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ANALYZING THE EFFECTS OF DEMOGRAPHIC AND SOCIO-ECONOMIC FACTORS ON EFFICACY OF DIGITALIZATION IN INDIA'S HIGHER EDUCATION SYSTEM DURING COVID-19 PANDEMIC

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Abstract: THE PURPOSE OF THIS STUDY IS TO ASSESS THE EFFICACY OF THE DIGITALIZATION IN HIGHER EDUCATION OF BIHAR DURING THE LOCKDOWNS OF COLLEGES AND UNIVERSITIES DUE TO COVID-19 PANDEMIC AND TO FIND WHETHER GENDER, COURSE OPTED, STREAM OF STUDY, MEDIUM OF STUDY, RESIDENTIAL AREA, FAMILY INCOME LEVEL, ONLINE CLASS ATTENDED, ACTUAL TIME SPENT ON USING INTERNET FOR EDUCATION, AND OWNERSHIP OF GADGETS USED IN ONLINE CLASSES AFFECT THE EFFECTIVENESS OF DIGITALIZATION IN HIGHER EDUCATION IN BIHAR. THE DATA USED IN THIS STUDY ARE PRIMARY IN NATURE AND COLLECTED BY USING THE QUESTIONNAIRE METHOD FROM 429 STUDENTS OF THIRTEEN DIFFERENT STATE UNIVERSITIES AND ONE OPEN UNIVERSITY. AS MANY PREDICTORS ARE CATEGORICAL IN NATURE MULTINOMIAL LOGISTIC REGRESSION HAS BEEN USED TO ASSESS THE IMPACT OF VARIOUS DEMOGRAPHIC AND SOCIO-ECONOMIC FACTORS ON EFFICACY OF DIGITALIZATION IN HIGHER EDUCATION IN BIHAR. IT HAS BEEN FOUND THAT THE VARIABLES LIKE MONTHLY INCOME OF THE FAMILY, TIME ACTUALLY SPENT BY THE STUDENTS FOR EDUCATION BY USING INTERNET PER DAY, STREAM OF THE STUDY, MEDIUM OF THE STUDY, RESIDENTIAL AREA AND GENDER ARE SIGNIFICANT FACTORS THAT AFFECT THE DIGITALIZATION IN HIGHER EDUCATION IN BIHAR DURING THE PANDEMIC. THE STUDY COULD CONTRIBUTE IN TWO WAYS. FIRST, THE RESULTS OF EFFICACY OF DIGITALIZATION IN HIGHER EDUCATION IN BIHAR OF A LOWEST EDUCATION INDEX RANKING STATE WILL DEPICT AN AUTHENTIC PICTURE OF EFFECTIVENESS OF DIGITALIZATION IN HIGHER EDUCATION IN BIHAR IN BACKWARD STATES AND THEREBY ADD UP TO THE EXISTING LITERATURE AND SECOND, THE SIGNIFICANT FACTORS OF THE MODEL COULD ASSIST THE POLICY MAKERS IN TAKING CORRECTIVE MEASURES WHILE TAKING ANY DECISION TO DIGITALIZE THE EDUCATION IN SUCH KIND OF STATES IN INDIA.

Keywords: DIGITAL EDUCATION; DIGITALIZATION IN HIGHER EDUCATION; COVID-19 PANDEMIC; INDIAN EDUCATION SECTOR; MULTINOMIAL LOGISTIC REGRESSION; DIGITAL DIVIDE

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1. Introduction

Digitalization is one of the key drivers of global education system. It is a "significant trend in the modernization and reformation of the worldwide educational landscape" (Machekhina, 2017; Wadhwa, 2019). The operation of teaching-learning and research in contemporary times are largely digitalized (Ugur, 2020). The digitalization of the education sector has come up in a large way due to the unprecedented pandemic situation. During the pre-COVID pandemic period education sector was functioning primarily in offline mode. The global outbreak of COVID-19 pandemic predicated a

precarious situation wherein people were forced to live in locked down conditions (Shrivastava & Shrivastava, 2022). With all the usual familiarities of everyday lived experience going topsy-turvy, the search for new modes and methods of teaching-learning and research became evident. Spulbar et al. (2022) investigated relevant aspects about digitalization and its impact on poverty alleviation during COVID-19 pandemic.

The greatest challenge in the higher education sector was reflected in temporal and special shifts from the real to the virtual platform. This shift had many vicissitudes. The present study will look into the problems of adaptability to the new normal in higher education sector through a cross sectional analysis of various socio-economic and demographic factors determining and impacting the efficacy of digitalization in higher education sector. Gillani et al. (2022) argued that education and health represent essential pillars for the sustainable development of an economy. Bai Gokarna et al. (2021) investigated the effect of institutional effectiveness based on an empirical research study focused on higher education universities in India.

India is the second most populous country in the world with around 27.1% of gross enrollment ratio in higher education as per All India Survey of Higher Education (AISHE) 2019-20. Apart from University Grants Commission and the Department of Higher Education, Ministry of HRD/Education has also set a GER target of 50 percent at the higher education level by the year 2035 (Tobenkin, 2022).Until recently, the state of Bihar has had a dismal performance in higher education sector. According to NITI Aayog report the state of Bihar has the second lowest (19th rank) education index rankings (Aayog, 2018)**.** But in the past couple of years Bihar has recorded a phenomenal rise in its gross enrolment ratio (GER). The GER of Bihar has increased from 14.5% in 2020 to 19.3 % in year 2021, according to preliminary statistics revealed during the All India Survey of Higher Education. Even though the state of Bihar has made it to the fourth top position, next to UP, Maharashtra and Tamil Nadu in terms of increase in GER in 2021 (TOI, 2022), the picture remains much the same in digital literacy as it was in pre-pandemic period. The challenges for the digitalization in higher education in the state of Bihar are, thus, manifold. There are multiple factors impacting the efficacy of digitalization in higher education in Bihar. The present study aims at assessing the efficacy of the digitalization in higher education of Bihar during the lockdowns of colleges and universities due to COVID-19 pandemic by taking the perception of students. The study will also try to find out whether gender, class of education, stream of study, medium of study, residential area, family income level, online class attended, actual time spent on using internet for education, and ownership of gadgets used in online classes impact the effectiveness of digitalization in higher education in the state of Bihar during intermittent lockdowns of colleges and universities due to COVID-19 pandemic.

