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COURSE CODE

SECI 2143 – Probability and Statistical Data Analysis

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GROUP PROJECT

Report on UTM Students' Choice of Telecommunication

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SECTION

02

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1.0 Introduction

The main purpose of the questionnaire survey was to provide a basic overview of the students in UTM preferred choice of telecommunication to use. In the process of achieving this objective, the students were asked about their daily usage and satisfaction level of their current service provider.

2.0 Background of Study

The data regarding the preferred choice of telecommunication are collected by conducting an online survey among the students of University of Technology Malaysia (UTM). The survey was created by four students of Data Engineering and it focuses on two aspects: the information of the telecommunication service provider, and the student's satisfaction level of mobile cellular services. A copy of the questionnaire is in Appendix A. The respondents involved in the study consist of UTM's students from different residential colleges. The data is then summarized or tabulated into its appropriate data description.

3.0 Objective of Study

The questionnaire survey was conducted to meet the following objectives:

- To collect data about student's info on telecommunication service provider used
- To measure the students satisfaction level of mobile cellular services

4.0 Description of Data

Population : UTM Johor Bahru students

Sample : 80 students

Data Description :

Variables	Types of Variable
Gender of students	Qualitative
Age of students	Quantitative
Year of studies	Quantitative
Students' residence	Qualitative
Service provider currently using	Qualitative
Type of plan used	Qualitative
Average data usage per month	Quantitative
Average internet speed	Quantitative
Money spend for Internet plan per month	Quantitative
Average Internet speed	Quantitative
Most frequent used apps	Qualitative
Internet coverage	Quantitative
Quality of download speed	Quantitative
Quality of video streaming	Quantitative
Overall satisfaction	Quantitative

5.0 Method of Data Analysis

Objectives	Variables related	Data Description
To measure the student's satisfaction level of mobile cellular services	Quantitative	Bar chart, Scatterplot
To collect data about student's info on telecommunication service provider used	Qualitative, Quantitative	Pie chart, stem and leaf graph, ogive, bar chart

ii. Respondents' Age Distribution

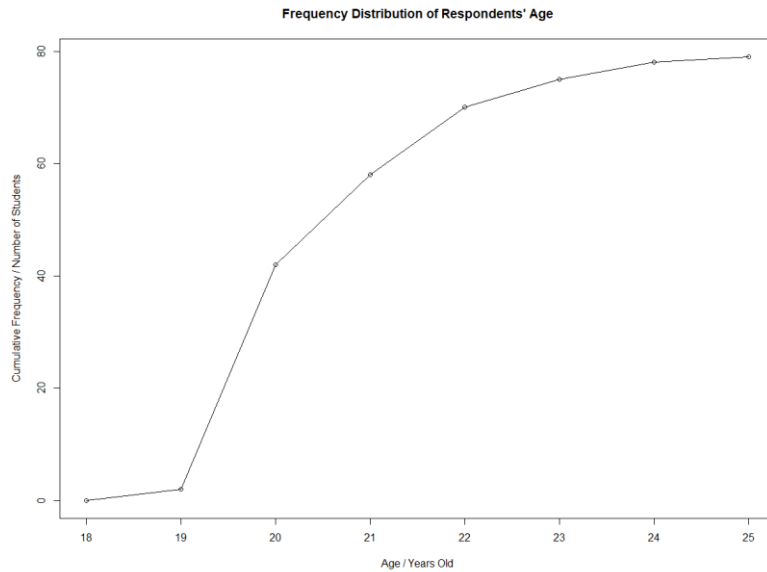


Figure 3

Figure 3 shows the cumulative frequency graph(ogive) of the age of the respondent. By interpreting the ogive, the 1st Quartile(Q_1), Median(Q_2), and 3rd Quartile(Q_3) can be determined which 19, 20, and 21 respectively.

