Research Article

Students' Intention (as a Consumer) to Study through Distance Education Mode Post COVID-19 Crises

Heena Kashyap[1] & Sunny Makhija[2]
[1]Lecturer, Commerce, Directorate of Education
Government of NCT of Delhi, Delhi, India,
Email: heena.kashyap91@yahoo.com
[2]Marketing & International Business Advisory Professional
Dezan Shira & Associates, Delhi, India

Abstract

The aim of this paper is to assess the intention of students (as a consumer) to study through distance education mode after arousal of a pandemic situation (due to spread of coronavirus all over the world). The research was conducted in India, where responses were sought from current and prospective students. The basic idea was to study the impact of covid-19 crises on the mindset of students, as many of them would be hesitant in travelling miles for a regular college. While searching for the best college/education institution, the behavior of students seems to be similar to the behavior of a consumer. Therefore, students' intention was studied from the perspective of consumer behavior discipline. There were a total 431 students whose responses were included in this study. The smart PLS version 2.0 software has been used for applying mathematical and statistical formulas. The model was constructed from the literature review that consisted of four independent factors (perception, attitude, motivation and personality) and one dependent factor (student/consumer intention). The results showed that perception, attitude and motivation are the main driving force behind a student's intention to take admission in a distance education institution.

Keywords: Student's Intention, Distance Education, COVID-19, Consumer Behaviour

Introduction

COVID-19 is a real villain of our lives. It needs no introduction as it has devastated the lives of more than one billion people around the world. In this whole scenario, humankind is not the only sufferer instead thousands of animals also lost their lives. One of the segments that have been affected is "Students" such that it has created a mental pressure on them. Initially, they did not realize the effects of the pandemic but gradually the consequences shook them.

Nothing can replace teaching–learning process between a teacher and a student. Whether it is online teaching or distance teaching, the guidance of a teacher is always required. The business of tutors and online coaching has flourished after covid-19 crises. Many educational apps were introduced for providing education to students during these crises (Li & Lalani, 2020). The most

affected students were those who got stuck in the middle of new admission or a new session because their new syllabus could not be started due to lockdown in the whole country. There is a difference between online teaching and distance education where online teaching could be a means or a method to complete the syllabus of distance education courses.

Many universities have proclaimed their excellence, but it is the student who can actually analyze and decide what is best for him/her. These students can also be considered as consumers of education as they go to the market, search for various colleges and then decide about their admission (Schiffman, Kanuk, Ramesh, & Wisenblit, 2010). While assessing various colleges, the admission fees and associated costs is one of the factors that influence the final decision of students or consumers (Fidalgo, Thormann, Kulyk, & Lencastre, 2020). Since a student alone is not capable of making accurate decisions, he/she seeks help from their family members and friends.

The scenario has changed, as earlier online teaching was not possible for all the students due to paucity of resources. The students were supposed to collect books/notes and attend weekly classes held at the designated center. But, the technology upgradation has been a boon for both teachers and students (Sheridan & Kelly, 2010) that has led to improvement in communication between teacher and student (Li & Lalani, 2020). A Covid-19 crisis has made academicians think about other modes of teaching, as another pandemic situation may arise anytime without a warning (Li & Lalani, 2020).

Need for the study

child is different therefore their desires and preferences are also different. They make choices that are affected by the choices of many people at their home or neighbourhood. But, there is a need to identify the student centered factors that are responsible for a student's intention to study through distance mode. Apart from basic factors like income, social status and social factors there are many psychological and personal factors that have deep impact over a student's or consumer's preference. The results of this study would help in assessing the student's preferences post COVID-19 crises and would help education institutions to devise their programs to attract students for distance education courses. Usually, students prefer to study from a regular college/university but it is imperative to study the changes in preferences (if any) of students in relation to distance education after COVID-19 crises. Since the crises have mentally affected many people all over the world, it must have impacted the preferences and perception of students towards distance education programs.

Objectives

The objectives of this study are not elaborative, instead are focused on the major area of research which is as follows:-

1. To identify the factors responsible for students' (as consumers) intention to study through distance education mode.
2. To assess the relationship between

"various factors affecting students' (consumers') intention to study through distance education mode" and "actual intention".

