DATA COLLECTION AND DATA QUALITY

"WHY STUDENTS FAVOR IPHONE?"

Project Report

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Table of Content

WHY STUDENTS FAVOR IPHONE?

Abstract:

We are trying to carry out the research to study the opinions of the students regarding iPhone to draw our conclusion that supports our hypothesis i.e., **Why Students Favor iPhone?** We will be conducting a survey with the variables supporting our hypothesis. Later, we will try to draw the conclusion using the data obtained from the survey.

Keyword: Survey, iPhone Features, Student's opinions, Analysis.

1. Introduction:

"Why Students Favor iPhone?"

In today's world, people keep on purchasing iPhone even with their high price tag (Jason, 2018). But we are interested in investigating why students are getting attracted to it and what's making students to like and favor iPhone (Matyszczyk, 2018).

The result of this survey can be able to give a valuable information for the people about what draws the student's choices to buy iPhones. Knowing student's mode of choice is the influencing factor to conduct this survey.

This survey is interesting because, people thinks that the iPhones has a good usability, consistency, mainly makes people feel good about themselves and whether students favor just because of the brand (Spoonauer, 2019). By the end of this survey we are able to say why students favors iPhones by considering the various factors and to provide the key factors that makes students to favor iPhone.

1.1. Objectives:

We are considering students opinions on various key features of iPhone and try to analyze the factors that making students to favor iPhones.

1.1.1. Research Objectives:

In order to carry out this survey we will be considering the following features which are considered to be strong parameters of iPhone (Kelly, 2018).

  a. **GUI:** User interface is one of the important parameter to make people to like the product.
  b. **Camera:** Since, today everyone is taking photos with their phones, it makes people to like the phone that has a good camera quality.
  c. **Performance:** Performance is a feature that every user requires in day to day life, hence it will be a major factor for a person to like it.
  d. **Brand value:** Since, Apple has a very good brand value, it attracts the people to buy iPhones just as the mark of status.
  e. **Built Quality:** Looks (appearance) and materials used for a product also plays a major role in attracting people.
  f. **Security:** Always people prefer their data to be safe and secure.
  g. **IOS environment:** If the user is using IOS previously then he/she will prefer to use IOS in future.
  h. **Uniqueness:** iPhones are the only phones that has IOS, which is not offered by any other smartphones.

We will verify how much users are liking these above features, which will help us to prove our hypothesis.

1.1.2. Goals of the study:

As a result, we will be able to reach the following objectives.

- Why students favor iPhones?
- What are the main factors that makes students to favor iPhone?

1.1.3. Literature Review:

In the first step a literature review was done. The objectives of a literature review were to understand the usability, usability attributes in the iPhones. Another objective of a literature review was acquiring the understandability of the different statistical usability evaluation methods. The mentioned keywords are used to find out the related data from all available databases. However, some of the authentic knowledge resources were listed as BTH Library's books, IEEE, ACM digital library, Engineering Village, Google Scholar, Springer-link, Scopus, and Ebrary.

2. Research Methodology and Design Plan:

Here we describe the methods used in collecting data, such as questionnaire and analyzing data. Validity and reliability are processes that were implemented in gathering and analyzing of the data.

2.1. Method Overview:

Steps that were taken to collect data for this research study and also the reason for choosing the methods adopted in this research and the relevancy of each of the methods employed in this research study are described here. It also mentions the sample size, the demography of the respondent, the validity and the reliability of this study.

The questionnaire and the methodology were designed to reflect the concepts used in this research. After that, the data obtained from the questionnaire was gathered and analyzed.

In this research we used quantitative research method. By using quantitative method, we will be able to quantify and find possible emerging trends. Our research focuses on gathering student's opinion via survey and generalizing it across groups of students to explain a particular phenomenon.

- This will be followed up with an online quantitative surveying students via student's university mail id.
- To identify key findings and action points on which to build our analysis to support our hypothesis.

Finally, the conclusion was drawn from the analysis. The sample technique employed in this research is a nonprobability sample method given that questionnaire was distributed to every student but will be answered by random students, which gives a fair representation of the study population.

2.2. Data Collection Plan:

Data is collected which can be used in analyzing the research study. Data is obtained through questionnaires given to respondents. Structured questionnaires were distributed to Högskolan Dalarna students through university e-mail. The choice of using pre-coded questionnaire is based on Fisher view on structured questionnaire. According to Fisher (Fisher &

Stenner, 2011) "If you want to quantify the research material, then it is best to use a pre-coded approach. He further notes that if you want to compare the views and experiences of a great many people, then it is easiest if pre-coded approaches are used". Given that this research study is aimed to know the student's opinions on Apple Smartphone and as recommended by Fisher pre-coded questionnaire was adopted.

