

# Predicting Satisfaction Among the Students On E-Learning Under the Pandemic Situation

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# Data:-

- Collected data from undergraduates
- Satisfaction levels identified with a five-point Likert scale
- Around 100 data entries collected
  - Only 63 samples were selected – Undergraduates



Section 1 of 3

## Predicting Satisfaction Among the Students On E-Learning Under the Pandemic Situation

Because of COVID-19, online learning has become the new normal in many schools around the world. Satisfaction with online learning is an important factor in promoting effective educational processes. The purpose of this study was to identify factors influencing student and faculty satisfaction with online learning in the new normal.

Purpose : Academic Purpose  
Conductor : AGHU Dewmini

	F	G	H	I	J	K	L	M	N
1	How much time do you spend on e-learning?	How stressful is distance learning?	How helpful are teachers?	How peaceful is the environment?	How effective has remote learning been?	How supportive has your institution been?	Are you satisfied with the quality of e-learning?	What importance do you place on e-learning?	Are you satisfied with the results of e-learning?
2	3-5 hours	Moderately	Moderately	Not at all	Not at all	Not at all	Not at all, Slightly	Slightly	Not at all
3	1-3 hours	Moderately	Good	Not at all	Good	Moderately	Good	Slightly	Very Good
4	3-5 hours	Moderately	Not at all	Not at all	Not at all	Slightly	Slightly	Not at all	Not at all
5	3-5 hours	Moderately	Moderately	Slightly	Good	Moderately	Moderately	Good	Moderately
6	5-7 hours	Moderately	Very Good	Good	Good	Moderately	Good	Good	Good
7	5-7 hours	Not at all	Slightly, Moderately	Good, Very Good	Very Good	Not at all	Very Good	Very Good	Not at all
8	3-5 hours	Moderately	Moderately	Slightly	Slightly	Slightly	Slightly	Slightly	Slightly
9	5-7 hours	Not at all	Good	Moderately	Slightly	Good	Moderately	Moderately	Moderately
10	1-3 hours	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good	Very Good
11	5-7 hours	Moderately	Good	Moderately	Slightly	Moderately	Slightly	Slightly	Moderately
12	1-3 hours	Slightly	Good	Good	Moderately	Good	Good	Very Good	Good
13	3-5 hours	Slightly	Very Good	Good	Moderately	Very Good	Good	Good	Good
14	1-3 hours	Slightly	Very Good	Moderately	Not at all	Very Good	Moderately	Good	Slightly
15	3-5 hours	Slightly	Moderately	Slightly	Moderately	Moderately	Moderately	Slightly, Moderately	Moderately
16	3-5 hours	Not at all	Good	Very Good	Very Good	Moderately	Very Good	Good	Very Good
17	10+ hours	Not at all	Very Good	Very Good	Very Good	Moderately	Very Good	Good	Good
18	1-3 hours	Slightly	Very Good	Moderately	Moderately	Moderately	Moderately	Moderately, Good	Moderately
19	3-5 hours	Slightly	Moderately	Good	Good	Good	Good	Good	Good

Go to Settings to activate Windows.

# Introduction to Questionnaires...

## Questions for Descriptive Analysis;

Undergraduate Stream \*

- ☐ Physical Science Stream
- ☐ Biological Science Stream
- ☐ Commerce Stream
- ☐ Arts Stream
- ☐ Technology Stream

Home District

Choose ▼

How strong is the internet connection in your area? \*

- ☐ Very Strong
- ☐ Average speed - manageable
- ☐ Poor

Laptop

Desktop

Tablet

Smartphone

Other

What device  
do you use  
for distance  
learning?

☐☐☐☐☐

1-3 hours

3-5 hours

5-7 hours

7-10 hours

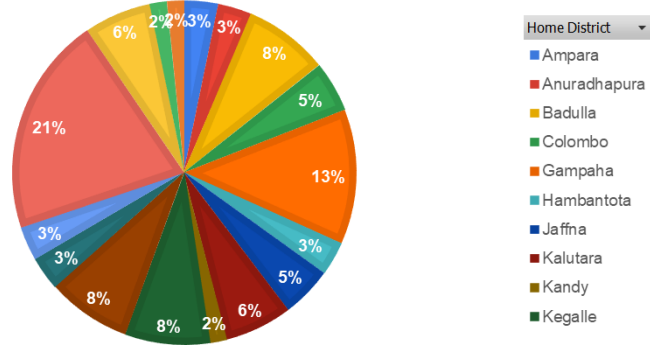
10+ hours

How much  
time do you  
spend on  
average per  
day on  
distance  
education?

