ADOPTION OF MOOCS AND ONLINE TEACHING AMIDST THE COVID-19 PANDEMIC, A STUDY FROM THE PERSPECTIVE OF STUDENTS AND FACULTIES IN INDIA

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Abstract

COVID-19 Pandemic has presented a slew of challenges to almost every industry bringing opportunities for few and challenges for others. The key to survival in this volatile, uncertain, complex and ambiguous business environment is adapting and changing business processes to suit the new normal. Education industry has not been immune to this pandemic; it has brought a myriad of challenges and opportunities for the students and teachers community. Institutions around the world have adopted E-teaching methods to serve the students from an arm's length; faculties have also taken lockdown period as an opportunity to sharpen their knowledge domain by pursuing various MOOC/Online courses. This study is an effort to understand consumer behavior in the adoption of E-learning/teaching among students and faculties. The objective of this paper was to create and test two regression models on the adoption of e-courses by students and adoption of online teaching/online learning among faculties. Additional objectives included assessing the difference in adoption of e-learning/teaching between different groups of students/faculties on the basis of demographic factors.

Keywords: Mooc, Covid-19, E-Learning, E-teaching

Introduction

Internet has changed the way people approach life in terms of their day to day activities like shopping, watching movies, browsing content; the same applies for access to education (Siau,2018). Online education is a type of education that is offered to students by accessing their smartphones/computers delivered through multiple ways that includes blended education (a combination of online and on campus learning); online education courses (distance education); individual online courses (as a part of a degree program with separate credits); and MOOCs (online courses that are offered by various universities around the world with the benefit of unlimited participation and open access). As per a report by KPMG (2017) India's online education market is projected to grow to USD 1.96 billion with 9.6 million users by 2021. The five categories of education that will see tremendous growth include primary and secondary supplemental education, test preparation, reskilling and online

certifications, higher education and language and casual learning. The growth drivers of online education have been, low cost alternative in comparison to offline alternatives; an opportunity to get quality education where access to good education is less; growing employment seeking population looking for skill based courses; government's initiative to promote online education through initiatives like swayam, e-basta, rashtriyamadhyaamikshikshaabhiyan, NPTEL etc; increasing internet and smartphone penetration; rising disposable income and growing young population. The current pandemic has forced humans to reimagine their world and has changed the normal course of life. The teaching learning processes at universities have suffered a major setback due to nationwide imposition of lockdown. Universities have suspended teaching on campus and most have adopted remote teaching methods. Many universities are scrambling to adjust with the corona virus threat and many universities across India, US and UK including highest ranked universities such as MIT, Cornell, Yale, Stanford, John Hopkins and the like have moved on the bandwagon of online classes (Peters et.al, 2020). The shift towards online teaching has come with a fair share of trouble for users viz. students and faculty, which includes student engagement, faculty expertise with technology and content delivery. ICT developments in education have been in existence since long yet the adoption of online teaching and learning has been rather disappointing, but the current pandemic has pushed education institutions to rethink their educational practices. A whole new set of practices have evolved which includes online interaction with students, preparation of content for online classes, evaluation of assignments, monitoring online attendance, providing timely notice of class schedules and so on.

In recent years MOOCs have observed growing interest among universities across the world as a platform for blended learning being recognized as a supplement to the courses taught traditionally in the classroom (Virani et.al, 2020). Traditionally it was observed that MOOC participants were mostly from Europe and North America and participation from Asia and Africa was limited. However in India, the number of MOOCs enrolments has increased tremendously in recent years. Lately due to the COVID-19 pandemic, online education has surged (Li and Lalani, 2020). This can be related to the fact the Zoom experienced a 458% growth in the second quarter of 2020 (Tenebruso, 2020).

In spite of growing interest in online education there is a dearth of research in this domain. This study has been conducted with an aim to fill this gap and contribute to the literature with respect to adoption of online education.

