UTM

UNIVERSITI TEKNOLOGI MALAYSIA

PROBABILITY & STATISTICAL DATA ANALYSIS

SECI2143

Lecturer:

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1. INTRODUCTION

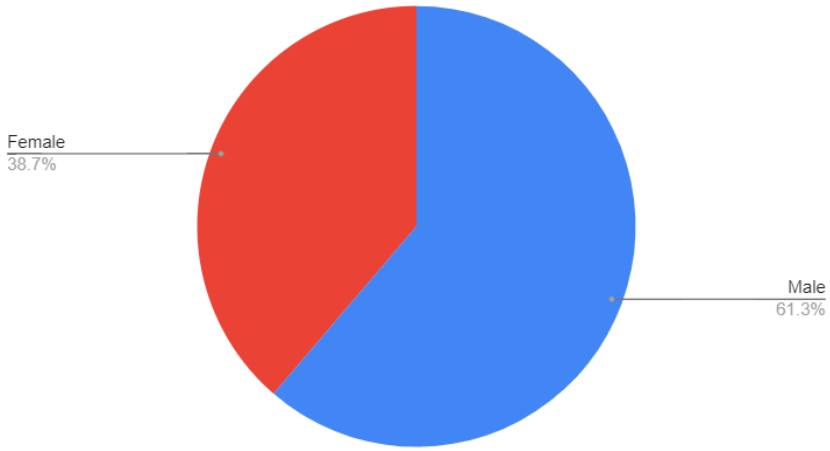
What exactly is sport? Sport is an activity that involves physical endurance and ability in which individuals or teams compete against one another. Sport has evolved over time especially in this modernized era. Sports are widely enjoyed by people of all ages, from young to old, because research has shown that sports helps someone in living a healthy lifestyle. However, everything has its own advantages and disadvantages. The same goes with sport, some argue that sports will cause students to be distracted from their studies that will affect their academic performance and that they will be exposed to injuries that might affect them for the rest of their lives. As a result, there has been a debate about whether students should focus solely on their studies or participate in sports once in a while. To answer this question, we conducted a survey named "A Survey On How Does Sports Participation Affect the Students Performance". The main purpose of this survey is to investigate the relationship between sports and academic performance of UTM students. Aside from that, we also want to identify what type of sports are played and popular among UTM students. Furthermore, we also want to know how much time UTM students spend studying on average. Lastly, we would like to analyze and provide a way or method for balancing between study and sports.

2. DATA COLLECTION

For this project , the population is university students and the sample is students of Universiti Teknologi Malaysia(UTM)**.** In order to collect the data from our sample, we distributed a questionnaire using Google Form as our platform. The questionnaires were distributed from May 6th to May 12th 2022 and managed to get 62 respondents. The questionnaires were filled out by random UTM students of various ages, nationalities, genders, and CGPAs from the previous semester. First, we ask the respondent about their gender, age, nationality and also their CGPA from the previous semester. This will make it easier for us to determine the range and condition of our respondents. Then, we asked the respondents about sports, such as what kind of sports played by them in order to identify popular sports among UTM students, such as frisbee,football,volleyball, martial arts and many more Then, we asked the respondents about sports, such as what kind of sports they played in order to identify popular sports among UTM students, such as frisbee, football, volleyball, martial arts, and many more, as well as what action they did if they were tired after playing sports. Following that, we proceed with a questionnaire about their academic performance including their thoughts on sports and academic performance, their average study time in a week, the frequency of falling asleep during class and also their thoughts on how to balance their life as a university student between sports and academic performance. We provide all types of data ranging from quantitative data to qualitative data in this questionnaire. We also provide all levels of measurement, which are nominal (Gender and nationality), ordinal (Likert scale to determine the frequency of falling asleep during class), interval (Average study time in a week), and ratio (number of local students and international students,number of male and female respondents).