☐☐☐☐☐

Count of Home District

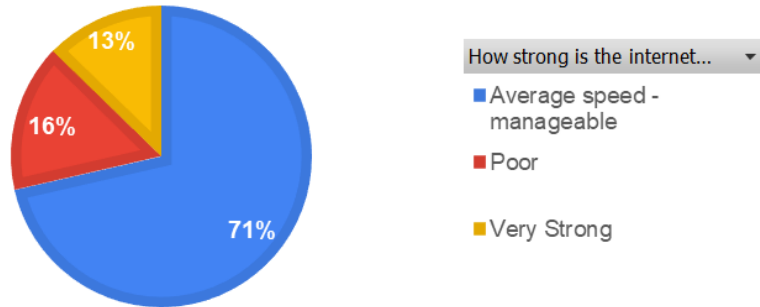
### COUNT OF HOME DISTRICT



- The dataset was gathered from all most all regions of Sri Lanka.
- Almost all students use their own laptop to join their classes.
- Spend 3-7 hours on distance learning

Count of How strong is the internet connection in your area?

### COUNT OF HOW STRONG IS THE INTERNET CONNECTION IN YOUR AREA?



- it appears that they have moderately good coverage.

\*

Yes, absolutely      Yes, but I would like to change few things      No, there are quite a few challenges      No

Do you like learning from a distance?

☐      ☐      ☐      ☐

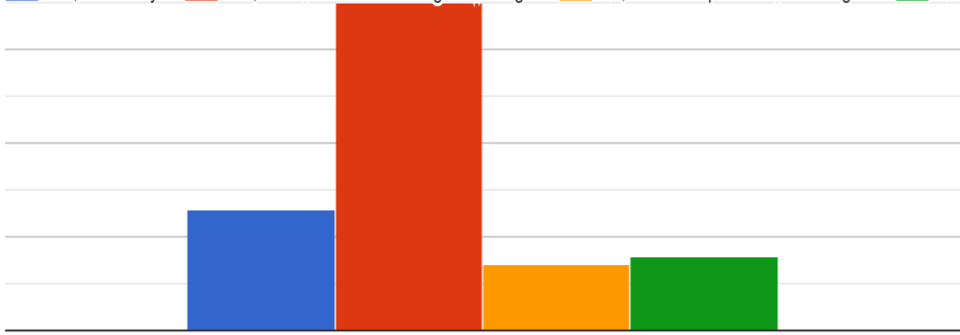
\*

Much worse      Somewhat worse      About the same      Somewhat better      Much better

How was your overall experience learning from home?

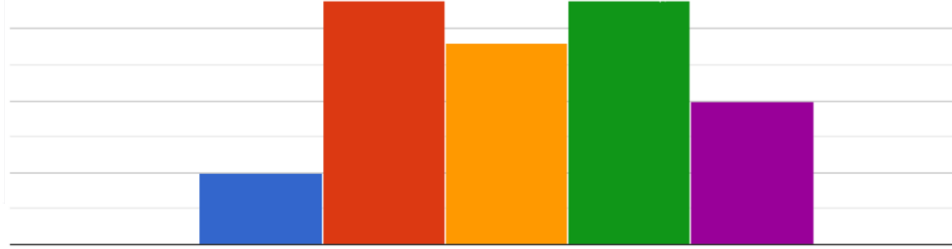
☐      ☐      ☐      ☐      ☐

Yes, absolutely      Yes, but I would like to change few things      No, there are quite a few challenges      No



Do you like learning from a distance?

Much worse      Somewhat worse      About the same      Somewhat better      Much better



How was your overall experience learning from home?

# Main Question 01: What type of classroom learning environment were students most satisfied with: online, face-to-face, or blended?

- To answer this question, I created a survey with multiple questions in which students could select their preferred mode:
  - ◆ Online      Face-to-Face      Hybrid
- We hypothesized that student satisfaction levels would differ across the three modalities.
  - ◆ We predicted that face-to-face learning would be the most prominent, while online learning would be the lowest ranked. (H0)
  - ◆ However, the data showed otherwise.

