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UNIVERSITI TEKNOLOGI MALAYSIA

SCHOOL OF COMPUTING
Faculty of Engineering

SCSI 2143-08

PROBABILITY & STATISTICAL DATA ANALYSIS

PROJECT 1: DAILY AVERAGE TIME SPENT ON SOCIAL MEDIA

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Semester 2 2018/2019

Table of Contents

No.	Contents	Page Number
1.	1.0 Abstract	2
2.	2.0 Introduction	3
3.	3.0 Methodology	4
4.	4.0 Results and Discussion	5 - 20
5.	5.0 Reflection	21
5.	6.0 References	22

1.0 ABSTRACT

Nowadays, social media has become almost inescapable and is revolutionizing the way people communicate, interact and socialize. Consequently, people are spending a substantial part of their time on social media. This study examines the most frequently used social media, the daily average time spent, the purposes of using social media and the behavior of users from different age group and social background on social media. 125 random respondents completed the questionnaire and their response were analyzed. Results indicated that the most frequently used social media was WhatsApp and most of the sampled respondents spent 0 - 5 hours per day on social media to spend free time. The study also found that most respondents held opinions that social media generally brings more advantages than disadvantages, however, gives negative effect on relationship between friends and families. Most of them had also the acknowledgment of their addiction towards social media.

2.0 INTRODUCTION

Nowadays, social media has become an integral part to our life and society. In 2019, it is estimated that there will be around 2.77 billion social media users around the globe. However, not every user knows that the impact of social media on society and the influence of social media towards people from different age group and social background.

Therefore, we decided to conduct a study on the usage of social media among a random sample of respondents. The purpose of this study is to discover multiple relationships between respondents and the usage of social media such as daily average time spent (hours) on social media, the purpose of using social media, respondents' behaviors and opinions on social media as well as the manipulating reasons behind these behaviors.

3.0 METHODOLOGY

The method that we used for this project is by conducting a survey via Google Form. Before we conducted the survey, we had discussed on the set of questions to be used. In the survey form, we have 3 parts of questions, 4 questions in Part 1, 5 questions in Part 2 and 3 questions in Part 3, which purpose is to collect different type of data such as ratio data, ordinal data and others.

The question set consists of three parts where first part is to collect the personal information of respondents including their gender, age, occupation and marital status while the second part and third part focus on the questions to meet the objective of our study.

To fulfill our research, we had collected data regarding respondents' daily average time spent on social media, the purpose of using social media, how active they are in social media, their perspectives on some aspects in social media and their opinions on their own behaviors on social media.

After receiving 125 samples of data, we organized it into spreadsheet for further analysis and interpretation. Then, we used R-Studio to make graphical presentation of our data and findings.

4.0 RESULTS AND DISCUSSION

From our survey, we have gathered a total of 125 responses. All data are interpreted using the R-program and all graphs and plots will be discussed as below:

Gender of Respondent

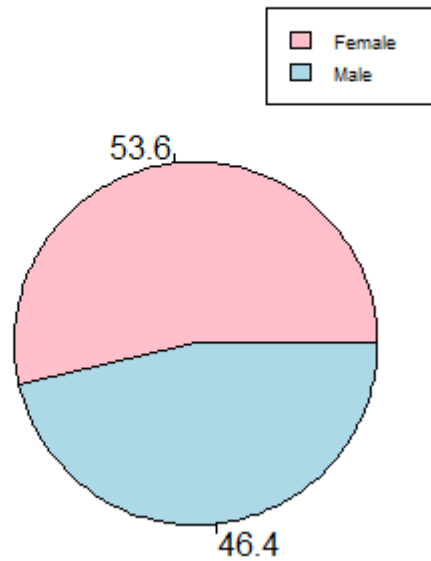


Figure 1: Gender of Respondents in Pie Chart

Out of 125 respondents, we can tell that 53.6% (67 respondents) are female while 46.4% (58 respondents) are male from *Figure* above. The number between male and female respondents is considered balance since the difference between each gender is only 7.2% (9 respondents).

Stem	Leaf
1	4 6 7 7 8 8 8 8 9 9 9 9 9
2	0 1 2 2 2 2 2 2 2 2 2 2 3 3 3 3 3 4 4 5 6 6 7 7 7 8
3	0 5
4	0 1 4
5	0 2 3 8

Key: 1|4 is 14

Figure 2 : The stem and leaf plot for the age of respondents

From the distribution above, we can conclude that most of the respondents are between 20 to 28 years old. And the age of the least respondents is between 30 to 40.