Literature Review

Adoption of online classes by students and faculty

Many universities around the world have acknowledged and accepted the online teaching methodology but in developing countries specifically adoption of the same remains a challenge. In India for instance, the adoption of online teaching was seen as a challenge even in the top notch institutes like IITs. The challenges that came across were access to laptop, high speed internet, cyber café (due to lockdown) and so on. It was also found that students at the undergraduate level do not feel comfortable with online teaching and feel cheated for the amount of fees they pay (Peters et.al, 2020). Xie X. et al., (2020) posited that student in developing nations unlike developed nations struggle with technological issues,

access to computers and network infrastructure. He further highlighted income divide within families in developing nations. As identified by Aithal et.al, (2016) less peer and teacher interaction, practical subjects that include workshops and labs, loneliness, isolation, self-learning, and no opportunity of personality development through peer interaction were other factors that acted as a barrier in student's acceptance of online teaching pedagogy. Furthermore, Manochehr (2007) posited that students who have an assimilator learning style adopt e-learning more than the converger types as the latter prefer to learn through practice and demonstration. For faculties the factors that reduced their willingness to adopt online teaching was lack of interaction/feedback from students, difficulty in teaching practical/mathematical/technical subjects. Bao et al. (2020) in a study conducted recently found that COVID-19 lockdown forced universities to compulsorily take up online teaching which brought challenges like modifying the course content to suit online environment, emphasis on clarity of voice, making the content interactive and interesting for an online audience, scheduling and informing students about classes and the like. The faculty taking up online classes also has an effect on attendance in online classes (Gopal. R, 2015). Among other challenges faced by faculties, network infrastructure, access to computers, lack of student engagement, distractions at home, and lack of belongingness and connectedness affect faculties intent to engage students in online classes (Xie X. et al., 2020). It has also been posited by Tang et al., 2020 that for professional courses like science and engineering, online teaching is challenging due to the presence of wide variety of mathematical formulas and abstract concepts.

Existing research in the area on online teaching pedagogy are scarce, given the context of COVID-19, the online teaching pedagogy has been forced upon students and faculties, what merits research is the factors that influence students in adopting online teaching pedagogy. This brings us to our RQ.1 which is to identify the predictor factors that influence adoption of online classes among students and faculties. On the basis of the above findings, the following hypotheses have been proposed:

H1 There is a significant difference in the adoption of online classes between students from different localities

H2 There is a significant difference in the adoption of online classes between students from different income backgrounds

H3 There is a significant difference in the adoption of online classes between students from different academic capabilities

H4 There is a significant difference in the adoption of online teaching between faculties from different academic disciplines

H5 There is a significant difference in the adoption of online teaching between faculties from different age groups

H6 Institutional Factors influence faculty's decision to adopt online teaching practice

H7 Access and Flexibility influence faculty's decision to adopt online teaching practice

H8 User-Friendly software's influence faculty's decision to adopt online teaching practice

H9 Difficult to teach Practical/Technical Subjects influence faculty's decision to adopt online teaching practice

H10 Lack of Student Interaction influence faculty's decision to adopt online teaching practice

Adoption of Online Courses by students and faculties for continuous learning and upgradation

Several studies have pointed out various internal and external factors that influence students to take up MOOC courses (Alraimi et al., 2015; Milligan & Littlejohn, 2017; Watted& Barak,2018; Wu & Chen,2017; Zheng et al.,2015). Limited social interaction between trainer and participants in an online environment raises concerns about motivation and engagement in MOOCs (Martin et al.,2018; Xiong et al.,2015). Given that MOOCs are low cost, free access, flexible and voluntary; number of registrations in MOOC courses are very high which gradually reduce due to several factors that include motivation (Barba et al.,2016). This motivation includes intrinsic motivation which includes interest, curiosity and external factors which includes credits, development of job competencies, reputation, peers etc (Alraimi et al., 2015; Milligan & Littlejohn, 2017; Watted& Barak, 2018; Wu & Chen,2017; Zheng et al.,2015). Similarly researchers have posited that easy availability, access from anywhere, ubiquity, reduced cost, increased comfort, flexibility, comfort with English language and convenience play an instrumental role in the pursuit of doing online courses (Wyk et. al, 2018; Aithal et al., 2016; Mohammad A., 2006). Another interesting insight by Brindha et al., (2016) is the tenet of "No Restrictions", i.e people from any background can take up an online course; technological progress in the form of easy availability of internet, handheld devices has been another instrumental factor in the growth of online education. Lars Cernerud (2002) posited that male students were more comfortable with e-classes. The faculty taking up online classes also has an effect on attendance in online classes (Gopal. R, 2015). Baturay et.al (2015) found that students success in an online course depends on flexible, individualized, interactive and user-friendly learning environment.

