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UNIVERSITI TEKNOLOGI MALAYSIA

SCHOOL OF COMPUTING
Faculty of Engineering

SECI2143 – PROBABILITY & STATISTICAL DATA ANALYSIS

PROJECT 1 – GROUP 4

DATA ANALYSIS BASED ON DESCRIPTIVE STATISTICS

SECTION : 06 - 1SECJH

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1.0 Background

1.1 Introduction

The advance of the current technology has caused the Internet to provide the benefits and advantages to the people in many ways. The Internet allows the people to share their data through pictures, videos, links and opinions with others. The history of media social started as a medium to communicate with long lost friends or relatives and also used to follow and share each other activities. Since then, the usage of social media had been increasing day by day and have become a necessity in our daily lives because of its unique functions and ease a lot of our routines.

Nowadays, almost all teenagers and adults in the whole world including students have at least one social media account installed in their devices whether in mobile phones or computers. To see and understand the statistic of the usage of social media, we conducted a survey to gather the data from our sample which is among Malaysian students. This study is to collect the data from each Malaysian student as we want to do observation and conclusion on how and why students are using social media. From the questions in the survey also, we can know the numbers of students who have been exposed to social media since certain ages and this findings can be used to continue other studies in the same topic in the future.

In this report, we will provide the data representation using various types of graphs based on the findings that we had gathered through a survey about their most used social media, screen time and others and also can get the statistic of how students using the social media in Malaysia.

1.2 Purpose of Study

1. To study how familiar Malaysian students and their involvement with social media.
2. To relate the usage of social media with their behaviour such as time spent and the purpose of having social media.
3. To interpret the data gathered using various type of graphs and do conclusion based on the findings.

1.3 Method of Data Analysis

First of all, we create a questionnaire on Google Form that consists of all the questions that we needed in order to proceed with our study, which is The Usage of Social Media among Malaysian Student. Next, we share the form through media applications such as WhatsApp and Telegram to get responses. A copy of questionnaire is attached together with this report.

2.0 Data Collection

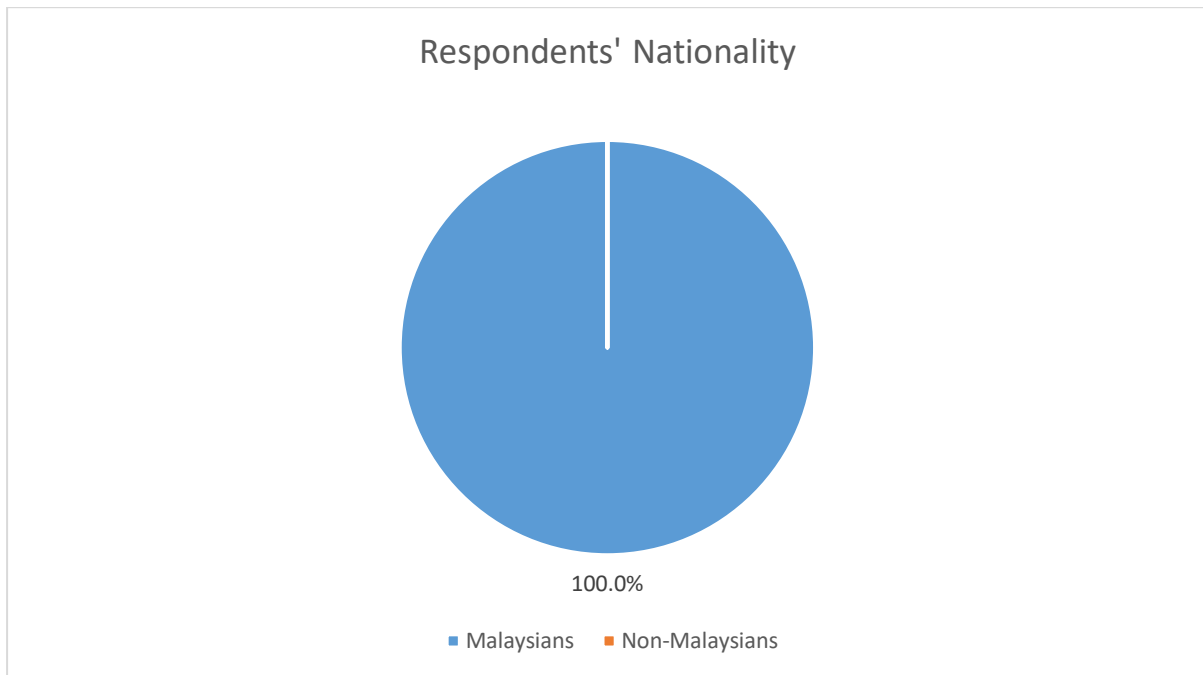
Population: Malaysian Students

Sample: 119 Malaysian Students

Variables	Type Of Variable	Level Of Measurement	Representation
Nationality	Qualitative	Nominal	Pie Chart
Gender	Qualitative	Nominal	Pie Chart
Age	Quantitative	Ratio	Stem and Leaf
Type of Social Media	Qualitative	Nominal	Bar Chart
Most used Social Media per Day	Qualitative	Ordinal	Pie Chart
Screen Time per Day	Quantitative	Ratio	Histogram
Purpose of using Social Media	Qualitative	Nominal	Bar Chart
Age starting to use Social Media	Quantitative	Ratio	Histogram