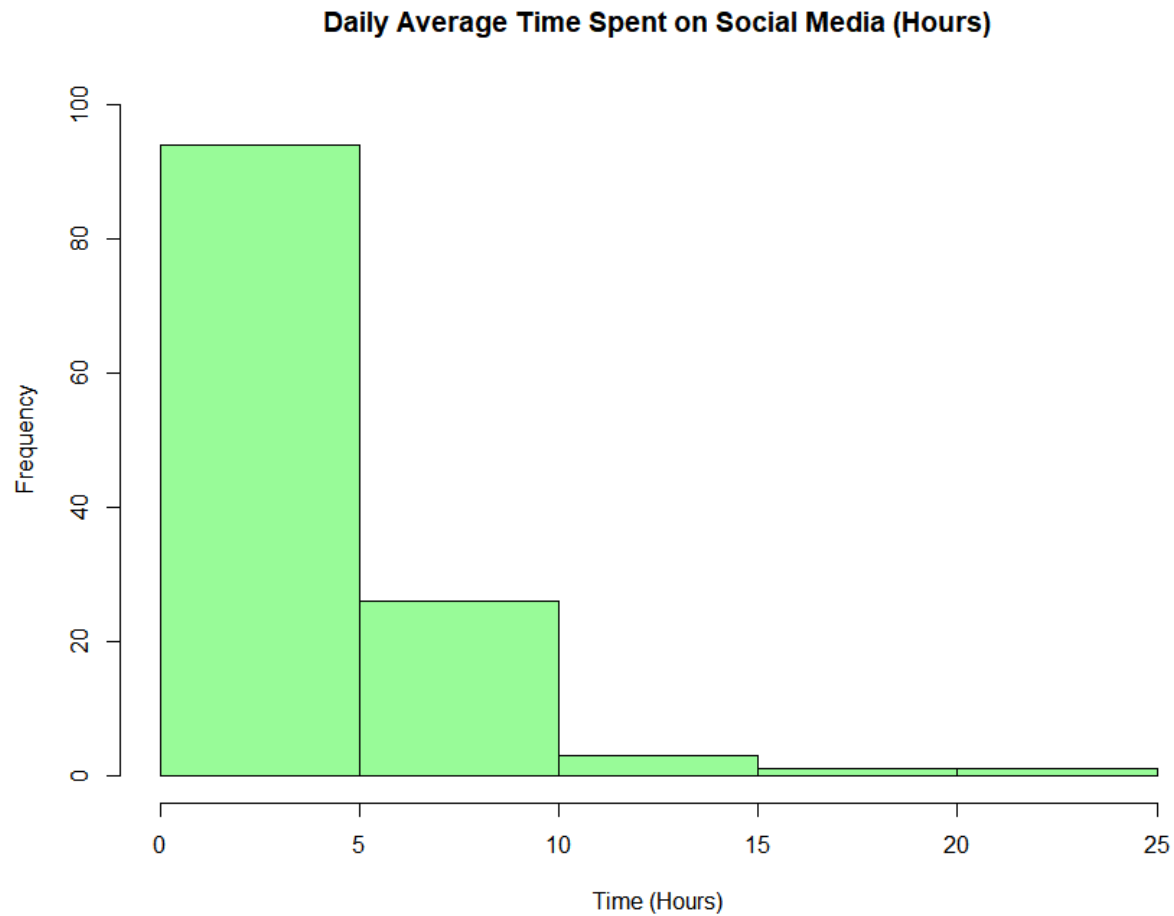


Figure 3: The Average time spent on social media daily

We have gathered all our respondents' feedback on **daily average time spent on social media** and a graph of histogram is plotted to extract the data. From the histogram above, we can come to a conclusion that most people spent 0 to 5 hours daily on using social media which is a standard measure. A small number are concluded to have an addiction in using social media as they spent more than 15 hours per day in using social media.

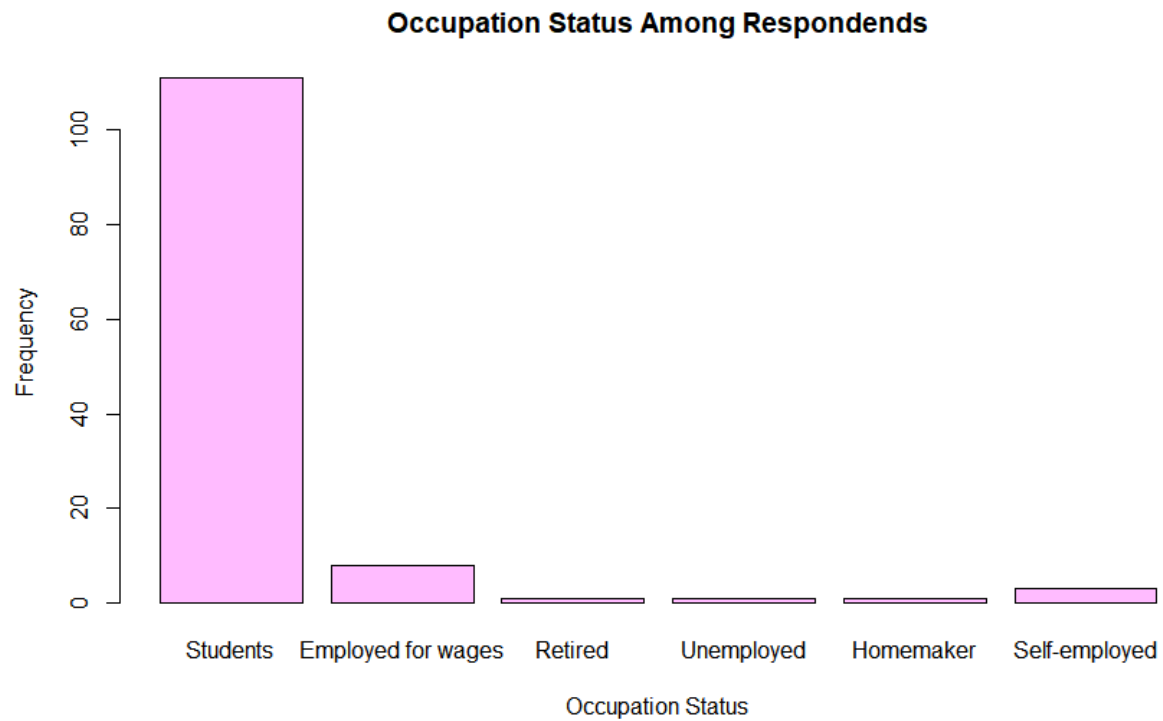


Figure 4: The occupation status among respondents

From this bar chart, we can see that our respondents are mainly students out of 125 respondents. There are 111 students, 8 respondents are employed for wages, 3 self-employed respondents, and 1 respondent each for retired, unemployed and homemaker which answering our survey via Google form.

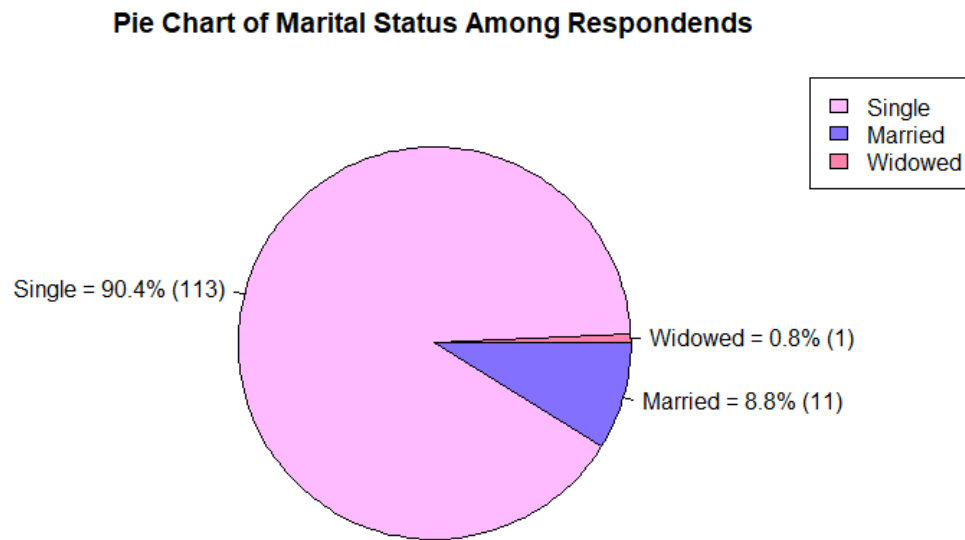


Figure 5: The marital status among respondents

From the pie chart above, we can said that most of our respondents are single. There are 90.4% respondents are single (113 respondents), 8.8% which 11 respondents out of our 125 respondents are married and 0.8% (1 respondents) are widowed. We can guess the reason of why the marital status of our respondents are mostly single is because of our respondents are mainly students.

