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SECI2143- PROBABILITY AND STATISTICAL DATA ANALYSIS

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06

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Group:

03

Title of Assignment:

PROJECT 1

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1.0 INTRODUCTION

Nowadays, shopping service either online or offline has become a popular trend in this society and most of the offline shops have online shopping websites where everyone can buy things from there. Everyone, especially IPT students have their own shopping preference either online or offline. The online shopping trend formed because of the pandemic covid-19 that restricted citizens from going shopping at stores because the government wanted to cut the chain of the virus from being spread. However, we did not have a clear view about the shopping preference among IPT students because online and offline shopping both have their own benefits. Therefore, our group conducted a survey with the topic of “ Shopping Preference Among IPT Students’ “. The purpose of this project is to study the shopping preference among IPT students whether they prefer online or offline shopping because each of us have different preferences, especially to buy something related to size. From this project, we can see the graph of shopping preference whether they prefer online or online shopping, what category of item that they usually spend on, what influences them to buy those things and more. We are really interested to know what's’ the shopping preference among IPT students that they usually use whenever buying any items. Is it worth it for them to spend it online or offline? At the same time, we are expecting they will prefer online shopping because it is more convenient for them as students to buy it online rather than going out to the mall to buy something that you can get if on the website.

2.0 DATA COLLECTION

The aim of this project is to study the preferences of IPT students on shopping. Therefore, to discover more about these preferences, data was collected from IPT students. Some of the main focuses of this study are knowing students' preference between online and offline shopping, main factors that influence them to shop and the category of items that they usually bought.

The data that was collected and used in this project is Primary data. This is because this data was collected through a questionnaire. The variables that were measured in this study were grouped into qualitative and quantitative. The variables were listed in the table below according to their type.

Qualitative Data	Quantitative Data
Gender	Age
Nationality	Monthly income
Current study	How much they spend on shopping
Have an income	
What influence them to buy things	
If shopping as a student is a must	
How often they shopping	
Type/Category of items they usually shopping on	
Type/Category of Items of their last purchase	
Shopping preference	
Why prefer online shopping	
Reliability of online shopping	
How satisfied they are with online shopping	

Why prefer offline shopping	
Reliability of offline shopping	
How satisfied they are with online shopping	

Table 1

The variables that were listed in the table above, were measured by using a questionnaire that was distributed among IPT students. This questionnaire was created by the group members on Google Form. To distribute this questionnaire, the links of the Google Form that contains the questionnaire was shared with the respondents.

Each respondent needs to answer 13 questions on the first part of the questionnaire. Then, they need to answer another three questions on the second part of the questionnaire. The total of questions that need to be answered by each respondent will be 16 questions. However, the total question on the questionnaire is 19 because for the second part of the questionnaire, there are two sets of questions. The respondent will only receive the set of questions that is suitable for their choices on part one of the questionnaire.

This data was collected around 30th April of 2022 until 7th May of 2022. After the data was collected, it will be extracted and imported to Excel. Next, this data will be analysed, summarised, and presented by using graphical representations such as box plot, stem-and-leaf plots, histogram, pie chart, scatter plot, bar chart, and frequency distribution. The questions, answers and level of measurement of the questionnaire was listed in table 2 below.

Questions	Answers	Level of Measurement
1. Gender	<ul style="list-style-type: none"> • Male • Female 	Nominal

2. Age (Years)	<ul style="list-style-type: none"> ● 14-19 ● 20-25 ● 26-31 ● 32-37 	Ratio
3. Nationality	<ul style="list-style-type: none"> ● Local Student (Malaysian) ● International Student (non-Malaysian) 	Nominal
4. Current study	<ul style="list-style-type: none"> ● Foundation/Matriculation/A-Level/STPM ● Diploma ● Bachelor's Degree ● Master's Degree ● Doctoral Degree 	Ordinal/Interval
5. Do you have an income?	<ul style="list-style-type: none"> ● Yes ● No 	Nominal
6. Monthly income (If applicable)	<ul style="list-style-type: none"> ● RM 0 - RM 1 500 ● RM 1 500 - RM 3 000 ● RM 3 000 - RM 4 500 ● RM 4 500 - RM 6 000 ● RM 6 000-RM 7 500 	Ratio

7. What influence you to buy things	<ul style="list-style-type: none"> • Cultural factors (Eg: Culture, religion) • Social factors (Eg: Social media, family) • Personal Factors (Eg: Occupation, lifestyle) • Economic Factors (Eg: Asset) • Psychological Factors (Eg: Motivation) 	Nominal
8. Do you think shopping as a student is a must?	1 (Very Unlikely) to 5 (Very Likely)	Ordinal/Interval
9. How often do you shopping?	1 (Rarely) to 3 (Frequently)	Ordinal/Interval
10. How much did you spend on shopping?	<ul style="list-style-type: none"> • RM0 - RM100 • RM100 - RM200 • RM200 - RM300 • RM300 - RM400 	Ratio
11. What type/category of items you usually spend on?	<ul style="list-style-type: none"> • Groceries • Fashion (clothing, shoes, accessories, etc..) • Electronics (computers, mobile, home appliances, etc..) • Health & Beauty (vitamins, supplements, makeup, etc..) 	Nominal

