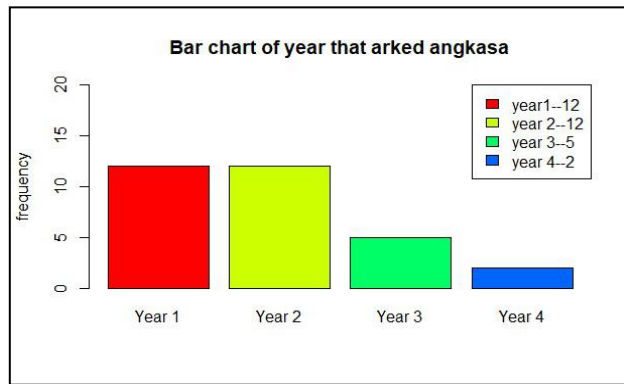
*(Bar chart 1: Respondents of Arked Angkasa's Year)*

(Bar chart 2: Respondents of Arked Angkasa's Year)

According to bar chart 1, the amount of students choosing Arked Angkasa from Year 1 and Year 2 is the highest with frequency 12 for each of them followed by Year 3 with frequency 5 and the least frequency of 2 is from Year 4. The highest frequency of students who chose Mak Ngah Cafe is also from Year 1 with frequency 7 followed by Year 2 with frequency 5 while Year 3 and Year 4 have the same east frequency which is only 1 student choosing Mak Ngah Cafe. This shows that most student is likely to choose Arked Angkasa rather than choosing Mak Ngah cafe.

## FREQUENCY DISTRIBUTION OF STUDENTS GO TO CAFE IN A WEEK
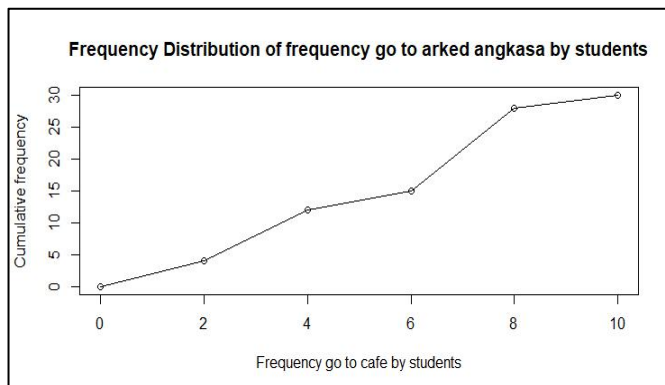
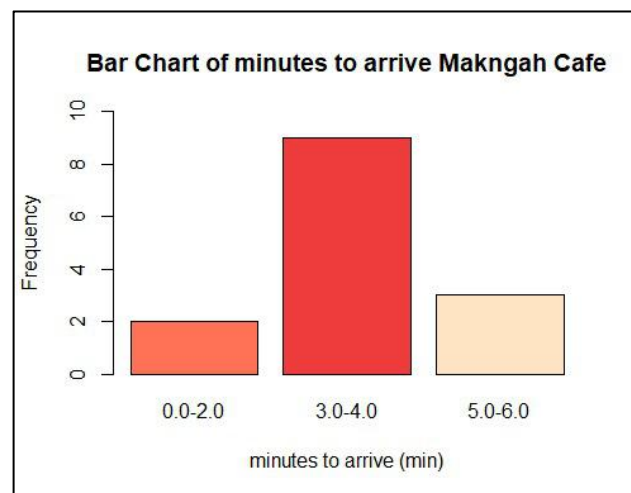*(Frequency graph 1:Frequency students go to Arked Angkasa)*
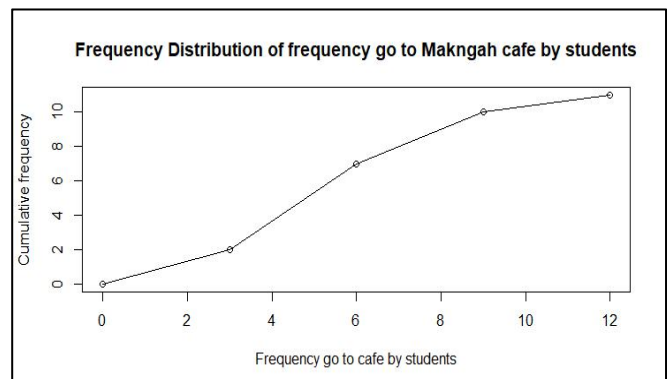
(Frequency graph 1:Frequency students go to Mak Ngah Cafe)

From the frequency distribution graph above we can see how frequently students go to that cafe, we can see from MakNgah distribution it shows the highest frequency is 12 times but for 10 students only whereas the highest frequency for Arked Angkasa is only 10 times but it is for about 30 students. We can conclude in this graph students are tends to go to Makngah café more than Arked Angkasa,but the highest cumulative students are more to Arked Angkasa .This is because the students are consider about the taste and the prices of their food.

