SECI-2143 PROBABILITY AND STATISTICAL DATA ANALYSIS
Project I – Descriptive Statistic

IMPACT OF ENTERTAINMENT TO STUDY

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Abstract – **Entertainment is a necessity that everybody, including university students like us, not only it gives us a sense of pleasure and comfort, it also gives us a time to take off from work and study so that we will be relieve from the feeling of stress and burnout. Therefore, we conduct a survey to know does entertainment effect study or not among students from UTM.**

I. Introduction

Studying, project, assignment, quiz are all the things that a student will certainly face during their time of study but student can't just spend their time to do and prepare for them, we also need to take time to enjoy ourselves. Entertainment is a popular way for students to free them self from the burdens of their study, there are many types of entertainments that students can enjoy like music, movie, video games and even physical activity. Many people tough consider entertainment as a medium that can disturb the focus and motivation of student towards their study, this difference drove our team to conduct a survey to find out the effect of entertainment to the study of students.

We share our survey through social media and obtain responds from student around UTM. We were hoping to find a clear answer on the real effect of entertainment towards the study of student, and will it motivate them even more.

II. Methodology

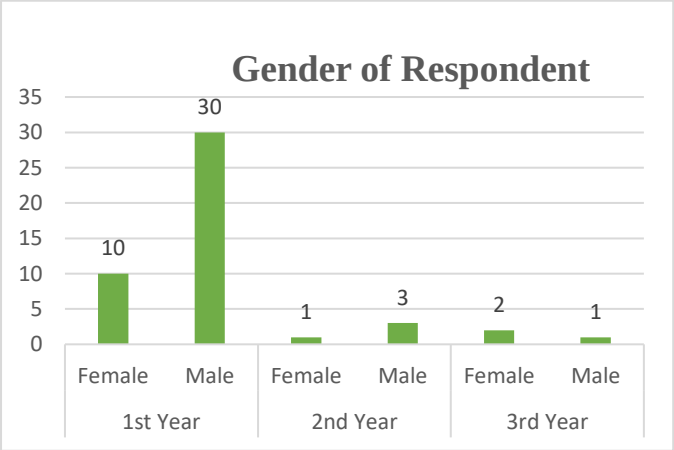
Our data was collected based on questionnaire on google form, 47 respondents are randomly collected from UTM school of computing student, the questionnaire was distributed through WhatsApp group that related with school of computing student.

The question asking about personal information and question that related to our survey "The impact of entertainment on learning" such as:

Data Variable	Data Measurement	Explanation
Gender	Nominal	Male, Female
Year	Nominal	1,2,3,4
CGPA	Ratio	In scale of 1 until 4
Hour(s) spend on study	Ratio	Total of time spend for study filled by respondent
Money spend for study per semester	Ratio	Amount of money spend for study filled by respondent
Hour(s) spend for entertainment per day	Ratio	0(not enjoyed)-5(really enjoyed)
Money spends for entertainment	Ratio	0(not enjoyed)-5(really enjoyed)
Scale of enjoyment in watching	Ordinal	0(not enjoyed)-5(really enjoyed)

Scale of enjoyment in music	Ordinal	0(not enjoyed)-5(really enjoyed)
Scale of enjoyment in physical activity	Ordinal	0(not enjoyed)-5(really enjoyed)
Scale of enjoyment in gaming	Ordinal	0(not enjoyed)-5(really enjoyed)
Level of motivation after get entertained	Ordinal	0(no effect)-5(really Motivated)
Hour(s) spend for interacting with others per day	Ratio	1 hour or until more than 4 hours

Gender of Respondent



(Bar Chart 1: Gender of Respond)

According to the bar chart of gender data distribution shows that from 47 respondent, male from first year student are the highest number of respondent by 30 person followed by female from first year student by 10 person, second year student total respondent are only 4 person, 3 male and one female, the third year student give respond by 3 person, 2 Female and one male.

