PROJECT 1

SURVEY ON FAST FOOD AMONGST UTM STUDENTS

Probability & Statistical Data Analysis

Section 05

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Secondly, we would like to thank our family members especially our parents for supporting us all the time. Whenever we are in trouble, they would give us support no matter in physical form or mental form. We could have not completed this project if there is no any support from them. Although they do not have any knowledge in digital logic, but their caring words and advices is the key for us to keep moving forward when we are facing difficulties.

Lastly, we would like to express our gratitude towards our friends which are also our coursemates. They are so helpful and caring that they would spend their time to explain anything we do not understand while completing this project. Furthermore, they also suggest some ideas for us to complete the project . They always guide us when we are having trouble during the survey and project They would pin point our errors and guide us to correct it.

INTRODUCTION

Overweight and obesity are growing health problems both worldwide and in Malaysia due to such lifestyle changes as decreased physical activity, increased sedentary behaviour and unhealthy eating habits. Fast food is one of the main factors that causes obesity among Malaysians especially students. Fast food causes obesity for 3 reasons which are fast food's ingredients that contain more fat, more sugar, more carbohydrates, less vitamins and minerals. Second, low cost of fast food encourages people to choose it over more expensive healthier food, which is a big reason that lower-income individuals are more likely to be obese. The final factor that makes fast food causes obesity is its convenience, or more specifically, how close fast food restaurants are to your home, job or school.

The purpose of this survey is to study the relationship between consumption of fast food among students and their body mass index (BMI). We need to know how often students eat fast food and how much fast food costs them so that we can relate it to obesity and why they choose fast food over healthy food.

DATA COLLECTION

The method that we use to collect our data is by using quantitative method, which is getting the data through questionnaire. We collect the data by using Google Form, which is an online free application to set up the question. The data that we use to analyze was the one we took from our sample. For this project, the target population are UTM students and limits it to 40 respondents only. Each respondent need to answer 8 questions for the survey.

The survey contains different type of level of measurements which are nominal, ordinal and ratio. This survey is to investigate the relationship between consumption of fast food and obesity. First, we asked the respondents gender, whether he/she is female or male. Then, we asked them to state their age, weight and height. These three questions are ratio type question. We asked their weight and height to find out their BMI value which is the main point in our survey. The fifth question asking about how often the respondent ate fast food per week. The choices that we let them pick are from 1 to 3 times, 4 to 7 times, more than 7 times and none. After that, we try to ask the responses which fast food restaurants they preferred. There are 6 choices to pick which are KFC, McDonalds, Burger King, Dominos Pizza, Pizza Hut and other.

Moreover, we also asked them about which service they prefer and there are 3 options to pick which are take away, dine in and delivery. The last question is about how much money spend on fast food per week in Ringgit Malaysia (RM). We let them state the price to know the exact or approximate value they spend.

Please refer to Attachment A for the example of our survey.

DATA ANALYSIS

Graphical Description
Question 1: Gender (Male or Female)

Figure 1 shows pie chart of gender among respondents.

Gender
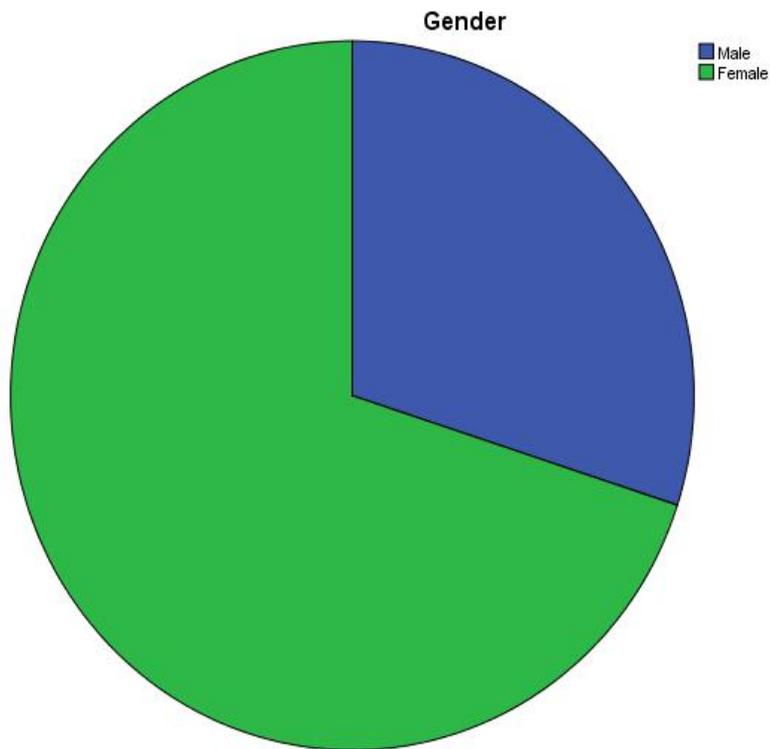
Figure 1

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	12	30.0	30.0	30.0
	Female	28	70.0	70.0	100.0
	Total	40	100.0	100.0	