iii. Year of Studies

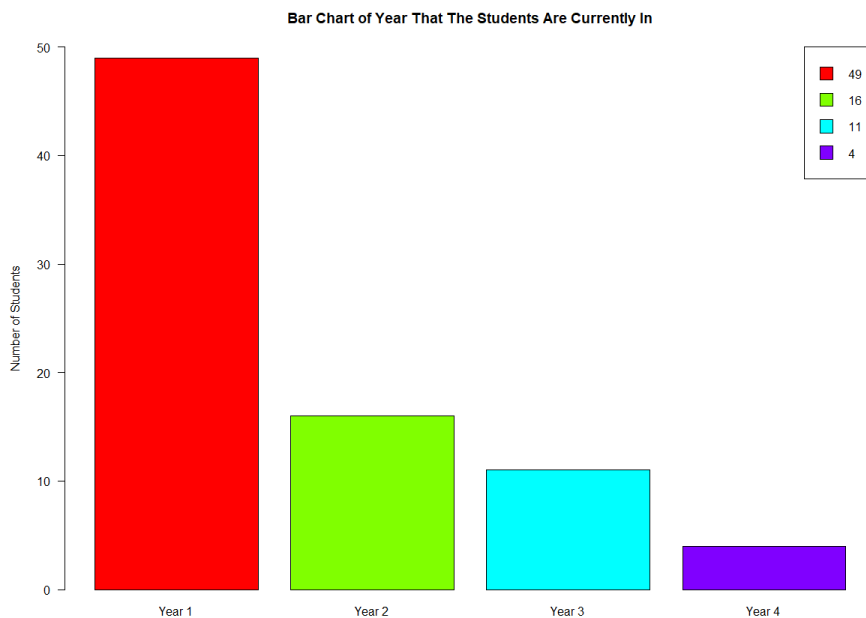


Figure 4

In figure 4, the bar chart above that shows the year of the students are currently in. The highest number of respondents recorded was Year 1 which is 49. Next, the second highest is Year 2 which is 16 followed by Year 3 which is 11 and Year 4 which is 4.

iv. Students' College

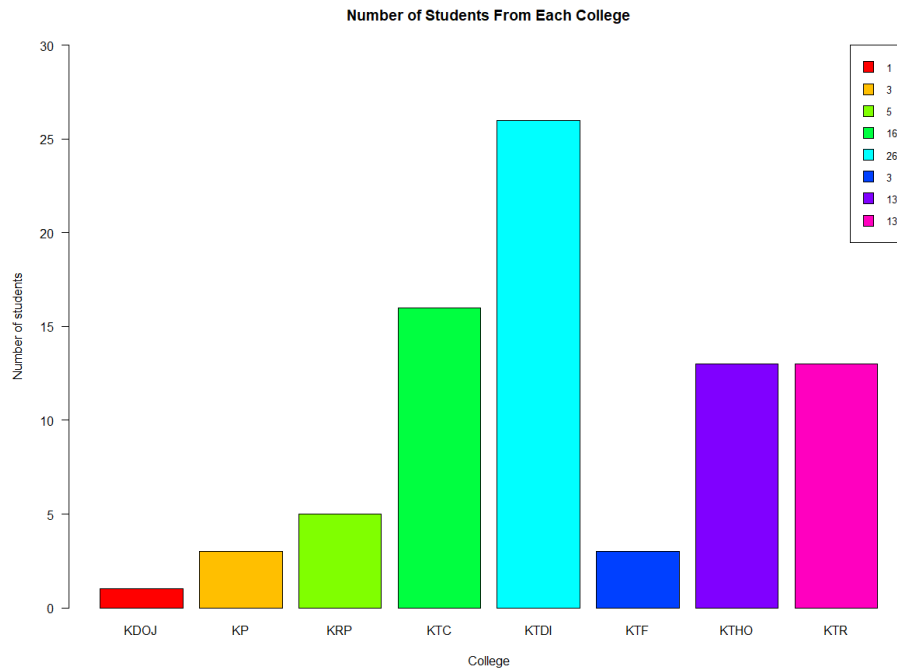


Figure 5

Figure 5 above depicts a bar chart on students' residence area. It is stated that the students of KTDI residence recorded the highest which are 26 students. Students who live in KTC are recorded as the second highest which are 16 students. The third highest respondents are from KTHO and KTR which are the same in number which are 13 students. On the other hand, the fourth highest respondents are from students who live in KRP which are 5 students. Next, KTF and KP students were recorded the same in number of students which are 3 students. The lowest respondents stated that the students who live in KDOJ which is only 2 students.