Extant Literature consists of studies on factors influencing adoption of MOOC courses, but there is a significant gap in literature with respect to the impact of COVID-19 lockdown on adoption of MOOC Courses, this brings us to our RQ.2, which is to identify the impact of COVID-19 lockdown on adoption of MOOC courses by students and faculties. On the basis of the above findings, the following hypotheses have been proposed:

H11 Easy Availability, Access and Context (Covid-19) has an effect on student's adoption of online courses

H12 Peer Pressure and Variety of Courses have an effect on student's adoption of online courses

H13 Easy Availability, Access, Flexibility and Context (Covid-19) have an effect on faculty's adoption of online courses

H14 Peer Pressure has an effect on faculty's adoption of online courses

Research Objectives and Research Questions:

COVID-19 lockdown has forced universities around the world to adopt online teaching pedagogy, given the challenges of rapid adoption of online technology, this new phenomenon throws open a number of challenges for faculties and students in this COVID era. This research has been done to identify the factors that influence adoption of online teaching and learning among students and faculties, also to identify the impact of demographic factors on student's adoption of online learning.

Additionally through the data collected through a primary survey, this study aims at answering the following research questions:

RQ.1 What are the factors that influence adoption of online classes among students and online teaching among faculties?

RQ.2 Whether COVID-19 lockdown has an effect on adoption of MOOC courses among faculties and students?

Methodology

Study Context

This study was done in a private university of India. MOOCs had been relatively popular in developing countries since several years; in developing countries the number of participants in MOOCs have recently picked pace. Similarly online teaching has found a fair share of critics due to which its wide scale adoption across the length and breadth of the country has been slow. Given the spread of pandemic across the world recently, online courses such as MOOCs and online teaching by the academic fraternity have increased during current times.

Measurement of the study variables

The variables in the study were measured using statement extracted through literature review. All statements were measured using 5 point Likert Scale (1-Strongly Disagree, 7-Strongly Agree).

Data Collection and Sample

The Study population was the students and faculties of a private university in India. Sample of 125 post graduate students and 51 faculties was selected on the basis of non-probability convenience sampling. A google form was circulated among the sample respondents for data collection. In person data collection was not possible to COVID-19 restrictions.

Results

To check if there is any significant difference in the adoption of online teaching between students of different localities, Krushkal Wallis test was used. Non- parametric test was used as the data was not normally distributed.

Ranks

	In which locality do you live?	N	Mean Rank
I prefer to attend online classes?	Rural	13	62.85
	Urban	74	46.09
	Semi urban	14	65.96
	Total	101	

Table No.15: Mean Rank Values

A Krushkal Wallis test showed that locality significantly affects preference to attend online classes , $H(2) = 8.960, p = .011$ with a mean rank of 62.85 for rural students, 46.09 for urban students and 95.96 for semi-urban students; hence accepting H_1 .

Test Statistics^{a,b}

	I prefer to attend online classes?
Chi-Square	8.960
Df	2
Asymp. Sig.	.011

a. Kruskal Wallis Test

b. Grouping Variable:

In which locality do you live?

Table No.16: Test Statistics

To check if there is any significant difference in the adoption of online teaching between students from different income backgrounds, Krushkal Wallis test was used. Non-parametric test was used as the data was not normally distributed.

Ranks

	Under which	N	Mean
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	category does your family income fall?		Rank
I prefer to attend online classes?	Less than 25,000 per month	25	42.76
	25,001- 50,000	42	57.15
	50,001- 75,000	15	52.80
	75,001- 1,00,000	12	51.54
	More than 1,00,000	7	38.71
	Total	101	

Table No.17: Mean Rank Values

A Krushkal Wallis test showed that income background does not significantly affect preference to attend online classes rejecting H_2 , $H(4) = 5.841, p = .211$ with a mean rank of 42.76 for less than 25,000 per month; 57.15 for between 25,001 to 50,000; 52.80 for between 50,001 to 75,000; 51.54 for between 75,001 to 1,00,000 and 38.71 for more than 1,00,000.

Test Statistics^{a,b}

	I prefer to attend online classes?
Chi-Square	5.841
df	4
Asymp. Sig.	.211

a. Kruskal Wallis Test

b. Grouping Variable:
Under which category
does your family
income fall?

Table No.18: Test Statistics

To check if there is any significant difference in the adoption of online teaching between students from different academic capabilities, Krushkal Wallis test was used. Non-parametric test was used as the data was not normally distributed.