Table 1

Based on the Figure 1 shown, the majority of the sample respondents are female where 70% of the respondents are female and 30% are male. It shown that female students love to eat fast food than male .
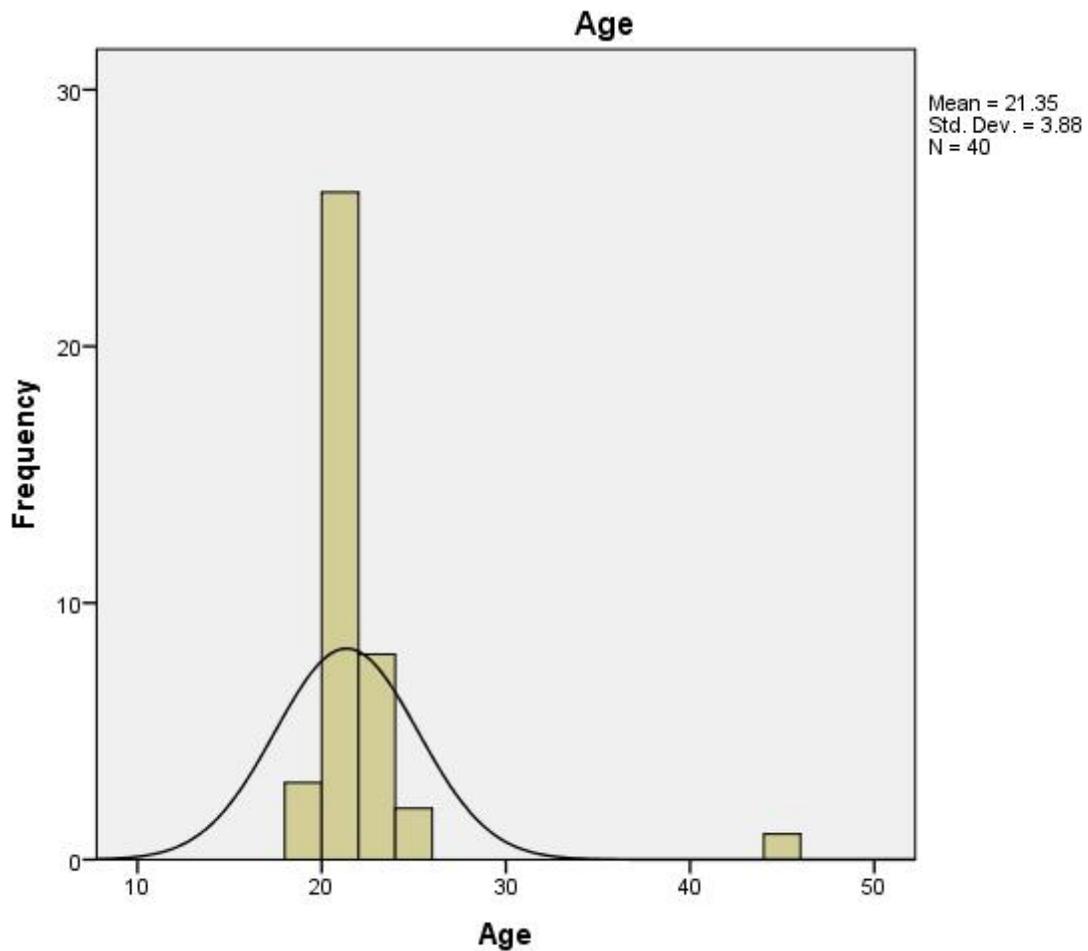
Question 2:
Age

Figure 2

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	19	3	7.5	7.5	7.5
	20	19	47.5	47.5	55.0
	21	7	17.5	17.5	72.5
	22	6	15.0	15.0	87.5
	23	2	5.0	5.0	92.5
	24	2	5.0	5.0	97.5
	44	1	2.5	2.5	100.0
	Total	40	100.0	100.0	