The uniqueness of this research lies in the attempts to objectively examine the fundamental issues of digitalization in higher education sector in the state of Bihar in India. The research may help in understanding the loopholes in the rather hasty implementation of digitalization in higher education in Bihar. It may assist the policy makers in framing informed and carefully calibrated policy decisions to gear up and go for the full digitalization of the higher education sector in the state of Bihar in future.

2. Literature Review

Education is given the highest rank and priority by almost every state and organization (Mentsiev, 2020). The advent of the COVID-19 pandemic radically redefined the global education sector. In 2020 1.6 billion learners all over the world faced problems in their education (Vishwakarma, 2022). The new normal predicated by the pandemic made it imperative on the part of the pedagogical policy makers to re-imagine the edu-space. The state-of-the-art pedagogical practices underwent dramatic change. (Pu et al., 2022) Information and communication technology played a key role as the harbinger of pedagogical modernity (Bejinaru, 2019; Prasad and Prakash, 2022). Creation of e-content

by using open educational resources and their dissemination through online classes conducted by using various virtual platforms filled the gap in academic transactions. Like a paper outlines how this new digital learning platform that has been co-created by students, academics and expert practitioners and how it supports the application of theoretical knowledge and learning to consolidate and enhance students' employment prospects (Raghubansie et al., 2014). Even a study tries to analyze the significant predictors related to the digital learning experience on the likelihood of choosing to keep the online format in the succeeding academic year (Sousa et al., 2022). Moreover, a paper also explores the assumptions by instructors and students concerning why and how multimodal and digital technologies are incorporated into undergraduate classes by qualitative approach (Ugur, 2020). But it is not as easy as it appears as there are many structural hurdles, the inequities of digital divide, financial difficulties and even lack of awareness (Maitra & Anurekha, 2021). The fundamental challenges of digitalization in higher education system in India are resistance to change, motivation levels of students, technical skills of students, students' understanding of technology, student performance evaluation, etc. (Chatwal, 2019). Timely intervention through the application of digital education was the need of the hour as it immediately addressed the stagnancy of entire education system of India through bridging the learning gap (Mukherjee & Kuri, 2021). Digital Education can be defined as the usage of a combination of technology, digital content and instructions in the education system to make things more effective and efficient than the former traditional education system in place (Chatwal, 2019). But the effectiveness of the digitalized education system largely depends on how well the online content is designed and executed (Prasad & Prakash, 2022; Tanya, 2019). The introduction of digitalization in the higher education sector in India is not unaffected by the global challenges and upheavals. As educational activities switched to online mode it has been observed that Bihar has some challenges to drive the education sector to the next level, which has the potential to increase access (Prasad & Prakash, 2022). This study finds a huge gap in existing literature regarding effectiveness of digitalization in higher education in the Indian state of Bihar vis-a-vis various socio-economic and demographic factors during the COVID-19 pandemic with a view to suggest targeted intervention to create a positive space for digitalization in a resilient higher education sector in the Indian state of Bihar (Das and Das, 2020; Kapasia et al., 2020). Ullal et al. (2022) examined the implications of artificial intelligence for service industry in India.

3. Need of the Study

Due to the pandemic many universities and colleges have started providing education in digital mode. Over 130 million users came online in 2020 and 2021 from which nearly 80 million came online in 2020 and 43 percent of them (around 34 million) came online due to the COVID-19 crisis. Though online teaching–learning methods have been followed by world-class universities for more than a decade to cater to the needs of students who stay far away from universities/colleges, it was during the COVID-19 pandemic online teaching–learning helped almost all universities, colleges, and affiliated students even in India (Darius et al., 2021). According to the 2011 census of India, Bihar has an overall literacy rate of 61.35 %. The male literacy rate of the state is 60.32%. The literacy rate of females is 33.57% which is much lesser than males in the state. The literacy rate is lower than the overall national average of 74.04%. Bihar has 13.1% Private-unaided colleges. Also, as per the report of All India Survey of Higher Education (AISHE), Bihar has recorded the lowest gender proportion where female to male teachers' ratio is 1:4 which is in percentage terms 75.3% for male and only 24.7% for female teachers. Moreover, modern Bihar has an inadequate educational infrastructure creating a huge mismatch between demand and supply. This problem is further aggravated by increases in population. The craving for higher education among the general population of Bihar has led to a migration of the student community from the state (Aditi, 2022). As per the report of The New Leam, an emphasis on

digitalized education has undoubtedly alienated a majority of Indian children especially those living in its rural areas where access to smart phones and computers as well as functional internet connections is a distant luxury. This is the reason for which it would be interesting to assess the efficacy of digitalization in higher education in Bihar during the pandemic and to determine whether gender, class of education, stream of study, medium of study, residential area, family income level, online class attended, actual time spent on using internet for education, and ownership of gadgets used in online classes have any impact on the effectiveness of digitalization in higher education in the state of Bihar during lockdowns of colleges and universities due to the pandemic.

4. Materials and Methods

4.1. Objectives

The objective of this study is to assess the efficacy of the digitalization in higher education of Bihar during the lockdowns of colleges and universities due to COVID-19 pandemic by taking the perception of students. Moreover, the paper also attempts to find whether gender, class of education, stream of study, medium of study, residential area, family income level, online class attended, actual time spent on using internet for education, and ownership of gadgets used in online classes affect the effectiveness of digitalization in higher education in the State of Bihar during lockdowns of colleges and universities due to the pandemic.

4.2. Instrument and Data Collection Procedure

The study is empirical. The data used in this study are primary in nature. A survey has been conducted within thirteen state universities and one Open University of Bihar. These universities cover more than 85% of the total bachelors, masters and research students of the whole state. The survey has been conducted with the help of questionnaire. The questionnaire that has been framed is in both English and Hindi language for the purpose of ease in understanding the questions for the both English and Hindi medium students. Enumerators have been appointed to distribute the questionnaires to the students of these fourteen universities and help the respondents to fill up the data in case of difficulty in understanding any question. The questionnaire involves the university name, gender, courses opted by student, stream, medium of study, residential area of student, monthly family income, number of online classes attended, usage of internet for education, ownership of gadgets used in online classes and opinion of the students of Bihar state on the efficacy level of online education during the pandemic in the Likert scale of 1 to 10.