**MINUTES TO ARRIVE AT THE CAFE FROM RESIDENTIAL BLOCK**
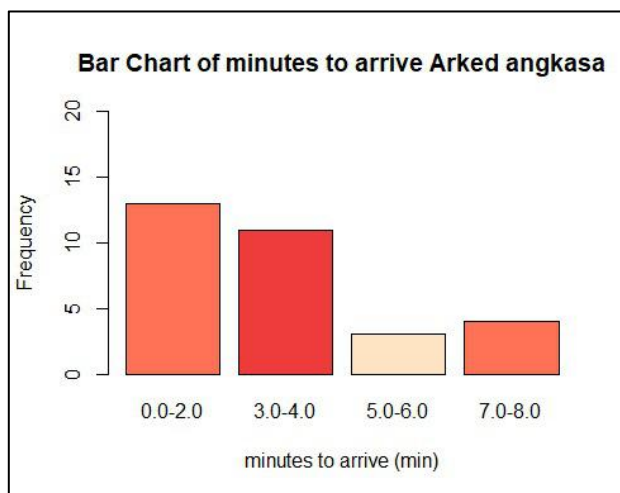
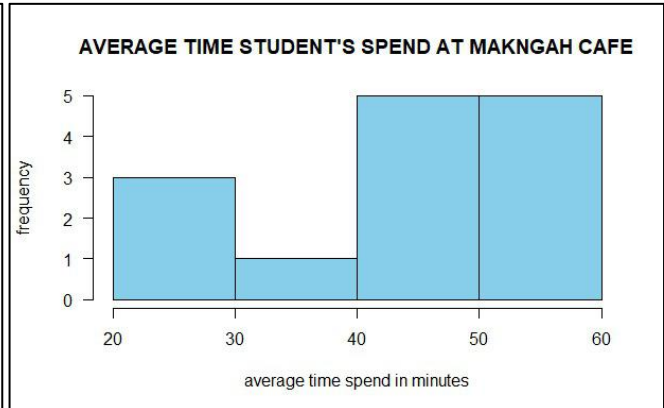| *(Bar chart 3: Minutes to arrive at Arked Angkasa)* | *(Bar chart 4: Minutes to arrive at Mak Ngah Cafe)* |

From bar chart 3, it was shown that most student who chose Arked Angkasa reside near the Cafe as the highest frequency of the bar chart is from 0 minute to 2 minutes and 3 minutes to 4 minutes to arrive at Arked Angkasa from their residential block with frequency 13 and 11 respectively. For Arked Angkasa, the longest minutes taken to arrive at the cafe is 7 minutes to 8 minutes. While from bar chart 4, most student who chose Mak Ngah Cafe took around 3 minutes to 4 minutes to arrive at the cafe from their residential block with frequency 9. Contrast to Arked Angkasa, the longest minutes taken to arrive at Mak Ngah Cafe is only 5 minutes to 6 minutes. From this, we can conclude that even though Arked Angkasa is far from some student who chose Arked Angkasa's residential block, they are still willing to go there despite the distance.

AVERAGE TIME STUDENTS SPEND AT BOTH CAFE
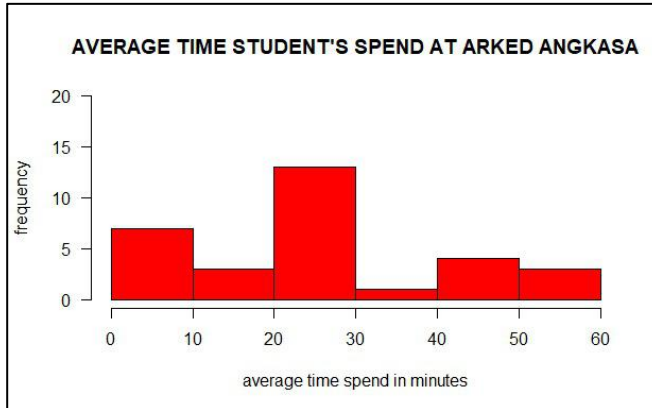
(Bar chart 1: Average time student spend at Arked Angkasa)