III. Data Analysis

GPA

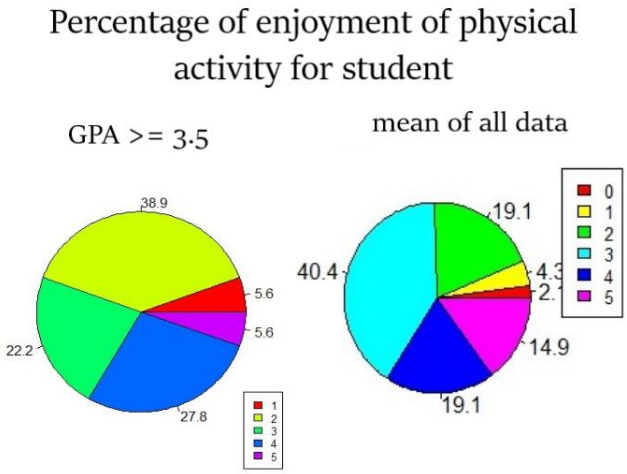
GPA

Stem	Leaf						
2.2	0						
2.9	0						
3.0	0	0	0	0	2	4	8
3.1	0	5	7				
3.2	0	0	0	2	2	3	7
3.3	0	5	5				
3.4	0	3	5	8			
3.5	0	0	0	6	7		
3.6	1	9					
3.7	4						
3.8	0	0	0	0	1	7	
3.9	5	6					
4.0	0	0					

Key: 2.2|0 means GPA 2.20

(Stem and Leaf 1: Range of GPA of Respondent)

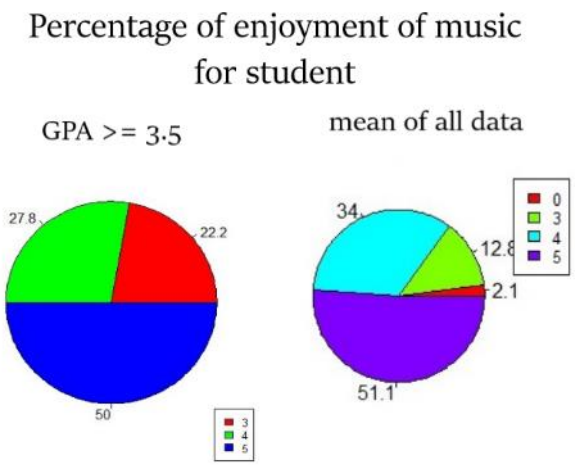
From the stem and leaf we can see that there are some people who get the maximum GPA which is 4.0, and the majority of the respondents often got the GPA between 3.0 and 3.5 and there only a little who got the GPA below 3.0. On total we obtain about 47 respondents, but 3 of them are counted as invalid because their answers didn't meet the standard



(Pie chart 1-2: Enjoymeny of Physical Activity)

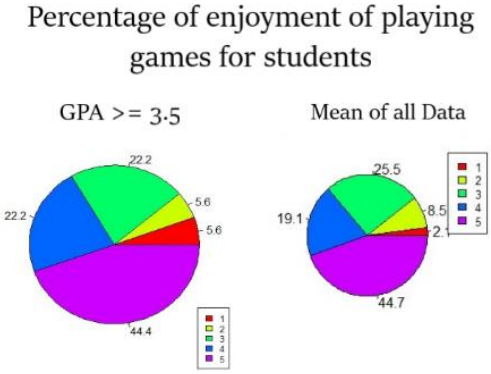
According to pie chart 1(GPA>=3.5), out of 18 respondents, the choice most chosen among students with GPA>=3.5 is scale of 2 which is 7 students(38.9%) And there is 2 fewest choices chosen which is scale of 0 and 5 with only 1 student (5.6%), respectively. And from pie chart 2(mean of all data), out of 47, the choice

most chosen is scale of 3 with 19 students (40.4%) and the fewest choices chosen is scale of 0 with 1 student (2.1%). --------- From this data, students with GPA>=3.5 enjoy less physical activity for entertainment but no respondent choose 0, that mean, they prefer to do physical activity in minimum of amount than not at all. On the other side, almost half of students enjoy physical activity but not too intense.