6.2 Telecommunications description

i. Types of plan used

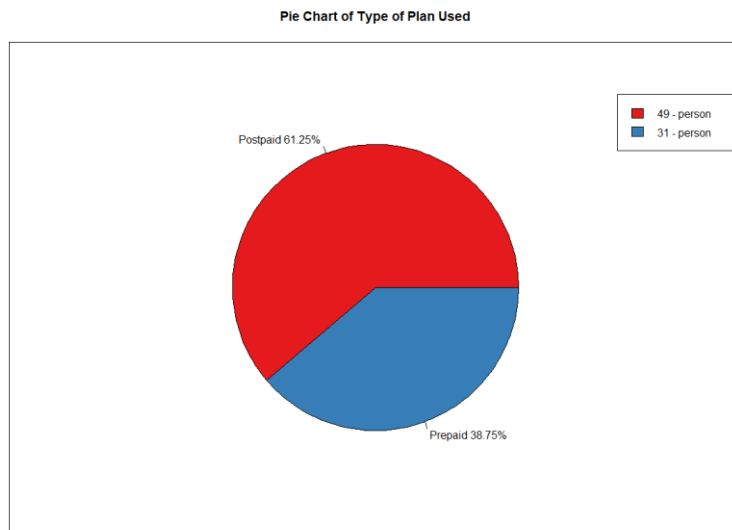


Figure 6 illustrate the percentage of the type of plan used by the respondents which is post-paid (61.25%) and prepaid (38.75%).

Figure 6

ii. Service provider used currently

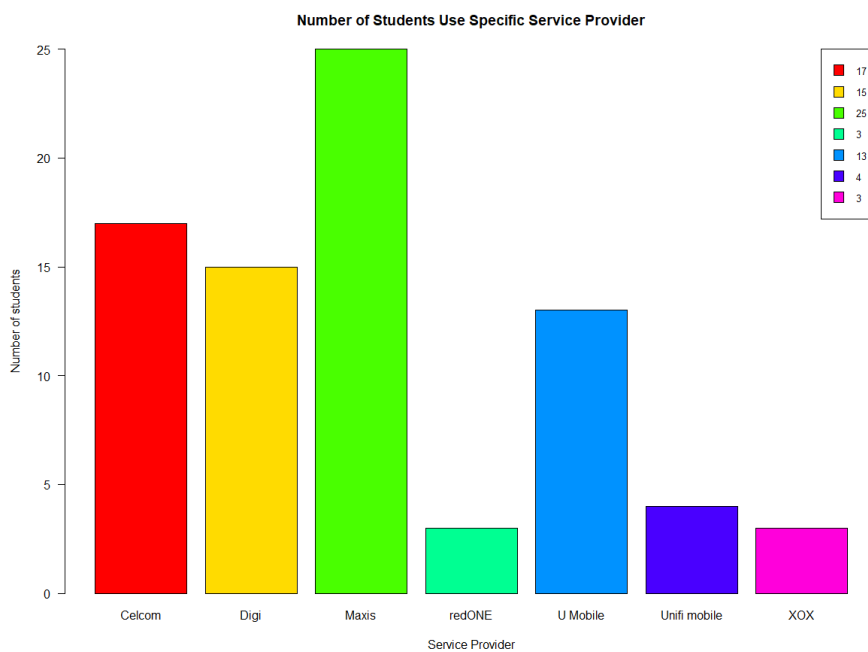


Figure 7 represents the number of students correspond to their specific service provider. Maxis has the most number of students (25) using their services, followed by Celcom (17), Digi (15), U Mobile (13), Unifi mobile (4), and the bottom lowest redONE and XOX, with 3 students each.

Figure 7

iii. Most frequent used app

Most frequent used apps:

80 responses

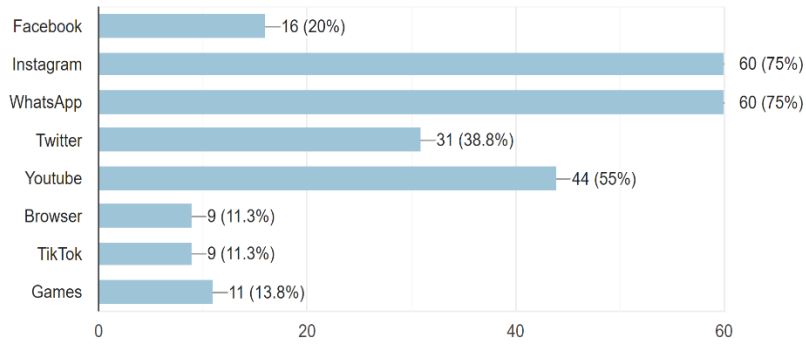


Figure 8

Figure 8 depicts the most frequent used apps by the respondents. Both apps, Instagram and WhatsApp have the same number of user (60) which also the highest compared to the other apps. Meanwhile apps such as Browser and TikTok also have the same number of users (9) and was the least frequent used apps. The number of users are in increasing order from Games (11), Facebook (16), Twitter (31) and Youtube (44).

iv. Money spend for Internet plan per month

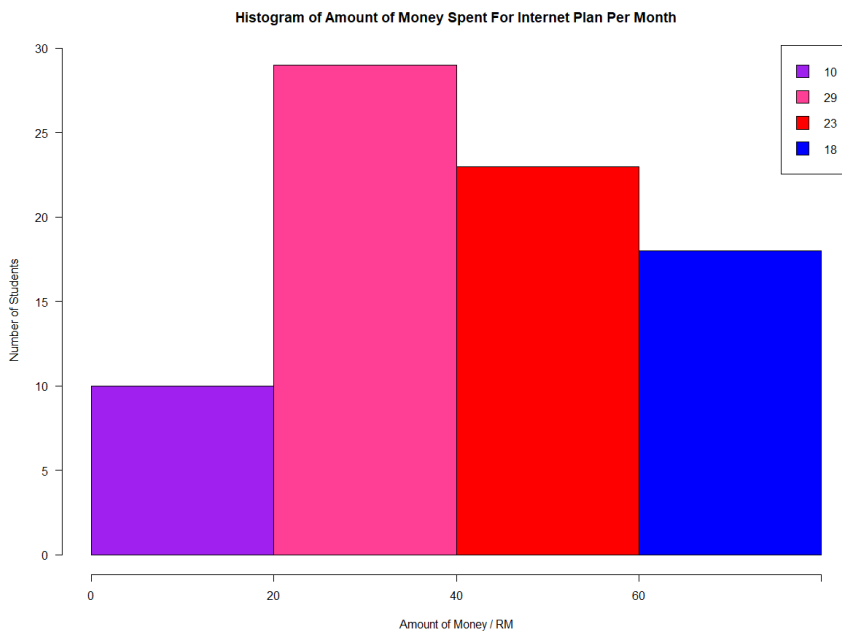
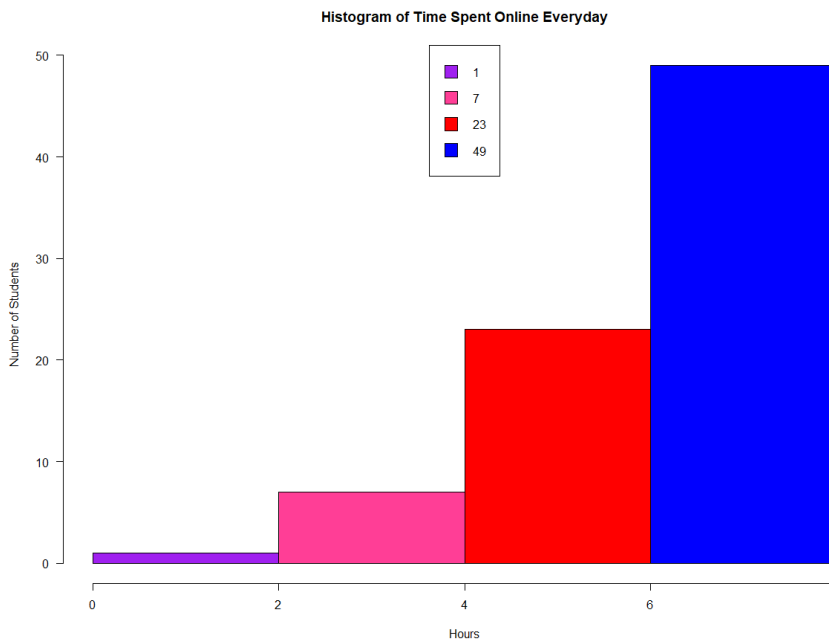


Figure 9 displays the amount of money spent for Internet plan per month. The highest amount of money spent per month are between RM20 to RM40 while the lowest are between 0 to RM20.