Table 2

Based on the figure shown, the first higher frequency is at age 20 of 47.5% , next the second highest is at age 21 of 7% and third highest is at age 23 of 2% .While the lowest is at age 44 of 2.5% .It shown that the majority age is among the teenager which prefer fast food in their daily life and the older people will prefer eats healthy than fast food in order to avoid the unexpected diseases.
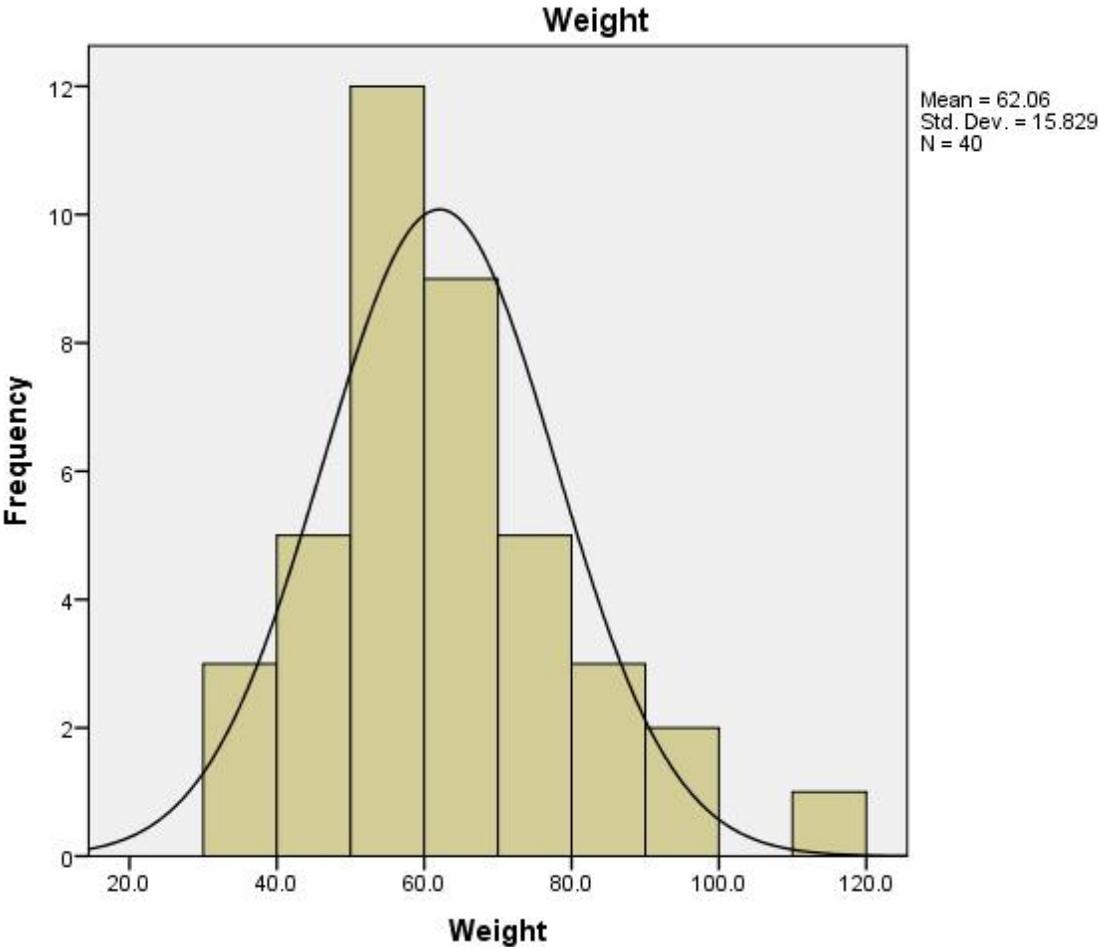
Question 3: Weight

Figure 3

Weight

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	36.0	1	2.5	2.5	2.5
	39.5	1	2.5	2.5	5.0
	39.9	1	2.5	2.5	7.5
	42.0	1	2.5	2.5	10.0
	43.0	1	2.5	2.5	12.5
	44.0	1	2.5	2.5	15.0
	46.0	1	2.5	2.5	17.5
	47.0	1	2.5	2.5	20.0
	51.0	3	7.5	7.5	27.5
	55.0	2	5.0	5.0	32.5
	56.0	1	2.5	2.5	35.0
	57.0	1	2.5	2.5	37.5
	58.0	2	5.0	5.0	42.5
	59.0	3	7.5	7.5	50.0
	60.0	2	5.0	5.0	55.0
	61.0	1	2.5	2.5	57.5
	61.9	1	2.5	2.5	60.0
	65.0	2	5.0	5.0	65.0
	68.0	3	7.5	7.5	72.5
	70.0	3	7.5	7.5	80.0
	75.0	2	5.0	5.0	85.0
	80.0	2	5.0	5.0	90.0
	85.0	1	2.5	2.5	92.5
	90.0	1	2.5	2.5	95.0
	94.0	1	2.5	2.5	97.5
	110.0	1	2.5	2.5	100.0
	Total	40	100.0	100.0	