4.3. Sample

An attempt has been made to collect 60 responses from each university. The response rate was 51%, i.e., 429 out of 840, which implies that only 429 respondents have given full and complete information. The data has been collected during March, 2022 to June, 2022.

4.4. Data Analysis Procedure

Multinomial Logistic Regression has been used to formulate a model that could represent the impact of gender, class of education, stream of study, medium of study, residential area, family income level, online class attended, actual time spent on using internet for education, and ownership of gadgets used in online classes affect the effectiveness of digitalization in higher education in Bihar during lockdowns of colleges and universities due to COVID-19. For the purpose of hypothesis testing and model development SPSS 25 has been used. The results and analysis are explained with the help of tables and diagrams.

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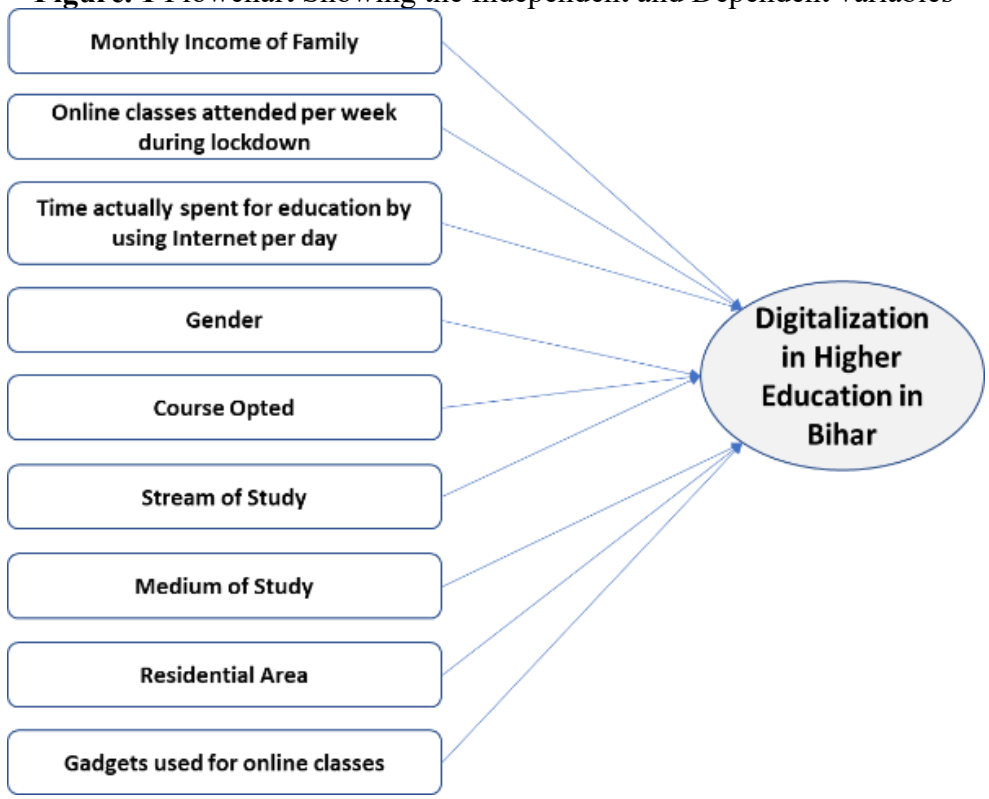
5. Data Analysis, Results and Discussion

For the purpose of assessing the impact of demographic and socio-economic factors on the effectiveness of digitalization in higher education in Bihar state, Multinomial Logistic Regression has been applied. Multinomial logistic regression is a simple extension of binary logistic regression that allows for more than two categories of the dependent or outcome variables. Like binary logistic regression, multinomial logistic regression uses maximum likelihood estimation to evaluate the probability of categorical membership. The succeeding section is the conceptual framework of the study in which variables considered for the model are mentioned.

5.1. Conceptual Framework – About the Variables used in Formulation of Model

The demographic and socio-economic variables considered as independent were monthly income of family, online classes attended per week during lockdown, time actually spent for education by using internet, gender, course opted, stream of study, medium of study, residential area and ownership of gadgets used for online classes. On the other hand, effectiveness of digitalization in higher education in Bihar is the dependent variable. A flowchart showing the independent and dependent variables of the study are mentioned below:-

Figure. 1 Flowchart Showing the Independent and Dependent variables



Source: Authors' own formulation

The predictor monthly income of family was in ordinal scale with four levels, i.e., below Rs. 20000, Rs. 20000 to Rs. 40000, Rs. 40000 to Rs. 60000, Rs. 60000 and above. Online classes attended per week during lockdown and time actually spent for education by using internet per day, are in ratio scale. Gender is categorical variable with male and female categories. Course opted is also categorical variable with categories of Undergraduate, Post Graduate, Ph.D. and vocational courses. Stream of Study has three categories, i.e., Arts, Science and Commerce. Medium of study is divided into two categories, i.e., English and Hindi. Residential Area is divided into three categories, i.e., Urban, semi-

Urban and Rural. Gadgets used for online classes are also divided into three categories, i.e., Personal, Provided/ Borrowed from friends and family, and provided by institute. While considering dependent variable effectiveness of digitalization in higher education in Biharis in the Likert scale of 10 points.

The following table 1 shows the number of respondents covered from different universities of Bihar.

