

Rayat Shikshan Sanstha's
BALWANT COLLEGE, VITA
DEPARTMENT OF STTISTICS

PROJECT REPORT ON
**“Comparative Study of Online and Offline
Education”**

SUBMITTED TO
DEPARTMENT OF STTISTICS
BALWANT COLLEGE, VITA
BY

Mr. Bhosale Saurabh Vasant.
Mr. Manegaonkar Swapnil Dagadu.
Miss. Patil Priyanka Sayaji.

UNDER THE GUIDENCE OF
Miss. S. S Ghail

DEPARTMENT OF STATISTICS
BALWANT COLLEGE, VITA
2021-2022

CERTIFICATE

This is to certify that the project reported entitled
“Comparative Study of Online and Offline Education”, being
submitted by

Mr. Bhosale Saurabh Vasant

Mr. Manegaonkar Swapnil Dagadu.

Miss. Patil Priyanka Sayaji

As a partial fulfillment for the award of degree of **B.Sc.**
in **STATISTICS** of **Balwant College, Vita** is a record of bonafide
work carried out by her under supervision and guidance.

To the best of my knowledge the matter presented in
the project has not be submitted earlier.

Miss. S. S Ghail
Project guide

Mr. P.A. Gavli
Head, Department of Statistics,
Balwant College, Vita

Place: Vita
Date:

Acknowledgement

It gives me great pleasure to express my sincere thanks with deep sense of gratitude to project guide Miss. S. S. Ghail. for his valuable guidance, unfailing patience and constant encouragement during the course of the Project work. I am thankful to all teachers of Department of Statistics, Balwant College, and Vita for their kind co-operation and advice for my project work.

I thank to my entire friend for their cooperation and help which I received from them during the course of Project work throughout.

Mr. Bhosale Saurabh Vasant

Mr. Manegaonkar Swapnil Dagadu.

Miss. Patil Priyanka Sayaji

DECLARATION

We hereby declare that the project entitled "**Comparative Study of Online and Offline Education**".

It is the original work carried out by us at the Department of Statistics. This project or part of it has not been submitted previously for any other degree of any other purpose.

Place: Vita

Date:

Sr.No	Roll. No	Name	Exam Seat No.	Signature
1	1302	Bhosale Saurabh Vasant		
2	1319	Manegaonkar Swapnil Dagadu		
3	1321	Patil Priyanka Sayaji		

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INTRODUCTION

At the beginning of the new year in 2022 the coronavirus disease 2019 (covid-19) outbreak become a global public health incident and has constituted a public health emergency of international concern so far as a results the online education has been popularized the and developed the pandemic increased the not only the importance and urgency of online education but also provide an opportunity for and in the discus of online education for colleges and universities. How do teachers and students evaluate online teaching? The present manuscript combines the online courses for management and students survey of B.Sc., B.A ,B.Com, B.Cs student of Balwant College,Vita to analyses the comparison of online and offline education aiming at providing a reference for college educator to carry out teaching reform .

Learning has become one of our responsibilities since the first time we came into this world. In this learning becomes one of the things that is so important to do. Because as we have known, there are a lot of tricky things in this world which always give negative impacts on others. Since it is now the time of the pandemic, some schools from over the world must learn from home or have online classes. This must be a new thing for some people who always have face-to-face classes before COVID-19 exists. Both online learning and offline learning have positive and negative impacts. Lessons in face-to-face classes are more understandable than in online classes. Besides that, offline classes easy us to interact with the teacher properly and directly. However, offline learning is more tiring than

online learning because it needs a lot of energy to do extra things that we don't need to do in online classes, such as going to School by transportation. While in online classes, we save a lot of time because we don't need to spend our time on things that we need to do in offline classes, such as going to school, heading out to the canteen, and going home.