Review of literature

Distance learning is a process of acquiring knowledge when a learner and a trainer cannot interact face-to-face, instead they can communicate with the help of various online technologies (Bijeesh, 2013). There is historical importance of such a learning mechanism because it helps even those who cannot travel miles every time (Bozkurt, 2019). The role of distance learning has widened as one can study from lecturers of various countries; assignments and doubts can be cleared through innovative system softwares (Aharony & Ilan, 2016). The distance learning modes are considered less expensive than regular courses due to infrastructural and other cost savings (HMC Architects, 2020). These costs are ultimately borne by students in the form of admission fees, therefore distance courses seem to be more economical.

The concepts of psychology are relevant in studying consumer behavior, which are also relevant for understanding students' behavior. Education has now become a business market where education and knowledge is being sold and students are the consumers/buyers of that knowledge. Analyzing from consumer behavior discipline, the four factors are most important to study one's mind. These factors are Perception, attitude, motivation and personality (Schiffman, Kanuk, Ramesh, & Wisenblit, 2010). The decision of learning through distance or regular mode involves mental exercise and cognitive thinking (Churchill & Surprenant, 1982). Thus,

these four factors play an important role in the determination of the same (Schiffman, Kanuk, Ramesh, & Wisenblit, 2010). The explanations of these factors are as follows:-

Perception displays the thought process of an individual. Throughout a time, an individual develops certain assumptions and on the basis of that he/she starts interpreting and perceiving the stimulus (Schiffman, Kanuk, Ramesh, & Wisenblit, 2010).

Attitude displays a direction i.e. whether a person is positive towards something or is negative towards something (Schiffman, Kanuk, Ramesh, & Wisenblit, 2010). It has been seen in past studies that a positive attitude towards an object or person, may influence decisions of an individual.

The motivation may be classified into monetary and non-monetary heads (Schiffman, Kanuk, Ramesh, & Wisenblit, 2010). Some individuals are motivated by monetary benefits and some are motivated by non-monetary benefits (Maslow, 1943). Higher the motivation, higher would be the intention to take an action or not to take an action (Ajzen, 1985).

Different individuals have different identities and personalities. Personality traits determine the wholesome personality and character of an individual. A risk taker, brave and adventurous individual does not seek opinions of others to make his/her final decision (Schiffman, Kanuk, Ramesh, & Wisenblit, 2010).

Thus, a model (figure-1) has been constructed to understand students' intention to study through distance

education mode.

Figure-1: Model of students' intention to study through distance education mode
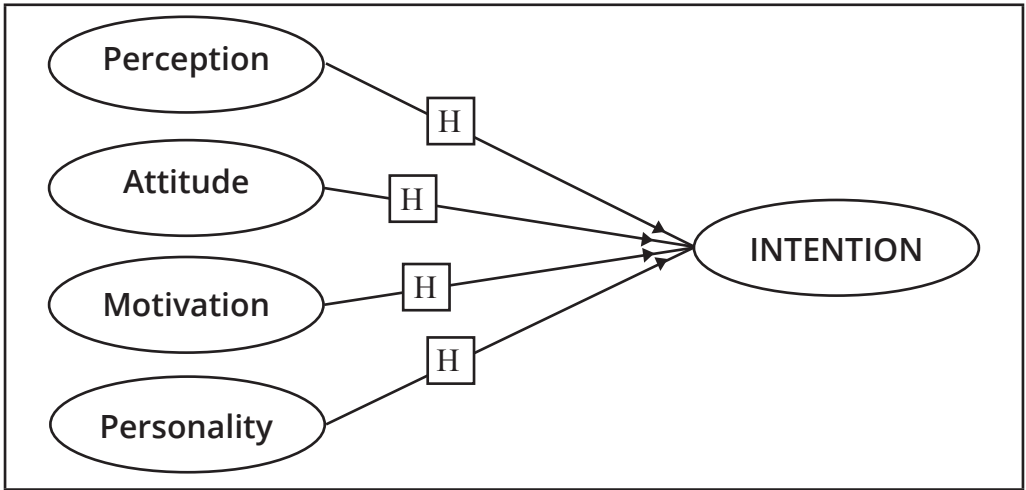
Intention is a desire to do something which has an impact over the final decision. (Ajzen, 1985). A strong intention may lead to an action, but it is not necessary as other factors may intervene to affect one's decision (Hocutt, Chakraborty, & Mowen, 1997).