Ranks

	What was your aggregate percentage in your last exam? (In your current course)	N	Mean Rank
I prefer to attend online classes?	Less than 50%	9	51.33
	50.1%-60%	24	59.29
	60.1% to 70%	29	55.83
	70.1% to 80%	32	44.25
	More than 80%	7	33.00
	Total	101	

Table No.19: Mean Rank Values

A Krushkal Wallis test showed that academic capabilities significantly affects preference to attend online classes accepting H_3 , $H(4) = 8.041, p = .090$ with a mean rank of 51.33 for less than 50% percent; 59.29 for between 50.1% to 60%; 55.83 for between 60.1% to 70%; 44.25 for between 70.1% to 80% and 33 for more than 80%.

Test Statistics^{a,b}

	I prefer to attend online classes?
Chi-Square	8.041
df	4
Asymp. Sig.	.090

a. Kruskal Wallis Test

b. Grouping Variable:

What was your aggregate percentage in your last exam? (In your current course)

Table No.20: Test Statistics

To check if there is any significant difference in the adoption of online teaching between faculties teaching in different academic disciplines, Krushkal Wallis test was used. Non- parametric test was used as the data was not normally distributed.

Ranks

	In which Discipline do you teach ?	N	Mean Rank
I prefer to take online classes?	Management	10	27.20
	Commerce	17	17.76
	Science	6	19.00
	Engineering	6	22.50
	Arts	3	26.67
	Total	42	

Table No.21: Mean Rank Values

A Krushkal Wallis test showed that different academic backgrounds does not significantly affect faculty preference to teach online rejecting H_4 , $H(4) = 5.362, p = .252$ with a mean rank of 27.20 for Management; 17.76 for Commerce; 19 for Science; 22.50 for engineering and 26.67 for Arts.

Test Statistics^{a,b}

	I prefer to take online classes?
Chi-Square	5.362
df	4
Asymp. Sig.	.252

a. Kruskal Wallis Test

b. Grouping Variable:
In which Discipline do
you teach ?

Table No.22: Test Statistics

To check if there is any significant difference in the adoption of online teaching between faculties from different age groups, Krushkal Wallis test was used. Non- parametric test was used as the data was not normally distributed.

Ranks

	Your age ?	N	Mean
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			Rank
I prefer to take online classes?	1 to 20	2	14.50
	21 to 29	13	26.08
	30 to 39	22	24.36
	40 and above	13	28.54
	Total	50	

Table No.23: Mean Rank Values

A Krushkal Wallis test showed that age of faculty does not significantly affect faculty preference to teach online rejecting H_5 , $H(3) = 2.140, p = .544$ with a mean rank of 14.50 for 1-20; 26.08 for 21-29; 24.36 for 30-39 and 28.54 for 40 and above.

Test Statistics^{a,b}

	I prefer to take online classes?
Chi-Square	2.140
df	3
Asymp. Sig.	.544

a. Kruskal Wallis Test

b. Grouping Variable:
Your age ?

Table No.24: Test Statistics

For finding the factors that influence the decision of faculties to undertake online teaching 13 statements extracted from literature review were considered as independent variables and the dependent variable was adoption of online teaching. It was considered to reduce the dimensions and build a better regression model; hence exploratory factor analysis was run to reduce the number of statements into a few factors using principal component analysis with Varimax (orthogonal) rotation. The KMO value was .798 and was adequate for sampling adequacy and the Bartlett's test of sphericity was also significant indicating the data to be suitable for factor analysis. Five factors were extracted explaining 65% variance. The five factors extracted were named Institutional Factors, Access and Flexibility, User-Friendliness, Difficult for Practical/Technical Subjects and Lack of Student Interaction.

Dimension Reduction

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.798
Bartlett's Test of Sphericity	Approx. Chi-Square	142.663
	df	78
	Sig.	.000

Table No.5: Values of KMO and Bartlett's test of Sphericity**Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	2.826	21.741	21.741	2.826	21.741	21.741	2.070	15.924	15.924
2	1.932	14.860	36.602	1.932	14.860	36.602	1.905	14.651	30.575
3	1.422	10.939	47.541	1.422	10.939	47.541	1.859	14.297	44.872
4	1.173	9.024	56.565	1.173	9.024	56.565	1.341	10.315	55.186
5	1.097	8.439	65.004	1.097	8.439	65.004	1.276	9.818	65.004
6	.937	7.211	72.215						
7	.863	6.641	78.856						
8	.738	5.676	84.533						
9	.677	5.207	89.739						
10	.481	3.698	93.437						
11	.40	3.116	96.55						

	5		3						
12	.25 8	1.983	98.53 6						
13	.19 0	1.464	100.0 00						

Extraction Method: Principal Component Analysis.