2.2.1 Sampling:

Our population is all students in Högskolan Dalarna. A cluster sampling technique (Borucki, Card, & Lyle, DECEMBER 1975) will be employed considering Borlänge and Falun campus as ours clusters.
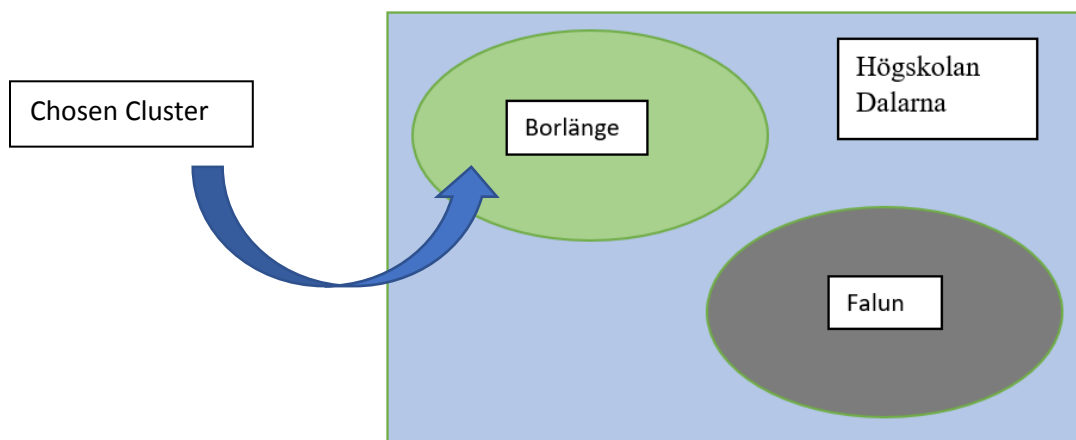

Fig: Sample frame.

The sampling frame will be all students in Högskolan Dalarna. The sample will get us a mix of all age groups of students and also a mix of gender.

We are deciding the sample size of the population by some calculations as below:

- n = Sample size $n = Z_\propto^2 \frac{P(1-p)}{(\widehat{P}-P)^2}$
- $Z_\propto$: is the confidence interval that we take it at 95%. = 1.96
- P (proportion): when the researcher has no idea (no idea from any older survey) about which is the proportion, it's usually common to take P=0.5 (biggest sample size).
- ($\widehat{P}$-P) is the acceptable error level which we assume it 10%.
- Therefore, n = 1.96 ^2 (0.5*(1-0.5)) / 0.1^2 = 3.8416 * 0.25 / 0.01 = 96 respondents are needed.

According to the above formula we should consider a minimum of 96 students, but we will consider as much as possible students from Borlänge campus. Our questionnaire will be sent to all the students in Borlänge campus, but response will be random. We believe that our sample is considered to be adequate and representative for this research study.

2.3. Questionnaire Design:

2.3.1. The Purpose of Questionnaire:

The questionnaire is design to translate information needed into a set of specific question. In this research information regarding students favoring iPhones are translated into simple questions to obtain respondents view on the above concept. Each of the questions in the

questionnaire was based on the research tool used in the conceptual framework which are key features.

The questionnaire is designed to be brief, simple, and clear, covering the relevant aspects of the models used. According to Fisher it is recommended to Keep the questionnaire as short as possible and give it a logical and sequential structure so that the respondent can easily see what the questionnaire is about and can follow its themes as they develop .Divide the questionnaire into parts that correspond to the various issues you are asking 6 questions about. Ask the easy questions first and the hard ones last. Keep any personal questions (as long as they are justified) until last.

2.3.2. Questionnaire Design Checklist:

We will analyze the questionnaire in line with DESAP checklist number 27 in section Survey Design where it discusses about items determining the quality of the questionnaire design, we will provide our understanding for each point in the list.

Below table represents all the items mentioned in DESAP checklist which are considered important as the 'items determining the quality of the questionnaire design'. We have also included our understanding as a column where we considered how far the particular item has been applied to the design of this survey questionnaire.