3.0 Data Analysis

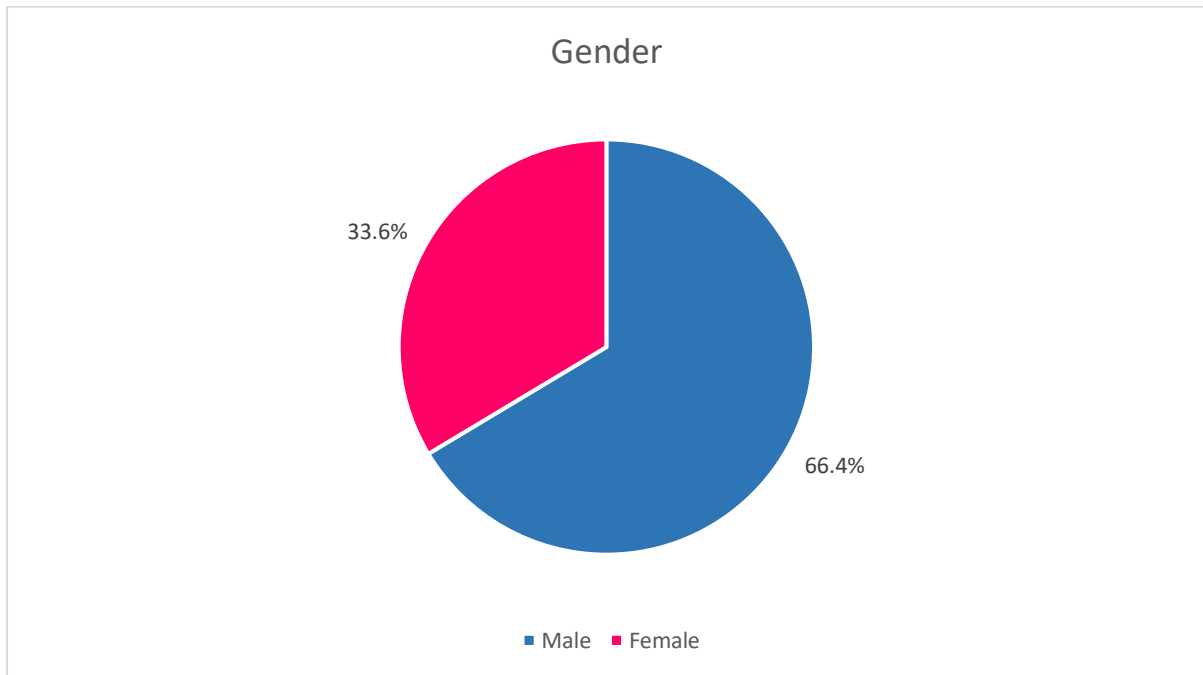
3.1 Nationality



Nationality	Value	Percentage (%)
Malaysians	119	100.0
Non-Malaysians	0	0.0
TOTAL	119	100.0

Explanation: All the respondents are Malaysians since this survey is for Malaysian students only.

3.2 Gender



Gender	Value	Percentage (%)
Male	79	66.4
Female	40	33.6
TOTAL	119	100.0

Explanation: In this survey, there are total 66.4% male and 33.6% female respondents.