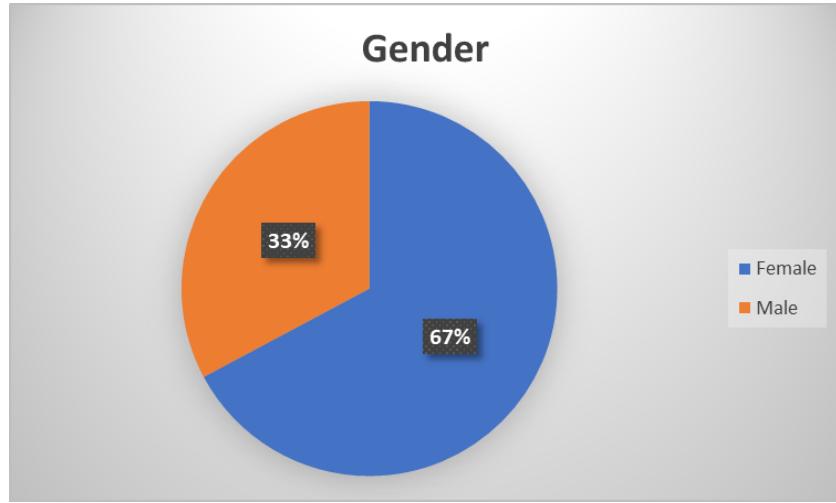
<p>12. From what type/category was your last purchase?</p>	<ul style="list-style-type: none"> ● Groceries ● Fashion (clothing, shoes, accessories, etc..) ● Electronics (computers, mobile, home appliances, etc..) ● Health & Beauty (vitamins, supplements, makeup, etc..) 	Nominal
<p>13. Do you prefer online or offline shopping?</p>	<ul style="list-style-type: none"> ● Online ● Offline 	Nominal
<p>14. Why did you prefer online shopping? Please select your reasons.</p>	<ul style="list-style-type: none"> ● Cheaper ● Can buy and order anywhere at anytime ● Always have a great deals ● A lot of vouchers available to be used ● More convenient because I don't have to drive to the destination 	Nominal
<p>15. How reliable online shopping is?</p>	1 (Unreliable) to 5 (Very Reliable)	Ordinal/Interval
<p>16. How satisfied are you with online shopping?</p>	1 (Unsatisfied) to 5 (Very Satisfied)	Ordinal/Interval

<p>17. Why did you prefer offline shopping? Please select your reasons.</p>	<ul style="list-style-type: none"> • Item we bought, reach our expectations • Do not have to wait for a long time to get the item • Chances to be scammed is low • Easy to claim warranty and exchange the item • Can explore places while shopping 	Nominal
<p>18. How reliable offline shopping is?</p>	1 (Unreliable) to 5 (Very Reliable)	Ordinal/Interval
<p>19. How satisfied are you with offline shopping?</p>	1 (Unsatisfied) to 5 (Very Satisfied)	Ordinal/Interval