Based on a survey done by Balwant College Vita, 60.4% of students want to go back to face-to-face (*Offline*) classes. The reason why the students prefer face-to-face classes is because of the difficulties to understand some subjects, and some activities that cannot be done in an online class. This must be one of the most stressful things during online classes. Because once we get stuck in a matter, then it will make us stressed and bring us down. This reason will surely affect our overall life because we will not be able to concentrate on other activities. Besides that, we feel the simple tasks become more difficult than they used to be.

Data collection

For data collection, we have selected students from the Balwant College, Vita for the analysis the opinion of students on “Comparative Study of Online and Offline Education”

The data is collected randomly by stratified method. The sample size for survey is determined by Solvin's formula. It provides a simplified formula to calculate sample size is as follows:

$$n = \frac{N}{1+(N*e^2)}$$

Where, N= population size

e-level of precision

So, we have taken 232 students interview randomly. Out of which few students are belonging to urban areas and few belongs to rural area.

We apply different statistical tools to interpret the collected data. We use different graphical representations to interpret the data. We use different test to find out the results which are indicated in the objectives.

Objectives

- 1) To check the rating of offline and online learning.
- 2) To check which learning is effective for study offline & online learning.
- 3) To study the advantages of online & offline learning.
- 4) To study the disadvantages of online & offline learning.
- 5) To check the problems faced by students during online lecture.

Statistical Tools

I .Graphical representation:-

To represent our data graphically, we use the multiple bar Diagram, pie chart etc. To construct the appropriable divided bar Diagram of given data we use Microsoft excel.

A) Bar chart:-

A bar chart or bar graph is a chart Represents grouped data with rectangular bars with lengths Proportional to the values that they represent. The bars can be plotted graphically or horizontally. A vertical bar is sometimes is column bar chart.

B) Pie chart:-

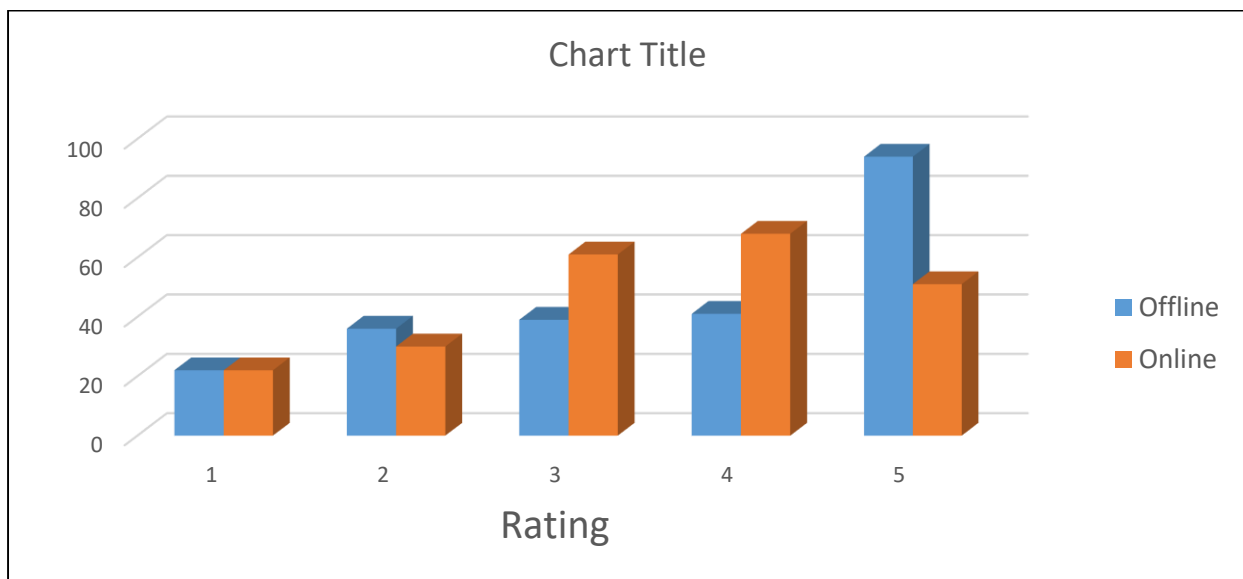
A pie chart display a data, information and Statistics in an easy to read 'pie slice' format with varying slice size Teeling you how much of on data element exists. The bigger the slice the more of that particular data was gather.