Table 1. Number of Respondents from Different Universities and Courses

Name of University	Ph.D		Post Graduate		Undergraduate		Vocational Courses		**Grand Total**
	Female	Male	Female	Male	Female	Male	Female	Male	
Aryabhattta knowledge university Patna	0	0	0	0	4	4	0	0	**8**
BNMU Madhepura	1	0	4	0	10	1	0	0	**16**
BRABU Muzaffarpur	1	2	0	0	2	6	0	3	**14**
JPU Chhapara	0	4	7	1	3	2	0	1	**18**
LMNU Darbhanga	2	5	17	38	18	17	4	0	**101**
Magadh University	0	0	7	2	1	4	2	0	**16**
Munger university	1	3	2	4	2	1	0	1	**14**
Open University	2	2	3	3	8	12	1	3	**34**
Patliputra University	1	4	0	2	10	4	1	0	**22**
Patna university	2	2	2	0	16	8	2	0	**32**
Purnea University	0	1	27	26	28	9	2	2	**95**
TMU Bhagalpur	2	0	3	2	14	12	2	1	**36**
VKSU Ara	3	7	4	2	2	2	1	0	**21**
Maulana Mazharul Haque Arabic and Persian University	0	0	0	0	2	0	0	0	**2**
Grand Total	**15**	**30**	**76**	**80**	**120**	**82**	**15**	**11**	**429**

Source: Authors' Computation using SPSS 25

The first model has been formulated to determine which independent variables, i.e., gender, class of education, stream of study, medium of study, residential area, family income level, online class attended, actual time spent on using internet for education, and ownership of gadgets used in online classes is or are significantly affecting the dependent variable, i.e., effectiveness of digitalization in higher education in the State of Bihar during lockdowns of colleges and universities due to COVID-19. The results of the Model – 1 are mentioned below:

Table2. Model Fitting Information of Model - 1

Model	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC	BIC	-2 Log Likelihood	Chi-Square	df	Sig.
Intercept Only	1865.099	1901.652	1847.099			
Final	1872.813	2494.216	1566.813	280.286	144	.000

Source: Authors' Computation using SPSS 25

Table 2shows the results about model fitting criteria and likelihood ratio tests. The results are a comparison of the full model, i.e., containing all the predictors against a null or no predictors. The statistical value of likelihood ratio tests is less than 0.05 which represents that the full model represents

a significant improvement in fit over the null model. The succeeding table 3 depicts the Goodness of Fit table.

Table 3. Goodness of Fit of Model - 1

	Chi-Square	df	Sig.
Pearson	3536.991	2394	.000
Deviance	1552.139	2394	1.000

Source: Authors' Computation using SPSS 25

Table 3 is the Goodness of Fit table which contains the Deviance and Pearson chi-square tests that could be useful for determining whether the model exhibits good fit to the data. The value of chi-square of Pearson is significant whereas the chi-square value of Deviance is non-significant, i.e. more than 0.05 which is an indication that the model fits the data well. The succeeding table 4 shows the values of Pseudo R-Square.

Table 4. Pseudo R-Square of Model - 1

Cox and Snell	0.501
Nagelkerke	0.507
McFadden	0.160

Source: Authors' Computation using SPSS 25

Table 4 shows the Pseudo R-Square of Cox and Snell, Nagelkerke and McFadden of Model-1. Cox and Snell, and Nagelkerke shows R-square about 0.50 which reveals that the explained variation is about 50% which implies that the predictors (demographic factors) are about 50% capable to explain the dependent variable, i.e., effectiveness of digitalization in higher education in Bihar. The next table 5 shows the results of Likelihood Ratio Tests of each predictor.

Table 5. Results of Likelihood Ratio Tests

Predictors	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC of Reduced Model	BIC of Reduced Model	-2 Log Likelihood of Reduced Model	Chi-Square	df	Sig.
Intercept	1872.813	2494.216	1566.813[a]	.000	0	.
Monthly income of the family (Rs.)	1895.306	2480.156	1607.306	40.493	9	.000
Online classes attended per week during lockdown	1864.076	2448.925	1576.076	9.262	9	.413
Time actually spent for education by using Internet per day	1877.805	2462.655	1589.805	22.992	9	.006
Gender	1873.173	2458.022	1585.173	18.359	9	.031
Course Opted	1855.488	2367.231	1603.488	36.675	27	.101
Stream of Study	1860.110	2335.300	1626.110	59.296	36	.009
Medium of study	1884.912	2469.762	1596.912	30.099	9	.000
Residential area	1867.352	2415.649	1597.352	30.539	18	.033
Gadgets used for online classes	1852.940	2401.237	1582.940	16.127	18	.584

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

Source: Authors' Computation using SPSS 25

Table 5 depicts the values of Chi-square, degree of freedom and significance value of the predictors. From the above observation, it is clear that the predictors Monthly income of the family,

time spent for education by using internet per day, gender, stream of study, medium of study and residential area can be considered as significant as their probability values of chi-square are less than 0.05. On the other hand, the predictors like Online Classes attended per week, course opted and ownership of gadgets used for classes can not be termed as significant predictors as their significance values are more than 0.05. Hence, these three variables should be dropped and a revised model should be framed taking into consideration the significant variables having probability values less than 0.05. A table showing parameter estimates of each level of dependent variable of Model 1 is mentioned in the appendix. The results of the revised model are mentioned in Table 6, Table 7, Table 8 and Table 9.

Table 6. Model Fitting Information of Model-2

Model	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC	BIC	-2 Log Likelihood	Chi-Square	Df	Sig.
Intercept Only	1767.073	1803.626	1749.073			
Final	1725.942	2128.026	1527.942	221.131	90	.000

Source: Authors' Computation using SPSS 25

Table 6 shows the results about model fitting criteria and likelihood ratio tests of revised model termed as Model-2. The results are a comparison of the full model, i.e., containing all the predictors against a null or no predictors. As like in Model-1, the statistical values significant values of likelihood ratio tests of Model - 2 is also less than 0.05 which represents that the full model represents a significant improvement in fit over the null model. The succeeding table 7 depicts the Goodness of Fit table.

Table 7. Goodness-of-Fit of Model-2

Method	Chi-Square	df	Sig.
Pearson	2843.434	1890	.000
Deviance	1440.270	1890	1.000

Source: Authors' Computation using SPSS 25

Table 7 is the Goodness of Fit table of Model-2, which contains the Deviance and Pearson chi-square tests that could be useful for determining whether the model exhibits good fit to the data. The value of chi-square of Pearson is significant whereas the chi-square value of Deviance is non-significant, i.e., more than 0.05 which is an indication that the model fits the data well. The succeeding table 8 shows the values of Pseudo R-Square.

Table8. Pseudo R-Square

Cox and Snell	.416
Nagelkerke	.421
McFadden	.124

Source: Authors' Computation using SPSS 25

Table 8 shows the Pseudo R-Square of Cox and Snell, Nagelkerke and McFadden. Cox and Snell, and Nagelkerke shows R-square about 0.416 which reveals that the explained variation is about 41.6% which implies that the predictors (demographic and socio-economic factors) are about 42% capable to explain the dependent variable, i.e., effectiveness of digitalization in higher education in Bihar. The next table 9 shows the results of Likelihood Ratio Tests of revised model of each predictor.

