Factors Influencing Online Learning

FACTORS INFLUENCING THE DATA USAGE FOR UNDERGRADUATES' ONLINE LEARNING DURING THE COVID-19 PANDEMIC

Tharushi Karunaratna and Sampath Fernando

STUDENTS' SATISFACTION TOWARDS ONLINE LEARNING DURING THE POST COVID-19 PANDEMIC

Lakni Peiris and Sampath Fernando

STUDENTS' PERCEPTION ON THE EFFECTIVENESS OF ONLINE LEARNING DURING COVID -19 PANDEMIC - (STUDY BASED ON SABARAGAMUWA UNIVERSITY OF SRI LANKA)

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➢ **Objectiives**

➢ **Population** – Second and Third year students of SUSL

➢ **Sampliing technique -** Multi-stage cluster sampling

➢ **Sample** - (240/2828)
➢   - a priori sample size calculator for MLR
       - Applied Sciences
       - Agriculture
       - Geomatics
       - Management
       - Social Sciences and Languages

➢ **Dependent variable** – Monthly cost of online data usage

Demographic Factors

- ✓ Gender
- ✓ Faculty
- ✓ Academic year
- ✓ Family income before the covid 19 period
- ✓ Family income after the covid 19 period
- ✓ Number of family members use online platforms

Technological Factors

- ✓ Most usable online platform (G-classroom, MS Teams, Zoom)
- ✓ Service provider (Airtel, Dialog, Hutch, Mobitel, SLT)
- ✓ Connection method (Wi-Fi, Mobile data, Mobile hotspot)
- ✓ Quality of the connection (Interval 1-9)

Educational Factors

- ✓ Total monthly lecture hours
- ✓ Degree programs
- ✓ Participate in live online lectures (Interval 1-9)
- ✓ "Youtube" usage is relevant to the studies (Interval 1-9)
- ✓ Lecture recording usage (Interval 1-9)
- ✓ "VLE" usage (Interval 1-9)
- ✓ Usage of other online materials for studies (Interval 1-9)
- ✓ Monthly online courses (Number)
- ✓ Monthly online quizzes and assignments hours
- ✓ Monthly online exam hours
- ✓ Monthly online presentation hours
- ✓ Monthly online seminars and workshop

Results and Discussion

Monthly cost of online data usage

Variable	Mean	Q1	Q2	Q3	Max
Data Cost	1838	700	1510	2000	8000

Faculty	N	Mean	Q1	Q2	Q3	Max	CV %
Management	66	1404	500	1400	2000	5000	75
Geomatics	63	1504	495	1250	2000	7000	94
Social Sc. & Lan	75	1900	780	1600	2000	8000	86
Agriculture	12	2878	1693	2350	4000	7000	58
Applied Science	24	2954	1663	2000	4000	8000	63

Results and Discussion

Monthly cost of online data usage

Service Provider	N	Mean	Q1	Q2	Q3	Max	CV %
SLT	121	1689	500	1400	2000	8000	98
Dialog	82	1982	1190	1800	2500	8000	69
Airtel	6	2000	1000	2000	2500	4000	55
Hutch	6	506	118	500	750	1200	79
Mobitel	25	2362	1395	1700	3250	7000	71

Platform	N	Mean	Q1	Q2	Q3	Max	CV %
Zoom	220	1914	785	1600	2300	8000	83
MS Teams	20	994	195	1000	1688	2000	74

Results and Discussion

Term	Coef	P-Value
Constant	-846	0.245
Youtube	77	0.061
Gender (Ref:Male)		
Female	395	0.038
Faculty (Ref: Management)		
Geomatics	265	0.293
Social Sciences and Languages	521	0.031
Agriculture	1016	0.028
Applied	1615	0.000

R-sq – 26%

Results and Discussion

Term	Coef	P-Value
Degree Field (Ref: Management)		
Science	739	0.104
Management	30	0.950
Social Sciences and Languages	198	0.587
Geomatics	1142	0.008
Service Provider (Ref: Hutch)		
SLT	1262	0.038
Dialog	1105	0.073
Aairtel	1418	0.087
Mobitel	1715	0.010