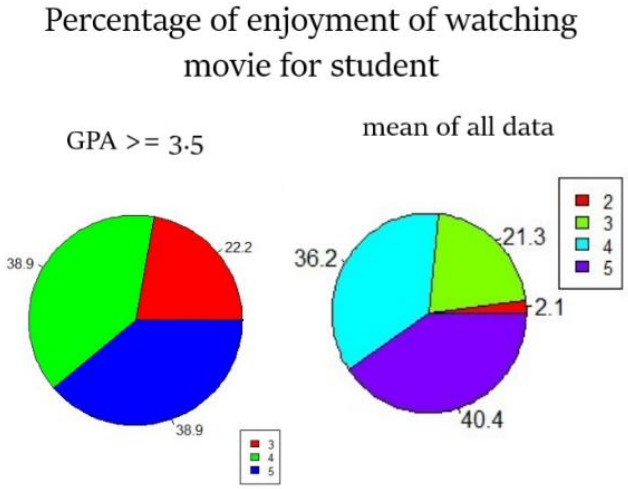
(Pie chart 3-4: Enjoyment of Music)

From pie chart 3(GPA>=3.5), half of students with GPA>=3.5 which is 9 students and also this is the most choices chosen, choose scale of 5 out of 5 scales. There are no students choose the scale less than 3. Scale of 4 with 5 students (27.8%) and scale of 3 with 4 students (22.2%). And from pie chart 4(mean of all data), more than half of all students which is 24 students (51.1%) out of 47 students choose scale 5 out of 5 scales. The second and third most choices chosen is 4 and 3 with 16 students (34%) and 6 students (12.8%), respectively. The fewest choices chosen is scale 0 with only 1 student (2.1%). --------- Comparing both of this data, most of students, either students with GPA>=3.5 or all of students, prefer enjoy music for their entertainment. And most of them not only enjoy music for their entertainment, but also really like music.



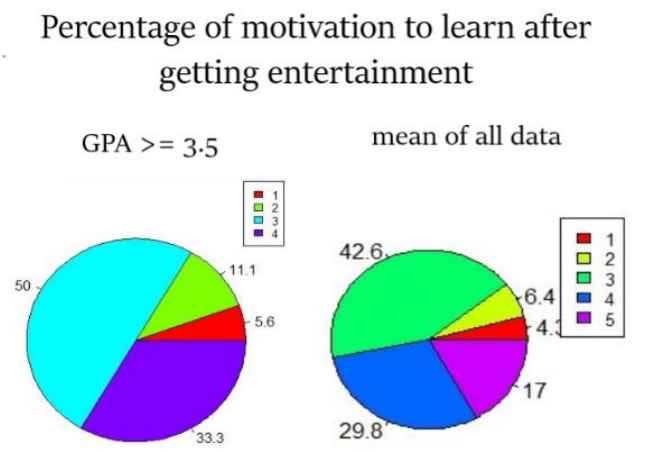
(Pie chart 5-6: Enjoyment of Playing Games)

According to pie chart 5(GPA>=3.5), 8 students (44.4%) out of 18 students choose the highest scale of enjoyment of playing games. Only 1 student choose scale of 1 and 2, respectively. Scale of 3 and 4 has the same number of students which is 4 students (22.2%). On the other pie chart (mean of all data), most of the students choose scale more than 3 and 21 students (44.7%) out of 47 students prefer to choose scale of 5 from enjoyment of playing games. 1 student (2.1%) choose scale of 1, 4 students (8.5%) choose scale of 2. 12 students (25.5%) and 9 students (19.1%) choose scale of 3 and 4, respectively. ----- From both of the data, either students with GPA>=3.5 or mean of all data, most of student prefer to playing games for their entertainment and no students who don't playing games. Student with GPA>=3.5 and other students almost have same intensity in playing games.