Figure 9

v. Time spent online



In Figure 10, most of the respondents spent more than 6 hours per day online which is 50. Only 1 respondent that spent time online less than 2 hours per day.

Figure 10

vi. Average Data Usage

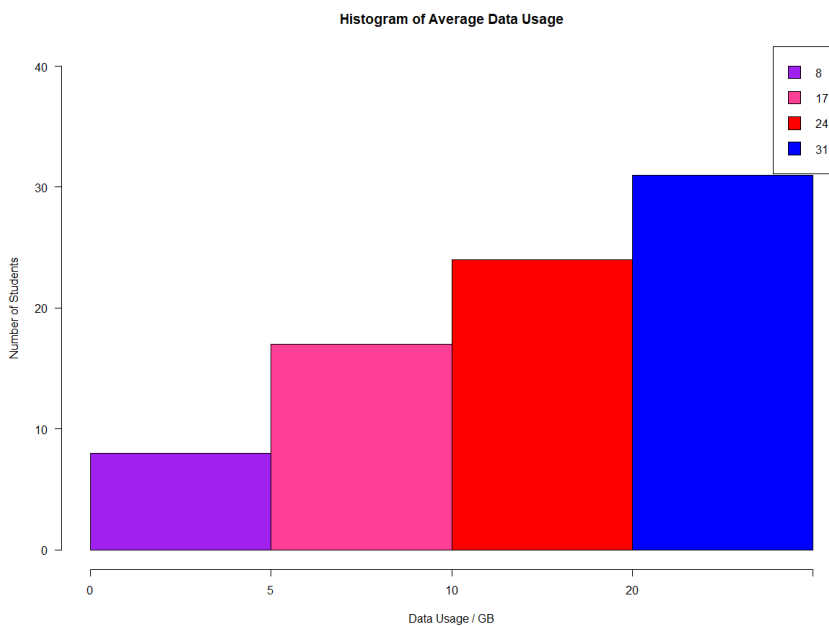


Figure 11, displays the average data usage, most of students use more than 20GB(31) data per month followed by 10GB-20GB(24), then 5GB-10GB(17) and lastly the least 0GB-5GB(8)

Figure 11

i. Average Internet Speed

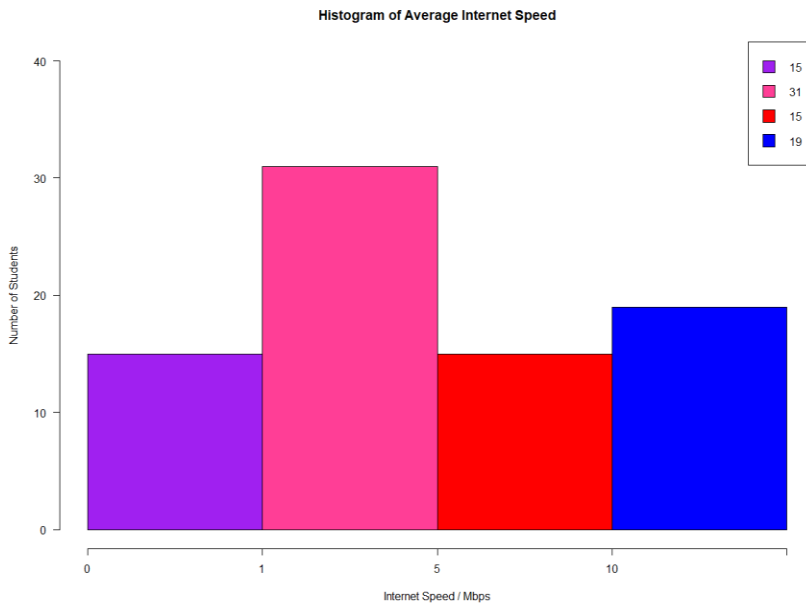


Figure 12, displays the average internet speed. 31 students pick between 1-5 Mbps, followed by more than 10Mbps(19) and 15 students for both between 0-1 Mbps and 5-10 Mbps.