STUDENTS' SATISFACTION TOWARDS ONLINE LEARNING DURING THE POST COVID-19 PANDEMIC
Lakni Peiris and Sampath Fernando

➢ **Objectiives**

➢ **Population** – First year students of FSSL of SUSL

➢ **Sampling technique** – Simple random sampling

➢ **Sample -** 239

➢ **Dependent variable** – Online learning satisfaction (0 – 10)

STUDENTS' SATISFACTION TOWARDS ONLINE LEARNING DURING THE POST COVID-19 PANDEMIC

Factors
- ✓ Gender
- ✓ District
- ✓ Advanced level subject stream
- ✓ Place of learning (Inside or outside of the house, other places)
- ✓ Students' device (Laptop, desktop, smart phone, tablet)
- ✓ Instructors' device (Laptop, desktop, smart phone, tablet)
- ✓ Connection method (Wi-Fi, Mobile data, Mobile hotspot)
- ✓ Laptop ownership (No, before, beginning)

STUDENTS' SATISFACTION TOWARDS ONLINE LEARNING DURING THE POST COVID-19 PANDEMIC

Factors

- ✓ Monthly cost of data usage
- ✓ Signal coverage (Interval 0 - 10)
- ✓ Gaining new knowledge (Interval 0 - 10)
- ✓ Support receiving from the neighbors (Interval 0 - 10)
- ✓ Environment noisy level (Interval 0 - 10)
- ✓ Computer literacy (Interval 0 - 10)
- ✓ English language proficiency (Interval 0 - 10)
- ✓ Level of experience on online group activities (Interval 0 - 10)
- ✓ Level of experience on online assessments (Interval 0 - 10)
- ✓ Applicability of Whiteboard (Interval 0 - 10)
- ✓ Computer literacy of the instructor (Interval 0 - 10)
- ✓ Level of solutions for subject related problems (Interval 0 - 10)
- ✓ Instructors' computer literacy (Interval 0 - 10)

STUDENTS' SATISFACTION TOWARDS ONLINE LEARNING DURING THE POST COVID-19 PANDEMIC
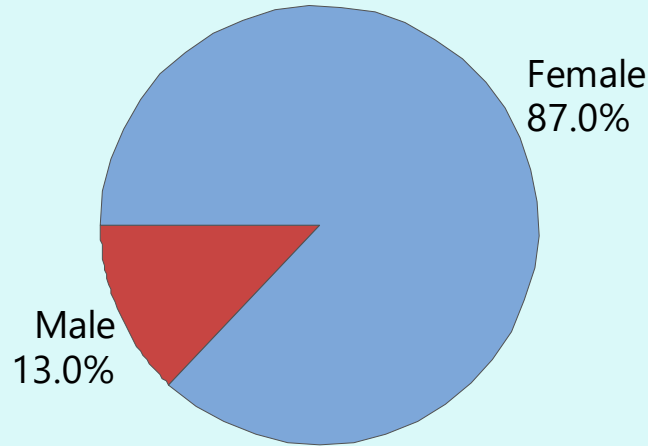
Results and Discussion

Satisfaction on online learning (0 – 10 Interval scale)