Table 2

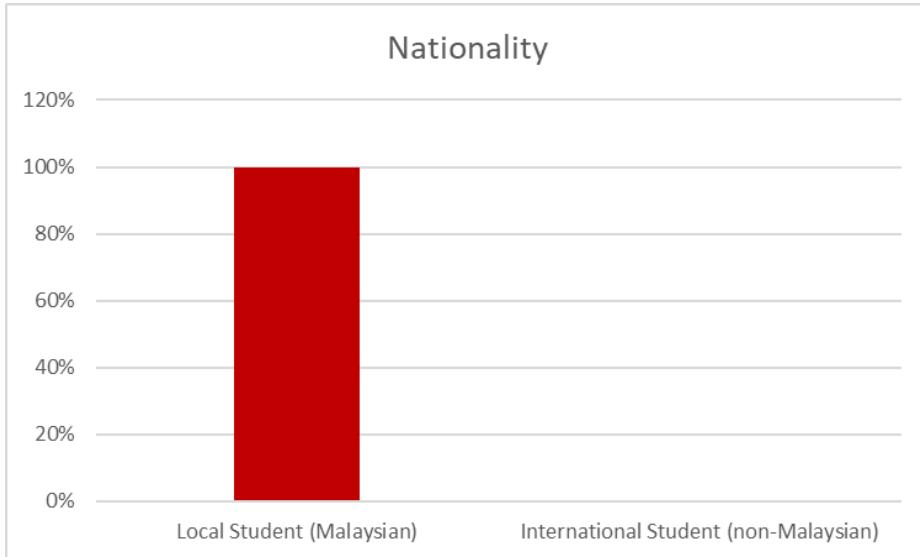
3.0 DATA ANALYSIS AND RESULT

3.1 *QUALITATIVE DATA*



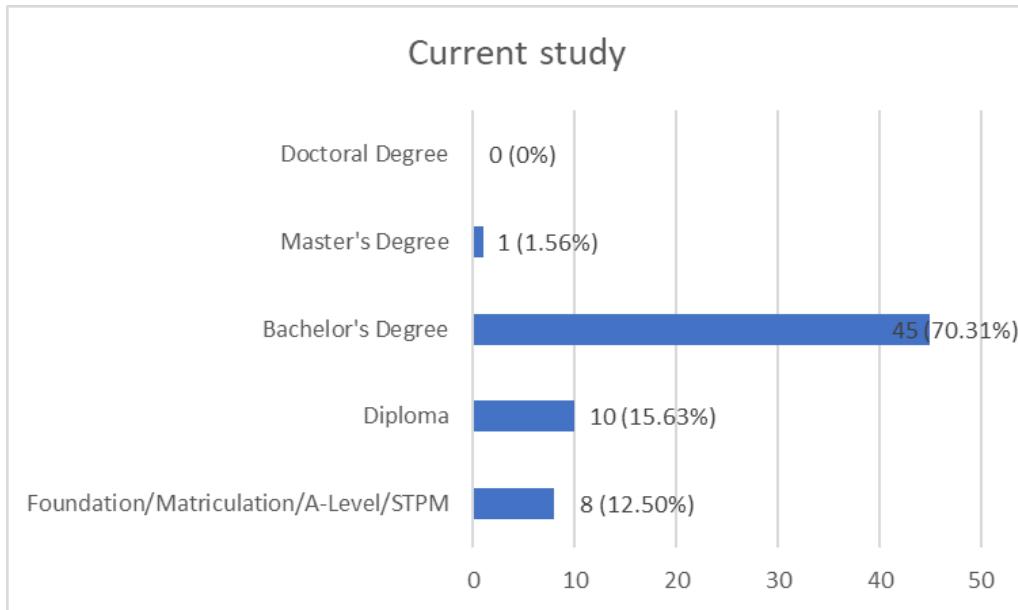
Discussion:

Based on the pie chart above, the percentage of female respondents is 67% while the percentage of male respondents is 33%.



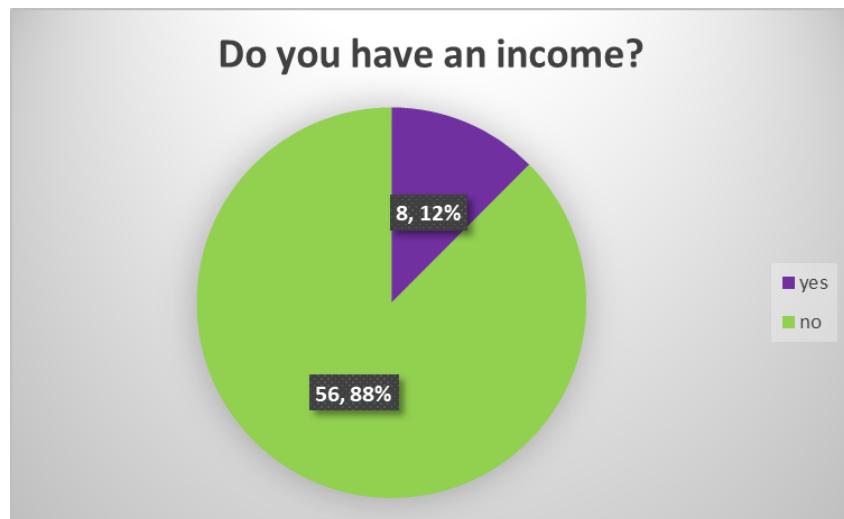
Discussion:

While we were conducting this survey, there were only students from Local Student (Malaysian) responding with 100% of respondents. There were no International Students (non-Malaysian) taking part in this survey.



Description:

In this survey, the academic level of study with the highest number of participants is Bachelor's Degree with 70.31% which is equal to 45 persons. The second highest goes to Diploma level with 15.63% which is equivalent to 10 persons. Meanwhile, the ranking went by Foundation/Matriculation/A-Level/STPM level at number 3 with 8 people (12.50%) followed by Master's Degree level with only one person (1.56%).

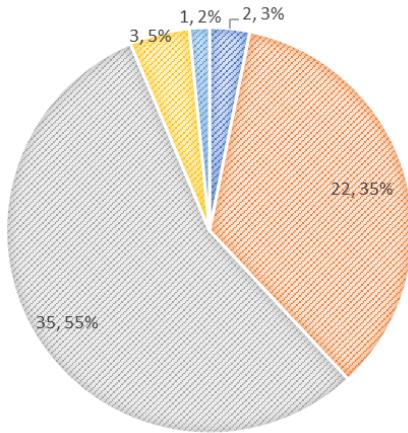


Description:

Based on the pie chart above, only 12% of people, which is equivalent to 8 persons, have an income. Meanwhile, the rest of the respondents with 56 persons (88%) do not have any income.