3.3 Age

1 | 4444455556666777788889999999999999999

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2 | 000000000000000000000000000000000000000000000
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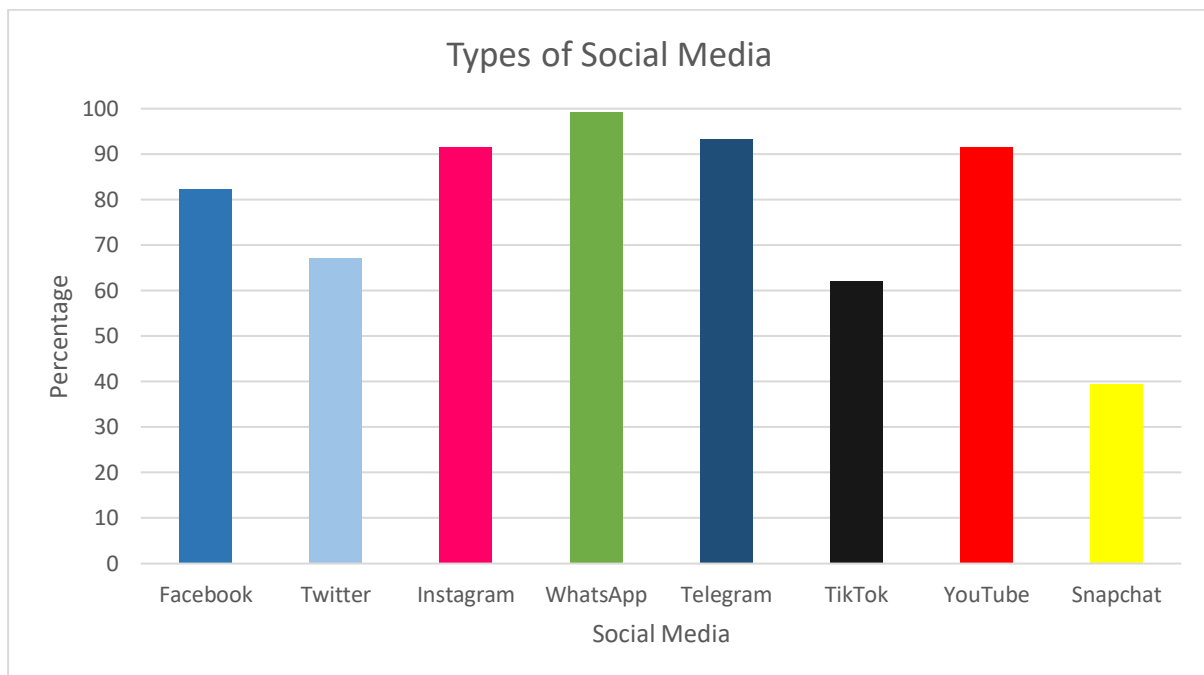
[illegible]

Key: 1 | 4 = 14 years old

Age	Frequency
14	5
15	4
16	4
17	4
18	5
19	13
20	75
21	3
22	2
23	4

Explanation: There are 5% of 14 years old respondents, 4% of 15 years old, 4% of 16 years old, 4% of 17 years old, 5% of 18 years old 13% of 19 years, 75% which is the major respondents are 20 years old, 3% of 21 years old, 2% of 22 years old which is the lowest percentage of respondents and lastly 4% of 23 years old from the overall respondents.

3.4 Type of Social Media

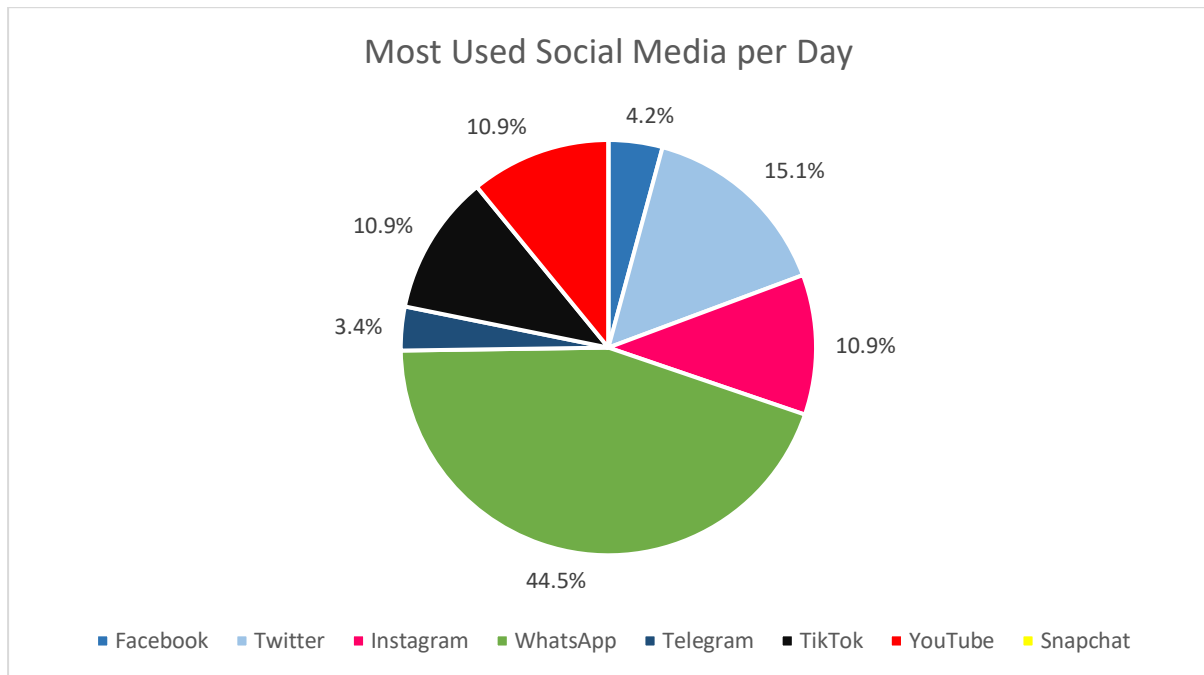


Type of Social Medias	Value	Percentage (%)
Facebook	98	82.4
Twitter	80	67.2
Instagram	109	91.6
WhatsApp	118	99.2
Telegram	111	93.3
TikTok	74	62.2
YouTube	109	91.6
Snapchat	47	39.5