Variable	Mean	Q1	Q2	Q3	Max
Satisfaction	4.3	2	5	5	10

Variable	Mean	Q1	Q2	Q3	Max
Data Cost	1387	700	1000	1500	6000

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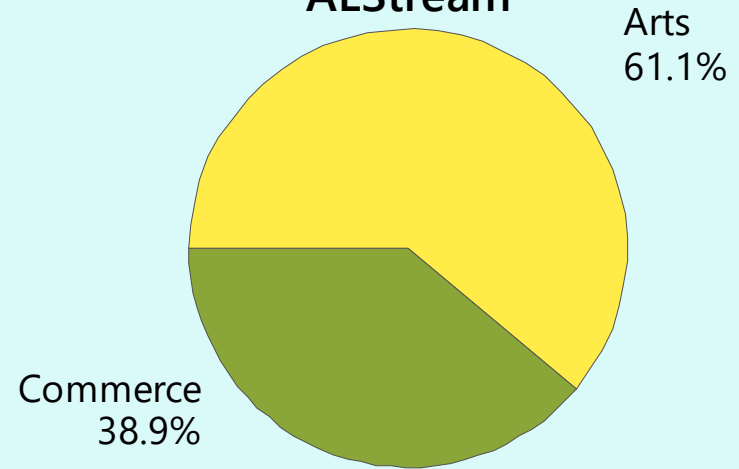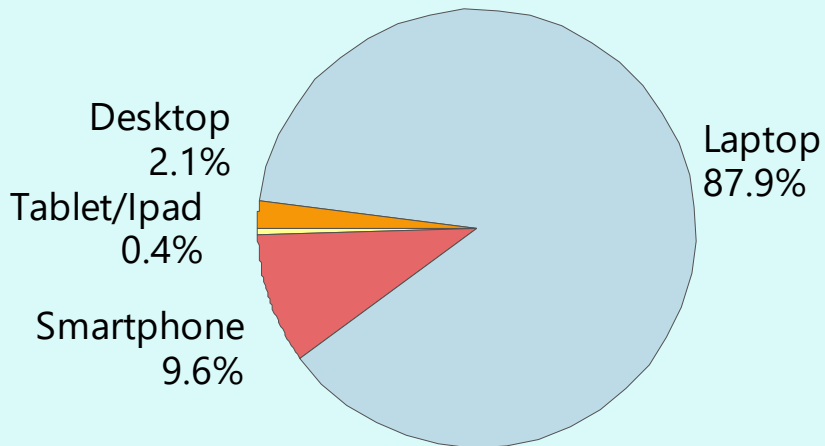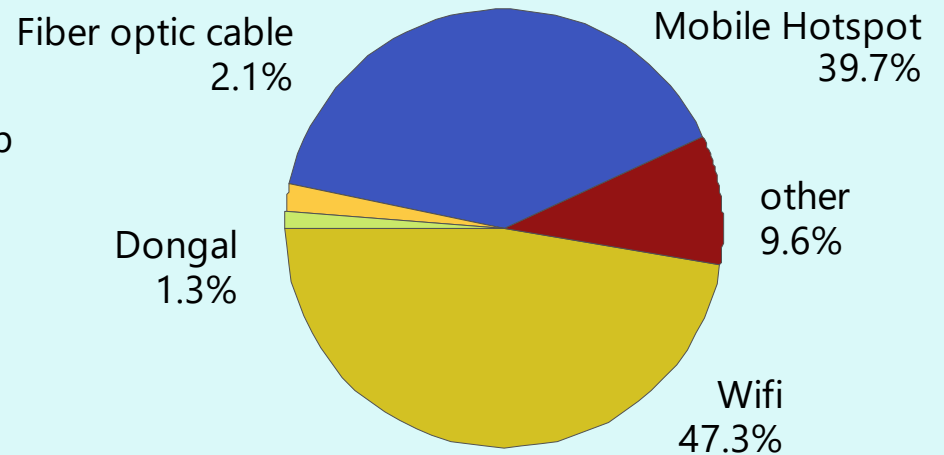