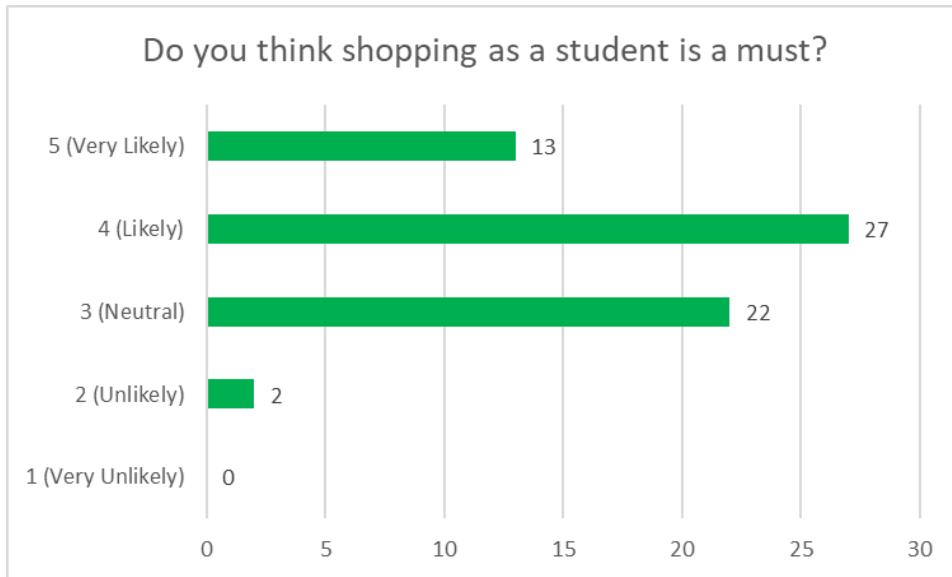
WHAT INFLUENCE YOU TO BUY THINGS?

- Cultural factors (Eg: Culture, religion)
- Personal Factors (Eg: Occupation, lifestyle)
- Psychological Factors (Eg: Motivation)
- Social factors (Eg: Social media, family)
- Economic Factors (Eg: Asset)



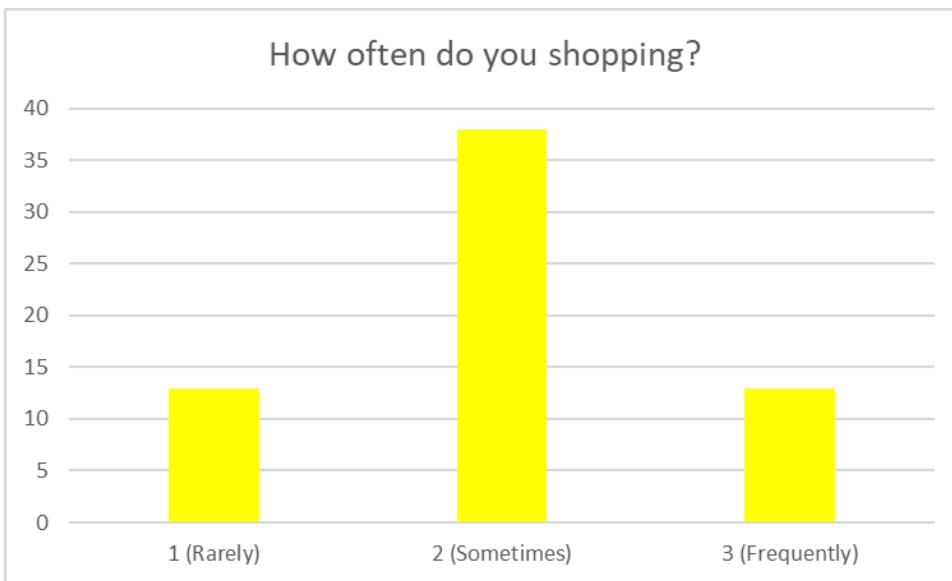
Description:

Personal Factors like occupation and lifestyle are the most reasons why people buy things because 35 people (55%) were influenced by them. The second highest influence was Social Factors like social media and family with 22 people (55%). Next, with 3 people (5%), Economic Factors was placed third most influential factors to buy things followed by Cultural Factors like culture and religion which was voted by 2 people (3%). Lastly, Psychological Factors like motivation were the least influential factors to buy things.