Explanation: In this section, the respondents are required to tick the types of social media they have. From this graph, we can see that almost all of the respondents which is 99.2% of the respondents are using WhatsApp account. Telegram has become the second highest for the types of social media that the respondents have, which mean 93.3% of the respondents have Telegram account followed by Instagram and YouTube which share the same percentage of respondents which is 91.6%. 82.4% of respondents have Facebook account, 67.2% have Twitter account and 62.2% have TikTok account. Lastly, Snapchat has the least number of respondents of having the social media account which is 39.5%.

From this graph, we can see that most of Malaysian students are using WhatsApp account followed by Telegram, Instagram and YouTube. Snapchat is the least used social media among Malaysian students.

3.5 Most Used Social Media per Day

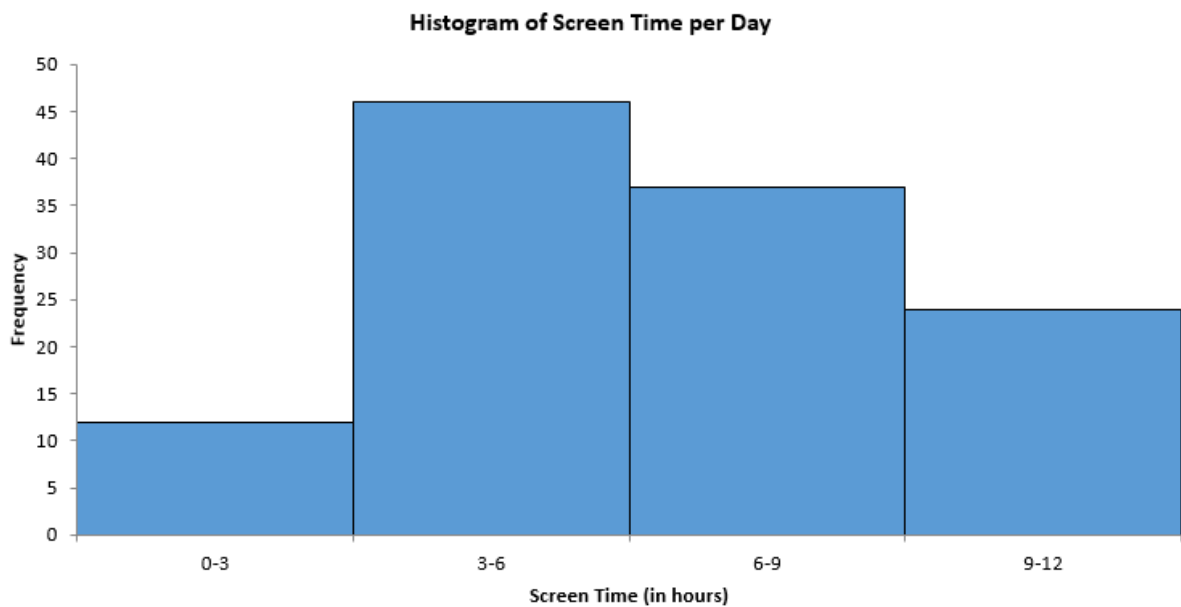


Type of Social Medias	Value	Percentage (%)
Facebook	5	4.2
Twitter	18	15.1
Instagram	13	10.9
WhatsApp	53	44.5
Telegram	4	3.4
TikTok	13	10.9
YouTube	13	10.9
Snapchat	0	0.0
TOTAL	119	100.0

Explanation: From the data, we found that the most used social media per day among Malaysians student is WhatsApp which is 44.5% of the sample followed by second most used social media, Twitter which is 15.1% and then other social media. Among variety of social media choices, no respondent chose Snapchat as their most used social media per day which results in 0%.

3.6 Screen Time per Day

Class Interval	Class Frequency, f	Class Cumulative Frequency, cf	Class Midpoint, x	x^2	$f(x)$
0-3	12	12	1.5	2.25	18
3-6	46	58	4.5	20.25	207
6-9	37	95	7.5	56.25	277.5
9-12	24	119	10.5	110.25	252