Table 3

The figure shown that the highest frequency for the weight is at range 50-60 while the lowest weight is at range 90-100 . It showed that the student in UTM have normal weight rather than have overloaded weight .
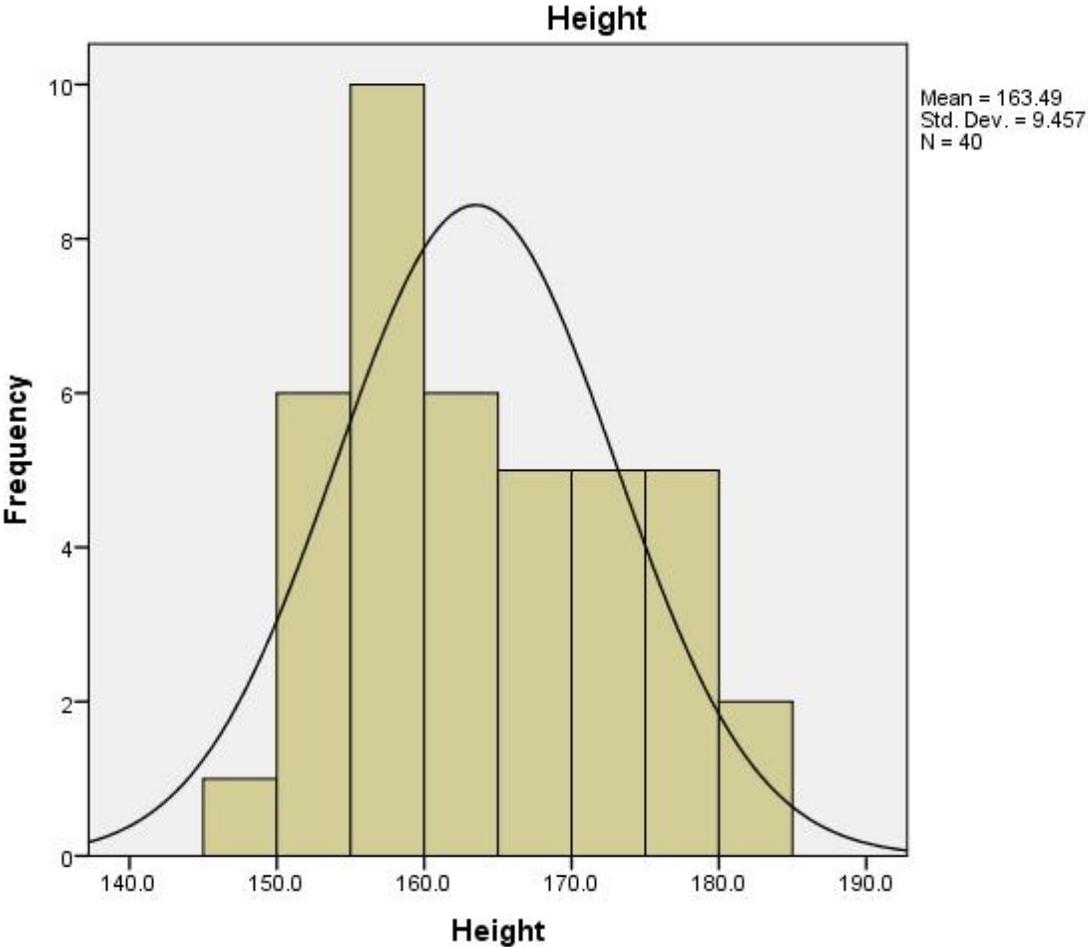
Question 4: Height

Figure 4

Height

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	147.0	1	2.5	2.5	2.5
	150.0	1	2.5	2.5	5.0
	151.6	1	2.5	2.5	7.5
	152.0	2	5.0	5.0	12.5
	154.0	2	5.0	5.0	17.5
	155.0	3	7.5	7.5	25.0
	155.5	1	2.5	2.5	27.5
	157.0	1	2.5	2.5	30.0
	158.0	3	7.5	7.5	37.5
	158.5	1	2.5	2.5	40.0
	159.0	1	2.5	2.5	42.5
	160.0	2	5.0	5.0	47.5
	161.0	1	2.5	2.5	50.0
	163.0	1	2.5	2.5	52.5
	164.0	2	5.0	5.0	57.5
	165.0	2	5.0	5.0	62.5
	166.0	2	5.0	5.0	67.5
	169.0	1	2.5	2.5	70.0
	170.0	1	2.5	2.5	72.5
	172.0	1	2.5	2.5	75.0
	173.0	2	5.0	5.0	80.0
	174.0	1	2.5	2.5	82.5
	175.0	3	7.5	7.5	90.0
	178.0	2	5.0	5.0	95.0
	181.0	1	2.5	2.5	97.5
	183.0	1	2.5	2.5	100.0
	Total	40	100.0	100.0	

Table 4

The figure showed that the range between 150-160 showed the highest frequency. The mean is 163.49 and its standard deviation is 9. 457,which it is the most height among students. This height will help in collecting data for BMI among students.

Question 5: How often do you eat fast food per week?

How often you eat fast food per week?

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-3	33	82.5	82.5	82.5
	4-7	4	10.0	10.0	92.5
	more than 7	1	2.5	2.5	95.0
	none	2	5.0	5.0	100.0
	Total	40	100.0	100.0	