In terms of the following points, which mode do you prefer the most? \*

Please select all that apply

	Online	Face-to-Face	Hybrid
The course goals/objectives were clearly outlined.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I know what I was supposed to do each week.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt free to ask any questions I had about the course materials.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I felt that instructors were easily accessible.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Students were encouraged to succeed by the lecturers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I enjoyed the group discussions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Students were encouraged to succeed by the lecturers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I enjoyed the group discussions.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
There were many opportunities to interact with peers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I believed I had met the learning objectives.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
When I had a technical problem, I knew where to go for assistance.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Overall, which mode was the most beneficial to you?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Questionnaires for main question 01

Learning Mode	Preference Percentage
Online	36%
Face-to-Face	34%
Hybrid	30%

## Learning mode preferences



*I believed I had met the learning objectives.*

Mean	2
Standard Error	0.103695169
Median	2
Mode	1
Standard Deviation	0.823054892
Sample Variance	0.677419355
Kurtosis	-1.524590164
Skewness	7.39757E-18
Range	2
Minimum	1
Maximum	3
Sum	126
Count	63
Confidence Level(95.0%)	0.20728369

*Overall, which mode was the most beneficial to you?*

Mean	1.968253968
Standard Error	0.108445833
Median	2
Mode	1
Standard Deviation	0.860762115
Sample Variance	0.740911418
Kurtosis	-1.661117362
Skewness	0.062084668
Range	2
Minimum	1
Maximum	3
Sum	124
Count	63
Confidence Level(95.0%)	0.216780131

Face-to-Face mode → 1  
Online mode → 2  
Hybrid mode → 3

## Main Question 02: Predicting satisfaction among the students

- To address these concerns, I devised a survey of student satisfaction levels that employs a five-point Likert scale to evaluate responses.
- ◆ Average Student Satisfaction Scores (1=Strongly Disagree; 5=Strongly Agree;)
  - ◆ Null hypothesis - Students will not prefer Online learning
-

## Part 02

\*

Not at all      Slightly      Moderately      Good      Very Good

How stressful is distance learning for you during the COVID-19 pandemic?

☐☐☐☐☐

How helpful are your teachers while studying online?

☐☐☐☐☐

How peaceful is the environment at home while learning?

☐☐☐☐☐

How effective has remote learning been for you?

☐☐☐☐☐

How supportive has your university been in providing you with resources to learn from home?

☐☐☐☐☐

Are you satisfied with the online learning technology and software you're using?

☐☐☐☐☐

What importance do you place on face-to-face communication while learning remotely?

☐☐☐☐☐

Are you satisfied with your online interaction with the lecturer?

☐☐☐☐☐

Are you satisfied with the amount of online interaction you received from other students in this course?

☐☐☐☐☐

## Questionnaires for main question 02

	Strongly Agree	Agree	Neither Agree or disagree	Disagree	Strongly Disagree
Distance education is worthwhile for me.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I like studying from a distance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Distance education is exciting.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Distance education is a thrilling experience.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I'm looking forward to learning from a distance.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I prefer online learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am more likely to ask questions in an online classes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My online experience has expanded my ability to access and use information.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

I felt comfortable participating in the online course discussions.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt comfortable conversing through this text-based medium	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt comfortable interacting with other participants in the online course.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I felt comfortable introducing myself in the online course	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I can manage my own learning better in online courses	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
In online courses, I can better manage my own learning.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