(Bar chart 2: Average time student spend at Mak Ngah Cafe)

According to histogram of average time students spend time at Arked Angkasa (histogram 1), most student spend between 20 minutes to 30 minutes while least students were found to spend between 30 minutes to 40 minutes of their time. While from histogram 2, most students spend their time at Mak Ngah Cafe between 40 minutes to 50 minutes and 50 minutes to 60 minutes with 5 respondents respectively. The least is between 30 minutes to 40 minutes with only 1 respondent. By comparing both histogram graph, the students who chose Mak Ngah Cafe spend more time at the cafe compared to the students who chose Arked Angkasa.

# AVERAGE TIME STUDENT WAITS FOR FOOD TO BE SERVED
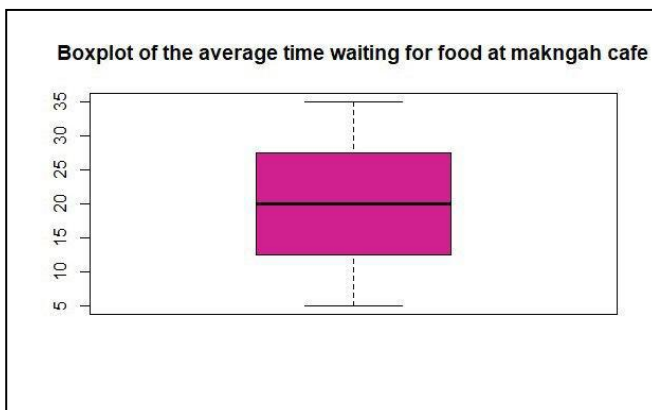
(Box Plot 1: Average time student student waits for food to be served at Arked Angkasa)
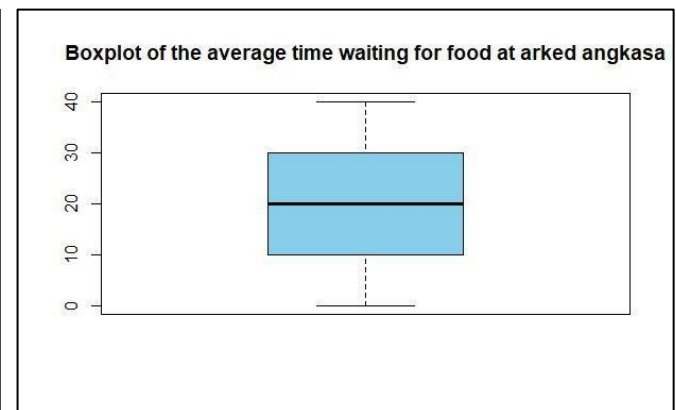
(Box Plot 2: Average time student student waits for food to be served at Mak Ngah Cafe)

The box plot graph above shows that Quartile 1, Quartile 2, Quartile 3 and interquartile range for Mak Ngah Café is 12, 20, 28, and 16 respectively. In addition, the average time student waits for food at Mak Ngah café is symmetrically distributed. Arked Angkasa' box plot also shows a quite similar size of boxplot as Mak Ngah Cafe which is it also is symmetrically distributed. Quartile 1, Quartile 2, Quartile 3 and interquatile range for Arked Angkasa is 10, 20, 30 and 20 respectively. Both cafes have no extreme value in the average time of waiting for food. The median of Mak Ngah's Cafe is 20 whereas Arked Angkasa is also 20. This data shows that the range of time waiting for food in Mak Ngah Cafe and Arked Angkasa are the same.