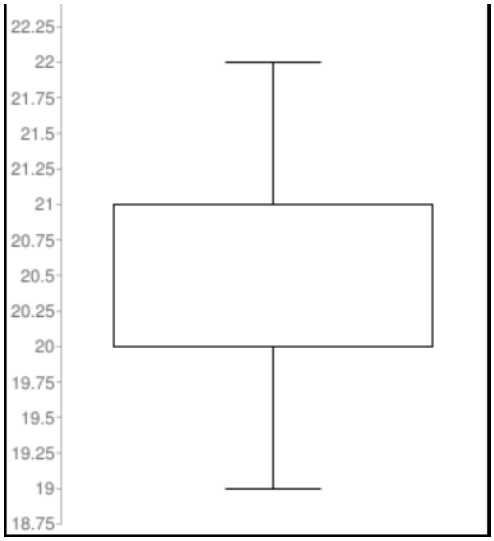
3. DATA ANALYSIS

A) Gender - Pie Chart



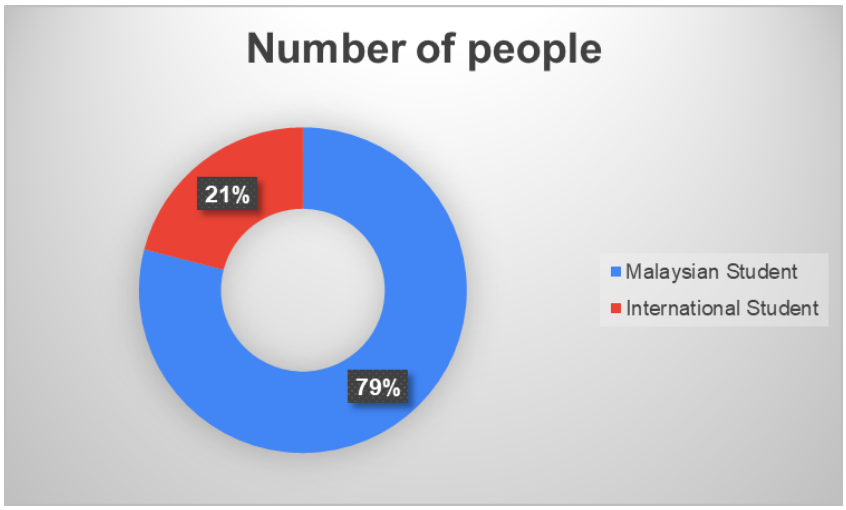
Explanation : According to the pie chart graphic above, the majority of our survey respondents were male, with 61.3 percent (38 out of 62), while females had just 38.7 percent (24 out of 62) who completed our survey.

B) Age - Box Plot



Explanation : According to this box plot graph, the minimum age for those who completed this survey was 19 years old and the highest age was 22 years old. We deduced that the median age was 20 years old. The first quartile value is 20 years old, whereas the third quartile value is 21 years old.