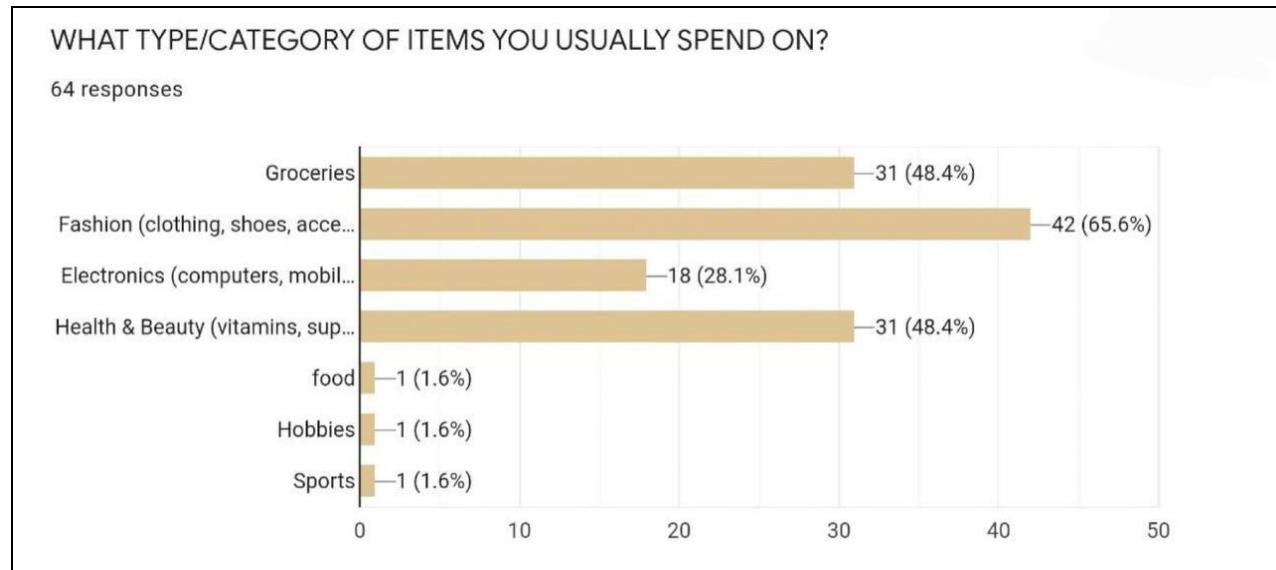
Description:

In this question, we were reviewing whether shopping is necessary or not for a student. Therefore, most of the students with 27 out of 64 students were likely to agree shopping is a must for a student.



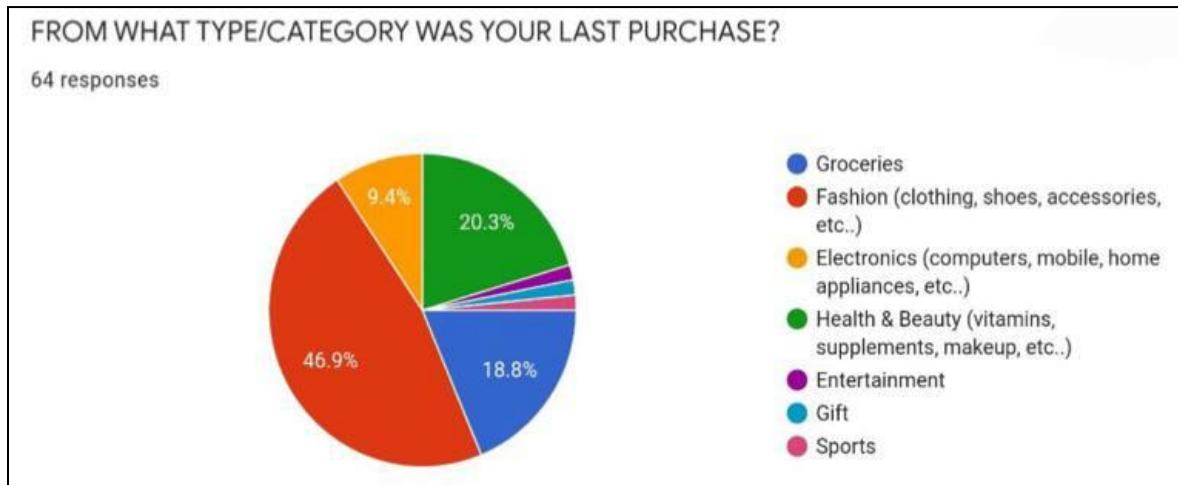
Description:

Based on the question asked above, the majority of students voted for ‘Sometimes’ as the frequency of shopping that they usually do.



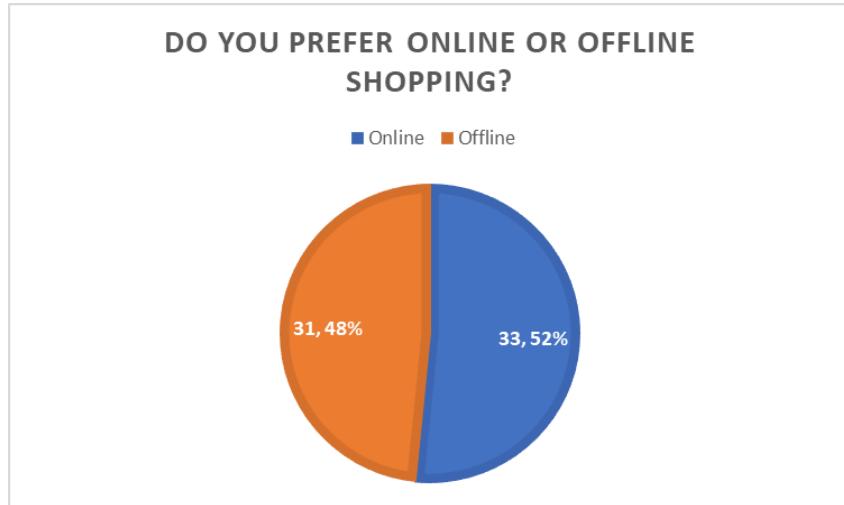
Description:

Based on the bar chart above, the most type of item students prefer to spend their money on was Fashion with 42 votes (65.6%). In second place, Groceries and Health & Beauty shared the same number of votes with 31 votes (48.4%), followed by Electronics with 18 votes which equals 28.1%.