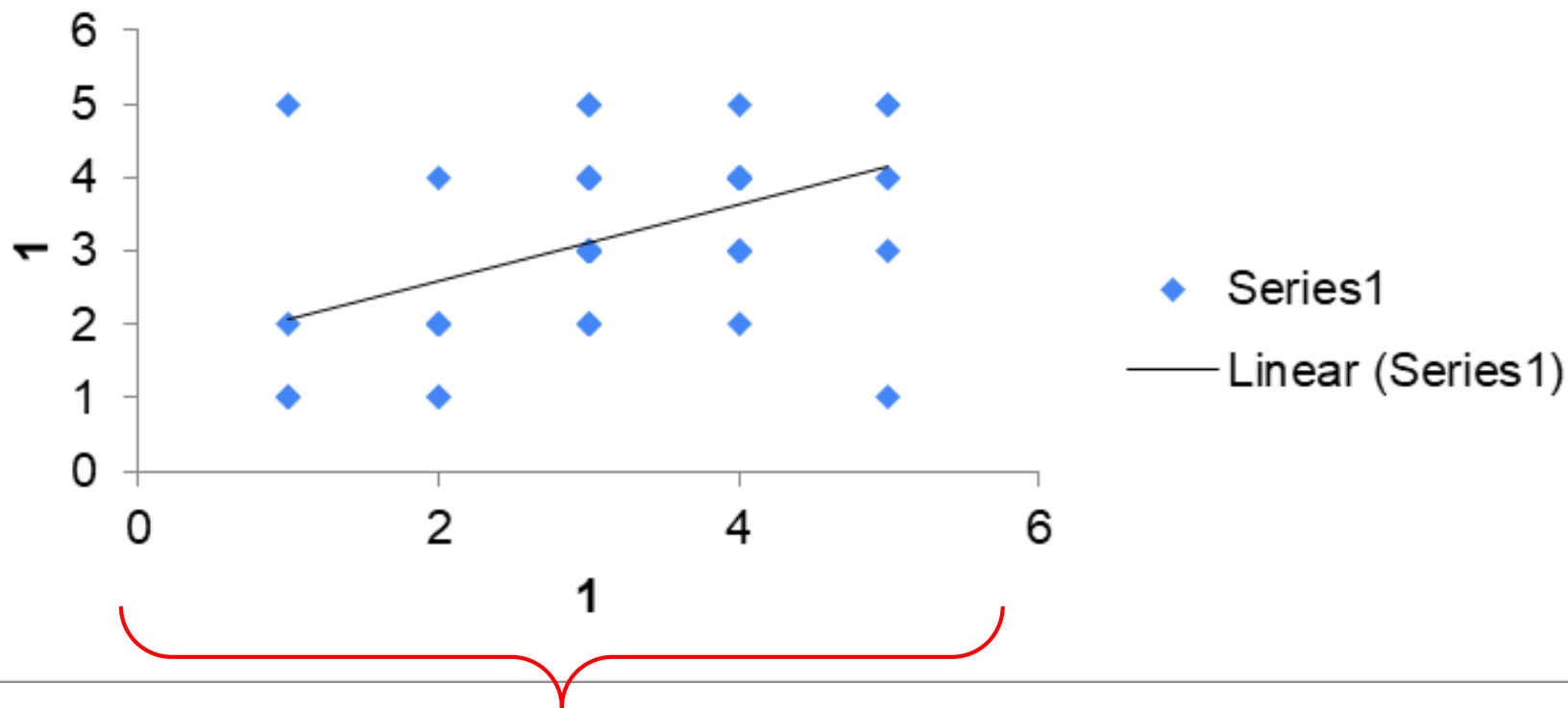
<i>[I like studying from a distance.]</i>	
Mean	3.46031746
Standard Error	0.140996012
Median	4
Mode	4
Standard Deviation	1.119121153
Sample Variance	1.252432156
Kurtosis	-0.619351191
Skewness	-0.5036364
Range	4
Minimum	1
Maximum	5
Sum	218
Count	63
Confidence Level(95.0%)	0.281847013

<i>satisfied with the online learning technology and software you're using?]</i>	
Mean	3.238095238
Standard Error	0.147888857
Median	3
Mode	4
Standard Deviation	1.173831412
Sample Variance	1.377880184
Kurtosis	-0.815569305
Skewness	-0.235549517
Range	4
Minimum	1
Maximum	5
Sum	204
Count	63
Confidence Level(95.0%)	0.295625613

Regression Statistics								
Multiple R	0.471214699							
R Square	0.222043292							
Adjusted R Square	0.209077347							
Standard Error	1.029089373							
Observations	62							
ANOVA								
	df	SS	MS	F	Significance F			
Regression	1	18.13592308	18.135923	17.125114	0.000110828			
Residual	60	63.54149627	1.0590249					
Total	61	81.67741935						
	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%	Lower 95.0%	Upper 95.0%
Intercept	1.541015155	0.420174506	3.6675599	0.0005214	0.700541005	2.381489	0.700541	2.38148931
1	0.520086601	0.125677903	4.1382501	0.0001108	0.268693365	0.77148	0.2686934	0.77147984

Regression statistics : [How supportive has your university been in providing you with resources to learn from home?] vs [How effective has remote learning been for you?]

# 1 Line Fit Plot



Very Good : 5, Good: 4, Moderately: 3, Slightly: 2, Not at all: 1

I don't like distance education

I had a pleasant experience with online studies, but I prefer face-to-face. Online studies can get stressful at times, but that does not mean it was not good, it was indeed the best medium for students during these pandemic days.

Distance learning method is very good but not good for physical practical subjects. and if we have good internet connection we can learn lot of things(other skills),in addition to university education.

Nothing better thn face-face studying

we need experience in campas but we cant get it from online .Online learning system is best but campas life is not only online we need more facilities

Distance learning is a good one.but university students want their freedom and their happiness like wise in university or hostel. They miss those days.

### Some student comments



**Thank You**

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# References:

1. <https://er.educause.edu/articles/2021/4/predicting-levels-of-student-satisfaction-during-covid-19>