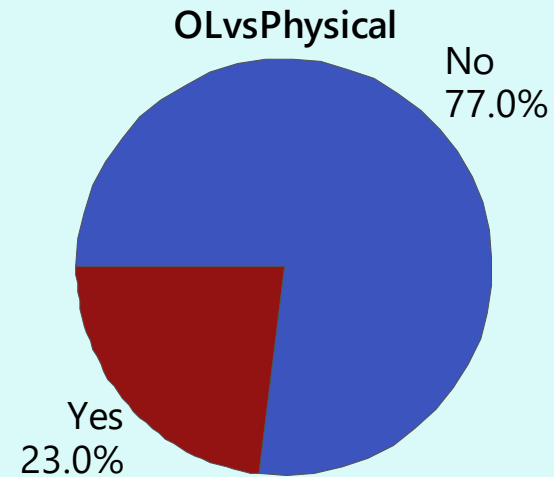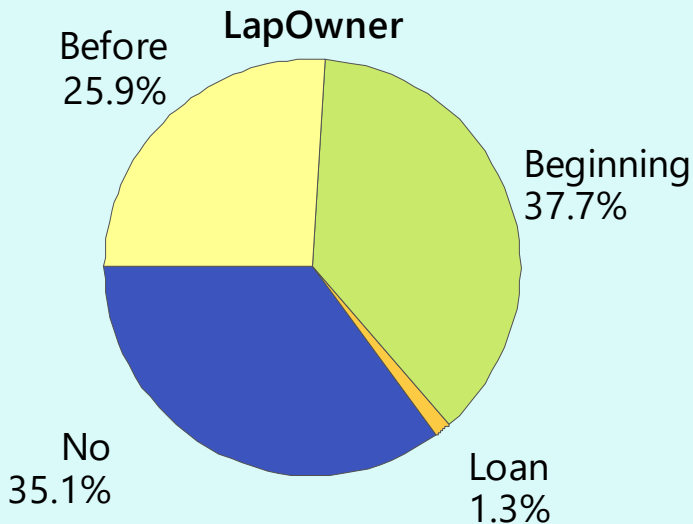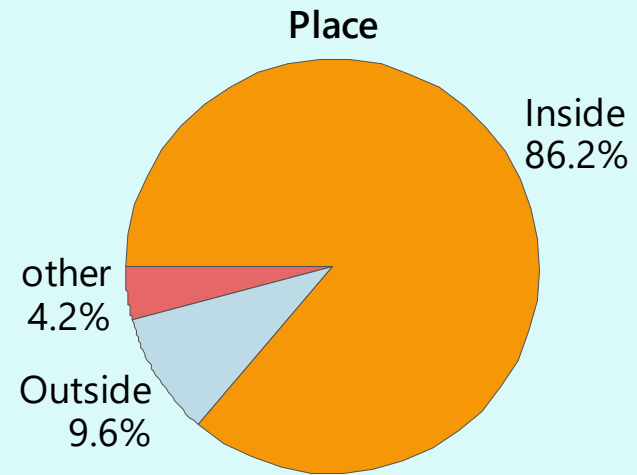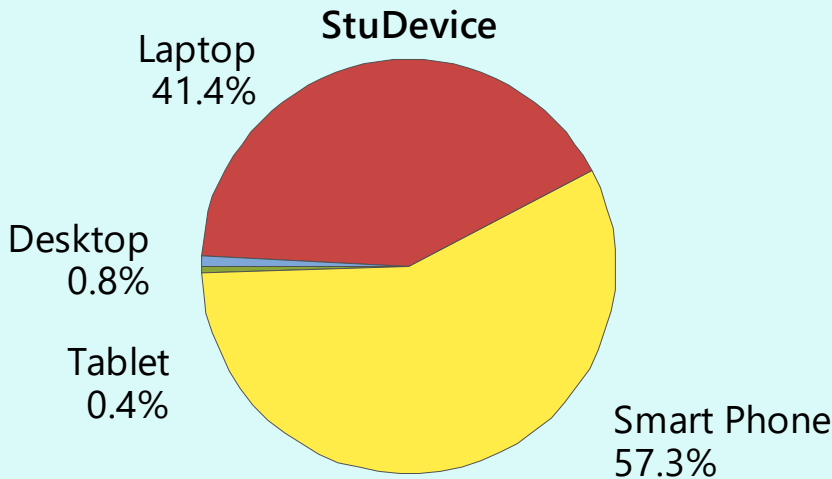# STUDENTS' SATISFACTION TOWARDS ONLINE LEARNING DURING THE POST COVID-19 PANDEMIC