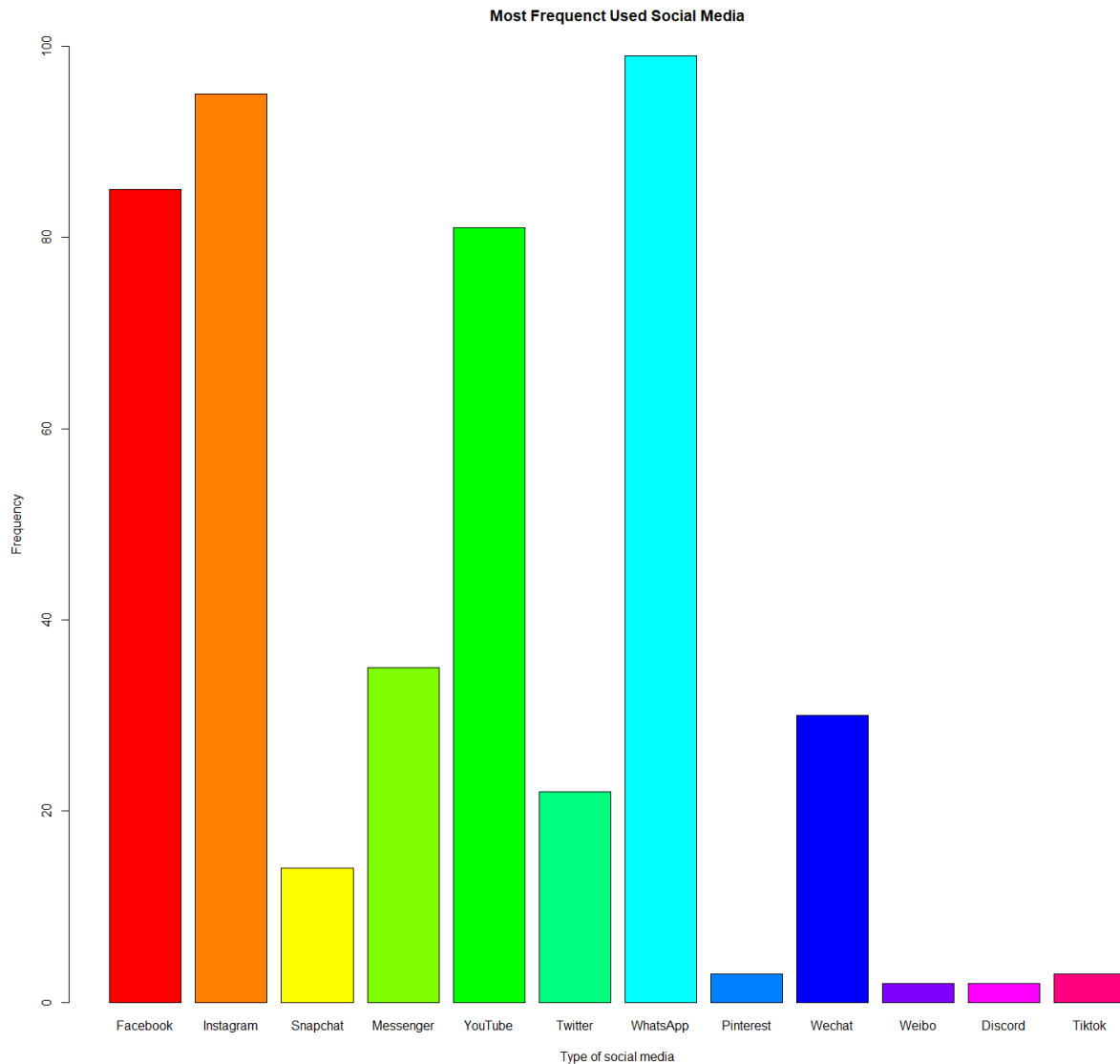


Figure 6: Most Frequently Used Social Media in Bar Chart

From the *figure* above, we can clearly tell that **the most frequently used social media** is **WhatsApp**, which consists of 99 responses following by **Instagram** (95 responses) and **Facebook** (85 responses). This is because WhatsApp is one of the most popular free messaging platform in Malaysia. It allows sending of text messages, voice calls, video calls, images and other media, documents, and user location. The **least popular social media** are **Weibo** and **Discord** due to language preference (Weibo) and limited usage as it is designed for gaming community only (Discord).

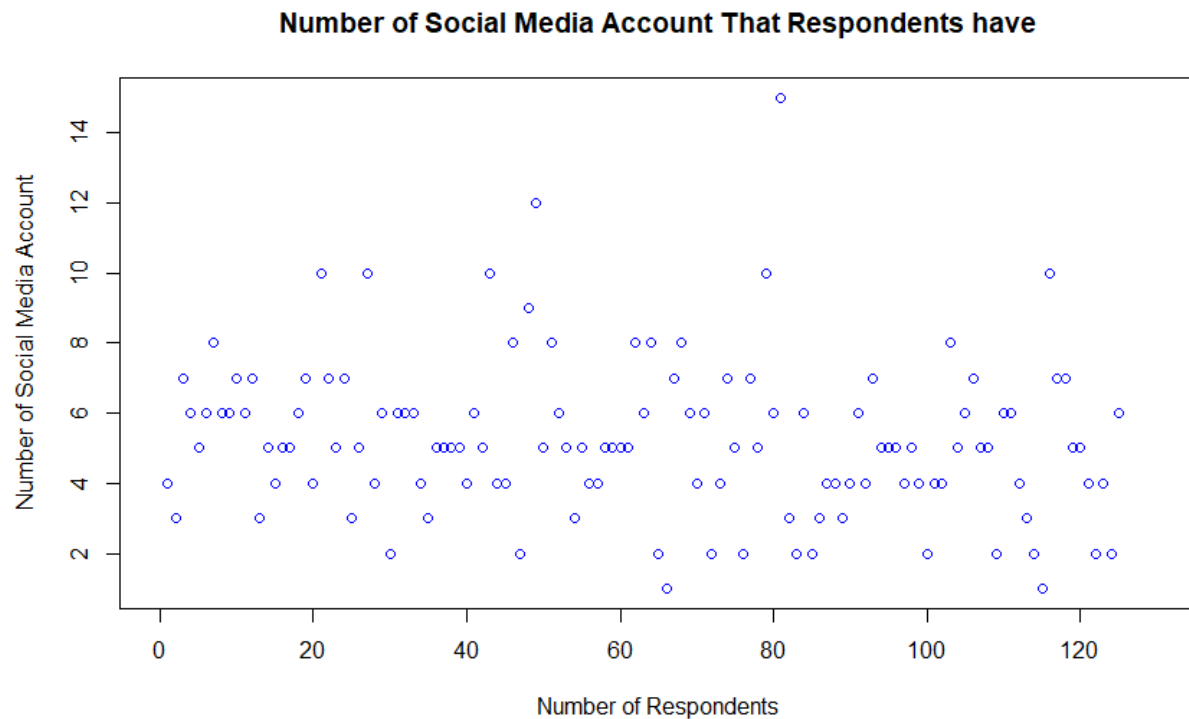


Figure 7: Number of Social Media Account that respondents have

We are using scatter plot to show the number of social media account that 125 respondents have. The scatter plot above tell us that 15 is the highest number of social media account that respondents have while they have at least 1 social media account from our 125 respondents. The mode is 5, because there are 29 out of 125 respondents which have 5 social media accounts, which is the highest frequency for the number of social media account that respondents have.