Description:

Based on the pie chart above, students tended to spend the most on Fashion with 46.9% out of 64 students. While in second place, Health & Beauty got the second most voted type of purchase with 20.3%. The third and fourth place went to Groceries and Electronics with 18.8% and 9.4% respectively. The least type of purchase voted by the students was Entertainment, Gift and Sports.



Description:

In this question, the number of students that prefer Online Shopping was slightly higher than Offline Shopping with 33 votes (52%) compared to 31 votes (48%) for Offline Shopping.



Description:

The most voted reason for preferring Online Shopping was because of “students can buy and order anywhere at any time” with 28 votes (84.8%). Meanwhile, the second highest reason Online Shopping was preferred was because of “always have great deals” with 21 votes (63.6%). The reason “cheaper” got 17 votes (51.5%) followed by 15 votes which equals 45.5% for “a lot of vouchers available to be used”. The least voted reason was “more convenient” with only 1 vote which equals 3% of total votes.



Description:

In this dot plot graph, most students voted for 4 out of 5 scale for the reliability of online shopping with 16 votes out of 33 votes.



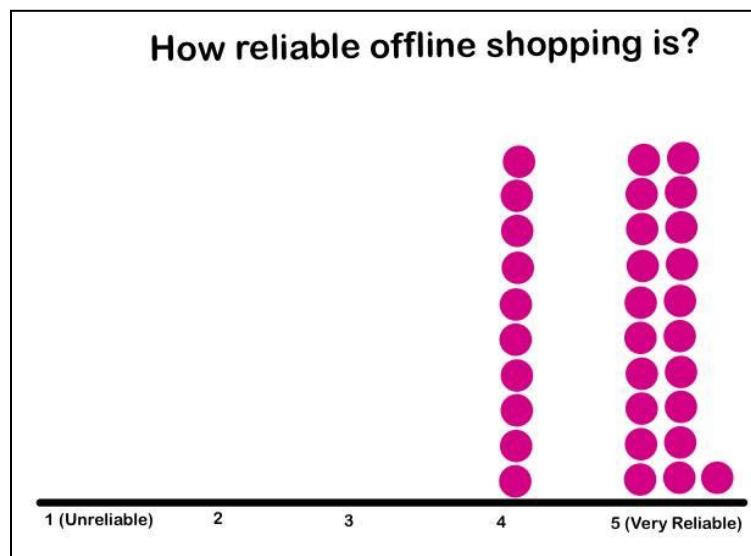
Description:

In this dot plot graph, most students voted for 4 out of 5 scale for their satisfaction on online shopping with 21 votes out of 33 votes.



Description:

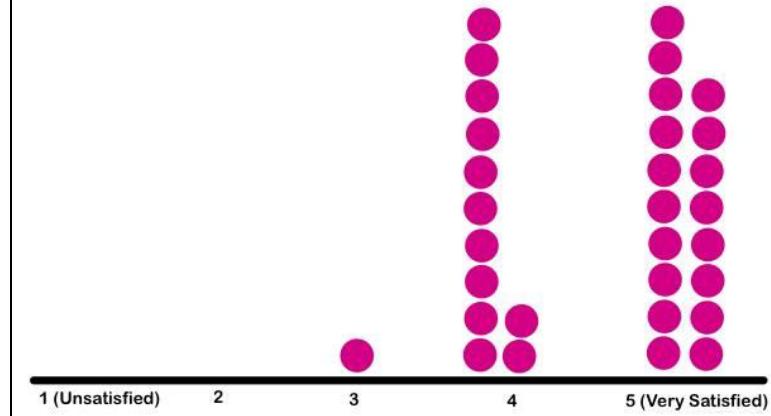
Based on the bar chart above, the most voted reason why students prefer offline shopping over online shopping was because “the item we bought, reaches our expectations” with 25 votes (80.6%). The second most voted reason was “do not have to wait for a long time to get the item” with 24 votes (77.4%) followed by the reason “chances to be scammed is low” with 19 votes (61.3%). The least voted reason was “can explore places while shopping” with only 1 vote which equals 3.2% followed by the reason “easy to claim warranty and exchange the item” with 17 votes which is equivalent to 54.8%.



Description:

In this dot plot graph, most students voted for 5 out of 5 scale for the reliability of offline shopping with 21 votes out of 31 votes.

