Sampling Project

~ By Sandhya Poojari (SS2122470)

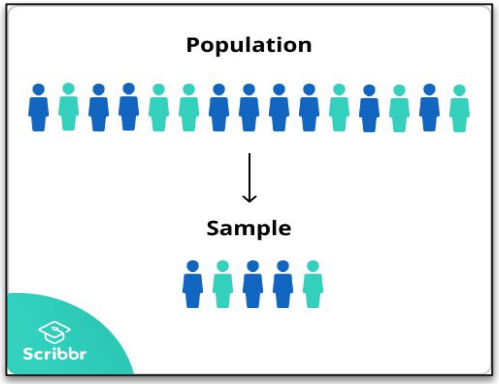
Introduction

As a part of Sem 3 activity, we have conducted a survey on "Sampling Project" topic to understand the concept and do some analysis based on the actual survey passed on to our classmates with the help of some questions in the Google form. After getting the responses from the survey questions on the Sampling topic, we have worked on the data with the help of Excel to get clarity and results of the sub-topics included in it. Further slides, will help us to get started and know more about this topic on what we have understood, analysed and got results based on the Survey.

Definitions

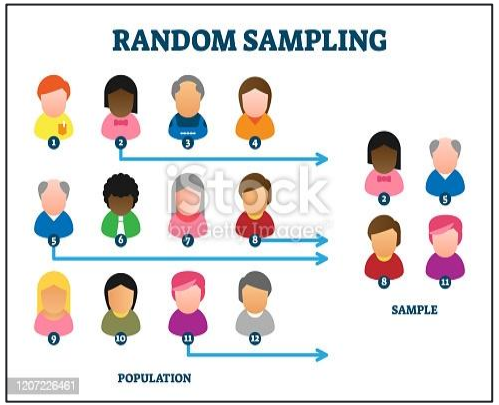
1) *Sample :*

- In statistics and quantitative research methodology, a sample is a set of individuals or objects collected or selected from a statistical population by a defined procedure.
- The elements of a sample are known as sample points, sampling units or observations.



2) *Random Sampling :*

- Random sampling is a part of the sampling technique in which each sample has an equal probability of being chosen.
- A sample chosen randomly is meant to be an unbiased representation of the total population.



Definitions:

3) Data Collection:

- Data collection is **the process of gathering and measuring information on variables of interest**, in an established systematic fashion that enables one to answer stated research questions, test hypotheses, and evaluate outcomes.

- For example, in retail sales, data might be collected from **mobile applications, website visits, loyalty programs and online surveys** to learn more about customers.

4) Data Analysis:

- Data Analysis is the process of systematically applying statistical and/or logical techniques to describe and illustrate, condense and recap, and evaluate data.

- Examples:
  - Social media statistics instantly register anytime there's a visitor or a post to a page.
  - Cell phone bills can pull up months of calling data to show you patterns of usage.
  - Sensors monitor the changing weather and report that data to you instantly on your smartphone.

Definitions:

5) Standard Error:

- The term "standard error" is used to refer to the standard deviation of various sample statistics, such as the mean or median.

- For example, the "standard error of the mean" refers to the **standard deviation of the distribution of sample means taken from a population**.

6) Standard Deviation:

- In statistics, the standard deviation is a measure of the amount of variation or dispersion of a set of values.

- A low standard deviation indicates that the values tend to be close to the mean of the set, while a high standard deviation indicates that the values are spread out over a wider range.

Understanding of "Data Collection And Data Analysis" with help of Survey Conducted:

Data collection :

We have considered whole class as population (N=55) and then generated random sample of 20 (n=20). Responses are collected by the sample through questionnaire consisting of two questions first based on the time spent by them on OTT platforms and second based on the subscription of OTT platform.

Data analysis :

The data was analysed with the help of Google sheets.

Analysis (for Variable) :

From the survey we have analysed that majority of the students do not spent their time on OTT platforms and some of them spend 2 hours also.