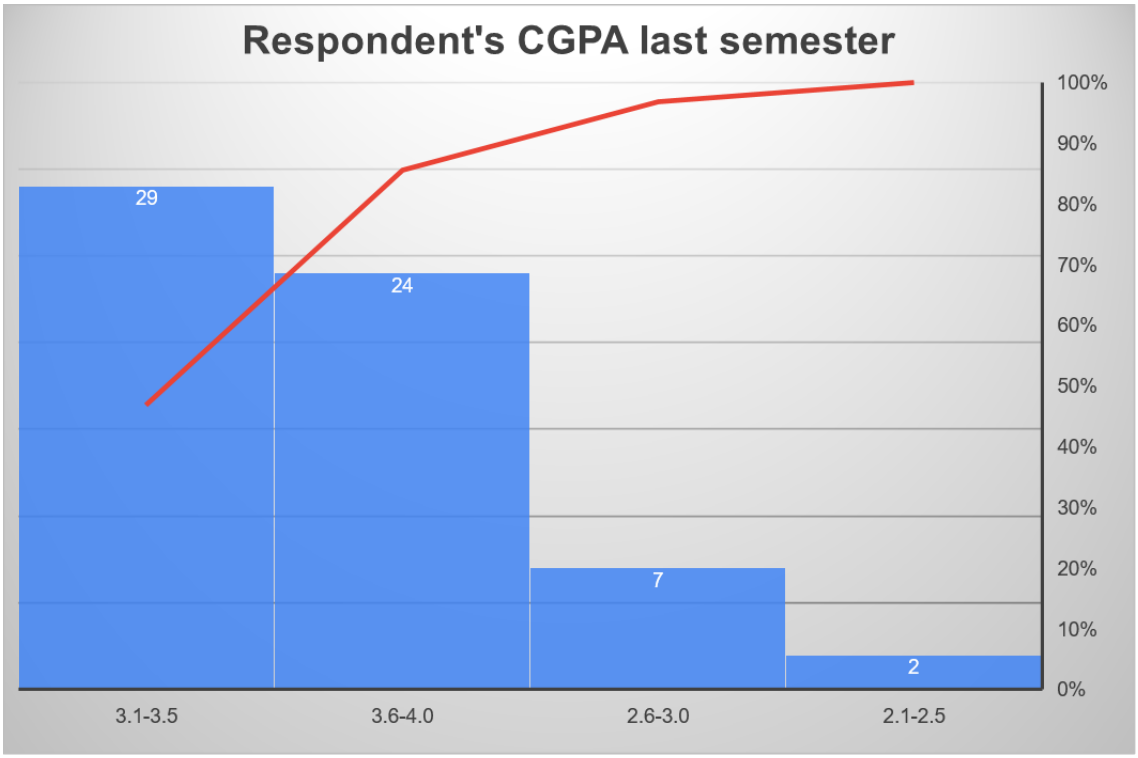
C) Nationality - Pie Chart



Explanation : According to the pie chart graphic , the majority of our survey respondents were Malaysian students, with 79 percent (49 out of 62), while the international students had 21 percent (13 out of 62) who completed the survey.

D) CGPA - Histogram and Frequency distribution table

Histogram



Frequency distribution table

Class interval	Frequency	Midpoint, x	Cumulative frequency	f(x)
2.1 - 2.5	**2**	**2.3**	**2**	**4.6**
2.6 - 3.0	**7**	**2.8**	**9**	**19.6**
3.1 - 3.5	**29**	**3.3**	**38**	**95.7**
3.6 - 4.0	**24**	**3.8**	**62**	**91.2**

Explanation: as we can see from the histogram above. The CGPA is divided into four ranges. The majority of the students have a CGPA (3.1-3.5) with 29 out of 62 respondents (46.7%). Followed by the CGPA of (3.6-4.0) with 24 out of 62 (38.7%). And the lowest CGPA of (2.1-2.5) has the lowest students consisting of only 2 out of 62 (3.2%).

$$Mean, \bar{x} = \frac{\sum_{i=1}^{h} f_i X_i}{n}$$

$$= \frac{2.3(2) + 2.8(7) + 3.3(29) + 3.8(24)}{62}$$

$$= \frac{211.1}{62}$$

$$= 3.405$$

$$Median = L + \frac{\frac{N}{2} - cf_p}{f_{med}} w$$

$$= 3.1 + \frac{31 - 9}{29}(0.4)$$

$$= 3.403$$

$$Mode = l + h \times [(f_1 - f_0) \div (2f_1 - f_0 - f_2)]$$

$$= 3.1 + 0.4\left[\frac{29 - 7}{2(29) - 7 - 24}\right]$$

$$= 3.426$$

$$variance, s^2 = \frac{\sum_{i=1}^{n}(x_i - \bar{x})^2}{n-1}$$

$$= \frac{(2.3 - 3.405)^2 + (2.8 - 3.405)^2 + (3.3 - 3.405)^2 + (3.8 - 3.405)^2}{62 - 1}$$

$$= \frac{1.754}{61}$$

$$= 0.029$$

$$standard\ deviation, s = \sqrt{s^2}$$

$$= \sqrt{0.029}$$

$$= 0.170$$

E) Amount of study time (in hours) - Stem and Leaf

Data:

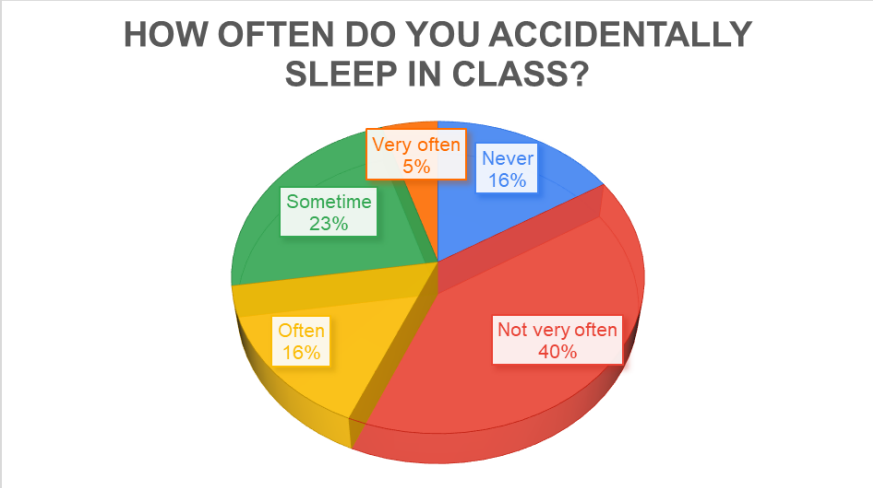
Average study study hours per week (in hours)	Frequency
less than 1 hour	1
1-2 hours	14
3-4 hours	10
5-6 hours	7
7-8 hours	9
9-10 hours	4
>10 hours	14