Table 9. Likelihood Ratio Tests of Model – 2

Predictors	Model Fitting Criteria			Likelihood Ratio Tests		
	AIC of Reduced Model	BIC of Reduced Model	-2 Log Likelihood of Reduced Model	Chi-Square	Df	Sig.
Intercept	1725.942	2128.026	1527.942[a]	.000	0	.
Monthly income of the family (Rs.)	1757.754	2123.285	1577.754	49.812	9	.000
Time actually spent for education by using Internet per day	1731.238	2096.770	1551.238	23.297	9	.006
Stream of Study	1715.243	1971.115	1589.243	61.302	36	.005
Medium of study	1734.054	2099.585	1554.054	26.112	9	.002
Residential area	1728.292	2057.270	1566.292	38.351	18	.003
Gender	1719.582	2085.113	1539.582	17.340	9	.043

The chi-square statistic is the difference in -2 log-likelihoods between the final model and a reduced model. The reduced model is formed by omitting an effect from the final model. The null hypothesis is that all parameters of that effect are 0.

a. This reduced model is equivalent to the final model because omitting the effect does not increase the degrees of freedom.

Source: Authors' Computation using SPSS 25

Table 9 depicts the values of Chi-square, degree of freedom and significance value of the predictors. It is clear from the observation that all the predictors namely monthly income of the family, time actually spent for education by using interned per day, stream of study, medium of study and residential area are significant variables as the probability values are less than 0.05. It can also be inferred that the most significant variable is Monthly income followed by medium of study followed by residential area. The point that should be noted that in this revised model the Pseudo R squared has been reduced to 0.416 but, all the predictors in this revised model are significant. A table showing parameter estimates of each level of dependent variable of Model 2 is mentioned in the appendix.

6. Conclusion, Implications and Future Directions

It should be noted that as per National Institution for Transforming India (NITI) Aayog, the state, Bihar has the second lowest education index rankings. (Aayog, 2018)Again, the pandemic COVID-19 hits not only the economy but also the education sector of Bihar. The faculties and students are advised to use digital platform for teaching but there are many demographic and socio-economic factors which have affected the digitalization in higher education during the pandemic that was also reflected in the analysis and results of this study. While considering the results of Model 1, it has been observed that not all the demographic and socio-economic factors were affecting the effectiveness of digitalization in higher education in Bihar. The variables like monthly income of the family, time actually spent by the students for education by using internet per day, stream of the study, medium of the study, residential area and gender are the significant factors that affects the digitalization in higher education in Bihar during the pandemic.

Monthly income has played an important role for students in adapting the digital education, which means that the families having lesser monthly income might have been deprived from online education during the pandemic. Similarly, the results also reflected that digital education is highly dependent on usage of internet. The families and areas having no internet connectivity cannot be facilitated with digital education. Again, as the residential area is also a significant variable, it is implied that there might be many remote areas that might have been deprived of digital education during the pandemic. Such a situation clearly indicates the existence of digital divide in Bihar.

On the other hand, number of classes attended by students per week, course opted and gadgets used for online classes are not the significant factors affecting the effectiveness of digitalization in higher education in Bihar. The reasons for which these few variables were weak and insignificant, are even though the number of classes attended will increase there will be no improvement in the effectiveness of digitalization in higher education. Similarly, there has been no gradation in the quality of pedagogical approach laid to different level of courses. The same pedagogical approach has been applied both to undergraduate and doctoral level of courses. Again, whether the gadgets used by the students are owned by the students or lent by family and friends or provided by institution did not have any impact on effectiveness of digital education in Bihar.

An important point that should also be noted that although in Model 2 the pseudo-R square has been declined slightly to 0.416 but all the variables inculcated in Model 2 are significant. It is highly suggested that for implementation of effective digitalization in higher education in Bihar it is important to detect various challenges or hurdles that are creating hindrances against the adaptation of digital education and this would be an unexplored area where research can be done by the new researchers. Although many valuable outcomes have been brough out but this study also got some limitations like :-

- The study is limited only to the state of Bihar in India, and it will not represent the level of digitalization in higher education of any other state.
- The study considers the efficacy of digitalized education in only higher education of Bihar.
- Limited demographic and socio-economic are considered in this study like gender, class of education, stream of study, medium of study, residential area, family income level, online class attended, actual time spent on using internet for education, and ownership of gadgets used in online classes.
- Few small colleges that are located on remote villages could not be reached for data collection.

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Appendix

Annexure – 1 Table Showing Parameter Estimates of each level of Dependent Variable of Model – 1