DESAP checklist; Items determining the quality of the questionnaire design

Item	Applied		
	Yes	No	Somehow
Attractive design appearing professional and businesslike	✓		
In the introduction, the title or subject of the survey, the identification of the sponsor, the explanation of the purpose of the survey, the request of the respondent's co-operation, information about the conducting authority and confidentiality protection are provided			✓
There are titles or headings for the separate sections		✓	
Graphic additives like color use, shading, illustrations, symbols or bold writing are employed in an optimal way to indicate where the respondents should answer or to direct their attention		✓	
The opening questions are applicable to all respondents and/ or easy to answer	✓		
Words and concepts are always consistently used	✓		
Each question is adequately justifiable	✓		
Questions follow the respondents' logic			✓
The order of the questions does warrant an optimal direction through the filters			✓
Time reference periods and units of response are always clear			✓
On the last page there is space for additional comments by respondents		✓	
Instructions and additional guidance		✓	
A free phone number for contact in the case of questions		✓	

2.3.3. Data Quality Assurance:

The questionnaire will be sent to a test sample of 10 respondents initially, to see if any adjustments are needed, e.g. if the questions have sufficient answer options. It can be difficult to get insights into influences and thought processes via a quantitative survey, but we aim to still capture this by using a mix of multivariate and a few open-ended questions.

The questionnaire will be short in order to avoid respondent fatigue. Our ambition is to reduce respondent bias by offering multiple answer choices and randomizing the order of the options. We also note that the respondents' information must not be passed on to any third party. After pilot survey a few learnings were achieved:

- Recollection of decision process was better than expected.
- Some questions were usually answered in answers to previous questions.
- Few of the irrelevant question from questionnaire were removed and helped us to revise the questionnaire to have better results.

Necessary amendments to the questionnaire were made before launching the survey.

3. Data Collections Process:

We have sent the structured questionnaires to all of the students registered in Högskolan Dalarna of Borlänge campus via university mail id. While sending we make sure that it sent only to the students through the help of register. Later, once the questionnaires are answered by the student's data is stored in the database. We try to gather as many responses as possible and use it for data analysis.

4. Data Analysis:

Raw data were collected, sorted and matched to lay the ground for analysis. Data is examined carefully such that no irrelevant responses are considered. In our questionnaire we used a question **Are you an iPhone user currently?** in order to eliminate the responses made by the non-iPhone users.

This research study is based on finding the student's opinions on iPhone from student perspective. Quantitative data analysis is to turn raw numbers into meaningful data through the application of rational and critical thinking. Quantitative data analysis may include the calculation of frequencies of variables and differences between variables. A quantitative approach is usually associated with finding evidence to either support or reject hypotheses you have formulated at the earlier stages of your research process. After conducting the survey now, we had the data which are not in numbers. So, we converted them into numbers.

Variables:

*1. Gender

○ Male   -   1

○ Female   -   0

This variable was used in order to know the variation of opinions on the basis of gender.

*2. Are you an iPhone user currently?

○ Yes   -   1

○ No   -   0

This variable was used in order to eliminate the responses made by the non-iPhone users, who fills the form despite of the disclosure in the description of the survey.

*3. What was your previous phone that you used?

○ iPhone   -   1

○ Others   -   0

This variable was used in order to find whether they are used to the IOS environment which makes them to use iPhones only and also to know that iPhones are consistent in satisfying the iPhone users.

*4. Rate the following aspects regarding performance.

	Very poor	Poor	Average	Good	Excellent
User Interface	○	○	○	○	○
Battery Backup	○	○	○	○	○
Camera	○	○	○	○	○
Display	○	○	○	○	○
Network Speed	○	○	○	○	○
Speaker	○	○	○	○	○

- Very Poor - 1
- Poor - 2
- Average - 3
- Good - 4
- Excellent - 5

This category of variables was used in order to know which of the feature in the iPhone is more important to make student to favor iPhone.

*5. Why did you purchase iPhone?

☐ Brand Value   -   if selected 1 or else 0

☐ Uniqueness   -   if selected 1 or else 0

☐ Appearance/Built Quality   -   if selected 1 or else 0

☐ Others   -   if selected 1 or else 0

This category of variables was used in order to know the intension of the students to purchase iPhone which helps our hypothesis to give the important factor that makes students to get attracted and favor it.

*6. Are you willing to buy iPhone as your next phone?

○ Yes   -   1

○ No   -   0

○ Not Sure   -   2

This category of variables was used in order to know whether the iPhone is satisfactorily to the user or not. If they are willing to buy an iPhone again that means they find as a good product and makes them to favor iPhone.

5.   Results:

The following results are based on the responses obtained.