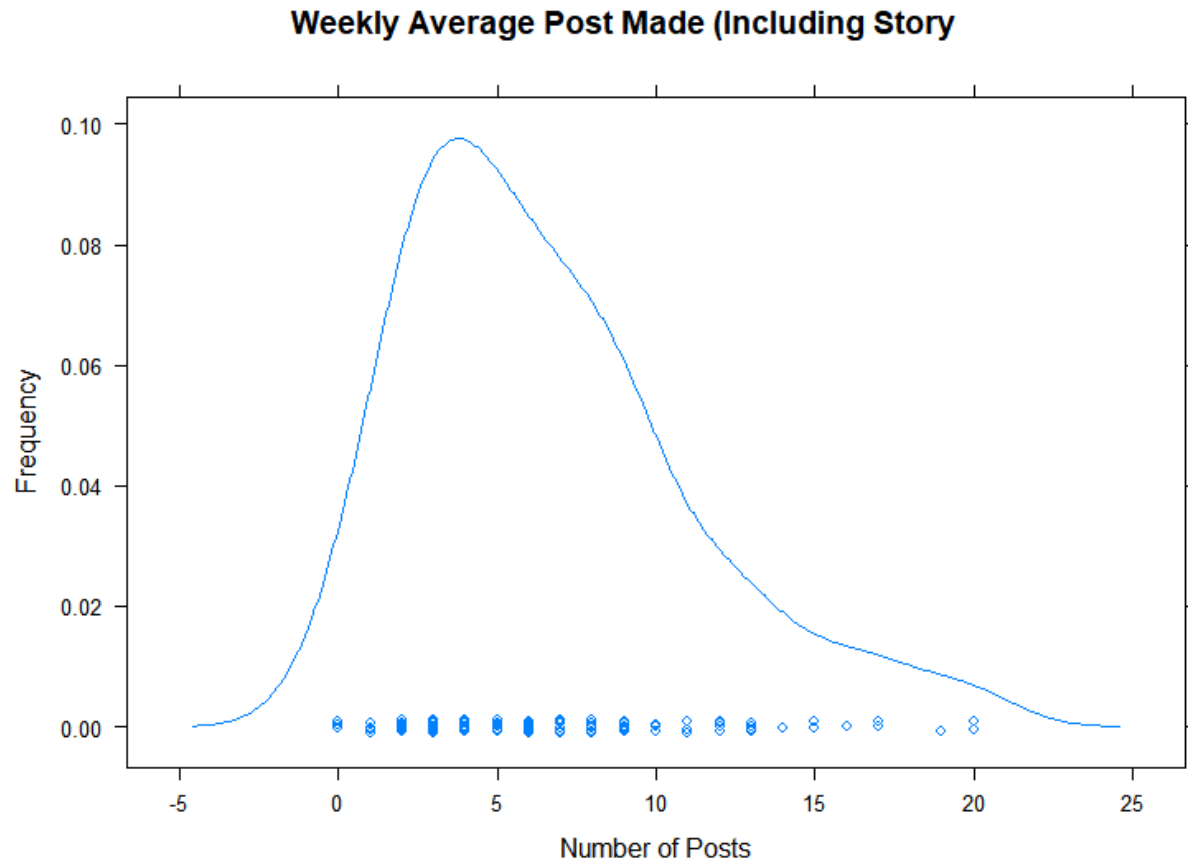


Figure 8: Weekly Average Post Made (Including story)

The above graph shows the frequency distribution of the respondents' posts per week. The highest posts per week made by our respondents are 20, while the lowest number of posts per week that made by our respondents is 0. The mean of this data is 6.58, while median is 6. This is a trimodal graph, which the mode are 2,3, and 4 respectively. This graph is skew to the right (a positively skewed graph).

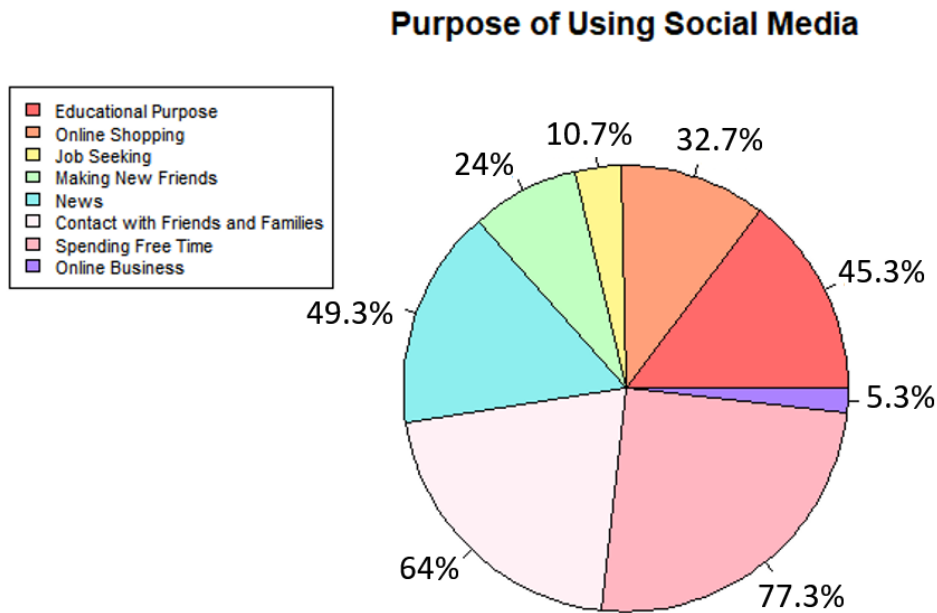


Figure 9: Purpose of using social media by respondent

From Figure above, the main purpose of using social media by respondent is to **spend their free time** which include **77.3%** of all respondent (**97 respondents**). **64%** of respondent use social media to **contact with friends and families**, **49.3%** use it to catch up **news**, **45.3%** use social media for **educational purpose** and **32.7%** for **online shopping**. A minor of **24%** use social media to make new friends, **10.7%** use to seek a job. Only **5.3%** of the respondent (**7 respondents**) use social media for an **online business**.