(Pie chart 7-8: Enjoyment of Watching Movie)

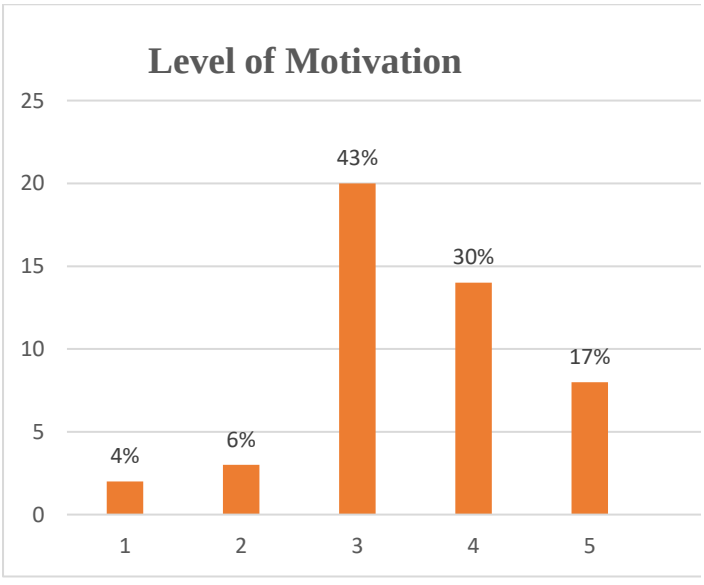
According to pie chart 7(GPA>=3.5), only three scale has been chosen by student with GPA>=3.5. two of the choices has the same amount of chooser, it is scale of 4 and 5 with 7 students (36.9%) each of it. And 4 students (22.2%) choose scale of 3, in this case scale of 3 is the lowest scale that had been chosen. For pie chart 8(mean of all data) which represent all of the respondent including student with GPA>=3.5, scale of 5 has the most chooser with 19 students (40.4%) out of 47 students. And scale of 2 has the fewest chooser with 1 student (2.1%). There is nobody choose the scale less than 2. --------- From both of data, most of student enjoy watching movie, and some of them really like watching movie. No students who don't watching movie. And student with GPA>=3.5 and other students almost have same intensity in playing games.



(Pie chart 9-10: Motivation to Learn After Entertained)

on the pie chart 9(GPA>=3.5) half of students with GPA>=3.5 choose scale of 3, and only 1 student (5.6%) choose scale of 1. Only 6 students (33.3%) choose scale of 4, and 2 students (11.1%) choose scale of 2. From the other pie chart (mean of all data), the most choices chosen is scale of 3 with 20 students (42.6%) and the fewest choices chosen is scale of 1 with 2 students (4.3%). 14 students (29.8%) choose scale 4 and 3 students (6.4%) choose scale of 2. --------- From both of pie chart, most of students getting not too much motivation after getting entertainment. For instance, most students with GPA>=3.5 choose scale of 3 which does not represent sufficient motivation, even though some of them got enough motivation after getting entertainment. From all of students, all of them still got motivation after getting entertained, although in a minimum of amount. None of them who don't get motivated after got entertained.