Mean	6.3403
Median	6.1216
Mode	5.3721
Variance	7.6438
Standard Deviation	2.7647

Calculation

$$\text{Mean, } \bar{x} = \sum fx/n$$

$$= (754.5) / (119)$$

$$= 6.3403$$

$$\text{Median, } M = L + ((n/2 - cf)/f) \cdot c$$

$$= 6 + ((59.5 - 58)/37) \cdot 3$$

$$\text{Mode, } Z = L + ((f_1 - f_0) / (2 \cdot f_1 - f_0 - f_2)) \cdot c$$

$$= 3 + ((46 - 12) / (2 \cdot 46 - 12 - 37)) \cdot 3$$

$$= 3 + (34/43) \cdot 3$$

$$= 3 + 2.3721$$

$$= 5.3721$$

$$\text{Sample Variance, } S^2 = ((\sum f \cdot x^2 - (\sum f \cdot x)^2/n) / (n-1))$$

$$= (5685.75 - (754.5)^2/119) / 118$$

$$= (5685.75 - 4783.7836) / 118$$

$$= 901.9664 / 118$$

$$= 7.6438$$

Sample Standard Deviation, $S = \sqrt{((\sum f \cdot x^2 - (\sum f \cdot x)^2 / n) / (n - 1))}$

$$= \sqrt{(5685.75 - (754.5)^2 / 119) / 118}$$

$$= \sqrt{(5685.75 - 4783.7836) / 118}$$

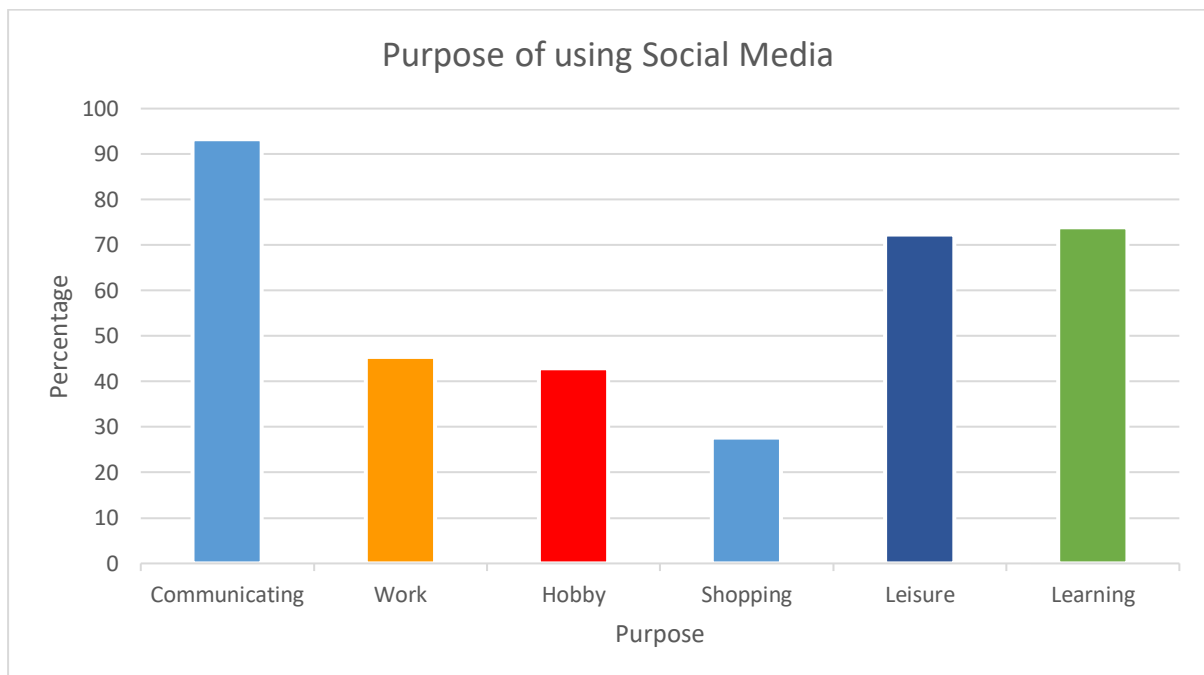
$$= \sqrt{901.9664 / 118}$$

$$= \sqrt{7.6438}$$

$$= 2.7647$$

Explanation: From the data, we find that 10.084% of the respondents have a screen time of 0 to 3 hours per day, 38.655% of the respondents have a screen time of 3 to 6 hours per day, 31.092% have a screen time of 6 to 9 hours and 20.169% of the respondents have screen time of 9 hours and above. Our data for screen time per day is being represent via histogram. Here we calculate many statistical data such as mean, mode and median to make an analysis of the data. We also determine the variance and standard deviation. Based on the calculations, we can conclude that our histogram is positively skewed. Our data for screen time per day is being represent via histogram. Here we calculate many statistical data such as mean, mode and median to make an analysis of the data. We also determine the variance and standard deviation. Based on the calculations, we can concluded that our histogram is positively skewed.