Pie Chart of StuDevice, Place, LapOwner, OLvsPhysical

StuDevice
- Laptop 41.4%
- Desktop 0.8%
- Tablet 0.4%
- Smart Phone 57.3%

Place
- Inside 86.2%
- other 4.2%
- Outside 9.6%

LapOwner
- Before 25.9%
- Beginning 37.7%
- No 35.1%
- Loan 1.3%

OLvsPhysical
- No 77.0%
- Yes 23.0%

STUDENTS' SATISFACTION TOWARDS ONLINE LEARNING DURING THE POST COVID-19 PANDEMIC

Results and Discussion

Term	Coef	P-Value	%
Constant	0.444	0.281	
Computer Literacy	-0.3123	0.000	3.6
Online Assessments	0.4008	0.000	26.7
Online White Board	-0.1595	0.008	1.0
Subject Related Problems	0.2025	0.001	8.2
Lecturer Online Competency	0.1685	0.004	4.6
Signal Coverage	0.1872	0.000	7.0
Surrounding	0.1972	0.000	3.8
Gender			
Male	0.673	0.050	0.8
Online better than Physical			
Yes	1.417	0.000	4.3

STUDENTS' PERCEPTION ON THE EFFECTIVENESS OF ONLINE LEARNING DURING COVID -19 PANDEMIC - (STUDY BASED ON SABARAGAMUWA UNIVERSITY OF SRI LANKA)

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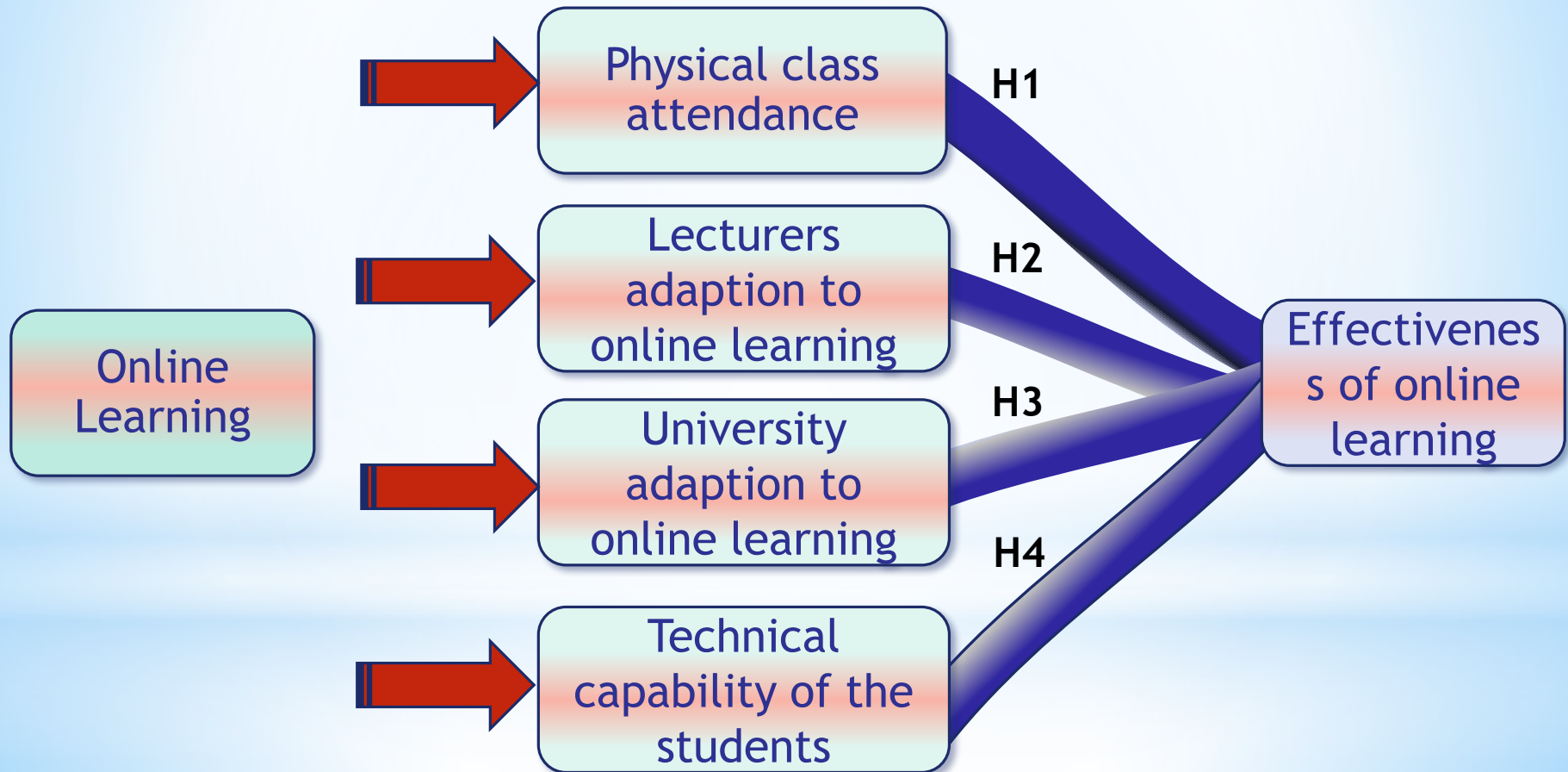
STUDENTS' PERCEPTION ON THE EFFECTIVENESS OF ONLINE LEARNING DURING COVID -19 PANDEMIC - (STUDY BASED ON SABARAGAMUWA UNIVERSITY OF SRI LANKA)