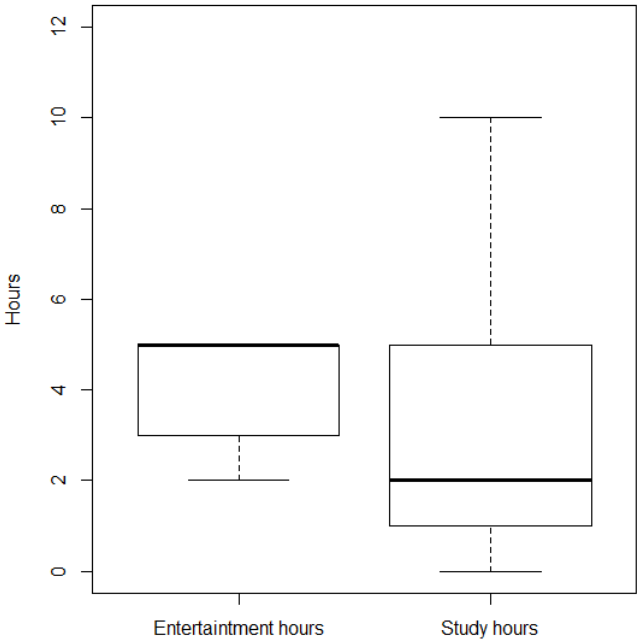
THE IMPACT ON MOTIVATION



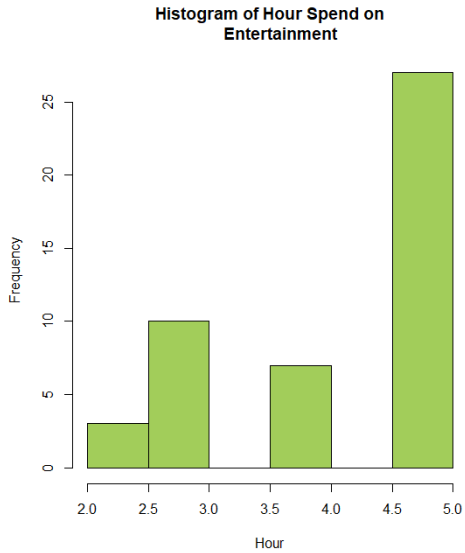
(Bar chart 1: Motivation Level After Enjoying Entertainment)

Based on the bar chart taken from the data collected from the survey with the scale ranging from 1 (less motivated) to 5 (really motivated), we can see that the majority selected the scale of 3 which is motivated enough with the frequency of 20 respondents or we can say about 43% of total respondents. And the frequency of scale of 4 and 5 which means the entertainment effected more on their motivation have more frequency than scale 1 and 2 that is the entertainment is less effected on their motivation. So, we can say that the entertainment is more likely to give a positive impact about 90% (percentage from scale 3 to 5) on motivation for study.

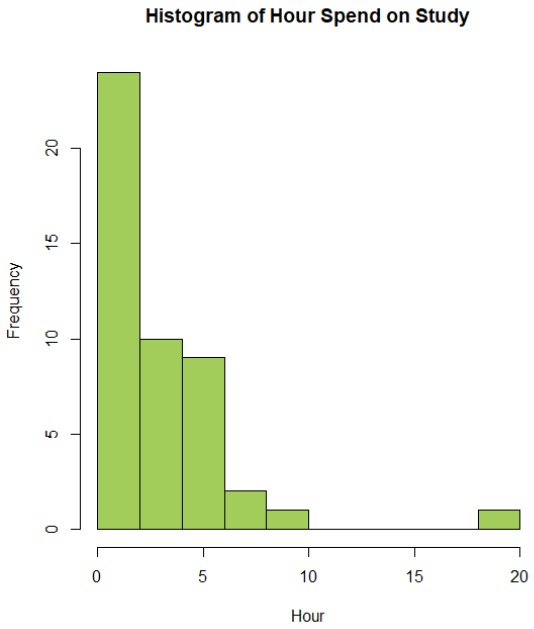
HOURS SPENT ON ENTERTAINMENT AND STUDY



(Box plot 1: Range of Hours Spend of Entertainment and Study)