Statistical Analysis

Graphical representation:

1) Rating of Offline and Online learning:

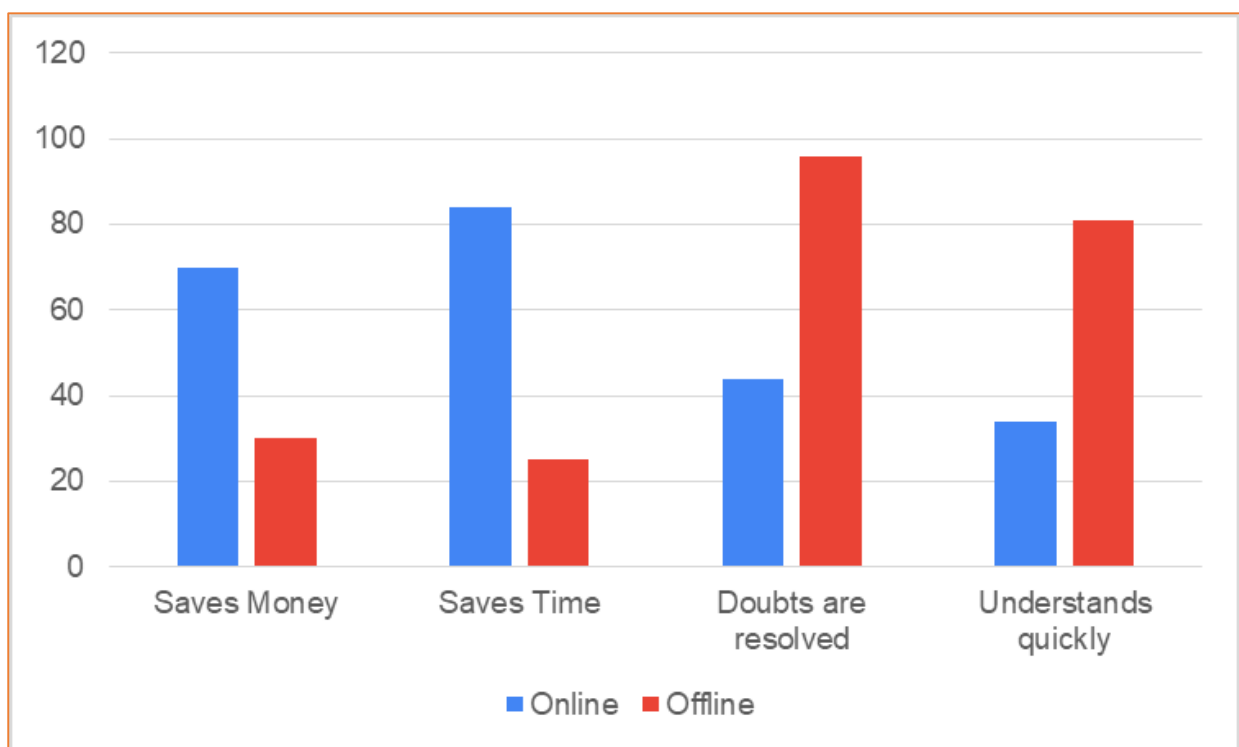
Rating	Offline	Online
1 (Poor)	22	22
2 (Fair)	36	30
3 (Good)	39	61
4 (Very Good)	41	68
5 (Excellent)	94	51
Grand Total	232	232



Conclusion: From the above graph we conclude that the offline learning have most rating.