Variables	Response 1	Response 2	Response 3	Response 4	Response 5	……
Gender	0	1	0	1	1	….
Are you an iPhone user currently?	1	1	1	1	1	….
What was your previous phone that you used?	1	1	0	0	1	….
User Interface	4	5	3	4	4	….
Battery Backup	5	4	3	4	4	….
Camera	5	4	4	5	3	….
Display	3	4	3	4	4	….
Network Speed	4	5	3	4	5	….
Speaker	5	5	4	3	3	….
Brand Value	1	1	1	1	0	….
Uniqueness	0	0	0	1	1	….
Appearance/Built Quality	1	1	1	1	1	….
Other Reasons	1	0	1	0	1	
Are you willing to buy iPhone as your next phone?	1	1	1	0	1	….

1. Gender
15 responses

● Female
● Male

60%

40%
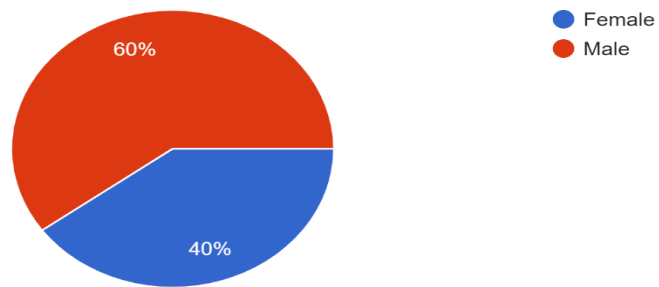
2. Are you an iPhone user currently?
15 responses

● Yes
● No

100%
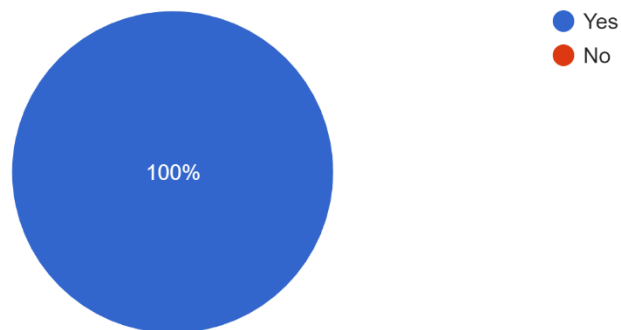
3. What was your previous phone that you used?
15 responses
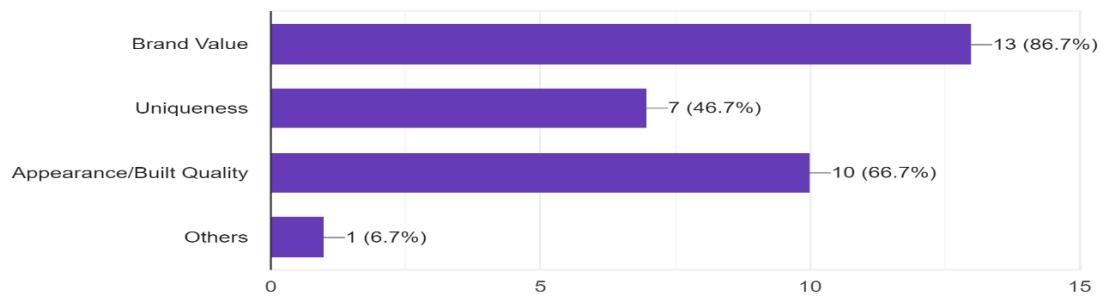
● iPhone
● Others