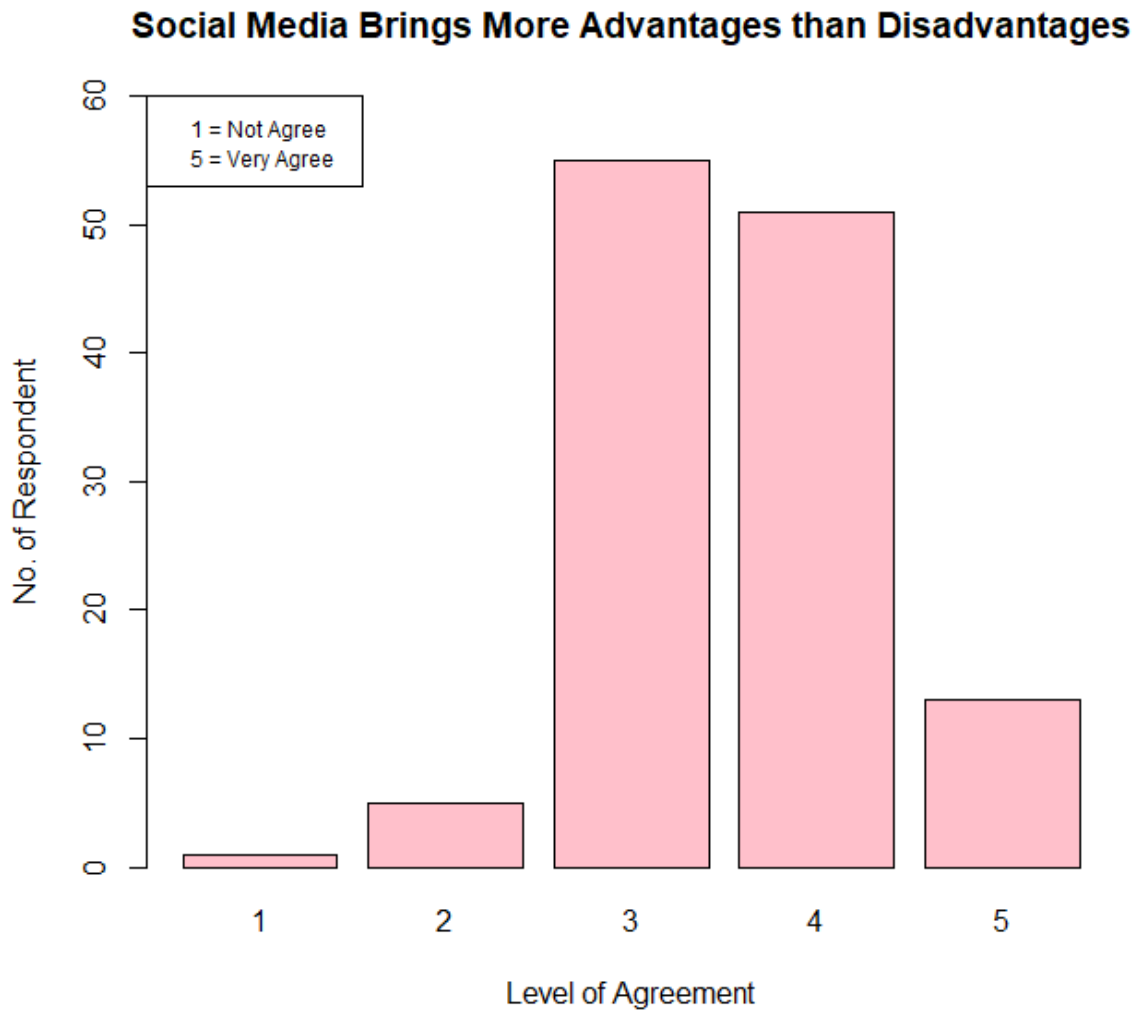


Figure 10: Level of Agreement on Social Media Brings More Advantages than Disadvantages

The graph above shows the level of agreement towards the topic “Social Media Brings More Advantages than Disadvantages”, where 1 represents Not agree, and 5 represents very agree. From the graph, we can make a conclusion where most of our respondents are half agree that social media bring more benefits to a relationship. And, only a few of respondents are not agree with this topic.