Figure 12

6.3 Satisfaction rating of telecommunication service provider

i. Quality of Internet Coverage

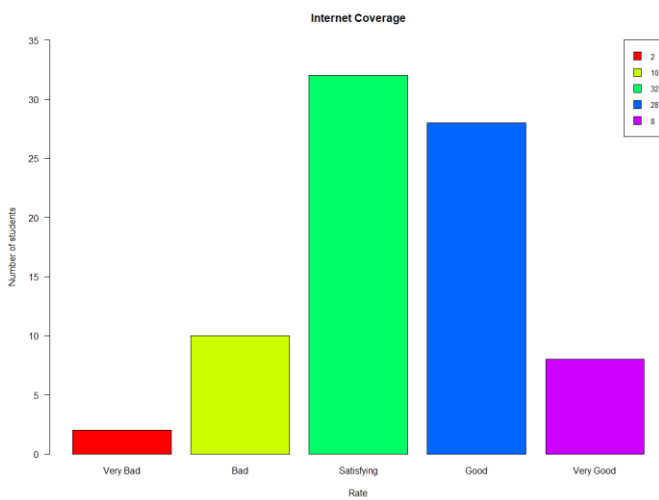


Figure 13 portrays the respondents' satisfaction rate regarding the quality of internet coverage. Most of the respondents (32) have the rate "Satisfying" for the internet coverage, followed by "Good" (28), "Bad" (10), "Very Good" (8), and "Very Bad" (2).

Figure 13

ii. Quality of Download Speed

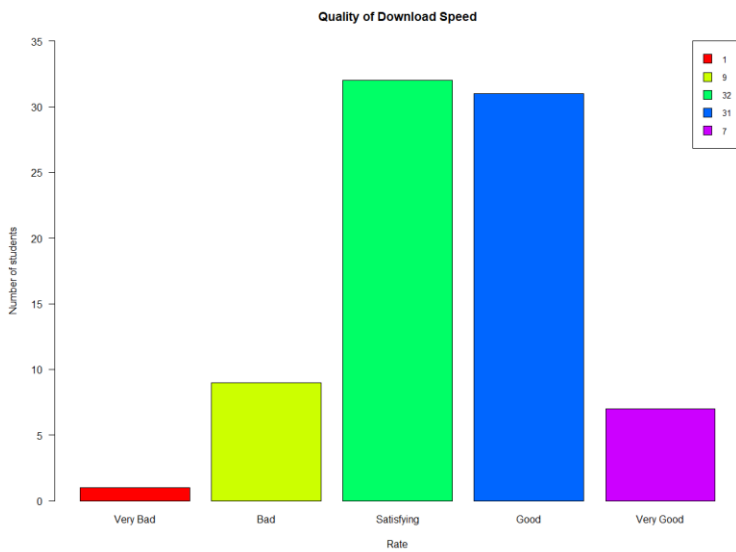


Figure 14 conveys the respondents' satisfaction rate regarding the quality of download speed. 32 respondents responded with "Satisfying", 31 for "Good", 9 for "Bad", 7 for "Very Good", and the least was "Very Bad" with 1 response.

Figure 14

iii. Quality of Video Streaming

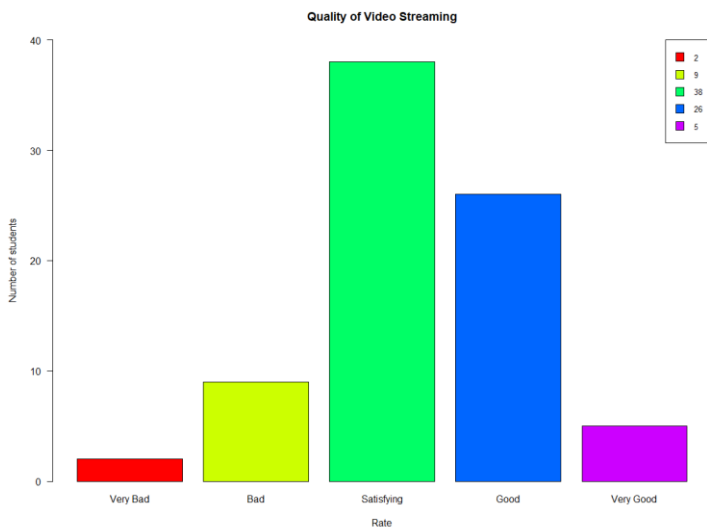


Figure 15 shows the respondents' satisfaction rate regarding the quality of video streaming. The responses are 38 "Satisfying", 26 "Good", 9 "Bad", 5 "Very Good", and 2 "Very Bad".