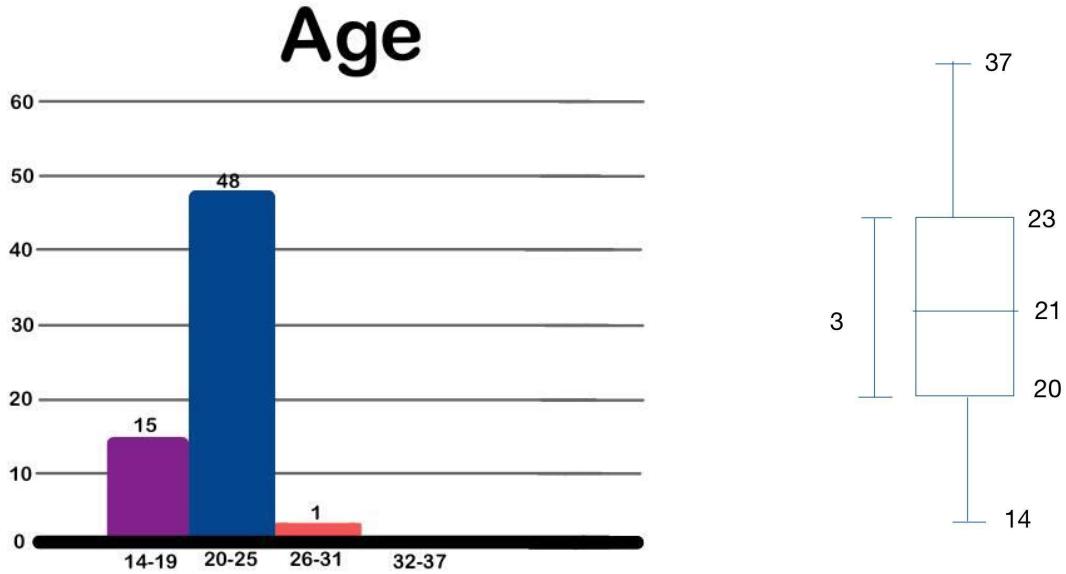
How satisfied are you with offline shopping?



Description:

In this dot plot graph, most students voted for 5 out of 5 scale for their satisfaction on offline shopping with 18 votes out of 31 votes.

3.2 QUANTITATIVE DATA



Measure of central tendency:

Mean = 21.19

Mode = 22.06

Median = 21.77

Data profile:

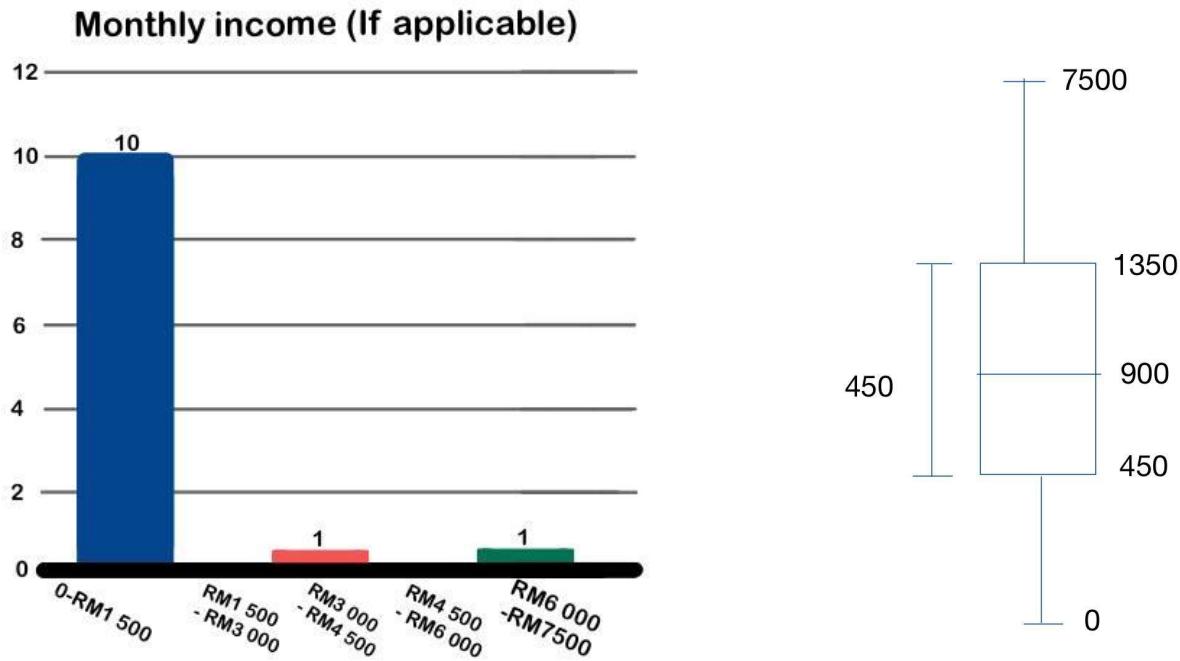
1st Quartile = 20

3rd Quartile = 23

Interquartile = 3

Description:

This histogram and boxplot show that the majority of our respondents are between the age of 20-25 years old.