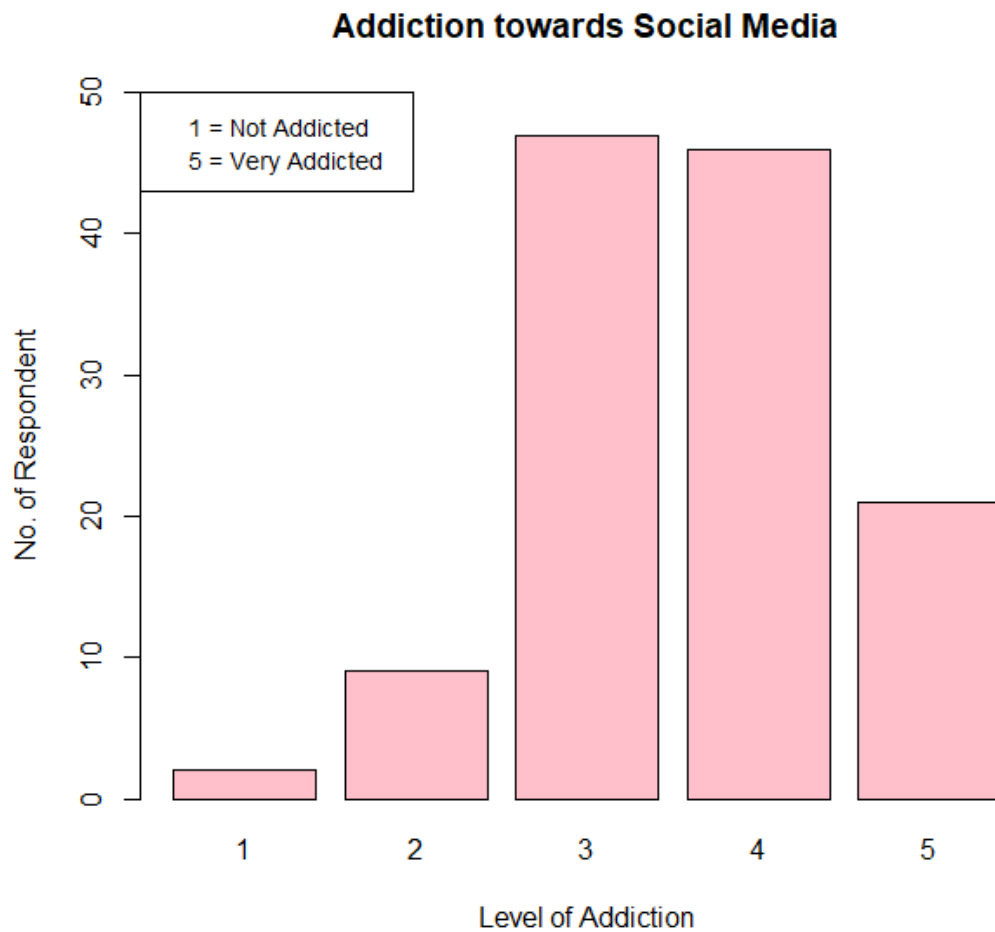


Figure 11: Level of Addiction towards Social Media in Bar Chart

We have also collected data on **level of addiction** towards social media by giving a scale of **1 (not addicted) to 5 (very addicted)**. Respondents rated their addiction towards social media with their own perspectives. From the *figure*, we can see that **majority respondents** rated their **level of addicted as 3 and above**, which shows us that most people nowadays rely much on social media.

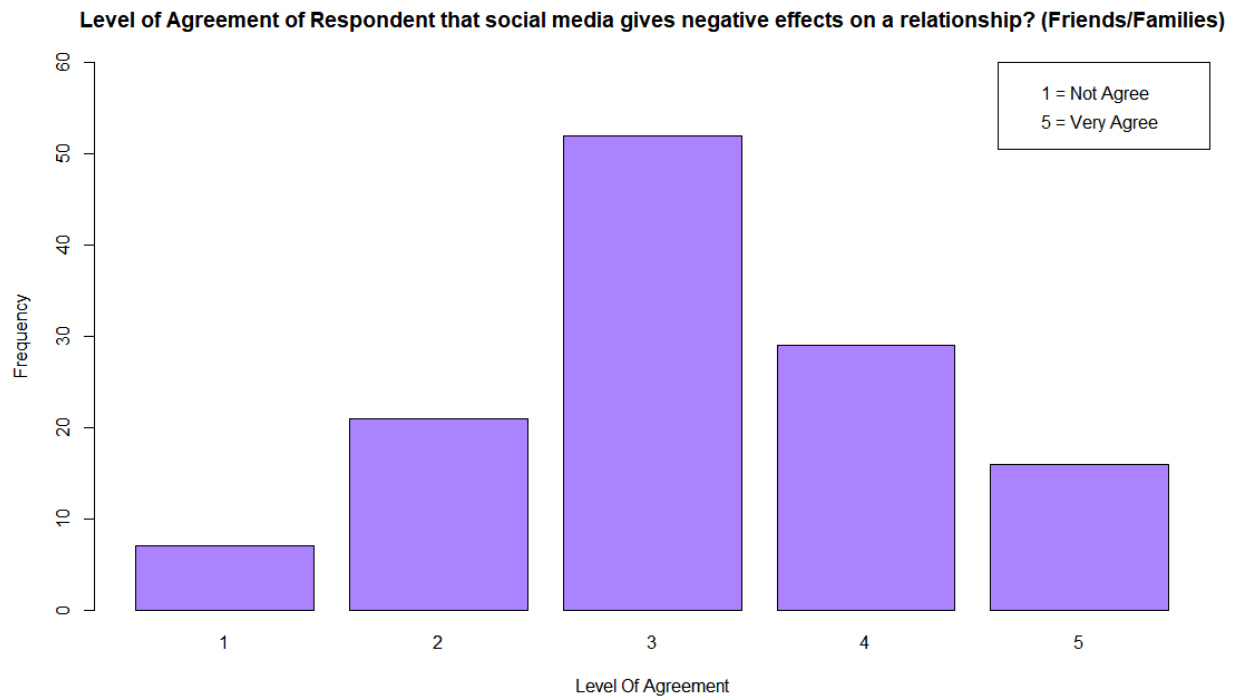


Figure 12: Level of agreement of respondents that social media gives negative effects on a relationship

From the figure above, a number of **52 respondents** has responded that they **neither agree nor disagree** that social media will bring negative effect to a relationship. A total of **28 respondents** respond to the scale of 1 and 2 which is more to **not agree** while a total of **45 respondents** respond to the scale of 4 and 5 which is more to **agree**. We can come to a conclusion that they are **more people who agree that social media will bring negative effect** to a relationship than those who disagree.

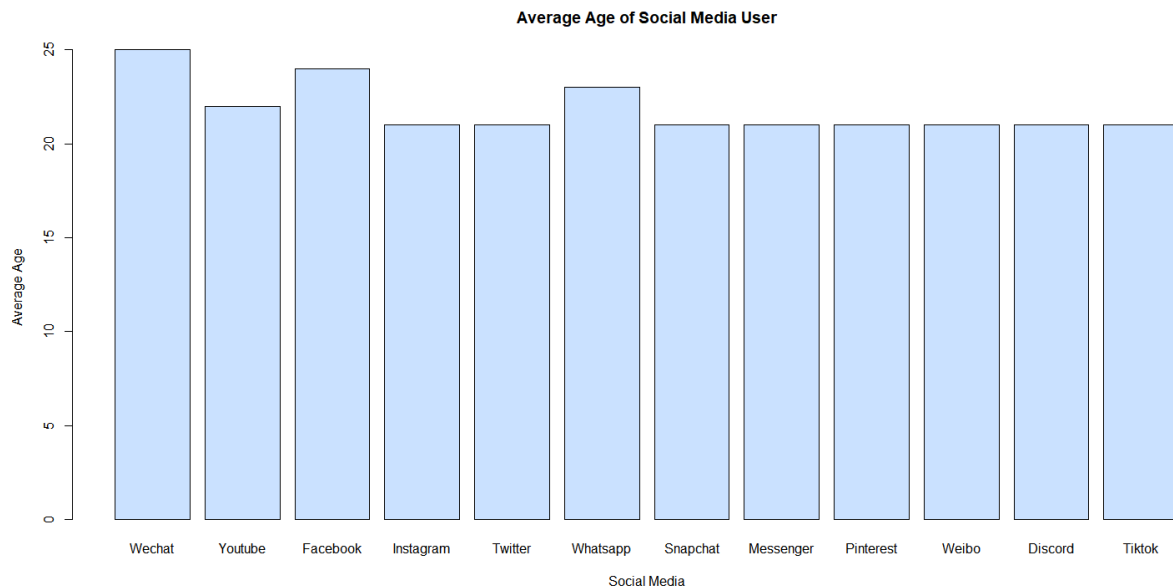


Figure 13: The Average User Age of each Social Media

According to the data gathered from our respondents, the social media which has the highest average user age is Wechat which has an average age of 25. Facebook has the second highest average user age which is 24 while Whatsapp is 23 and Youtube is 22. The other social media such as Instagram, Twitter, Snapchat, Pinterest, Weibo, Discord and Tiktok all have an average user age of 21.