Estimation For Variable :

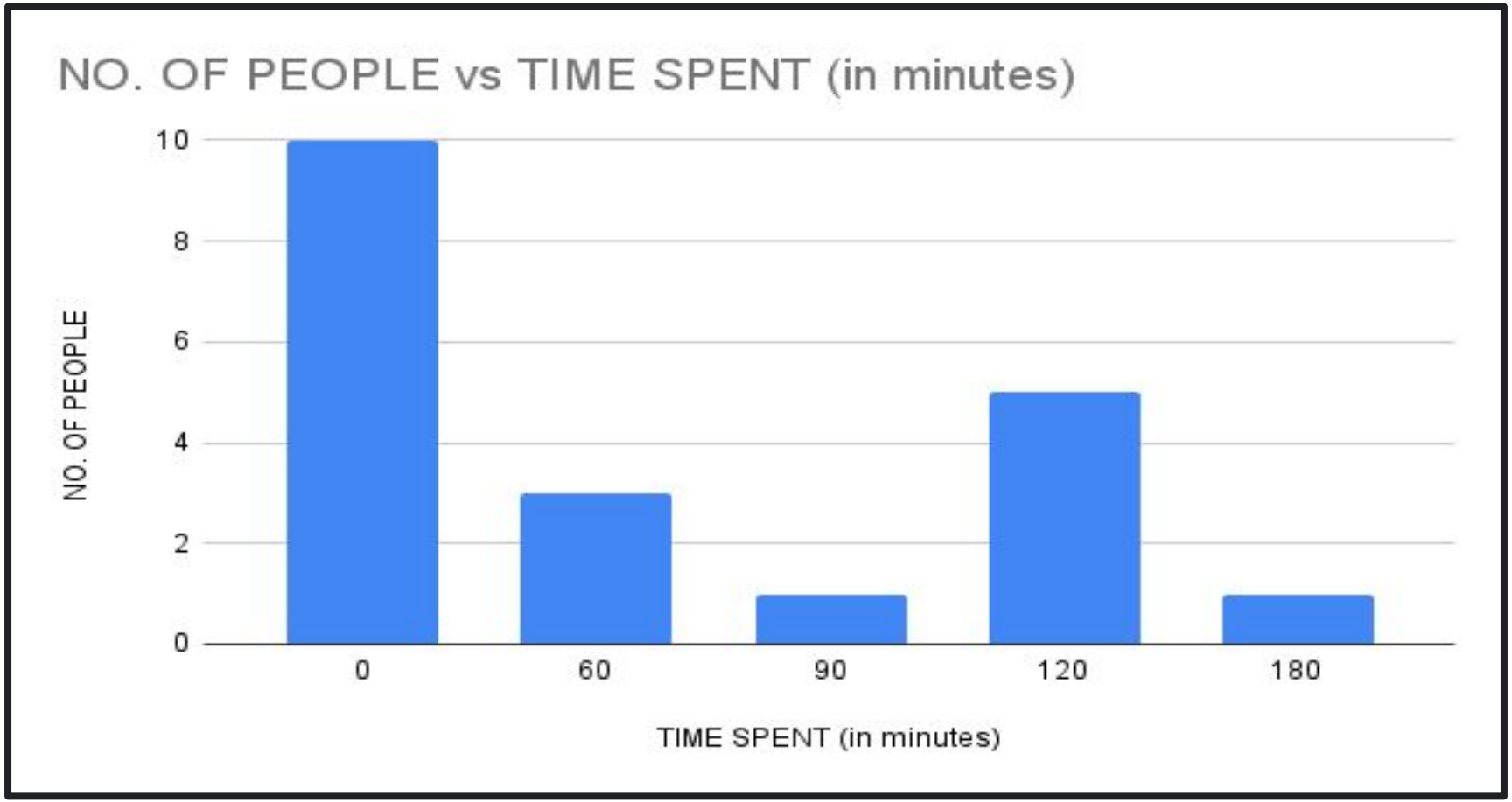
- Mean : 52.5
- Median : 30
- Mode : 0
- Sample Variance : 3588.157895
- Skewness : 0.7685636345

Column 1	
Mean	48.94736842
Median	0
Mode	0
Sample Variance	3521.052632
Skewness	0.7685636345

Analysis (for Variable) :

- Standard Deviation : 59.9012345
- Standard Error : 13.39432323
- t value : 2.093024054
- Confidence Interval : (24.46535929 , 80.53464071)

Column 1	
Standard Deviation	59.9012345
T value	2.093024054
Lower limit	-28.03464071
Upper limit	-28.03464071
Standard Error	13.39432323


NO. OF PEOPLE vs TIME SPENT (in minutes)
10
8
6
4
2
0
NO. OF PEOPLE
0
60
90
120
180
TIME SPENT (in minutes)

Analysis (for Attributes) :

From the survey we have analysed that majority of people do not have a subscription for OTT platforms.