3.7 Purpose of using Social Media

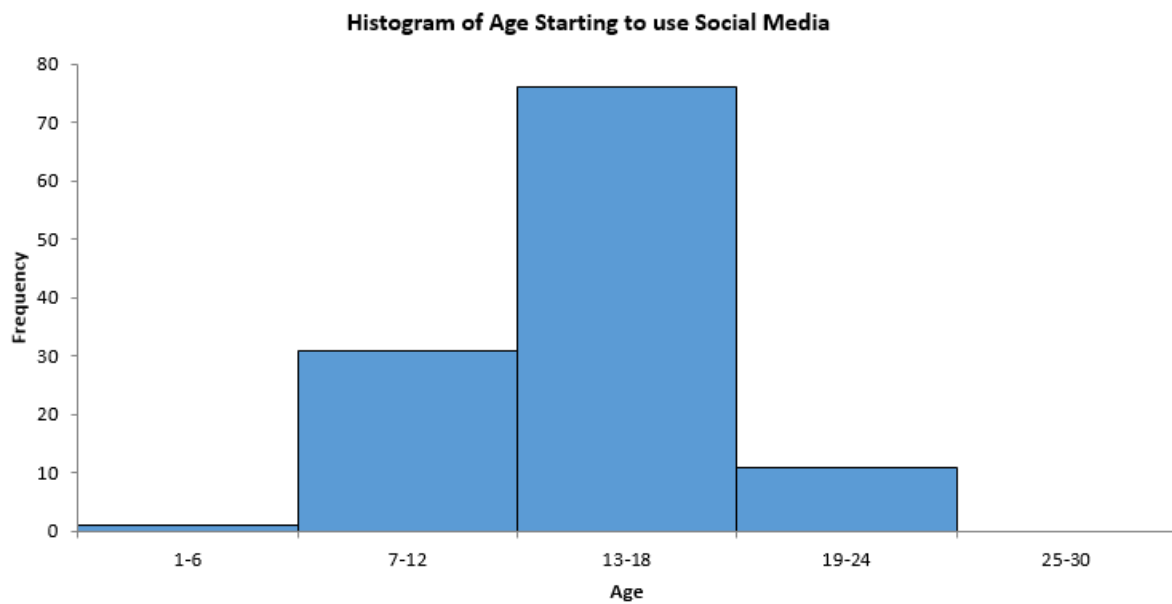


Type of Social Medias	Value	Percentage (%)
Communicating	111	93.3
Work	54	45.4
Hobby	51	42.9
Shopping	33	27.7
Leisure	86	72.3
Learning	88	73.9

Explanation: During the survey, respondents were able to pick one or many choices of purposes of using social media. From the data, we can see that almost all Malaysian Students use social media for communicating purpose which was 93.3% of the sample while most of them also use it to spend time during leisure and to learning purpose which was 73.9% and 72.3% of the sample respectively. It was followed by for working, hobby and shopping purposes which was 45.4%, 42.9% and 27.7% respectively. This shows that most Malaysian students are using social media as a way of communication.

3.8 Age starting to use Social Media

Class Interval	Class Frequency, f	Class Cumulative Frequency, cf	Class Midpoint, x	x^2	$f(x)$
1-6	1	1	3.5	12.25	3.5
7-12	31	32	9.5	90.25	294.5
13-18	76	108	15.5	240.25	1178
19-24	11	119	21.5	462.25	236.5
25-30	0	119	27.5	756.25	0



Mean	14.3908
Median	14.6711
Mode	14.9545
Variance	12.793
Standard Deviation	3.5767

Calculation

$$\text{Mean, } \bar{x} = \sum(fx)/n$$

$$= 1712.5/119$$

$$= 14.3908$$

$$\text{Median, } M = L + ((n/2 - cf)/f) \cdot c$$

$$= 12.5 + ((59.5 - 32)/76) \cdot 6$$

$$= 12.5 + (27.5/76) \cdot 6$$

$$= 12.5 + 2.1711$$

$$= 14.6711$$

$$\text{Mode, } Z = L + ((f_1 - f_0)/(2 \cdot f_1 - f_0 - f_2)) \cdot c$$

$$= 12.5 + ((76 - 31)/(2 \cdot 76 - 31 - 11)) \cdot 6$$

$$= 12.5 + (45/110) \cdot 6$$

$$= 12.5 + 2.4545$$

$$= 14.9545$$

$$\text{Sample Variance, } S^2 = (\sum f \cdot x^2 - (\sum f \cdot x)^2/n)/(n-1)$$

$$= (26153.75 - (1712.5)^2/119)/118$$

$$= (26153.75 - 24644.1702) / 118$$

$$= 1509.5798 / 118$$

$$= 12.793$$

$$\text{Sample Standard Deviation, } S = \sqrt{(\sum f \cdot x^2 - (\sum f \cdot x)^2 / n) / (n - 1)}$$

$$= \sqrt{(26153.75 - (1712.5)^2 / 119) / 118}$$

$$= \sqrt{(26153.75 - 24644.1702) / 118}$$

$$= \sqrt{1509.5798 / 118}$$

$$= \sqrt{12.793}$$

$$= 3.5767$$

Explanation: From the data, 0.84% of the respondents started to use social media since age of 1 to 6 years old, 26.05% of the respondents began to use social media at the age of 7 to 12 years old, 63.87% started to use social media at age of 13 to 18 years old and lastly 9.24% used social media at the age of 19 to 24 years old. Using the histogram, we also got the mean which is 14.3908. Based on the analysis, we learned that most students in Malaysia started using social media from age 13 to age 18 years old while most of the other students started from age 7 to 12 years old.