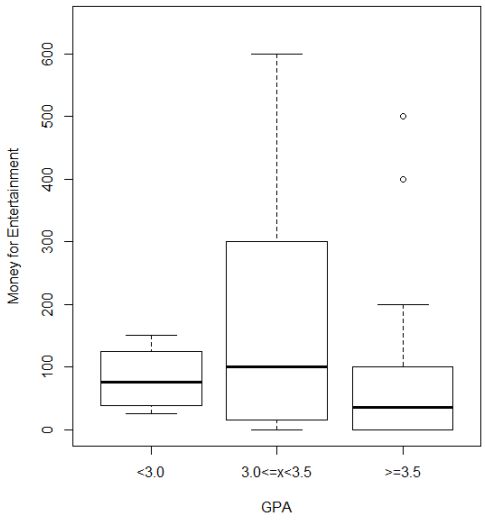
(Histogram 1: Amount of Hour Spend on Enjoying Entertainment)



(Histogram 2: Amount of Hour Spend on Enjoying Entertainment)

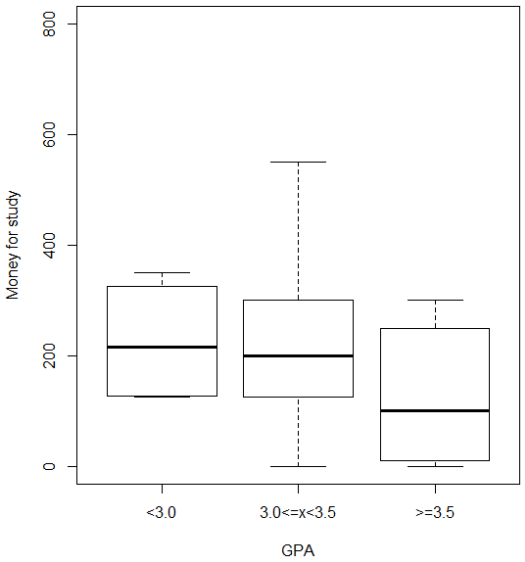
From the boxplot above, we know that the maximum of the interquartile range for both study hours and entertainment hours have the same value which is 5. Even though it has the same maximum range, the size of the range itself for each boxplot are different. The study hour's first quartile is 1 and the median is 2 and the range of the interquartile is 4. The study hours data also has outliers that are not mentioned in the boxplot, but it can be seen in the histogram. The entertainment hours data has the first quartile with the value of 3 and the median is the same as the third quartile which is 5 and it makes the interquartile range 2. For the mean, the study hours data has value of 3.24 which is around 3 hours and 15 minutes. On the other side, the entertainment hours data has a mean of 4.23 that is around 4 hours and 15 minutes. So, from it we can say that most people spend their time playing or do what entertain them for about 1 hour more than they what they spend for studying if we look it through the mean. In the histogram, the mode for the study hours is around 2 hours and the mode for the entertainment hours is about 4 hours 30 minutes and we can tell if we look through the mode, people are more often entertain themselves for 2 hours 30 minutes longer than studying.

MONEY SPENT



(Box Plot 2: Range of Money Spend on Entertainment)

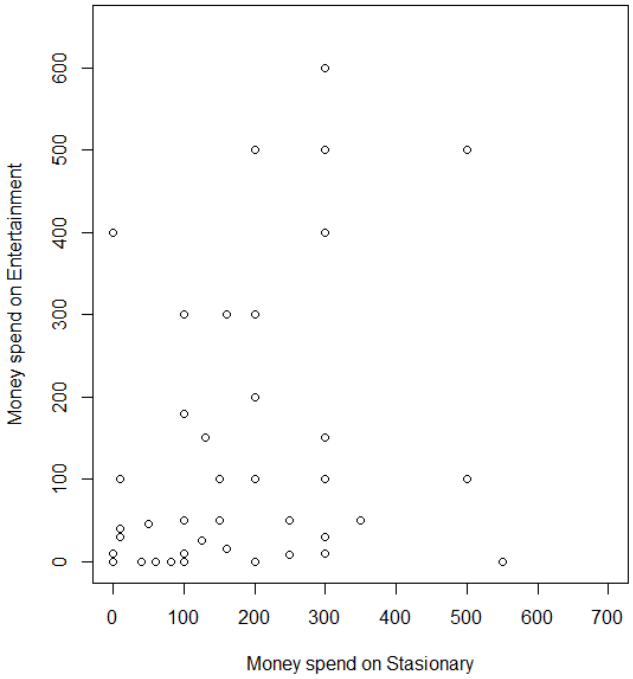
From the money for entertainment boxplot, we can see that the spread is almost the same but the size is different. The GPA between 3.0 and 3.5 boxplot has the biggest size of the range with an amount of RM 285 (Q1=RM15 & Q3=RM300). The spread for GPA above 3.5 is the lowest spread of them all, which has a range between RM 87.5 and RM2.5 (Range =RM85), but it has some outliers. The smallest range is RM68.75 (Q1=RM43.75 & Q3=RM112.5) for the GPA below 3.0. The last is the mean for each boxplot which are RM81.25, RM206.92, RM10.89 accordingly.