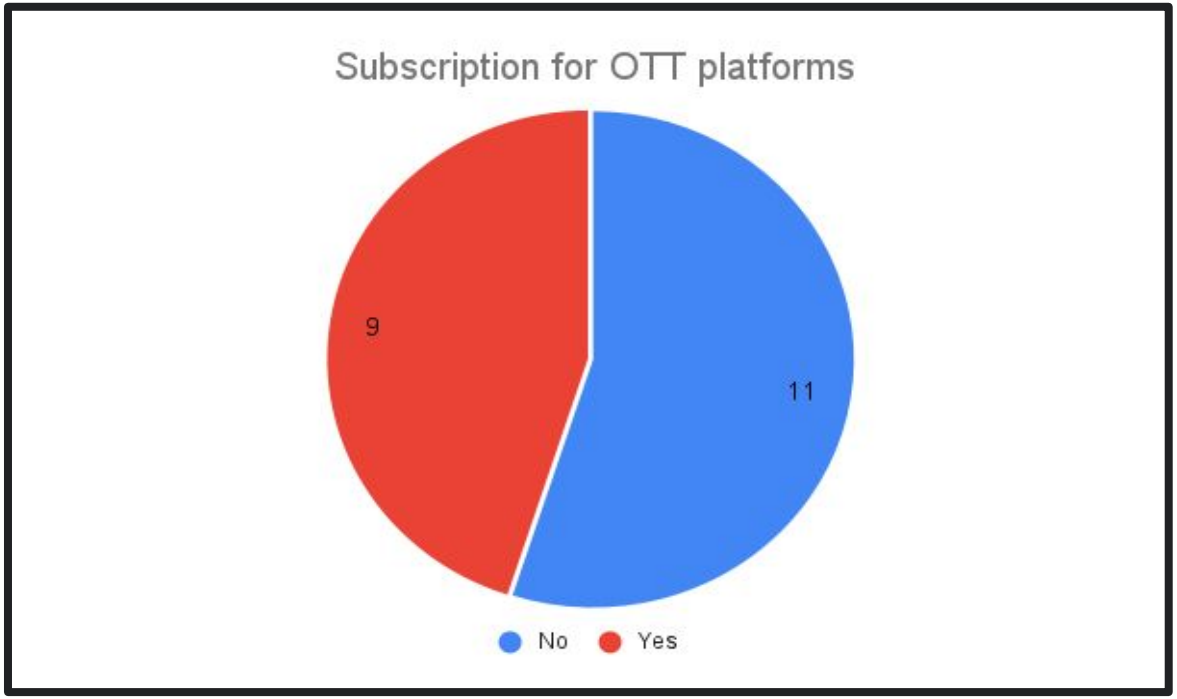
Estimation for Attribute :

- Population (N) = 55
- Sample (n) = 20
- Subject of interest = Yes
- Count of response(a) = 9
- Sample Proportion(p) = 0.45
- Variance (p)= 0.00828947368

Analysis (for Attributes) :

- Standard Error (p) = 0.09104654 68
- Confidence Interval (p) = (0.2594373875 , 0.6405626125)
- A^ = 24.75
- Variance (A^) =8.822916667
- Standard Error(A^) = 2.970339487
- Confidence Interval (A^) = (18.533008 , 30.966992)

sample proportion(p)	standard error(p)	variance (p)	confidence inten	lower limit	0.2594373875
0.45	0.0910465468	0.008289473684		upper limit	0.6405626125
A_cap	standard error(A_cap)	variance(A_cap)	confidence inten	lower limit	18.533008
24.75	2.970339487	8.822916667		upper limit	30.966992
N	n	t		q	
55	20	2.093024054		0.55	


Subscription for OTT platforms
9
11
No
Yes

Conclusion :

From our analysis we conclude below points that,

- Most of the students on an average spend 52 minutes on OTT platforms.

- Majority of them do not have subscription for OTT Platforms.

Thank You !!