4.0 Conclusion

In this study, 119 Malaysian students participated and most of them are 20 years old. Based on the analysis, we learned that majority of Malaysian students started using the social media from age 13 to age 18. We also found out that most of the students use social media mainly for communicating purpose. Out of variety choices of social media, WhatsApp is the most used social media per day among Malaysia's students and almost every student in Malaysia has WhatsApp as one of the social media that they use. Lastly, we learned students in Malaysia tend to spend at least 4 to 6 hours a day on social media. As a conclusion, almost all Malaysian students are familiar with social media and based on the data gathered, we think that social media has become a very important for Malaysian students to use in their life every day. Through this study, we also learn how to construct and visualize the data that we had gathered into various types of graphs using software which help us a lot to interpret the data.

QUESTIONNAIRE

Questionnaire

The Usage of Social Media among Malaysian Students

1. Are you a Malaysian student?
 - Yes
 - No

2. What is your gender?
 - Male
 - Female

3. What is your age?
 - (Enter metric value)

4. What type of social media do you have?
 - Facebook
 - Twitter
 - Instagram
 - WhatsApp
 - Telegram
 - TikTok
 - YouTube
 - Snapchat

5. What is your most used social media per day?
 - Facebook
 - Twitter
 - Instagram
 - WhatsApp
 - Telegram
 - TikTok
 - YouTube
 - Snapchat