Hypothesis

H_{01}- There is no significant relationship between students' perception and students' intention to study through distance mode, post COVID-19 crises.

H_{02}- There is no significant relationship between students' attitude and students' intention to study through distance mode, post COVID-19 crises.

H_{03}- There is no significant relationship between students' motivation and students' intention to study through distance mode, post COVID-19 crises.

H_{04}- There is no significant relationship between students' personality and students' intention to study through distance mode, post COVID-19 crises.

Research Methodology

In this study after the construction of the model, factors were measured with the help of scale items that were developed through previous literature findings. The primary data was collected with the help of questionnaire whose details are as follows:

Questionnaire: In totality, 14 statements were included in the survey and these statements were measured on 7-point likert scale (7– Strongly disagree, 6– Disagree, 5– Somewhat disagree, 4 – Neither agree nor disagree, 3 – Somewhat agree, 2 – Agree, 1– Strongly agree).

Sample Size: The sample includes respondents from all over India. However, a convenience sampling method was followed to accumulate the responses. Around 435 responses were received but only 431 were finalized for final study.

Statistical tools applied: Confirmatory factor analysis was done where all the statistical calculations were made using SmartPLS 2.0 version software. The reflective model and structural model assessment was initiated to test the relationships between independent factors and dependent factors. With the help of frequency, percentages, ratios and t-statistics all the data were analyzed intensely.

Table-1 shows scale items for each of the constructs which were included in the research model. The construct "perception" had four items in its scale, "attitude" construct had four items in its scale, "motivation" had two items, "personality" had two items and "intention" had two items in its scale.

Table-1: Scale items for measuring each Construct

Constructs	No.	Statement
Perception (Fidalgo, Thormann, Kulyk, & Lencastre, 2020)	P1	I think that distance learning modes would be in trend after covid-19 crises.
	P2	I think distance learning modes are gaining popularity.
	P3	I think distance education courses are necessary in our country.
	P4	I think there is no harm in completing a degree from a distance education college.
Attitude (Celika & Uzunboylu, 2015)	A1	I have a positive attitude towards distance education courses.
	A2	I feel that more distance education courses would be required in our education system post covid-19 crises.
	A3	Distance education has played a vital role in the education sector.
	A4	In critical situations, distance learning is the best option.
Motivation (Fidalgo, Thormann, Kulyk, & Lencastre, 2020)	M1	Distance learning helps in effectively managing time.
	M2	Distance learning helps in saving costs.
Personality (Schiffman, Kanuk, Ramesh, & Wisenblit, 2010)	PS1	I think rationally before making any decision.
	PS2	I evaluate the pros and cons of every situation.

Intention (Ajzen, 1985)	I1	I will definitely consider distance learning courses for my studies.
	I2	I will recommend others also for distance learning courses.

The purpose of scale items of "perception" was to understand the perception of students cum consumers regarding distance education mode post COVID-19 crises. The aim was to understand current views of students in relation to study via distance mode. The purpose of "attitude" scale items was to identify the attitude of students towards distance mode learning. A positive attitude may lead to higher intention to study via distance mode. The "motivation" scale items were meant to measure motive/benefit that students might seek while enrolling for a distance course. The "personality" construct measures the trait of a person/ student such that an open minded and decisive person might opt for distance learning mode, as his/her decisions are not affected by the views of others. The "intention" construct measures the intention/desire to study via distance mode.

Analysis and results

The table-2 shows frequencies for each of the demographic categories such that only three categories were found relevant for this study. Total number of male respondents was 235 and female respondents were 197.

Table -2: Demographics Summary

Paired Samples Statistics	Frequency	Percentage
Age		
(17-21 yrs)	211	49
(22- 26 yrs)	188	44
(26 yrs & above)	32	07
Gender		
Male	235	55
Female	197	46
Family Monthly Income		
(Rs.10,000- Rs.50,000)	122	28
(Rs. 50,001- Rs. 1,00,000)	180	42
(Rs. 1,00,001& above)	130	30

Source: Primary Data

Model Estimation

The model estimation involves two kinds of assessment i.e. reflective model estimation and structural model estimation. It is necessary to first conduct reflective model estimation and on the basis of its results, structural model estimation is performed.