2) Reasons for offline and online learning:

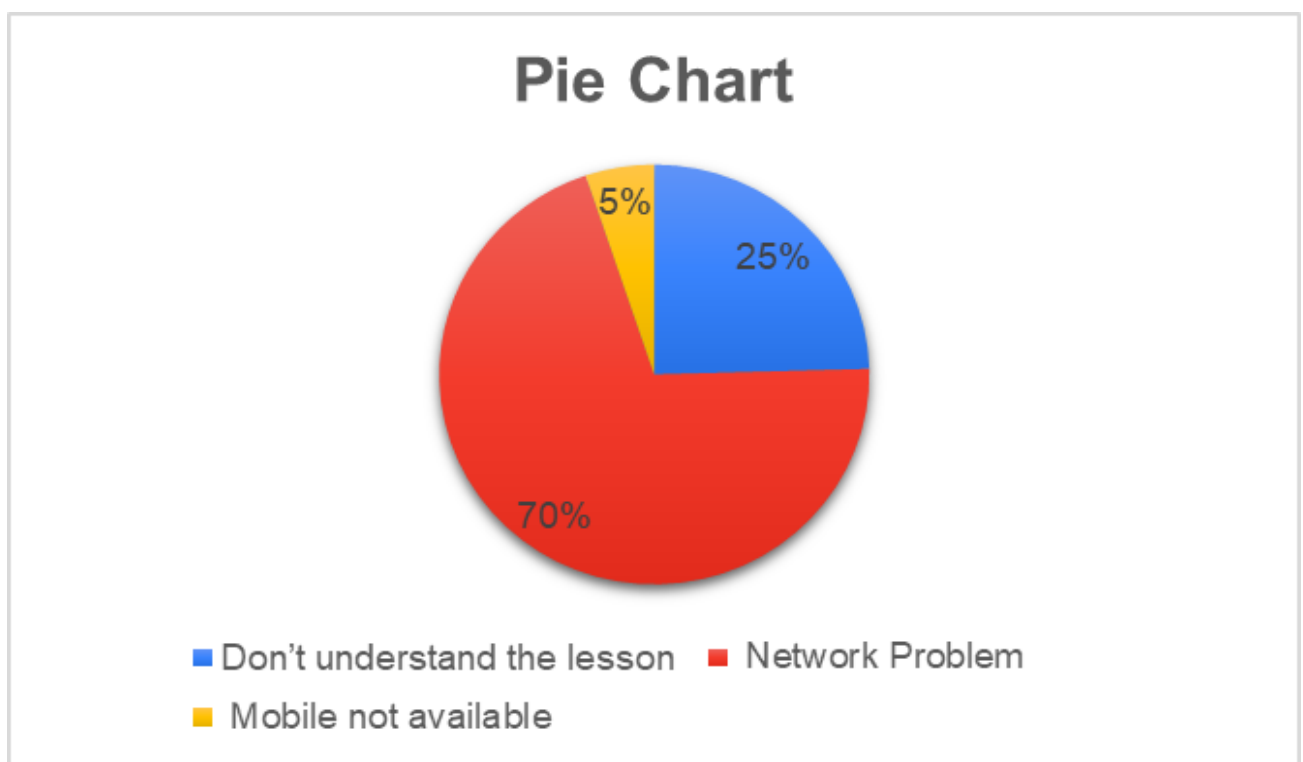
Sr.No	Reasons	Online	Offline
1	Saves Money	70	30
2	Saves Time	84	25
3	Doubt are resolved	44	96
4	Understands quickly	34	81



Conclusion: From above graph we conclude that the most of the .
student resolved doubts in offline exam.

3) Students faced problems during online lecture:

Sr.No	Problems faced	
1	Don't understand the lesson	57
2	Network Problem	163
3	Mobile not available	12



Conclusion: From above graph we conclude that the most of the student faced network problem during online exam.

Paired t-Test

We want to test difference in mean of marks (percentage) of Online & Offline learning.