Stem and Leaves plot :

Stem	Leaves
0	1 4 7 9
1	0 4 4

Explanation:
We could see from the table (Data): which shows average study hours in a week of the students taken in this survey. We could see that the majority of student study at (1-2 hours) and (more than 10 hours) with both data have 14 students out of 62 (22.5 %) both respectively. And the lowest is less than (less than 1 hour) with only 1 respondent out of 62 (1.61%).

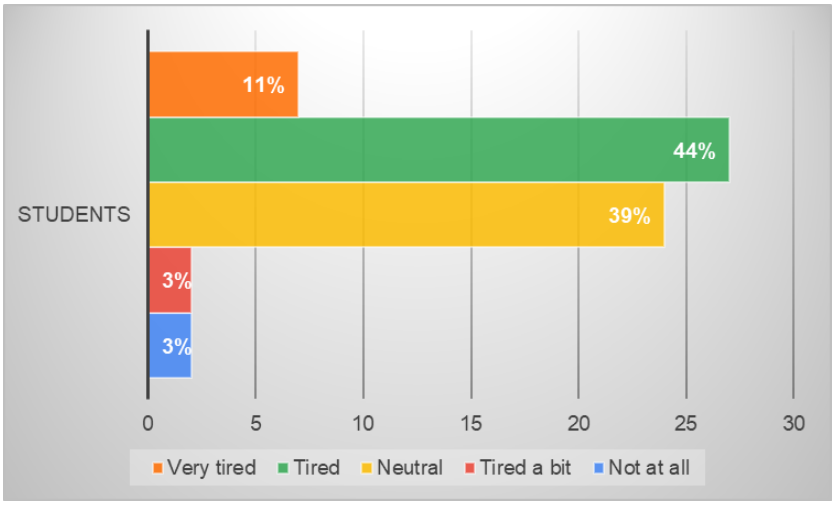
F) How often do you accidentally sleep in class? - in Pie Chart



Explanation :

According to the 3D pie chart graphic above, it's divided into 5 types of likeliness answers from our survey. The majority of our survey respondents answered with “Not very often” with 40 percent (25 out of 62),followed by the answer “sometimes” with 23 percent (14 out of 62) and the lowest percentage is “Very often” with the percentage of 5 % (3 out of 62).

G) Do you feel tired after playing sports? - in Bar Chart



Explanation:

We could see from the table Bar chart graph: which shows the respondent’s response to “Do you feel tired after playing sports?” The majority of the response from the students is 44 percent (27 out of 63 respondents) who answered (tired). And the lowest percentage are both (Tired a bit) and (Not at all) with both respectively 3 percent or (2 out of 62 respondents).

4. SUMMARY

Upon reviewing the accumulated data and the analysis that our group has conducted, it can be concluded that most of the respondents are male students in the university. A large percentage of them are local students. Our survey has been designed to explore how sports impact their studies and how students view sports in general. Our study examines the kind of sports they have participated in and how much time they have devoted to their studies despite participating in sports. It is encouraging to see that most of our respondents got decent CGPAs for their semester, proving that sports are unlikely to be responsible for poor grades on exams and assignments by students. In addition, they stated that sports does not affect their concentration or focus on their studies during classes. The majority of university students spend over 10 hours per week on their studies, showing they know and can manage their time effectively to lead healthy and scholarly lifestyles befitting a university education. In light of this, sports can be seen as a positive factor in empowering students to become better scholars at university rather than a hindrance to their daily lives.