Table No.6: Values of Total Variance Explained

Rotated Component Matrix^a

	Component				
	1	2	3	4	5
Easy availability of online learning software's encourages me to take online classes					.727
Access from anywhere encourages me to take online classes		.717			
Flexibility and convenience encourages me to take online classes		.842			
Force from my institute encourages me to take online classes	.712				
Peer pressure (Because my colleagues are taking) encourages me to take online classes	.639				
Motivation to engage students during lockdown encourages me to take online classes		.569			
Lack of one to one interaction (student engagement) discourages online teaching					.566
Difficulty in teaching courses that are practical and need simulation discourages online teaching				.733	

Lack of infrastructure (Laptop, Internet Speed) discourages online teaching					
Being less technology savvy discourages online teaching	.567				
Lack of user friendly software's discourages online teaching			.641		
Lack of economical software's discourages online teaching			.894		
Physical discomfort (strain in eyes, body pain etc) discourages online teaching				.680	
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.					
a. Rotation converged in 9 iterations.					

Table No.7: Extracted Factors

A regression model was built considering the factors extracted as independent variables and adoption of online teaching as dependent variable. The r-square value was .631 which indicated a good amount of variation in the dependent variable predicted by the independent variables.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.575 ^a	.631	.555	.76512

a. Predictors: (Constant), Lack of Student Interaction, Difficult for Practical/Technical Subjects, User-Friendliness, Access and Flexibility, Institutional Factors

Table No.8: R-Square Value

From the co-efficient table, it was found that three variables were significant accepting our H7, H8 and H10. Furthermore access and flexibility had a higher effect on adoption of online teaching than user friendliness and lack of student interaction as a barrier to adopt online teaching.

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	3.520	.108		32.531	.000		
	Institutional Factors	.067	.109	.075	.612	.544	1.000	1.000
	Access and Flexibility	.343	.109	.387	3.142	.003	1.000	1.000
	User-Friendliness	.261	.109	.295	2.391	.021	1.000	1.000
	Difficult for Practical/Technical Subjects	.067	.109	.076	.617	.540	1.000	1.000
	Lack of Student Interaction	.254	.109	.286	2.322	.025	1.000	1.000
a. Dependent Variable: I prefer to take online classes?								

Table No.9: Beta and P-Values

For finding the factors that influence the decision of students to undertake online courses 8 statements extracted from literature review were considered as independent variables and the dependent variable was adoption of online courses. It was considered to reduce the dimensions and build a better regression model; hence exploratory factor analysis was run to reduce the number of statements into a few factors using principal component analysis with Varimax (orthogonal) rotation. The KMO value was .889 and was adequate for sampling adequacy and the Bartlett's test of sphericity was also significant indicating the data to be suitable for factor analysis. Two factors were extracted explaining 73% variance. The two factors extracted were named Easy Availability, Access and Context (Covid-19) & Peer Pressure and Variety of Courses.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.889
Bartlett's Test of Sphericity	Approx. Chi-Square	501.376
	df	28

Sig.	.000
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Table No.1: Values of KMO and Bartlett's test of Sphericity**Total Variance Explained**

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.031	62.892	62.892	5.031	62.892	62.892	3.932	49.151	49.151
2	.849	10.609	73.501	.849	10.609	73.501	1.948	24.350	73.501
3	.585	7.313	80.813						
4	.424	5.298	86.111						
5	.386	4.830	90.941						
6	.276	3.451	94.392						
7	.260	3.247	97.639						
8	.189	2.361	100.000						

Extraction Method: Principal Component Analysis.

Table No.2: Values of Total Variance Explained**Rotated Component Matrix**

	Component	
	1	2
Easy availability of online courses have an effect on adoption of online courses	.861	
Access from anywhere has an effect on adoption of adoption of online courses	.805	

Flexibility and convenience of attending classes has an effect on adoption of online courses	.830	
Peer pressure (Friends undertaking courses) has an effect on adoption of online courses		.911
Access to different variety of courses has an effect on adoption of online courses		.670
Flexibility of modes (part-time/full time) has an effect on adoption of online courses	.688	
Self directed learning has an effect on adoption of online courses	.745	
Covid-19 lockdown has an effect on adoption of online courses	.715	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Table No.3: Extracted Factors

A regression model was built considering the factors extracted as independent variables and adoption of online courses as dependent variable. The r-square value was .439 which indicated a fair amount of variation in the dependent variable predicted by the independent variables.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.489	.439	.224	1.00844

a. Predictors: (Constant), Peer Pressure and Variety of Courses, Easy Availability, Access and Context (Covid-19)

Table No.4: R-Square Value

From the co-efficient table, it was found that both the independent variables were significant accepting our H11 and H12. Furthermore easy availability, access and context had a higher effect on adoption of online courses than peer pressure and variety of courses which was indicated by a higher beta value.