Descriptive Statistics

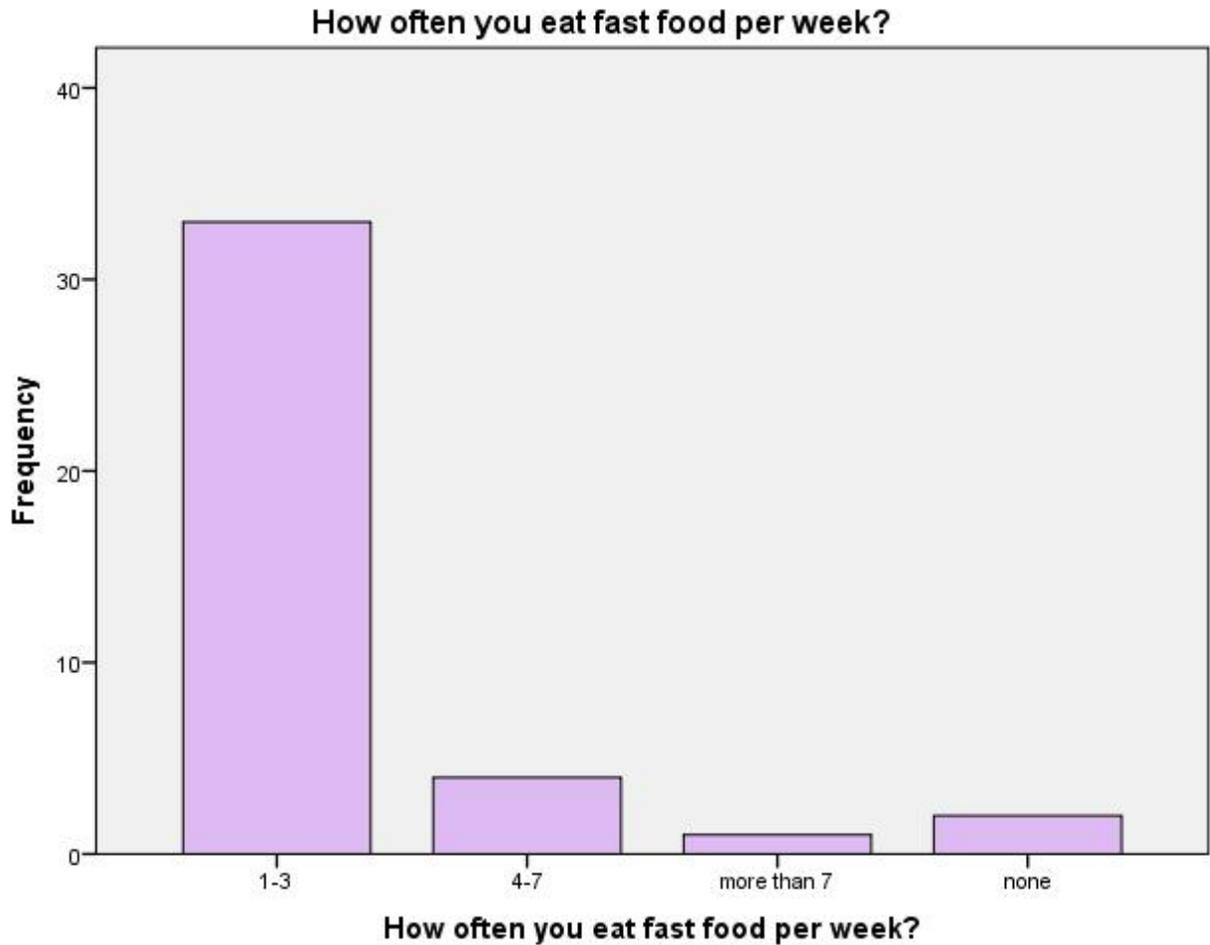|	N	Minimum	Maximum	Mean	Std. Deviation	Variance
How often you eat fast food per week?	40	1	4	1.30	.758	.574
Valid N (listwise)	40					

Table 5

Figure 5

Based on Figure 5 showed that 33 respondents eat fast food once to 3 times per week which is the highest value in this question. Moreover, there are 4 persons who eat fast food for 4 to 7 times a week with 10%. Besides, one person who was choosing more than 7 time a week with 2.5%. Two persons choose none which is 5% from 40 respondents.

The mean from the data is 1.30 while the standard deviation and variance is 0.758 and 0.574. From the data, we can conclude that UTM students eat fast food at least once a week.

Question 6: Which fast food restaurant do you prefer?

Which fast food restaurants do you prefer?