Population
Undergraduates in SUSL

Anticipated effect size:	0.1
Desired statistical power level:	0.8
Number of latent variables:	5
Number of observed variables:	32
Probability level:	0.05

Calculate!

Minimum sample size to detect effect: **1,599**
Minimum sample size for model structure: **269**
Recommended minimum sample size: **1,599**

Sampling technique

Two stage cluster sampling

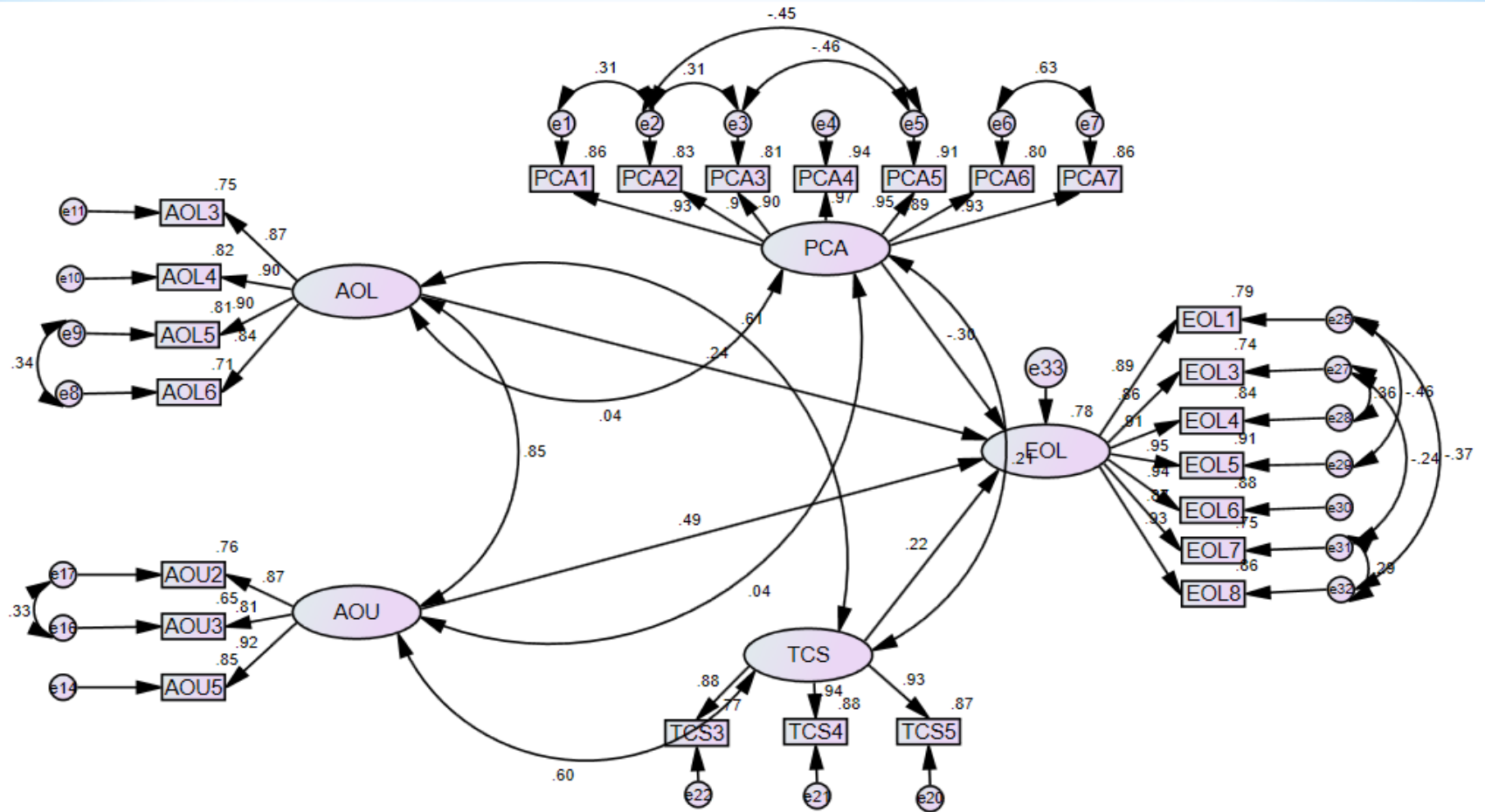*Data collection method*
Mailed Questionnaire