Coefficients

Model	Unstandardized	Standardized	t	Sig.	Collinearity
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	Coefficients		zed Coeffie nts			Statistics	
	B	Std. Error	Beta			Tolera nce	VIF
(Constant)	3.099	.100		30.88 4	.000		
1 Easy Availability, Access and Context (Covid- 19)	.398	.101	.348	3.947	.000	1.000	1.000
Peer Pressure and Variety of Courses	.394	.101	.344	3.904	.000	1.000	1.000

a. Dependent Variable: I would like to undertake online courses?

Table No.4: Beta and P-Values

For finding the factors that influence the decision of faculties to undertake online courses 8 statements extracted from literature review were considered as independent variables and the dependent variable was adoption of online courses. It was considered to reduce the dimensions and build a better regression model; hence exploratory factor analysis was run to reduce the number of statements into a few factors using principal component analysis with Varimax (orthogonal) rotation. The KMO value was .802 and was adequate for sampling adequacy and the bartlett's test of sphericity was also significant indicating the data to be suitable for factor analysis. Two factors were extracted explaining 53% variance. The two factors extracted were named Easy Availability, Access, Flexibility and Context (Covid-19) & Peer Pressure.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.802
Approx. Chi-Square		177.17 4
Bartlett's Test of Sphericity	df	28
	Sig.	.000

Table No.10: Values of KMO and Bartlett's test of Sphericity

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.037	50.467	50.467	4.037	50.467	50.467	3.673	45.911	45.911
2	1.241	15.511	65.978	1.241	15.511	65.978	1.605	20.067	65.978
3	.923	11.543	77.521						
4	.552	6.902	84.424						
5	.459	5.736	90.159						
6	.306	3.822	93.981						
7	.275	3.431	97.413						
8	.207	2.587	100.000						

Extraction Method: Principal Component Analysis.

Table No.11: Values of Total Variance Explained

Rotated Component Matrixa

	Component	
	1	2
Easy availability of online courses has an effect on adoption of online courses	.870	
Access from anywhere has an effect on adoption of adoption of online courses	.824	
Flexibility and convenience of attending classes has an effect on adoption of online courses	.761	
Peer pressure (Colleagues undertaking courses) has an effect		.9

on adoption of online courses		24
Access to different variety of courses has an effect on adoption of online courses	.561	.565
Flexibility of modes (part-time/full time) has an effect on adoption of online courses	.761	
Self directed learning has an effect on adoption of online courses	.637	
Covid-19 lockdown has led to adoption of online courses	.586	

Extraction Method: Principal Component Analysis.

Rotation Method: Varimax with Kaiser Normalization.

a. Rotation converged in 3 iterations.

Table No.12: Extracted Factors

A regression model was built considering the factors extracted as independent variables and adoption of online courses as dependent variable. The r-square value was .538 which indicated a fair amount of variation in the dependent variable predicted by the independent variables.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.488a	.538	.485	.973305

a. Predictors: (Constant), Peer Pressure, Easy Availability, Access, Flexibility and Context (Covid-19)

Table No.13: R-Square Value

From the co-efficient table, it was found that one variables was significant accepting our H13.

Coefficients

Model	Unstandardized Coefficients	Standardized Coefficients	t	Sig.	Collinearity Statistics

			ents				
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	3.460	.138		25.137	.000		
1 Easy Availability, Access, Flexibility and Context (Covid-19)	.502	.139	.460	3.611	.001	1.000	1.000
Peer Pressure	-.178	.139	-.163	-1.277	.208	1.000	1.000

a. Dependent Variable: I would like to undertake online courses?