Reflective Model Assessment

The smart PLS software provides three dimensions for model testing i.e. Algorithm, Bootstrapping and Blindfolding. The results of the algorithm are required for reflective model assessment and results of bootstrapping, blindfolding are required for structural model assessment.

Figure-2 represents the outcome of the PLS algorithm where four factors are independent (perception, attitude, motivation and personality) and one factor is dependent variable (intention). The value of $R2$ is 0.60 which shows that explanatory power is high (Wong, 2019). A value below 0.49 signifies a low explanatory power (Hair, Hult, Ringle, & Sarstedt, 2016).

Figure-2: Outcome of PLS algorithm run derived from smart PLS software version 2.0
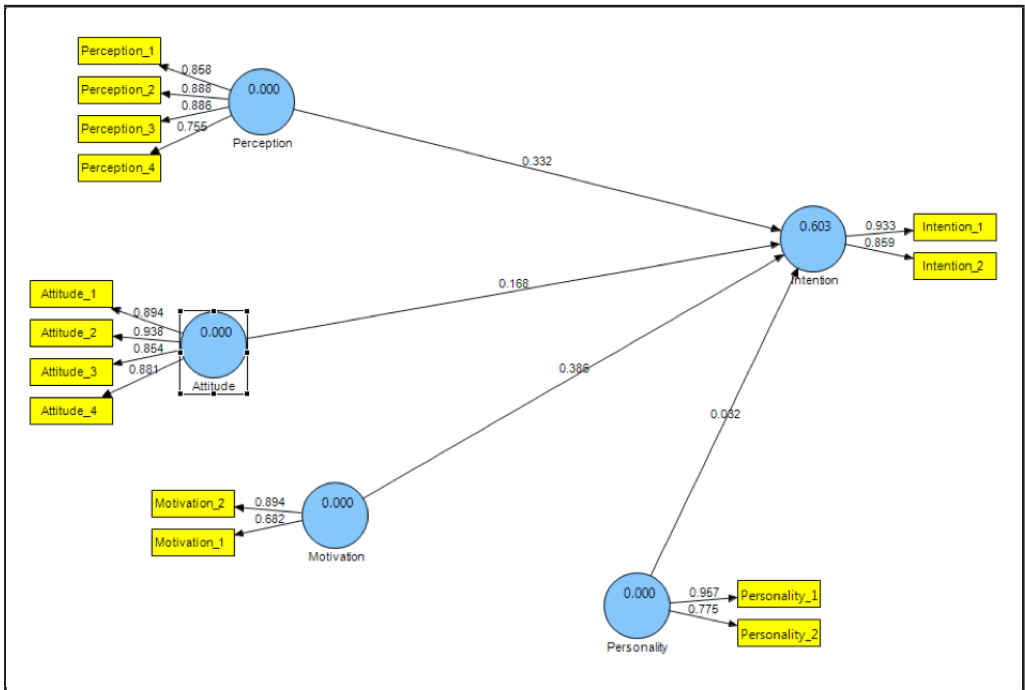
The internal consistency (Table-3) is confirmed through composite reliability; Individual indicator reliability is confirmed through outer loadings and Discriminant validity is confirmed through Fornell lacker criterion (Wong, 2019).

Table-3: Internal Consistency

Constructs	AVE	Composite Reliability	R Square	Cronbachs Alpha
Attitude	0.80	0.94	-	0.92
Intention	0.80	0.89	0.60	0.76
Motivation	0.63	0.77	-	0.44
Perception	0.72	0.91	-	0.87
Personality	0.76	0.86	-	0.72

Source: Primary Data

The scores of composite reliability for each construct should be above 0.70 to confirm the presence of internal consistency (Hair, Hult, Ringle, & Sarstedt, 2016). The third column of table-3 i.e. composite reliability column shows that the score of each construct is above 0.70, therefore internal consistency is present.