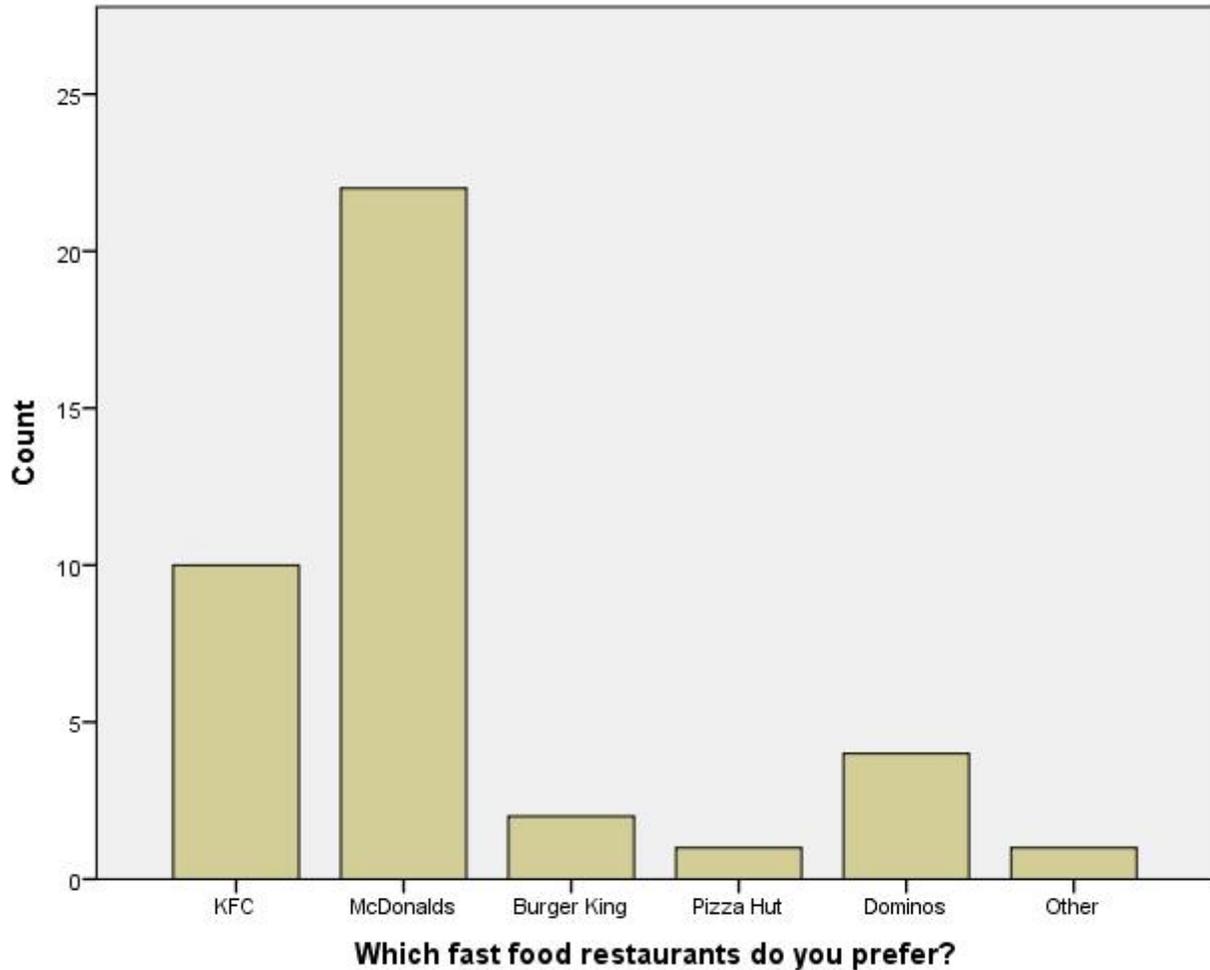|		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	KFC	10	25.0	25.0	25.0
	McDonalds	22	55.0	55.0	80.0
	Burger King	2	5.0	5.0	85.0
	Pizza Hut	1	2.5	2.5	87.5
	Dominos	4	10.0	10.0	97.5
	Other	1	2.5	2.5	100.0
	Total	40	100.0	100.0	

Table 6

Figure 6

From Table 6, there are 10 respondents who choose KFC as the preferred fast food restaurant with 25%. The highest is McDonalds with 22 responses choose this option with 55%. McDonalds has been chosen by more than half respondents of the sample. Moreover, there are 2 people that choose Burger King as the fast food restaurant they preferred. Besides, there are 1 respondent who choose Pizza Hut and others as their preferred fast food restaurants with 2.5%. Dominos has been chosen by 4 respondents with 10%.

Question 7: Which service do you prefer?

Which service do you prefer?

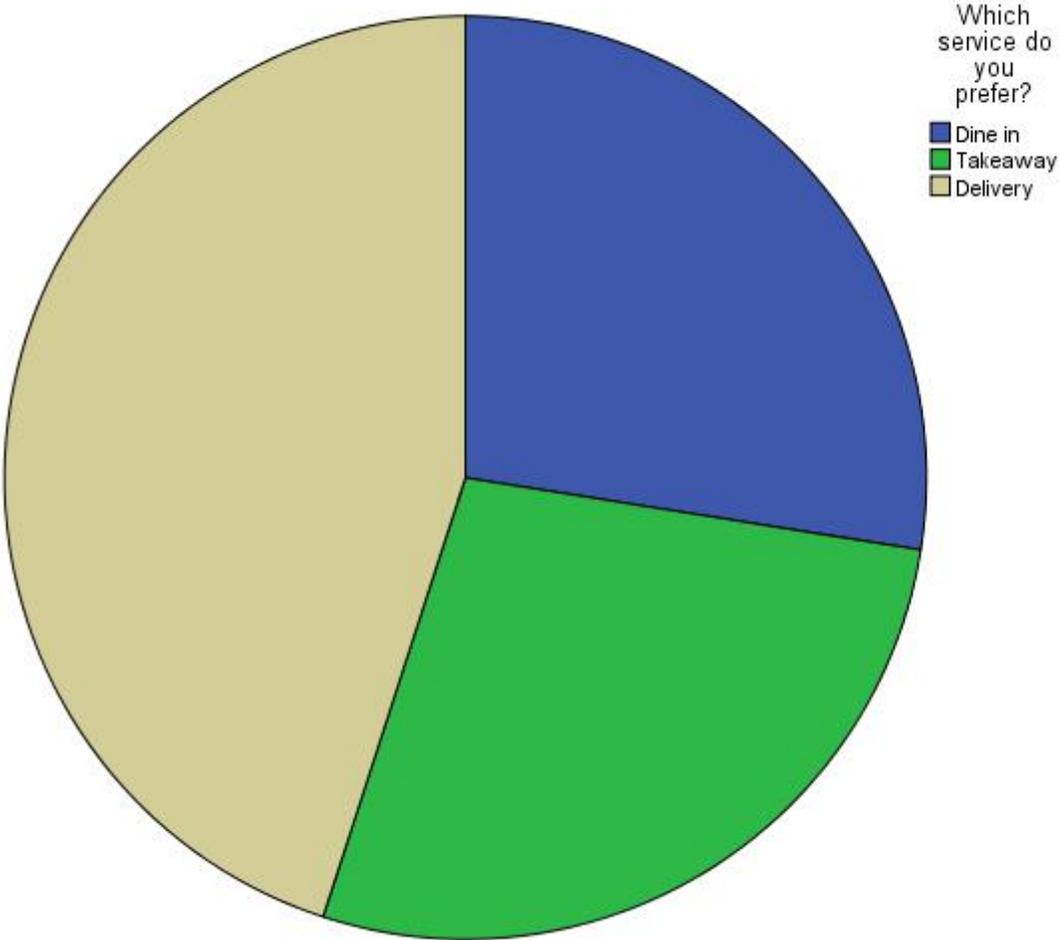|		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Dine in	11	27.5	27.5	27.5
	Takeaway	11	27.5	27.5	55.0
	Delivery	18	45.0	45.0	100.0
	Total	40	100.0	100.0	