Data Analyzing Technique
Structural Equation Modelling

Software

SPSS AMOS

STUDENTS' PERCEPTION ON THE EFFECTIVENESS OF ONLINE LEARNING DURING COVID -19 PANDEMIC - (STUDY BASED ON SABARAGAMUWA UNIVERSITY OF SRI LANKA)

Results and Discussion
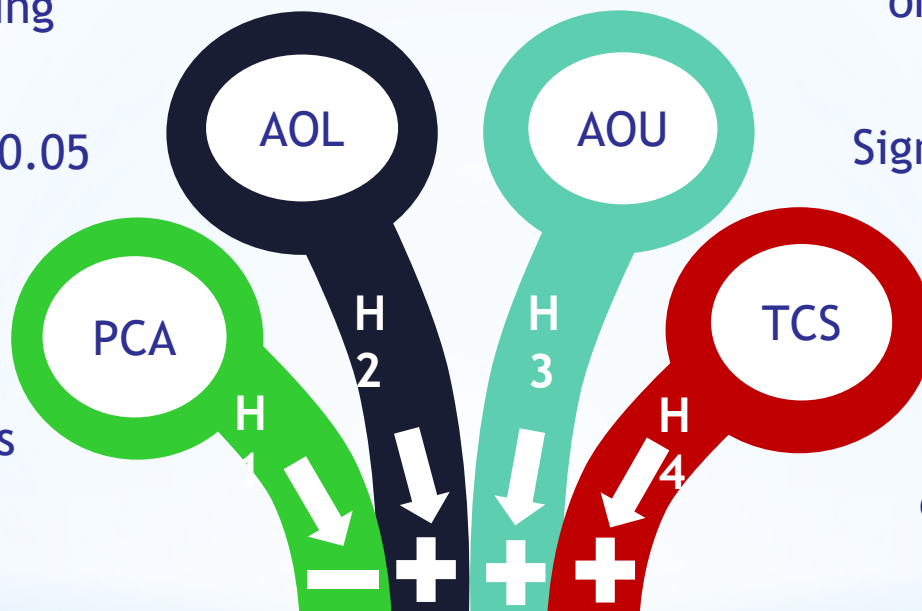
Lecturers adaption to online learning

0.245

Significant at 0.05 level

University adaption to online learning

0.487

Significant at 0.01 level

Physical class attendance

-0.303

Significant at 0.01 level

Technical capability of the students

0.217

Significant at 0.01 level

AOL

AOU

PCA

TCS

H1

H2

H3

H4

Effectiveness of online learning

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Conclusions

Physical class attendance	Lecturers adaption to online learning	University adaption to online learning	Technical capability of the students
High scores for items	*Moderate scores for items*	*Moderate scores for items*	*Moderate scores for items*
Meet lecturers again.	Provide adequate instructions in online tests	Offered User guide to access the online education	Have technical knowledge required for online education
Receiving education within the university premises	Shares lecture links and materials in a user-friendly manner	Completion of relevant semesters on online platforms	Have internet skills required for online learning
Physical classes are highly motivating for the learning	Help to resolve issues that arise when using online platforms	Provide necessary announcements accurately through online platforms	Ability to use online communication tools

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Recommendations

01
- explain the ease and efficiency of online learning

02
- Send notes, materials and zoom links user-friendly manner
- instructions clearly and adequately provide
- provide chat group facility via zoom
- Help to students solve problems

03
- Informed decisions related to online learning.

04
- Improve ICT related skills and ability

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Thank you!