Parameter Estimates

How you could rate the effectiveness of digital education that you got during lockdowns?		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
20.00%	Intercept	1.343	1.887	.506	1	.477			
	Monthly income of the family (Rs.)	-1.138	.332	11.723	1	.001	.320	.167	.615
	Online classes attended per week during lockdown	-.410	.372	1.210	1	.271	.664	.320	1.377
	Time actually spent for education by using Internet per day	.143	.141	1.027	1	.311	1.154	.875	1.521
	[Gender=Male]	-.823	.545	2.278	1	.131	.439	.151	1.279
	[Gender=Female]	0[b]	.	.	0	.	.	.	.
	[Presently studying =1]	2.259	1.363	2.746	1	.097	9.574	.662	138.492
	[Presently studying =2]	2.640	1.426	3.429	1	.064	14.012	.857	229.030
	[Presently studying =3]	3.871	1.814	4.553	1	.033	48.004	1.371	1681.122
	[Presently studying =4]	0[b]	.	.	0	.	.	.	.
	[Stream of Study=1]	-3.142	1.197	6.890	1	.009	.043	.004	.451
	[Stream of Study=2]	-3.258	1.151	8.019	1	.005	.038	.004	.367
	[Stream of Study=3]	-2.651	1.262	4.410	1	.036	.071	.006	.838
	[Stream of Study=4]	-1.501	1.289	1.357	1	.244	.223	.018	2.786
	[Stream of Study=5]	0[b]	.	.	0	.	.	.	.
	[Medium of study (अध्ययनकामाध्यम)=1]	2.340	.768	9.283	1	.002	10.385	2.304	46.800
	[Medium of study (अध्ययनकामाध्यम)=2]	0[b]	.	.	0	.	.	.	.
	[Residential area=1]	-.014	.627	.000	1	.983	.986	.289	3.372
	[Residential area=2]	1.964	.936	4.407	1	.036	7.128	1.139	44.597
	[Residential area=3]	0[b]	.	.	0	.	.	.	.
	[Gadgets used for online classes are=1]	1.003	.712	1.984	1	.159	2.727	.675	11.016
	[Gadgets used for online classes are=2]	.846	1.211	.488	1	.485	2.330	.217	24.986
	[Gadgets used for online classes are=3]	0[b]	.	.	0	.	.	.	.
30.00%	Intercept	-32.517	7111.175	.000	1	.996			
	Monthly income of the family (Rs.)	.531	.368	2.083	1	.149	1.701	.827	3.501
	Online classes attended per week during lockdown	-.106	.596	.032	1	.858	.899	.279	2.894
	Time actually spent for education by using Internet per day	-.439	.263	2.796	1	.094	.645	.385	1.078
	[Gender=Male]	.239	.928	.066	1	.797	1.270	.206	7.831
	[Gender=Female]	0[b]	.	.	0	.	.	.	.
	[Presently studying =1]	14.851	5821.053	.000	1	.998	2815179.362	.000	.[c]
	[Presently studying =2]	16.575	5821.053	.000	1	.998	15798004.000	.000	.[c]
	[Presently studying =3]	16.187	5821.053	.000	1	.998	10718136.578	.000	.[c]
	[Presently studying =4]	0[b]	.	.	0	.	.	.	.
	[Stream of Study=1]	14.593	4084.629	.000	1	.997	2175962.796	.000	.[c]
	[Stream of Study=2]	15.040	4084.629	.000	1	.997	3402882.317	.000	.[c]
	[Stream of Study=3]	15.250	4084.629	.000	1	.997	4197885.133	.000	.[c]
	[Stream of Study=4]	-1.861	7395.953	.000	1	1.000	.156	.000	.[c]

	[Stream of Study=5]	0[b]	.	.	0	.	.	.	.
	[Medium of study (अध्ययनकामाध्यम)=1]	2.478	1.161	4.556	1	.033	11.914	1.225	115.911
	[Medium of study (अध्ययनकामाध्यम)=2]	0[b]	.	.	0	.	.	.	.
	[Residential area=1]	-.489	.917	.285	1	.593	.613	.102	3.697
	[Residential area=2]	.122	1.427	.007	1	.932	1.130	.069	18.523
	[Residential area=3]	0[b]	.	.	0	.	.	.	.
	[Gadgets used for online classes are=1]	.410	1.301	.099	1	.753	1.506	.118	19.274
	[Gadgets used for online classes are=2]	-17.532	.000	.	1	.	2.431E-8	2.431E-8	2.431E-8
	[Gadgets used for online classes are=3]	0[b]	.	.	0	.	.	.	.
40.00%	Intercept	1.851	1.797	1.061	1	.303			
	Monthly income of the family (Rs.)	.234	.305	.590	1	.442	1.264	.695	2.298
	Online classes attended per week during lockdown	-.874	.450	3.778	1	.052	.417	.173	1.007
	Time actually spent for education by using Internet per day	-.181	.178	1.031	1	.310	.835	.589	1.183
	[Gender=Male]	-1.224	.673	3.303	1	.069	.294	.079	1.101
	[Gender=Female]	0[b]	.	.	0	.	.	.	.
	[Presently studying =1]	-.110	1.295	.007	1	.933	.896	.071	11.338
	[Presently studying =2]	1.132	1.346	.707	1	.400	3.102	.222	43.399
	[Presently studying =3]	1.811	1.717	1.113	1	.292	6.115	.211	176.853
	[Presently studying =4]	0[b]	.	.	0	.	.	.	.
	[Stream of Study=1]	-2.217	1.551	2.043	1	.153	.109	.005	2.276
	[Stream of Study=2]	-.683	1.366	.250	1	.617	.505	.035	7.351
	[Stream of Study=3]	-2.438	1.738	1.968	1	.161	.087	.003	2.635
	[Stream of Study=4]	-2.003	1.745	1.317	1	.251	.135	.004	4.128
	[Stream of Study=5]	0[b]	.	.	0	.	.	.	.
	[Medium of study (अध्ययनकामाध्यम)=1]	1.828	.830	4.854	1	.028	6.219	1.224	31.614
	[Medium of study (अध्ययनकामाध्यम)=2]	0[b]	.	.	0	.	.	.	.
	[Residential area=1]	-.221	.707	.098	1	.755	.802	.200	3.207
	[Residential area=2]	1.186	1.079	1.209	1	.272	3.275	.395	27.158
	[Residential area=3]	0[b]	.	.	0	.	.	.	.
	[Gadgets used for online classes are=1]	.255	.996	.065	1	.798	1.290	.183	9.097
	[Gadgets used for online classes are=2]	1.181	1.228	.926	1	.336	3.259	.294	36.151
	[Gadgets used for online classes are=3]	0[b]	.	.	0	.	.	.	.
50.00%	Intercept	-.236	1.515	.024	1	.876			
	Monthly income of the family (Rs.)	-.014	.250	.003	1	.956	.986	.604	1.611
	Online classes attended per week during lockdown	-.257	.363	.503	1	.478	.773	.379	1.575
	Time actually spent for education by using Internet per day	.061	.134	.208	1	.648	1.063	.817	1.383
	[Gender=Male]	.169	.531	.101	1	.750	1.184	.418	3.352
	[Gender=Female]	0[b]	.	.	0	.	.	.	.
	[Presently studying =1]	.792	1.059	.560	1	.454	2.208	.277	17.590
	[Presently studying =2]	1.337	1.125	1.413	1	.235	3.808	.420	34.538
	[Presently studying =3]	2.176	1.506	2.088	1	.148	8.809	.460	168.529
	[Presently studying =4]	0[b]	.	.	0	.	.	.	.
	[Stream of Study=1]	-2.031	1.198	2.873	1	.090	.131	.013	1.374
	[Stream of Study=2]	-1.248	1.095	1.301	1	.254	.287	.034	2.452
	[Stream of Study=3]	-1.289	1.205	1.146	1	.284	.275	.026	2.920
	[Stream of Study=4]	-1.794	1.368	1.719	1	.190	.166	.011	2.430
	[Stream of Study=5]	0[b]	.	.	0	.	.	.	.
	[Medium of study (अध्ययनकामाध्यम)=1]	2.276	.691	10.863	1	.001	9.741	2.516	37.714
	[Medium of study (अध्ययनकामाध्यम)=2]	0[b]	.	.	0	.	.	.	.
	[Residential area=1]	-.155	.560	.077	1	.781	.856	.286	2.565
	[Residential area=2]	.985	.916	1.158	1	.282	2.678	.445	16.111
	[Residential area=3]	0[b]	.	.	0	.	.	.	.
	[Gadgets used for online classes are=1]	.563	.711	.627	1	.429	1.755	.436	7.067
	[Gadgets used for online classes are=2]	-17.798	5262.811	.000	1	.997	1.864E-8	.000	.[c]
	[Gadgets used for online classes are=3]	0[b]	.	.	0	.	.	.	.
60.00%	Intercept	3.166	1.386	5.222	1	.022			
	Monthly income of the family (Rs.)	-.265	.238	1.239	1	.266	.767	.481	1.223
	Online classes attended per week during lockdown	-.523	.332	2.481	1	.115	.593	.309	1.136
	Time actually spent for education by using Internet per day	-.234	.130	3.252	1	.071	.791	.614	1.021
	[Gender=Male]	-.594	.480	1.531	1	.216	.552	.216	1.415