6. In what age you start to use social media?
 - 1 – 6 years old
 - 7 – 12 years old
 - 13 – 18 years old

- 19 - 24 years old
- 25 – 30 years old

7. What is your screen time per day spent for social media?

- 0 – 3 hours
- 3 – 6 hours
- 6 – 9 hours
- 9 – 12 hours

8. State the purpose of using social media.

- Communicating
- Work
- Hobby
- Shopping
- Leisure
- Learning

RESPONSES

24 | PROJECT ONE

22	Twitter;Instagram;WhatsApp;Telegram;Youtube;Snapchat	Instagram	13 - 18 years old	3 - 6 hours	Communicating;Work;Hobby;Shopping;Leisure;Learning
20	Facebook;Twitter;Instagram;WhatsApp;Telegram;TikTok;Youtube;Snapchat	Twitter	13 - 18 years old	6 - 9 hours	Communicating;Leisure;Learning
19	Facebook;Twitter;Instagram;WhatsApp;Telegram;TikTok;Youtube;Snapchat	WhatsApp	13 - 18 years old	3 - 6 hours	Communicating;Work;Shopping;Leisure;Learning
20	Facebook;Twitter;Instagram;WhatsApp;Telegram;TikTok;Youtube	Youtube	13 - 18 years old	3 - 6 hours	Communicating;Work;Hobby;Shopping;Leisure;Learning
20	Facebook;Twitter;WhatsApp;Telegram;TikTok;Youtube	Youtube	7 - 12 years old	6 - 9 hours	Communicating;Leisure
20	Instagram;WhatsApp;Telegram;TikTok;Youtube	TikTok	13 - 18 years old	9 - 12 hours	Communicating;Work;Hobby;Shopping;Leisure;Learning
20	Facebook;Instagram;Telegram;Youtube	Youtube	7 - 12 years old	0 - 3 hours	Work;Leisure;Learning
20	Facebook;Instagram;WhatsApp;Telegram;TikTok;Youtube	WhatsApp	13 - 18 years old	0 - 3 hours	Communicating;Work;Learning
20	Facebook;Twitter;Instagram;WhatsApp;Telegram;Youtube	Instagram	7 - 12 years old	9 - 12 hours	Communicating;Work;Hobby;Shopping;Leisure;Learning
19	Facebook;Twitter;Instagram;WhatsApp;Telegram;TikTok;Youtube;Snapchat	WhatsApp	13 - 18 years old	3 - 6 hours	Communicating;Hobby;Leisure;Learning
18	Facebook;Twitter;Instagram;WhatsApp;Telegram;Youtube	WhatsApp	13 - 18 years old	6 - 9 hours	Communicating;Shopping;Leisure;Learning
19	Facebook;Twitter;Instagram;WhatsApp;Telegram;Youtube	WhatsApp	13 - 18 years old	6 - 9 hours	Communicating;Hobby;Shopping;Leisure;Learning
23	Instagram;WhatsApp;Telegram	TikTok	13 - 18 years old	3 - 6 hours	Leisure
23	Instagram;WhatsApp;Telegram	TikTok	13 - 18 years old	3 - 6 hours	Leisure
19	Facebook;Twitter;Instagram;WhatsApp;Telegram;TikTok;Youtube;Snapchat	WhatsApp	13 - 18 years old	3 - 6 hours	Communicating;Work;Shopping;Leisure;Learning
19	Facebook;Twitter;Instagram;WhatsApp;Telegram;TikTok;Youtube;Snapchat	WhatsApp	13 - 18 years old	3 - 6 hours	Communicating;Work;Shopping;Leisure;Learning
14	Facebook;Instagram;WhatsApp;Telegram	Instagram	7 - 12 years old	6 - 9 hours	Communicating;Leisure
15	Facebook;Instagram;WhatsApp;Youtube	Instagram	7 - 12 years old	3 - 6 hours	Communicating;Leisure
14	Facebook;Instagram;WhatsApp;Telegram;Youtube	Youtube	13 - 18 years old	6 - 9 hours	Communicating;Leisure;Learning
14	Facebook;Instagram;WhatsApp;Telegram;Youtube	Facebook	7 - 12 years old	3 - 6 hours	Communicating;Hobby
14	Instagram;WhatsApp;Telegram;TikTok;Youtube	TikTok	7 - 12 years old	9 - 12 hours	Communicating;Leisure
15	Facebook;Twitter;Instagram;WhatsApp;Telegram;TikTok;Youtube	WhatsApp	13 - 18 years old	3 - 6 hours	Communicating;Shopping;Learning
15	Facebook;WhatsApp;Telegram;Youtube	Instagram	13 - 18 years old	3 - 6 hours	Communicating;Learning
17	Facebook;Twitter;Instagram;WhatsApp;Telegram;Youtube	Instagram	13 - 18 years old	6 - 9 hours	Communicating;Hobby;Leisure
23	Facebook;Twitter;Instagram;WhatsApp;Telegram;TikTok;Youtube;Snapchat	Twitter	7 - 12 years old	9 - 12 hours	Communicating;Work;Shopping
21	Facebook;Instagram;WhatsApp;Telegram	Telegram	13 - 18 years old	3 - 6 hours	Communicating;Work;Learning
19	Facebook;Instagram;WhatsApp;Youtube	Youtube	13 - 18 years old	3 - 6 hours	Communicating;Leisure;Learning
17	Instagram;WhatsApp;TikTok;Youtube	TikTok	7 - 12 years old	9 - 12 hours	Communicating;Leisure
16	Twitter;Instagram;WhatsApp;TikTok;Youtube;Snapchat	TikTok	7 - 12 years old	6 - 9 hours	Communicating;Hobby;Leisure
16	Twitter;Instagram;WhatsApp;Telegram;Youtube	Telegram	13 - 18 years old	3 - 6 hours	Communicating;Learning
16	Twitter;Instagram;WhatsApp;Telegram;Youtube	Telegram	13 - 18 years old	3 - 6 hours	Communicating;Learning
19	Twitter;Instagram;WhatsApp;Telegram;Youtube	Telegram	13 - 18 years old	6 - 9 hours	Communicating;Work;Learning
19	Facebook;Twitter;Instagram;WhatsApp;Telegram;TikTok;Youtube	WhatsApp	13 - 18 years old	3 - 6 hours	Communicating;Shopping;Learning
18	Twitter;Instagram;WhatsApp;Telegram;TikTok;Youtube	TikTok	7 - 12 years old	9 - 12 hours	Communicating;Hobby;Leisure;Learning
15	Instagram;WhatsApp;Telegram;TikTok	WhatsApp	13 - 18 years old	6 - 9 hours	Communicating;Hobby;Learning
17	Twitter;Instagram;WhatsApp;Telegram;Youtube	WhatsApp	13 - 18 years old	6 - 9 hours	Communicating;Leisure;Learning
22	Facebook;Twitter;Instagram;WhatsApp;Telegram;Youtube	Twitter	13 - 18 years old	6 - 9 hours	Communicating;Leisure;Learning
23	Facebook;Twitter;Instagram;WhatsApp;Telegram;Youtube	Facebook	7 - 12 years old	9 - 12 hours	Communicating;Work;Leisure;Learning
16	Instagram;WhatsApp;Telegram;TikTok;Youtube	Youtube	7 - 12 years old	6 - 9 hours	Communicating;Leisure;Learning
17	Facebook;Instagram;WhatsApp;Telegram;Youtube	WhatsApp	13 - 18 years old	3 - 6 hours	Communicating;Hobby;Leisure
18	Facebook;WhatsApp;Telegram;Youtube	WhatsApp	13 - 18 years old	3 - 6 hours	Communicating;Learning