Ho, Test statistic

Hypothesis: Ho: $\mu_d=0$ v/s H1: $\mu_d \neq 0$

$$t = \frac{(\sum D)}{\sqrt{\frac{\sum D^2 - \left\{\frac{(\sum D)^2}{N}\right\}}{(N-1) * (N)}}$$

t-Test: Paired Two Sample for Means		
	Offline	Online
Mean	73.68262931	75.81150862
Variance	155.6436368	131.9795678
Observations	232	232
Pearson Correlation	0.718089095	
Hypothesized Mean Difference	0	
df	231	
t Stat	3.585584312	
P(T<=t) one-tail	0.000205175	
t Critical one-tail	1.651476725	
P(T<=t) two-tail	0.00041035	
t Critical two-tail	1.970286659	

Interpretation:

Calculated t- value > Tabulated t- value

We can reject null hypothesis.

i.e; There is significant difference between percentage of students in online & offline exam

Two Sample Z Test of Proportions:

Where,

- Z is test statistic P_1 and P_2 observed proportion of events in the two samples
- n_1 and n_2 are sample sizes
- n_1 : total male =104
- n_2 : total female =128
- p_1 : number of offline lecture (male)=
- p_2 : number of offline lecture (female)=

Hypothesis:

$H_0: p_1=p_2$ v/s $H_1: p_1 \neq p_2$

$$Z = \frac{\hat{p}_1 - \hat{p}_2}{\sqrt{\frac{\hat{p}_1 * \hat{q}_1}{n_1} + \frac{\hat{p}_2 * \hat{q}_2}{n_2}}}$$

Calculated $|z|=4.24$ and p value = 0.27

Tabulated $Z=1.96$

$|z| > 1.96$ and p value > 0.05

Hence we Reject H_0

Conclusion – Female prefer offline mode for exam than male.

Hypothesis:

$H_0: p_1=p_2$ v/s $H_1: p_1 \neq p_2$

$$Z = \frac{\hat{p}_1 - \hat{p}_2}{\sqrt{\frac{\hat{p}_1 * \hat{q}_1}{n_1} + \frac{\hat{p}_2 * \hat{q}_2}{n_2}}}$$

Calculated $|z|=4.26$ and p value = 0.27

Tabulated $Z=1.96$

$|z| > 1.96$ and p value > 0.05

Hence we Reject H_0

Conclusion – Male prefer online mode for exam than female.

Interpretation:

- 1) There is significant difference between proportion of male and female prefer to offline lecture are better.
- 2) Females are more consent than male that offline lectures are better.

Advantages of online learning:

1. It is flexible; can be accessed from anywhere with a device and internet connection.
2. Budget-friendly.
3. Time saving.
4. Class recordings are available for later references.

Disadvantages of online learning:

- 1) One of the major disadvantages faced by students learning online is managing screen time. Online education requires staying logged in on the screen for an extended period regularly. Long-duration screen time becomes a great difficulty for the students and harmful for their health as well, especially the eyes.
- 2) Another disadvantage includes technical glitches. Poor Internet connectivity issues also arise multiple times during online sessions. Small towns/cities, urban areas face the most difficulty maintaining stable Internet connection. It destroys the learning of the students.
- 3) Feeling of isolation by individuals, Minimal peer help, Group work not as efficient as it would be if done offline.

Advantages of offline learning:

- 1) Students are fully attentive towards class only; less distraction. Online classes have more possibilities of distractions where students may surf on other online platforms or pay less attention in class.
- 2) Teachers can provide individual attention to the students, address their issues and solve it quickly.

Disadvantages of offline learning:

- 1) Students may lack the opportunity to learn advancing technology.
- 2) Time management becomes an issue for students who reside far away from campus.
- 3) No recording or any other form of data is not always available for students who missed the class or later references.

Conclusion:

- 1) Offline learning have most rating hence offline education is best than online Education.
- 2) Most of the student resolved doubts in offline exam.
- 3) Most of the student faced network problem during online exam.
- 4) There is significant difference between percentage of students in online & offline exam
- 5) Male and Female are prefers to offline lecture are better.
- 6) Type of the stream (arts, commerce, and science) is independent on type of Educational mode (online, offline).
- 7) Advantages and disadvantages of online learning and offline learning.