Table 7

Figure 7

Based on Figure 7 and Table 7, there are 11 respondents who choose to dine in and take away as the preferred service as they buy fast food with 27.5%.18 respondents choose delivery and it is the mode of the data with 45%. From the data, we can conclude that students prefer delivery as the service when they buy fast food.

Question 8: How much do you spend on fast food per week (RM)

```
How much do you spend on fast food per week (RM) Stem-and-Leaf Plot

 Frequency     Stem &  Leaf

     1.00         0 .  0
     1.00         0 .  6
     4.00         1 .  0004
    10.00         1 .  5555555555
    13.00         2 .  0000000000000
     2.00         2 .  55
     2.00         3 .  00
      .00         3 .
     1.00         4 .  0
     6.00 Extremes    (>=45)

 Stem width:        10
 Each leaf:         1 case(s)
```

How much do you spend on fast food per week (RM)

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0	1	2.5	2.5	2.5
	6	1	2.5	2.5	5.0
	10	3	7.5	7.5	12.5
	14	1	2.5	2.5	15.0
	15	10	25.0	25.0	40.0
	20	13	32.5	32.5	72.5
	25	2	5.0	5.0	77.5
	30	2	5.0	5.0	82.5
	40	1	2.5	2.5	85.0
	45	1	2.5	2.5	87.5
	50	3	7.5	7.5	95.0
	100	2	5.0	5.0	100.0
	Total	40	100.0	100.0	

Table 8

			Statistic	Std. Error
How much do you spend on fast food per week (RM)	Mean		25.13	3.292
	95% Confidence Interval for Mean	Lower Bound	18.47	
		Upper Bound	31.78	
	5% Trimmed Mean		22.19	
	Median		20.00	
	Variance		433.497	
	Std. Deviation		20.821	
	Minimum		0	
	Maximum		100	
	Range		100	
	Interquartile Range		10	
	Skewness		2.543	.374
	Kurtosis		7.105	.733

Table 9

Statistics

BMI

N	Valid	40
	Missing	0
Mean		23.0852
Median		21.4619
Std. Deviation		5.14601
Range		27.45
Minimum		14.98
Maximum		42.44

Based on Table 8, there are 1 to 3 person who spent RM0 to RM10 in fast food while 10 respondents spent RM15 to RM20 in buying fast food with 25%. Furthermore, 13 students spending their money on fast food for RM20 to RM25 with 32.5%. there are 2 persons who spent RM100 in buying fast food with 5%.