53.3%

46.7%
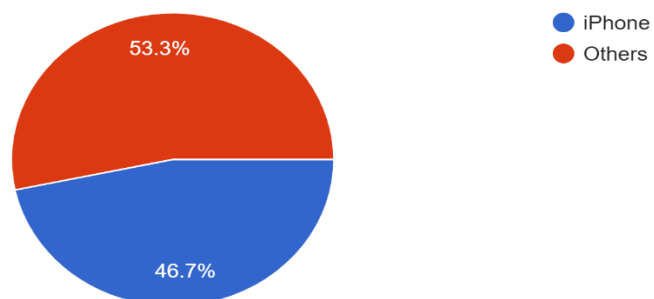
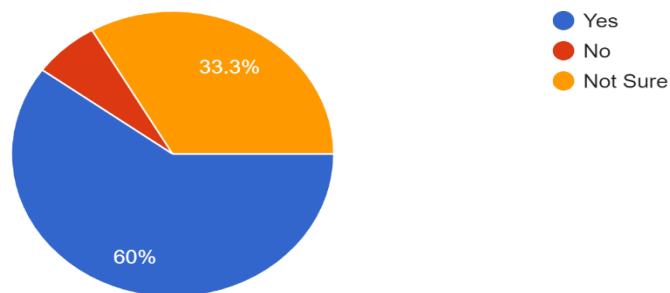## 4. Rate the following aspects regarding performance.
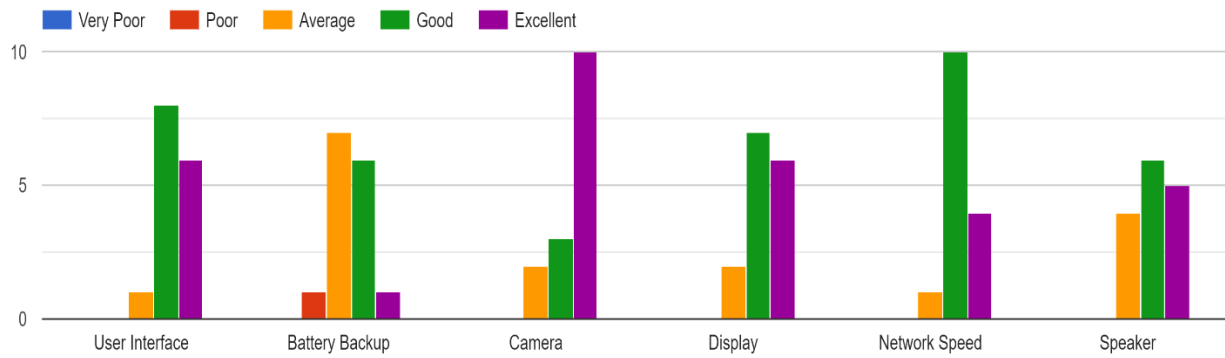
5. Why did you purchase iPhone?
15 responses

6. Are you willing to buy iPhone as your next phone?
15 responses

Based on the above responses we can see the following results.

- We can see that majority of the students switched from other smartphones to iPhones and rest of them are consistent and continued using iPhone.
- We can see that the best features in iPhone from the survey are Camera, Network Speed and User Interface.
- Speaker and Battery backup are not the features that draws the attention of the students.
- Brand value and appearance/built quality are the main factors that attracting students towards iPhones.
- Most of the students are happy to buy iPhone as their next smartphone.

6. Conclusion:

The students are favoring iPhone because of the following reasons

1. Brand
2. Built Quality
3. Camera
4. Network speed
5. User Interface

All the reasons above make the students of entire Högskolan Dalarna to like iPhone and make them to favor iPhone and to be bias over the other smartphones.

6.1. Limitations and Future work:

One of the flaws in this work might be that the research does not covers the following factors:

- Our sample size is quite small to represent the whole population, only Högskolan Dalarna students of Borlänge campus, which represents small portion of university students. So, the findings of this research might not be the reflection of student's opinion for the whole university given the scope of this research study.
- Limited consideration of features.
- Non consideration of iPhone model.
- Financial aspects.

Our future work is to address all the above limitations to make a much more valuable research.

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Appendix:

Questionnaires:

Why Students Favor iPhone?

Description:

This survey is carried out in order to know the key factors which drives the student's towards iPhone i.e., by using this factors we will be able to carry out our analysis to answer our research question.

This questionnaires will have 9 questions which takes around 3-5 minutes to complete this survey. This questionnaires will have some questions with yes or no answers. Some questions are to be rated between 1 to 5, 1 being poor and 5 being excellent.

Kindly help us to carry out this research by filling the below form.

NOTE: Take the survey only if you are using iPhone currently.

*1. Gender

○ Male

○ Female

*2. Are you an iPhone user currently?

○ Yes

○ No

*3. What was your previous phone that you used?

○ iPhone

○ Others

*4. Rate the following aspects regarding performance.

	Very poor	Poor	Average	Good	Excellent
User Interface	○	○	○	○	○
Battery Backup	○	○	○	○	○
Camera	○	○	○	○	○
Display	○	○	○	○	○
Network Speed	○	○	○	○	○
Speaker	○	○	○	○	○

*5. Why did you purchase iPhone?

☐ Brand Value

☐ Uniqueness

☐ Appearance/Built Quality

☐ Others

*6. Are you willing to buy iPhone as your next phone?

○ Yes

○ No

○ Not Sure

Thank You…

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