Table-4: Individual Indicator Reliability (Outer Loadings)

	Attitude	Intention	Motivation	Perception	Personality
Attitude_1	0.89				
Attitude_2	0.94				
Attitude_3	0.85				
Attitude_4	0.88				
Intention_1		0.93			
Intention_2		0.86			
Motivation_1			0.68		
Motivation_2			0.89		
Perception_1				0.86	
Perception_2				0.89	
Perception_3				0.89	
Perception_4				0.75	
Personality_1					0.96
Personality_2					0.77

Source: Primary Data

In order to confirm individual indicator reliability, the scores of outer loadings derived from algorithm outcome should be above 0.60 (Hair, Hult, Ringle, & Sarstedt, 2016). Table-4 shows that the outer loading value of each scale item is above 0.60, therefore individual indicator reliability is also present.

Table-5: Discriminant Validity

Construct	Attitude	Intention	Motivation	Perception	Personality
Attitude	0.89				
Intention	0.48	0.90			
Motivation	0.40	0.71	0.80		
Perception	0.40	0.70	0.73	0.85	
Personality	0.70	0.51	0.43	0.60	0.87

Source: Primary Data

Table-5 shows the results of Fornell lacker criterion i.e. the square root of average variance explained (AVE) is compared with other constructs latent variable value (Hair, Hult, Ringle, & Sarstedt, 2016). For example, the square root of attitude's AVE value should be greater than latent variable scores of other constructs in order to meet discriminant validity criteria (Wong, 2019). Table-5 shows that AVE value of each construct is greater than the latent variable value of other constructs (specific row and column), therefore discriminant validity of variables is also confirmed.

Table-6 shows the value of path coefficients, where positive value denotes positive relationship between the independent variable and dependent variable. The path coefficient value lies between 0 to 1, which could be positive or negative (Hair, Hult, Ringle, & Sarstedt, 2016). The highest path coefficient value is 0.386 which means that path "Motivation → Intention" has the strongest relationship.

Table-6: Path coefficient values of all the paths in Model

Path	Path coefficient
Attitude → Intention	0.168
Motivation → Intention	0.386
Perception → Intention	0.332
Personality → Intention	0.032

Source: Primary Data

Multicollinearity

The constructs should not have collinearity among themselves; therefore to check collinearity issue variance inflation value (VIF) is calculated. The VIF value should be less than "5" to prove that there is no collinearity among the constructs (Hair, Hult, Ringle, & Sarstedt, 2016).

Table-7: Multicollinearity check

Factors	Intention	
	Tolerance	VIF
Attitude	.407	2.458
Motivation	.514	1.945
Perception	.465	2.150
Personality	.452	2.213

Source: Primary Data

Table-7 is a summary regarding the result of VIF calculations. All the values are below "5", therefore there is no question of multicollinearity.

Structural Model Assessment

The structural model assessment includes t-statistics calculation for finding significance of relationships, effect size and predictive relevance of the model (Wong, 2019). Table-8 shows the outcome of bootstrapping run, where t-statistics value is being analyzed to conclude about significance of results (Wong, 2019). The significance of relationships was tested at 1% significance level such that t-statistics value should be above 2.57. The t-statistics value of each path is above 2.57 except for path "Personality → Intention", which means that personality does not affect the student's intention to study through distance education mode. Therefore, hypotheses H01, H02, H03 are accepted and hypothesis H04 is rejected. It can be concluded that perception, attitude and motivation of students, determines their intention to enroll in distance learning courses.

Table-6: Path coefficient values of all the paths in Model

Path	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	Standard Error (STERR)	T Statistics (|O/STERR|)
Attitude → Intention	0.168	0.170	0.047	0.047	3.609
Motivation → Intention	0.386	0.387	0.044	0.044	8.825
Perception → Intention	0.332	0.334	0.052	0.052	6.439
Personality → Intention	0.032	0.029	0.054	0.054	0.600

Source: Primary Data

Effect Size (F²)

The effect size of any construct may be calculated by Cohen's formula (Wong, 2019) which reveals which variable has larger impact on the dependent variable.

$$F^2 = \frac{R^2 \ included - R^2 \ excluded}{1 - R^2 \ included}$$

Table-9 is a summary of effect size of each construct, where "motivation" has the largest effect size and "personality"

has no effect size. Therefore, the result of "personality" hypothesis i.e. H04 is cross verified by both t-statistics and effect size. The "attitude" construct has the lowest effect on a student's decision related to studies.