(Box Plot 3: Range of Money Spend on study)

The boxplot of money used for study (excluding tuition) shows us that the GPA above 3.5 boxplot has the biggest range starting from the first quartile RM10 until third quartile RM237.5 (Range = RM227.5). It also has an outlier that is

not mention because it is too far away (RM8500). For the GPA below 3.0 boxplot, the first quartile has the amount of RM128.75 and the third quartile with RM 312.5 (range= RM 183.75). Next, the GPA between 3.0 and 3.5 boxplot has a range of RM162.5 (Q1= RM137.5 & Q3=RM300) and it has an outlier too, but the same as before, the number is quite far (RM1700), that if it's include the boxplot it will be hard to see. Now, we try to look at the mean, the biggest mean is held by the GPA above 3.5 with the number of 897.33, that was caused by the big number of the outlier. For the mean of GPA below 3.0 and between 3.0 and 3.5, they only have a little difference, their means are RM226.25 and RM282.5.



(Scatter Plot 1: Comparation of Money Spend on Entertainment and study

From the scatter plot above we can see that the ratio between the money spend on the entertainment and the money spend for study purposes (excluding tuition). We got from the scatter plot that mostly, if they spent quite much money for study purposes, they also spent less money on entertainment and it goes otherwise too. So here we can tell that the money spent for study purposes and the money spent for the entertainment are inversely proportional.

IV. Conclusion

From the survey we did, we got 47 respondents that range between the student of 1st year to 3rd year with the majority respond comes from the 1st year with the quantity of 40, followed by 2nd year with 4 respond and the last with 3 respond from the 3rd year student.

The type of entertainment that is mostly enjoyed by student is music with 51.1% of them gave the scale of 5 out of 5 for enjoyment of music, and the least favourable type of entertainment is physical activity like sports with the majority answer of 3 that means it has minimum fondness from UTM students.

The average mean of time spend for studying is around 3 hours and 15 minutes, whilst for entertainment enjoyment time is around 4 hours and 15 minutes.

From the stem and leaf we can see that there are some people who get the maximum GPA which is 4.0, and the majority of the respondents often got the GPA between 3.0 and 3.5 and there only a little who got the GPA below 3.0.

From the data obtained, we can compare the money spend between study and entertainment of students. From it we conclude that most student prefer to spend more money for their study rather than for entertainment

The question does entertainment effect the study of student can be answered as yes. From the respond of students, 43% of students select the scale of 3 which mean they are motivated enough after consuming entertainment based on their preference. By total 90% (43% select the scale of 3, 30% pick scale 4 and 17% pick scale 5) of student are eager to study after enjoying entertainment, which from it we can take away the fact that entertainment does give an effect to the study of student in positive manner.

V. Appendix

Please refer the link below for the Google Form : https://docs.google.com/forms/d/1IthgL65BXrB6IBnt7xn1GjXcjNOyuOMp78c_U95D-9U/edit