SCATTER PLOT OF CLEANLINESS AGAINST TASTE
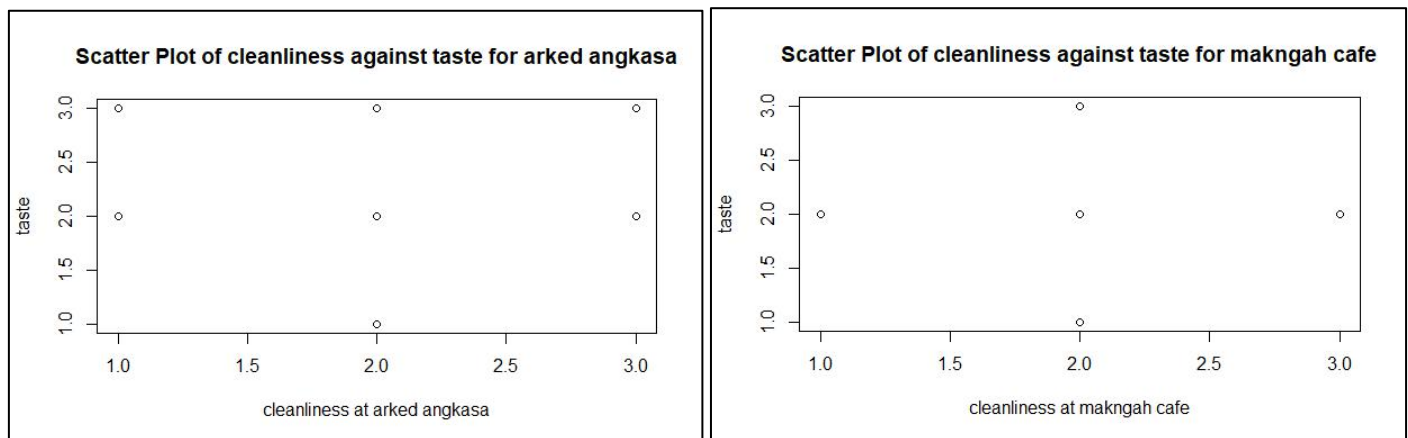
| (Scatter Plot 1: A cleanliness against taste for Arked Angkasa) | (Scatter Plot 2: A cleanliness against taste for MakNgah Café) |

From the scatter plots above, it is clearly shown that the cleanliness for both café are in the same range which are this two cafes' cleanliness are moderate. For Makngah Café this scatter plots shows a strong, non-linear between cleanliness and taste. We can see the relationship for cleanliness and taste for makngah café in the ratio of 2 : 2. For Arked Angkasa this scatter plots shows a null relationship which there are no ratio , we can see that scale taste for this café are more strong than makngah café. The ratio of taste for Makngah café and Arked Angkasa are 2 : 3 respectively. So basically, cleanliness and taste are parts of important element to attract students coming to the cafe.

AVERAGE AMOUNT OF MONEY SPEND IN A WEEK

```
0 | 5
1 | 005
2 | 00055
3 | 00005
4 | 00255
5 | 0000006
6 | 0
7 | 0009
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```
0 | 5 5 6 6
1 | 0
2 | 0 0 3 3 5
3 | 0 5
5 | 0
6 | 0
```

Key: 0 | 5 means RM5

(Stem and Leaf 1: Average money spend in a week at Arked Angkasa)

(Stem and Leaf 1: Average money spend in a week at Mak Ngah Cafe)

From the stem and leaf above, both cafes' respondent have RM5 as their least average amount of money spend in a week at these cafes. From stem and leaf 2, it was shown that most students spend less than RM30 in a week at Mak Ngah cafe with one respondent each spending an average of RM50 and RM60. Arked Angkasa (stem and leaf 1) shows a more variety data compared Mak Ngah Cafe (stem and leaf 2) with most student choosing Arked Angkasa spend an average of RM50 in a week. The highest average amount of money spent at Arked Angkasa was RM79. We can conclude that student who chose Mak Ngah Cafe spent less money in a week compared to students who chose Arked Angkasa.

IV.   CONCLUSION

Based on the survey, we have collected 56 samples of data which is contributed by KTDI student. Their chosen of preference in between two cafés which are Arked Angkasa and Mak Ngah Café were review. Arked Angkasa is chose by 31 respondents followed by MakNgah Café with 14 respondents and other cafés with 11 respondents.

The average mean of money spend in Mak Ngah Café is Rm 22.71 in a week while in Arked Angkasa is Rm39.42. It shows that a lot of KTDI student spend their money in Arked Angkasa where RM50 is the highest frequency. This is probably because of they have more variety of food compared to Mak Ngah cafe.For average time students spend time at café, Mak Ngah café has the longest student spend time which between 50 to 60 minutes with the highest frequency respondents answered, compared to Arked Angkasa between 20 to 30 minutes. This is

because of the cleanliness of Arked Angkasa is bad compared to Mak Ngah Cafe.The average time waiting for food to be served at both cafe produce the same result which is both of them took an average of 20 minutes.

In conclusion, there are 31 students out of 56 sample of KTDI students choose Arked Angkasa as their preferred café. The reason of choosing Arked Angkasa which has the highest rate (41.94%) is that the students takes around 0 minutes to 2 minutes to arrive at Arked Angkasa. We can also conclude that students choosing cafes based on the distance of these cafes from their residential block.