Table No.14: Beta and P-Values

Hypotheses	Test	Result
<i>H1 There is a significant difference in the adoption of online classes between students from different localities</i>	<i>Krushkal Wallis Test</i>	<i>Accepted</i>
<i>H2 There is a significant difference in the adoption of online classes between students from different income backgrounds</i>	<i>Krushkal Wallis Test</i>	<i>Rejected</i>
<i>H3 There is a significant difference in the adoption of online classes between students from different academic capabilities</i>	<i>Krushkal Wallis Test</i>	<i>Accepted</i>
<i>H4 There is a significant difference in the adoption of online teaching between faculties from different academic disciplines</i>	<i>Krushkal Wallis Test</i>	<i>Rejected</i>
<i>H5 There is a significant difference in the adoption of online teaching between faculties from different age</i>	<i>Krushkal Wallis Test</i>	<i>Rejected</i>

<i>groups</i>		
<i>H6 Institutional Factors influence faculty's decision to adopt online teaching practice</i>	<i>Regression</i>	<i>Rejected</i>
<i>H7 Access and Flexibility influence faculty's decision to adopt online teaching practice</i>	<i>Regression</i>	<i>Accepted</i>
<i>H8 User-Friendly software's influence faculty's decision to adopt online teaching practice</i>	<i>Regression</i>	<i>Accepted</i>
<i>H9 Difficult to teach Practical/Technical Subjects influence faculty's decision to adopt online teaching practice</i>	<i>Regression</i>	<i>Rejected</i>
<i>H10 Lack of Student Interaction influence faculty's decision to adopt online teaching practice</i>	<i>Regression</i>	<i>Accepted</i>
<i>H11 Easy Availability, Access and Context (Covid-19) has an effect on student's adoption of online courses</i>	<i>Regression</i>	<i>Accepted</i>
<i>H12 Peer Pressure and Variety of Courses have an effect on student's adoption of online courses</i>	<i>Regression</i>	<i>Accepted</i>
<i>H13 Easy Availability, Access, Flexibility and Context (Covid-19) have an effect on faculty's adoption of online courses</i>	<i>Regression</i>	<i>Accepted</i>
<i>H14 Peer Pressure has an effect on faculty's adoption of online courses</i>	<i>Regression</i>	<i>Rejected</i>

Table No.15: Hypotheses Test Results

Discussion and Conclusion

This paper was written with multiple objectives which included measuring if there was a significant difference in the adoption of online teaching/courses between students and faculties on the basis of demographic factors; it was found that there was a significant difference in the adoption of online classes between students from different locations; making it clear that the country is still not ready for a mass implementation of online teaching. This is in line with earlier literature (Peters et.al, 2020). It was also found that there is a significant difference in the adoption of online classes between students having different academic capabilities. It has been cited in literature that self-directed learning and motivation plays a

vital role in the online environment (Manochehr, 2007). The findings are in line with this observation. It was found that there was no significant difference in the adoption of online teaching among faculties teaching in different academic disciplines and between different age groups.

Another objective of this study was to find the factors that affect faculties decision to adopt online teaching pedagogy, it was found that easy access and flexibility and availability of user friendly software's have an effect on adoption of online teaching pedagogy; also lack of student interaction was found to be a barrier in the adoption of online teaching among faculties; this has been cited several times in literature as being an inhibiting factor in the success of online teaching (Manochehr, 2007).

Among the other objectives of this study, the authors also attempted to measure the effect of various factors on the adoption of online/MOOC courses among faculties and students. It was found that easy availability, access, flexibility and context (Covid-19 Lockdown) have an effect on faculty's adoption of online courses both among faculties and students. This is line with the findings of earlier studies (Wyk et. al, 2018; Aithal et al., 2016; Mohammad A., 2006). It has also been cited in literature that developing nations have been slow among the participation list of MOOC Courses (Virani et.al, 2020) but the trend is changing fast. This study found that peer pressure has a significant effect on adoption of MOOC courses among students; this was missing among faculties. The current scenario of COVID-19 have changes the dynamics in the education industry and has pushed the pace at which online teaching learning system is adopted by the academic and students community. This research study adds on to the growing literature on the online teaching learning environment.

Limitations and Future Research

The sample respondents in this study were from a mid-sized private university in Gujarat. Sample size was limited and majority of respondents belonged to a specific demographic; hence the results of this study cannot be generalized to a wider general population. Research in online education is still at its nascent stage, this research can be taken forward by exploring additional variables like reputation of MOOC courses, duration of courses, personal and contextual factors. Additionally future studies can be designed to study a larger diversified sample group for greater generalization of findings.

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