Major finding:

- 1) 46.5% of respondents strongly agree that students will be more focused in offline than online learning.
- 2) 42.2% of the students agree that students are guided directly through offline class compared to online learning.
- 3) 38.9% agree that offline learning makes students to learn more than online

LIMITATIONS:

- 1) We have to limit the scope of this research according to the result we obtain from the questionnaires.
- 2) This survey is limited to Balwant college vita
- 3) We consider the whole population is normal but in real it may be or may not be Normal.
- 4) The time constraint was one of the major limitations.

SCOPE

- 1) A well planned Study can be taken including some relevant characteristics.

Reference books:

- 1) 100 statistical test – Kanji Goal K.
- 2) Fundamentals of mathematical Statistics – S. C. Gupta & V.K. Kapoor.
- 3) Statistics – B. L. Agrawal.

Web site & search engines:

1. Google.
2. Wikipedia.
3. YouTube

QUESTIONNAIRE

Email

Gender

1) तुमचे पूर्ण नाव?

2) Stream

- I. Science
- II. Commerce
- III. Art

3) Class

- I. B. SC
- II. B. Com
- III. B. A.
- IV. B.Cs
- V. BBA

4) Percentage of (First year sem-1)

5) Percentage of (First year sem-2)

6) Online learning पद्धत शैक्षणिक कामगिरी सुधरण्यासाठी उपयुक्त आहे का?

- I. हो
- II. नाही

7) Online शिकत असताना वेळेची बचत होती का?

- I. हो
- II. नाही

8) तुम्हाला online शिक्षण कोणत्या कारणामुळे चांगली वाटते?

- I. शिकविलेले लवकर समजते
- II. पैशाची बचत होते
- III. वेळेची बचत होते
- IV. शंकेचे निरसन होते / संवादात्मक शिक्षण

9) तुम्हाला offline शिक्षण कोणत्या कारणामुळे चांगली वाटते?

- I. शिकविलेले लवकर समजते
- II. पैशाची बचत होते
- III. वेळेची बचत होते
- IV. शंकेचे निरसन होते / संवादात्मक शिक्षण

10) Online शिक्षणासाठी तूम्ही किती वेळ मोबाईल वापरता?

- I. 2-3 तास,
- II. 3-4 तास,
- III. 4 तास पेक्षा जास्त
- IV. 2 तास पेक्षा कमी

11) Online lecture करत असताना तुम्हाला कोणत्या अडचणी येतात?

- I. मोबाईल उपलब्ध नव्हता
- II. नेटवर्क प्रॉब्लेम
- III. शिकविलेले समजत नाही

12) Online lecture मध्ये तुमचे व शिक्षकांचा संवाद कसा होतो?

- I. कमी
- II. बरा
- III. उत्तम

13) तुम्हाला कोणती शिक्षण पद्धत योग्य वाटते?

- I. Offline शिक्षण,
- II. Online शिक्षण,

14) तुम्हाला कोणती शिक्षण पद्धत परीक्षेसाठी सोपी वाटते?

- I. Offline पद्धत,
- II. Online पद्धत,

15) Online learning मध्ये तुम्हाला किती समजते?

- I. 0-25 %
- II. 25-50 %
- III. 50-75 %
- IV. Above 75 %

16) तुमच्या मते तूम्ही online शिक्षण पद्धतीला किती रेटिंग देऊ शकता?

- 1 (Poor)
- 2 (Fair)
- 3 (Good)
- 4 (Very Good)
- 5 (Excellent)

17) तुमच्या मते तूम्ही offline शिक्षण पद्धतीला किती रेटिंग देऊ शकता?

- 1 (Poor)
- 2 (Fair)
- 3 (Good)
- 4 (Very Good)
- 5 (Excellent)

Thanks ☺ for submitted response,