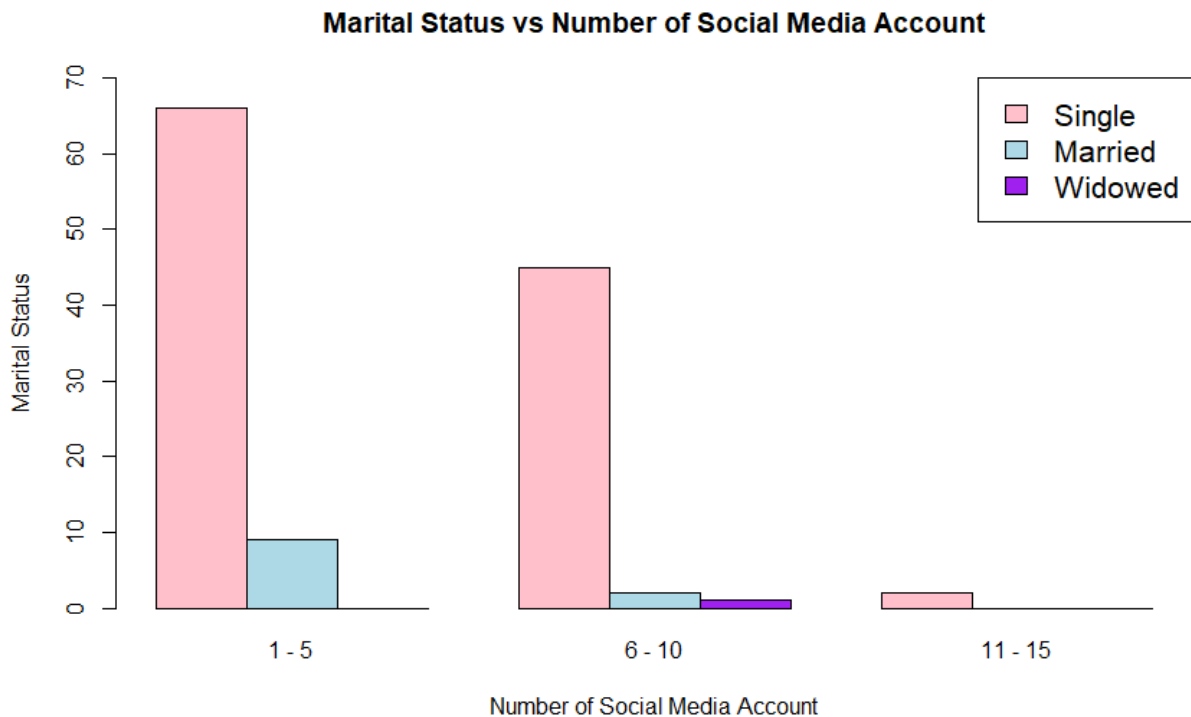


Figure 14: Number of social media account that respondents have from different marital status

We have collected the data of marital status and number of social media account from 125 respondents. We can conclude that from the bar chart above, the relationship between the marital status and number of social media account among respondents is students are having more social media account than married and widowed respondents. There are 66 students and 9 married respondents have 1 to 5 social media accounts. Besides, 45 students, 2 married respondents and 1 widowed respondents have 6 to 10 social media accounts while only 2 students having 11 to 15 social media accounts.