Table-9: Effect Size (F²)

Factors	Intention: R^2 excluded	Effect Size Intention	Inference
Attitude	0.588	0.03	Small
Motivation	0.539	0.1525	Large
Perception	0.566	0.085	Medium
Personality	0.6	0	No effect

Source: Primary Data

Predictive relevance (Q2)

Predictive relevance is confirmation of model accuracy which may be calculated using the following formula (Hair, Hult, Ringle, & Sarstedt, 2016):

$$Q^2 = 1 - \frac{Sum\ of\ squared\ prediction\ errors\ (SSE)}{Sum\ of\ squared\ observations\ (SSO)}$$

Table-10 shows the result of blindfolding calculations where cross validity redundancy option provides the value of predictive relevance (Hair, Hult, Ringle, & Sarstedt, 2016). The value of Q2 should be above "0" and a value nearer to "1" is considered best for model accuracy. The Q2 value derived from the calculations is between 0 and 1, therefore model predictive relevancy is good.

Table-10: Cross-Validity Redundancy

Construct	SSO	SSE	1-SSE/SSO
Intention	862	457.819	0.469

Source: Primary Data

Scale Items Statistics

Table-11 shows the mean and standard deviation score for each of the constructs. In likert scale "4" was quoted as "neutral" and "1" was quoted as "strongly agree". This means that factors that have obtained a mean score below "4" are going towards an "agree" continuum. Therefore, it can be concluded that students have developed an intention (post COVID-19 crises) to study via distance mode.

Table-11: Descriptive Statistics

Factors	N	Minimum	Maximum	Mean	Std. Deviation
Perception	431	1.25	5.50	2.8689	.77586
Attitude	431	1.00	5.50	3.0806	.95875
Motivation	431	1.00	5.00	2.9977	.89117
Personality	431	1.00	5.50	2.9559	.90176
Intention	431	1.00	5.00	2.7007	.89753

Source: Primary Data

Hypothesis summary

Table-12 is a short summary of accepted hypotheses. This is clear from the findings that psychological factors i.e. perception, attitude and motivation has an apparent role in development of intention among students to start considering distance education courses post COVID-19 crises.

Table-12: Hypotheses Summary

Hypotheses	Relation path	Result
H_{01}	Attitude → Intention	Supported
H_{02}	Motivation → Intention	Supported
H_{03}	Perception → Intention	Supported
H_{04}	Personality → Intention	Not Supported

Source: Primary Data

Findings

There are many imperative findings of the research. The study shows that there are three independent variables (perception, attitude and motivation) that affect the intention of students to opt for distance learning. This also means that, by changing the perception of students one can build a positive attitude towards distance education. However, the essence of motivation is needed to be combined with perception and attitude to change the mindset of students.

The students were also asked about their suggestions for any modifications that they think are essential for improving the education quality in India. The following suggestions were collated:-

• Since the impact of COVID-19 will take years to stabilize conditions in the world, therefore more options and courses should be made available through distance mode. Along with this, the comparison of regular and distance degrees shall be eliminated because, soon distance learning would be the

future of millions of potential students.

- For online examination, innovative methods shall be adopted to facilitate smooth conduct of tests. The questions shall be framed in such a way that students would require to use their own intelligence. The movement of eye retina, facial expressions and other computer techniques may be employed while conducting examinations online.
- The nomenclature given as distance learning shall be replaced with online learning as it degrades the value of degree.

Conclusion

Quality is important in imparting education to the masses. As compared to other developed nations, the education institutions in India focus less on quality of education. This has compelled students to evaluate various alternatives while seeking colleges. The results of the study clearly show that the behavior of students can be conditioned through psychological factors (perception, motivation and attitude). There is a need to create awareness among everyone that distance learning provides quality education like any other regular learning. Thus this study has contributed in revealing the true scenario and reality of today's time. The educational institutions require an understanding of the needs and demands of students such that students are not lured on pretext of good placements and jobs. The findings of study can help institutions in targeting and attracting students accordingly. The students are the future pillars of any economy and thus they should be educated appropriately.

Limitations

One cannot abstain from the limitations of any research. A wholesome research may not be feasible as different models may reveal different results. The following are few limitations of study:

1. Although the responses were aimed to be collected from all over India, many respondents of different states did not fill the questionnaire. Thus, the sample size was relatively small and not as aimed.
2. There may be a chance that minor factors have been ignored in the study. Those minor factors may be identified and studied in the future.

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