Figure 15

iv. Overall Satisfaction

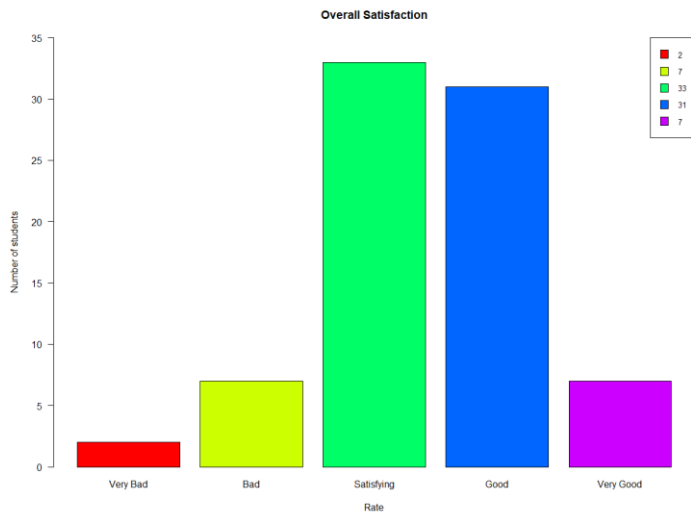


Figure 16 illustrates the respondents' overall satisfaction. The responses are 33 "Satisfying", 31 "Good", 7 "Bad", 7 "Very Good", and 2 "Very Bad".

Figure 16

v. Quality of Internet Coverage over Various Service Provider

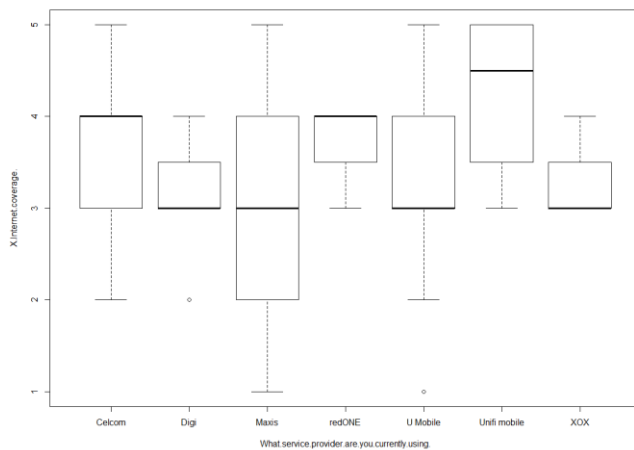


Figure 17 depicts the relationship between the service provider users currently using and the satisfaction rate of internet coverage. Some of the respondents agreed that service providers such as Celcom, Maxis, U Mobile, and Unifi Mobile have the highest satisfaction rate for internet coverage (5). But for Maxis, it is noted that the lowest satisfaction rate is 1 while for its competitor rated at 2 (Celcom), 2(U Mobile), and 3(Unifi Mobile).