	[Gender=Female]	0[b]	.	.	0	.	.	.	.
	[Presently studying =1]	.993	1.031	.928	1	.335	2.700	.358	20.364
	[Presently studying =2]	2.154	1.075	4.010	1	.045	8.616	1.047	70.912
	[Presently studying =3]	2.268	1.472	2.373	1	.123	9.656	.539	172.868
	[Presently studying =4]	0[b]	.	.	0	.	.	.	.
	[Stream of Study=1]	-2.490	1.159	4.613	1	.032	.083	.009	.804
	[Stream of Study=2]	-1.860	1.051	3.132	1	.077	.156	.020	1.221
	[Stream of Study=3]	-2.471	1.152	4.602	1	.032	.084	.009	.808
	[Stream of Study=4]	-1.969	1.195	2.713	1	.100	.140	.013	1.453
	[Stream of Study=5]	0[b]	.	.	0	.	.	.	.
	[Medium of study (अध्ययनकामाध्यम)=1]	1.504	.635	5.605	1	.018	4.499	1.295	15.622
	[Medium of study (अध्ययनकामाध्यम)=2]	0[b]	.	.	0	.	.	.	.
	[Residential area=1]	.259	.523	.245	1	.621	1.296	.464	3.615
	[Residential area=2]	2.170	.870	6.215	1	.013	8.759	1.590	48.237
	[Residential area=3]	0[b]	.	.	0	.	.	.	.
	[Gadgets used for online classes are=1]	-.482	.715	.454	1	.501	.618	.152	2.509
	[Gadgets used for online classes are=2]	-.510	1.145	.199	1	.656	.601	.064	5.659
	[Gadgets used for online classes are=3]	0[b]	.	.	0	.	.	.	.
70.00%	Intercept	-.100	1.649	.004	1	.951			
	Monthly income of the family (Rs.)	.280	.249	1.264	1	.261	1.323	.812	2.155
	Online classes attended per week during lockdown	-.552	.371	2.219	1	.136	.576	.278	1.190
	Time actually spent for education by using Internet per day	-.095	.141	.456	1	.500	.909	.690	1.198
	[Gender=Male]	-.951	.528	3.240	1	.072	.386	.137	1.088
	[Gender=Female]	0[b]	.	.	0	.	.	.	.
	[Presently studying =1]	1.355	1.208	1.258	1	.262	3.876	.363	41.361
	[Presently studying =2]	3.199	1.265	6.400	1	.011	24.513	2.056	292.314
	[Presently studying =3]	3.810	1.590	5.746	1	.017	45.162	2.003	1018.057
	[Presently studying =4]	0[b]	.	.	0	.	.	.	.
	[Stream of Study=1]	-2.684	1.211	4.914	1	.027	.068	.006	.733
	[Stream of Study=2]	-2.730	1.128	5.857	1	.016	.065	.007	.595
	[Stream of Study=3]	-1.691	1.204	1.974	1	.160	.184	.017	1.950
	[Stream of Study=4]	-1.843	1.338	1.897	1	.168	.158	.012	2.180
	[Stream of Study=5]	0[b]	.	.	0	.	.	.	.
	[Medium of study (अध्ययनकामाध्यम)=1]	2.767	.714	15.023	1	.000	15.912	3.927	64.476
	[Medium of study (अध्ययनकामाध्यम)=2]	0[b]	.	.	0	.	.	.	.
	[Residential area=1]	.396	.590	.450	1	.502	1.486	.467	4.727
	[Residential area=2]	1.238	.924	1.797	1	.180	3.450	.564	21.087
	[Residential area=3]	0[b]	.	.	0	.	.	.	.
	[Gadgets used for online classes are=1]	.312	.796	.154	1	.695	1.366	.287	6.500
	[Gadgets used for online classes are=2]	-.045	1.432	.001	1	.975	.956	.058	15.831
	[Gadgets used for online classes are=3]	0[b]	.	.	0	.	.	.	.
80.00%	Intercept	.078	1.511	.003	1	.959			
	Monthly income of the family (Rs.)	.130	.242	.289	1	.591	1.139	.709	1.831
	Online classes attended per week during lockdown	-.404	.360	1.259	1	.262	.668	.330	1.352
	Time actually spent for education by using Internet per day	.084	.132	.403	1	.526	1.088	.839	1.410
	[Gender=Male]	-.926	.522	3.151	1	.076	.396	.142	1.101
	[Gender=Female]	0[b]	.	.	0	.	.	.	.
	[Presently studying =1]	.330	.999	.109	1	.741	1.391	.196	9.854
	[Presently studying =2]	1.568	1.053	2.215	1	.137	4.796	.608	37.806
	[Presently studying =3]	1.810	1.471	1.514	1	.219	6.111	.342	109.259
	[Presently studying =4]	0[b]	.	.	0	.	.	.	.
	[Stream of Study=1]	-1.950	1.192	2.678	1	.102	.142	.014	1.470
	[Stream of Study=2]	-1.410	1.093	1.665	1	.197	.244	.029	2.079
	[Stream of Study=3]	-1.359	1.206	1.271	1	.260	.257	.024	2.729
	[Stream of Study=4]	-2.676	1.565	2.925	1	.087	.069	.003	1.478
	[Stream of Study=5]	0[b]	.	.	0	.	.	.	.
	[Medium of study (अध्ययनकामाध्यम)=1]	2.819	.698	16.314	1	.000	16.759	4.268	65.818
	[Medium of study (अध्ययनकामाध्यम)=2]	0[b]	.	.	0	.	.	.	.
	[Residential area=1]	-.041	.555	.005	1	.941	.960	.323	2.848
	[Residential area=2]	1.233	.896	1.894	1	.169	3.432	.593	19.877
	[Residential area=3]	0[b]	.	.	0	.	.	.	.
	[Gadgets used for online classes are=1]	1.038	.693	2.243	1	.134	2.823	.726	10.975