The data mean is RM25.13 and the standard error for this is 3.292. Lastly, the standard deviation for the data is 20.821.
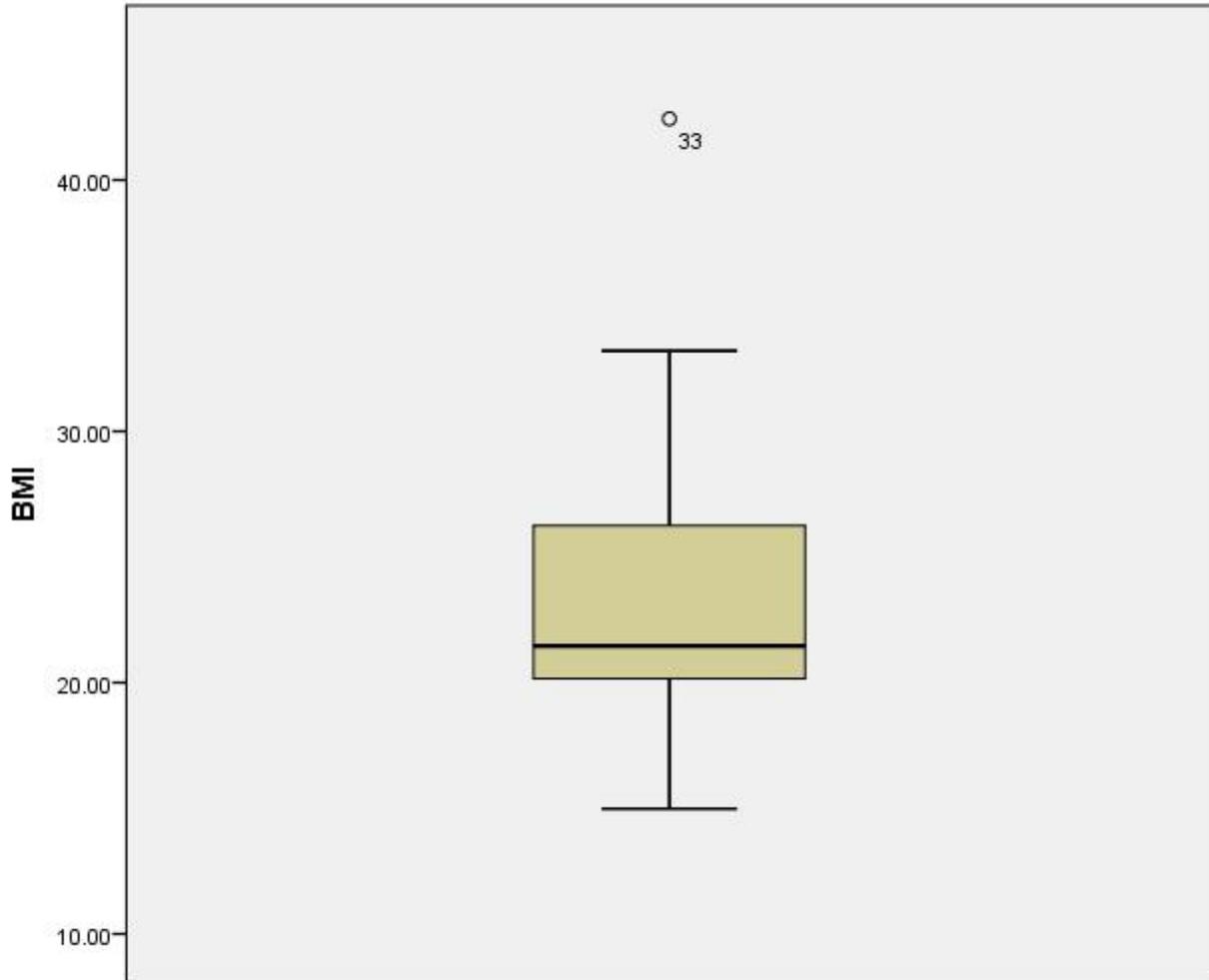
BMI

Figure 8

The figure 8 that most students in UTM is having normal BMI where it is at range below 30. While if it is more than 30 ,they will classified as obese where it will give much diseases to them since they still young .

DISCUSSION

1. Gender (Male / Female)

2. Age (state the age)

3. Weight in kg (state the weight)

4. Height in cm (state the height)

5. How often do you eat fast food per week? (1-3 / 4-7 / more than 7 / none)

6. Which fast food restaurant do you prefer? (KFC / McDonalds / Burger King / Dominos / Pizza

    Hut / Other)

7. Which service do you prefer? (dine in / takeaway / delivery)

8. How much do you spend on fast food per week (RM) ? (State the price)

CONCLUSION

As the conclusion for this survey, we can say that our hypothesis is accepted. Our hypothesis for this survey as stated in the introduction is accepted because our sample's mean for BMI is 23.0852 which is still in normal range. Most of our sample also consumed fast food once a week. Even though most of the students consume fast food every week but their weight is still normal. So, we can say that our hypothesis is accepted.

Most of UTM students prefer to eat Mc Donald's than other outlets. After doing some study, we expect this to happen since the nearest fast food franchise with UTM is Mc Donald's. So, this data is relevant and can be accepted. Besides, most of the students also prefer the delivery service compared to dine in and take away. This is maybe because of transportation problems which is common problems among students.

While we were doing this survey and report we also get to learn many things. Form this project we know how to collect data and present our data in various ways. We also learn how to use a software named SPSS to help us make graph and data collection. This make our work become much easier compared to do manually.

Other than that, we also get to know our strength while doing this project. Our group have a good teamwork because we manage to distribute our job easily. On the other hand, our leader named Nurul Sharmin also have a good leadership skill. She managed to make us do our job properly and taught us many things regarding this project especially while doing the SPSS. She is very responsible towards our group.

However, we also have our weakness. We are bad in time management. This is because many of us cannot manage our time properly to finish this report on time. After doing this project we will ensure to manage our time properly for the next upcoming project. We had learnt a very good lesson from this project especially involving our commitment towards project.