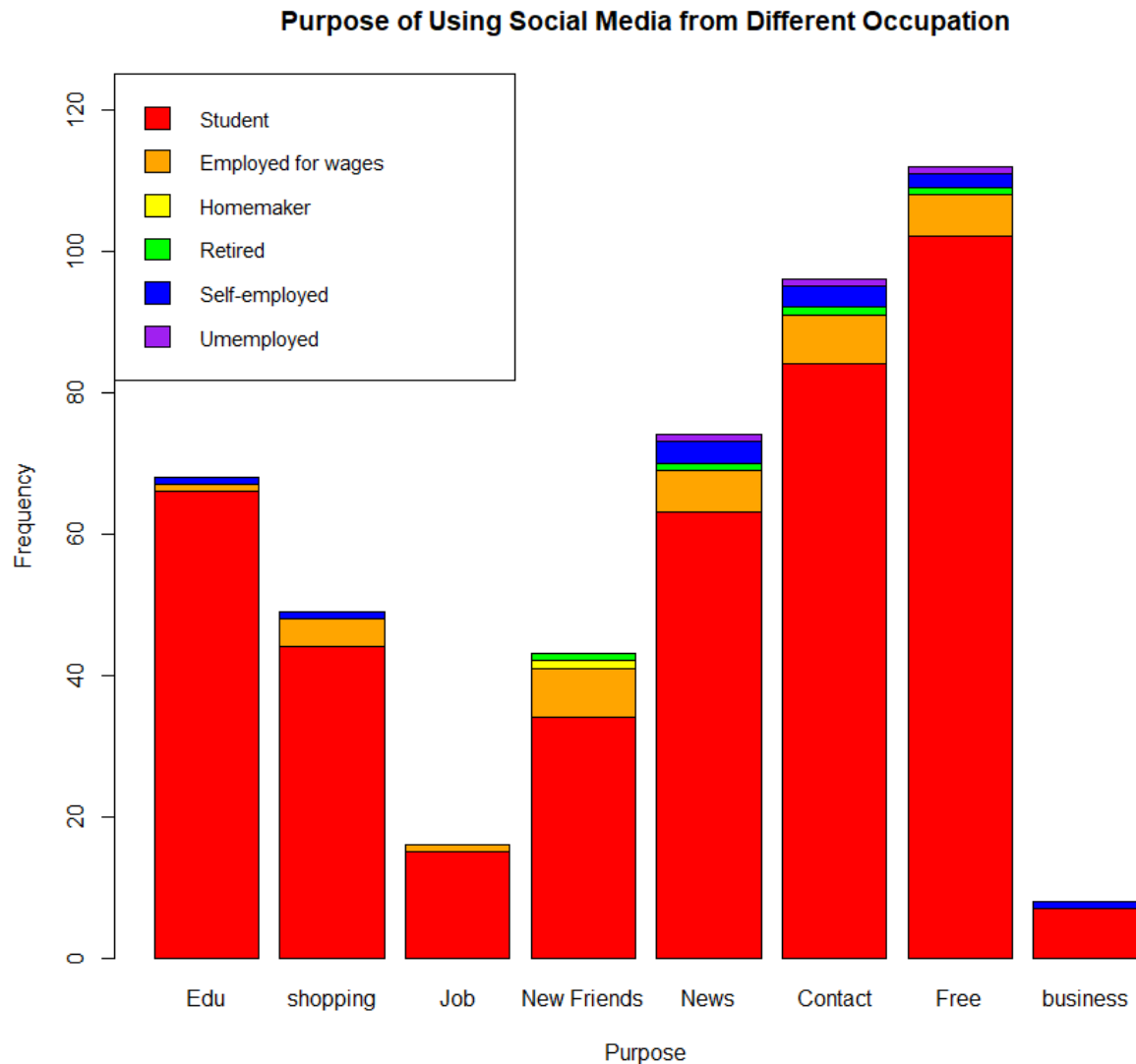


Figure 15: Purpose of Using Social Media from Different Occupation in Stacked Bar Chart
 Key: (Edu = Educational Purpose; Shopping = Online Shopping; Job = Job Seeking;
 New Friends = Making New Friends; News = News; Contact = Contact with Friends and
 Families; Free = Spending free time; Business = Online Business;)

Figure above shows that **students** use social media for various purpose such as educational purpose, online shopping, making new friends and etcetera. From the figure. We know that most number of students **spend their free time** (102 respondents) on social media following by **contact with friends and families** (84 respondents). As for those who are **employed for wages** (7 respondents), **homemaker** (1 respondent) as well as **retired** (1 respondent), most of them use social media for **making new friends**. Both **self-employed** (3 respondents) and **unemployed** (1 respondent) use social media mainly for **news**.

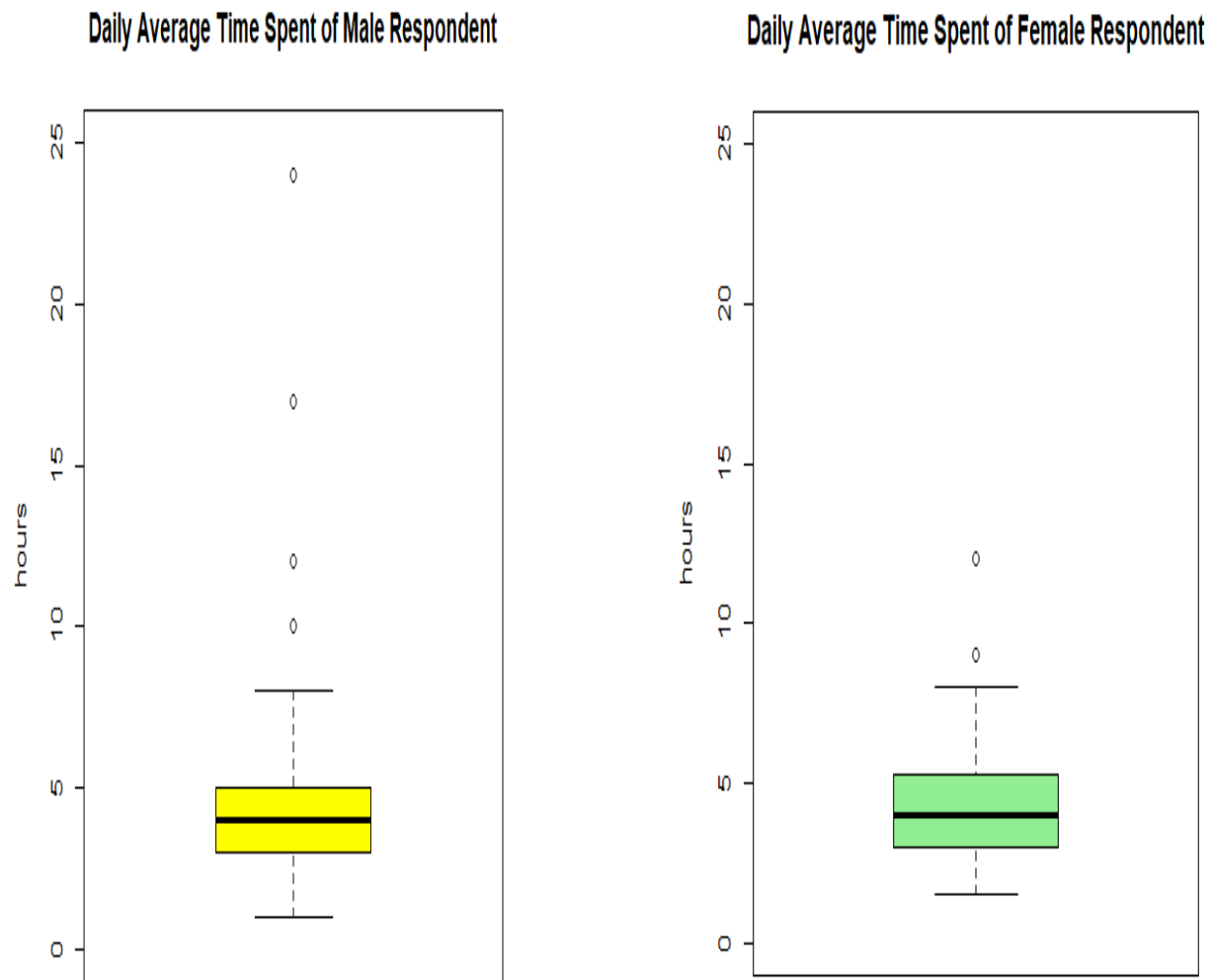


Figure 16: Comparison between male and female respondents on daily average time spent on social media

From the boxplots above, male and female are having the same first quartile and median, which is 3 and 4, while the third quartile of male and female is 5 and 5.25 respectively. From here we can know that the time spent on social media of female respondents is slightly longer than their median time spent. The interquartile range for male is 2 (5-3), while the interquartile range of female is 2.25 (5.25-3). For male boxplot, there are 3 extreme outliers (hours = 12, 17, 24) and 1 mild outlier (hours = 10) while female boxplot has 2 extreme outliers (hours = 12) and one mild outlier (hours = 9). Hence, we can conclude that male respondents are more addicted to social media than female respondents.

5.0 REFLECTION

The data for this surveyed is collected from random sample and most of our respondents are majority students and frequency of respondents from other social background is relatively low. It has causes the comparison of our data is not accurate based on frequency. Ways to avoid these mistakes are to limit the surveyed to only students or to spread the survey to more people from different age group t\rather than only student.

6.0 REFERENCES

- Lecturer's note Chapter 1: Introduction and Data Analysis
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