Measure of central tendency:

Mean = 1500

Mode = 789.47

Median = 900

Data profile:

1st Quartile = 450

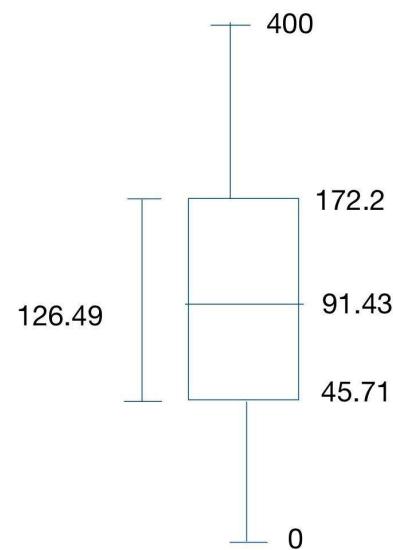
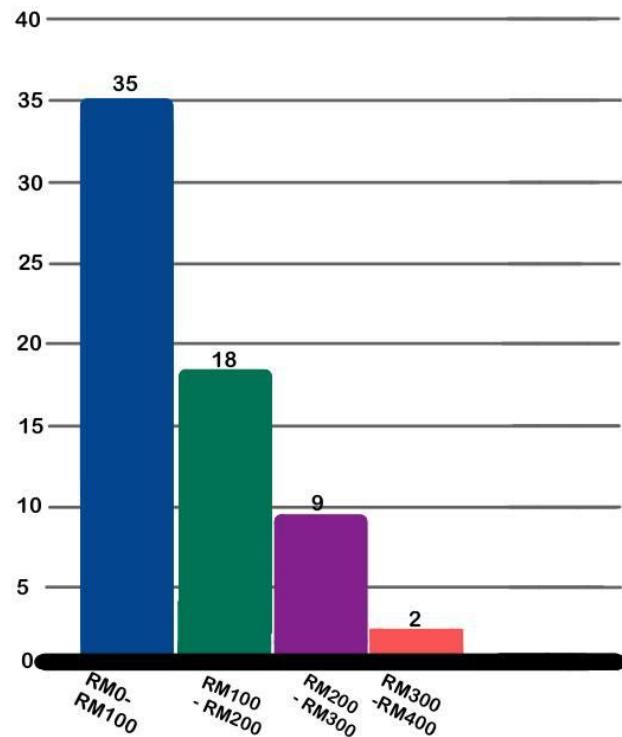
3rd Quartile = 1350

Interquartile = 450

Description:

This histogram and boxplot shows that the majority of our respondents who have an income have income less than RM1500.

How much did you spend on shopping?



Measure of central tendency:

Mean = 115.63

Mode = 67.31

Median = 91.47

Data profile:

1st Quartile = 45.71

3rd Quartile = 172.20

Interquartile = 126.49

Description:

This histogram and boxplot show that the majority of our respondents spend less than RM100 on shopping.

4.0 CONCLUSION

In conclusion, based on the group sample that we did a survey on shopping preferences among IPT students, which is representing the population of IPT students, more than half of our respondents are female students, whose ages are around 20 years old and 25 years old. All our respondents are Malaysian, and most of them are taking their bachelor's degree. When being asked for their income, most of the respondents do not have an income, and even if they do have an income, most of them have lower than RM 1500. Next, for the main factor that influences these respondents to buy things, the majority of them picked personal factors such as occupation and lifestyle. They also choose weekly as to how often they shopped and a range from RM 100 to RM 500 for the amount that they spend for shopping. Other than that, for the category of items that they usually buy, the top three categories that were chosen are fashion, groceries, and health & beauty. For the category of the last item they purchased, the majority of them choose fashion. When asked about their preference between online and offline shopping, most of our respondents choose online. However, when these people are being asked about how reliable online shopping is and how satisfied they are with online shopping, the majority of these respondents choose online shopping is quite reliable and they are quite satisfied with online shopping. This is the opposite of those who choose offline shopping because the majority of these students think offline shopping is reliable and they are also very satisfied with offline shopping.

From this project, we manage to learn some new things such as techniques for using Excel and Google Form. Truth to be told, we are familiar with the names of Excel and Google Form, however, to use both of them without any instructions and directions is quite difficult for us. But after a few discussions between the members and a little bit of research on the internet, we managed to utilize both Excel and Google Form as one of the tools that we used to complete our project. For Google Form, we use it to create our questionnaire and distribute it among our respondents. The results of our questionnaire were collected from Google Form, as this platform can present the data collected in a readable form, and we only need to read and interpret this data into the data that is suitable to put on our report. While for Excel, we use it to create the graph that we put on our report.

Finally, completing this project was not an easy task, nevertheless, we still managed to complete it. We are glad that we were given a chance to complete this task, because, from this task, we gained a lot of new experiences, such as creating an adequate questionnaire and finding the correct respondents. We also manage to learn about IPT students' preferences when they shop. With all these new experiences, we are assured that later in the future, if we need to complete a task that is similar to this project, we will be able to do it easily, without any trouble.

5.0 REFERENCE

- https://www.researchgate.net/publication/327175534_Online_Shopping_Behaviours_among_university_Students