Figure 17

vi. Quality of Download Speed over Various Service Provider

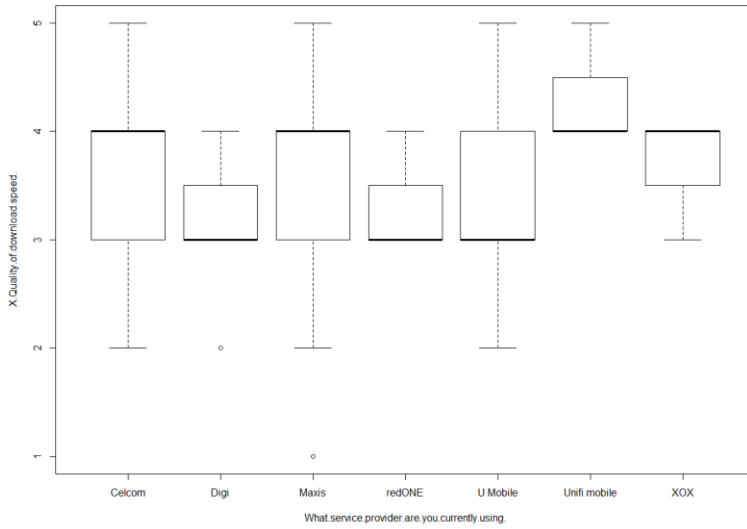


Figure 18 illustrates the relationship between the service provider users currently using and the satisfaction rate of quality of download speed. Based on the figure, there are 4 service providers that have the highest satisfaction rate (5) which are Celcom, Maxis, U Mobile, and Unifi Mobile. Among these four service provider, three of them (Celcom, Maxis, U Mobile) have the same lowest satisfaction rate (2) while Unifi Mobile has better lowest satisfaction rate which is 4.

Figure 18

v. Satisfaction Rate of Internet Coverage over Download Speed

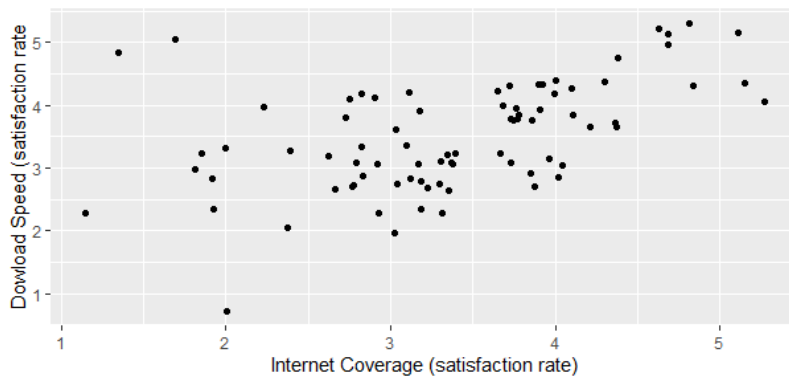


Figure 19 portrays the satisfaction rate of internet coverage over download speed. Based on the figure, it shows that more respondents have their rate of satisfaction higher than 3 for both internet coverage and download speed compared to the ones that responded with satisfaction rate lower than 3.

Figure 19

7.0 Conclusion

From the survey findings, we can conclude that the most used service provider is Maxis and the preferred plan is post-paid. Furthermore, the average time spent online per day is more than 6 hours. Another significant finding is the average data usage per month is more than 20GB per month and the average expenditure on internet plan per month is RM40 to RM60. The survey found that the most frequent used applications are Instagram and WhatsApp. The respondent ranked the internet coverage, quality of download speed and quality of video streaming as satisfied/good. The overall satisfaction with the service provider was rated as satisfied/very satisfied.

Appendix

Appendix A Questionnaires

Gender *

- Male
- Female

Which year of studies are you currently in?

- Year 1
- Year 2
- Year 3
- Year 4

How old are you?

- 19
- 20
- 21
- Other: _____

Which college are you from? *

Choose

KTDI

KTHO

KTC

KTR

KP

KRP

K9&K10

KTF

KDSE

KDOJ

currently using? *

What service provider are you currently using? *

- Celcom
- Digi
- Maxis
- U Mobile
- Other: _____

Type of plan used: *

- Prepaid
- Postpaid

Average time spent online per day: *

- 0 - 2 hours
- 2 - 4 hours
- 4 - 6 hours
- More than 6 hours

Average data usage per month: *

- < 5GB
- < 10GB
- < 20GB
- ≥ 20GB

How much do you spend for your Internet plan per month? *

- <RM20
- < RM40
- < RM60
- ≥ RM60

Average Internet speed: *

- < 1.0Mbps
- < 5.0Mbps
- < 10Mbps
- >10Mbps

Most frequent used apps: *

- Facebook
- Instagram
- WhatsApp
- Twitter
- Youtube
- Browser
- TikTok
- Games

Rank the following statements: *

1-Very Bad, 2-Bad, 3-Satisfying, 4-Good, 5-Very Good

	1	2	3	4	5
Internet coverage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality of your download speed	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Quality of your video streaming	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall satisfaction which includes customer service etc	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>