	[Gadgets used for online classes are=2]	-.367	1.442	.065	1	.799	.693	.041	11.702
	[Gadgets used for online classes are=3]	0[b]	.	.	0	.	.	.	.
90.00%	Intercept	-.461	1.730	.071	1	.790			
	Monthly income of the family (Rs.)	-.107	.258	.171	1	.679	.899	.542	1.489
	Online classes attended per week during lockdown	-.255	.366	.484	1	.487	.775	.378	1.588
	Time actually spent for education by using Internet per day	.093	.135	.473	1	.492	1.097	.843	1.428
	[Gender=Male]	-.843	.529	2.538	1	.111	.431	.153	1.214
	[Gender=Female]	0[b]	.	.	0	.	.	.	.
	[Presently studying =1]	2.576	1.379	3.489	1	.062	13.146	.881	196.191
	[Presently studying =2]	3.240	1.430	5.132	1	.023	25.531	1.548	421.106
	[Presently studying =3]	3.675	1.759	4.363	1	.037	39.436	1.254	1239.946
	[Presently studying =4]	0[b]	.	.	0	.	.	.	.
	[Stream of Study=1]	-2.601	1.233	4.449	1	.035	.074	.007	.832
	[Stream of Study=2]	-1.822	1.121	2.639	1	.104	.162	.018	1.457
	[Stream of Study=3]	-1.530	1.203	1.618	1	.203	.217	.021	2.287
	[Stream of Study=4]	-3.684	1.585	5.401	1	.020	.025	.001	.562
	[Stream of Study=5]	0[b]	.	.	0	.	.	.	.
	[Medium of study (अध्ययनकामाध्यम)=1]	1.116	.672	2.760	1	.097	3.052	.818	11.388
	[Medium of study (अध्ययनकामाध्यम)=2]	0[b]	.	.	0	.	.	.	.
	[Residential area=1]	.050	.580	.008	1	.931	1.052	.338	3.276
	[Residential area=2]	1.700	.912	3.478	1	.062	5.477	.917	32.706
	[Residential area=3]	0[b]	.	.	0	.	.	.	.
	[Gadgets used for online classes are=1]	.200	.729	.075	1	.784	1.222	.293	5.097
	[Gadgets used for online classes are=2]	-.348	1.374	.064	1	.800	.706	.048	10.427
	[Gadgets used for online classes are=3]	0[b]	.	.	0	.	.	.	.
100.00%	Intercept	-33.546	4818.460	.000	1	.994			
	Monthly income of the family (Rs.)	.086	.305	.079	1	.779	1.089	.600	1.979
	Online classes attended per week during lockdown	.294	.454	.419	1	.518	1.341	.551	3.266
	Time actually spent for education by using Internet per day	-.083	.164	.256	1	.613	.921	.668	1.269
	[Gender=Male]	.707	.676	1.095	1	.295	2.028	.540	7.625
	[Gender=Female]	0[b]	.	.	0	.	.	.	.
	[Presently studying =1]	16.591	4036.849	.000	1	.997	16045915.584	.000	.[c]
	[Presently studying =2]	16.642	4036.849	.000	1	.997	16878761.709	.000	.[c]
	[Presently studying =3]	.709	4789.924	.000	1	1.000	2.033	.000	.[c]
	[Presently studying =4]	0[b]	.	.	0	.	.	.	.
	[Stream of Study=1]	14.954	2630.858	.000	1	.995	3122444.949	.000	.[c]
	[Stream of Study=2]	15.986	2630.858	.000	1	.995	8766717.158	.000	.[c]
	[Stream of Study=3]	14.112	2630.858	.000	1	.996	1345008.660	.000	.[c]
	[Stream of Study=4]	15.742	2630.858	.000	1	.995	6862829.591	.000	.[c]
	[Stream of Study=5]	0[b]	.	.	0	.	.	.	.
	[Medium of study (अध्ययनकामाध्यम)=1]	1.556	.864	3.241	1	.072	4.739	.871	25.783
	[Medium of study (अध्ययनकामाध्यम)=2]	0[b]	.	.	0	.	.	.	.
	[Residential area=1]	-1.377	.724	3.614	1	.057	.252	.061	1.044
	[Residential area=2]	-15.715	2096.950	.000	1	.994	1.496E-7	.000	.[c]
	[Residential area=3]	0[b]	.	.	0	.	.	.	.
	[Gadgets used for online classes are=1]	.195	.814	.057	1	.811	1.215	.246	5.997
	[Gadgets used for online classes are=2]	-.245	1.441	.029	1	.865	.783	.046	13.203
	[Gadgets used for online classes are=3]	0[b]	.	.	0	.	.	.	.

Source : Authors' Computation using SPSS 25

Annexure – 2 Table Showing Parameter Estimates of each level of Dependent Variable of Model – 2

Parameter Estimates

To which percentage can online teaching-learning according to you replace offline teaching-learning in future		B	Std. Error	Wald	df	Sig.	Exp(B)	95% Confidence Interval for Exp(B)	
								Lower Bound	Upper Bound
20.00%	Intercept	-21.897	5624.955	.000	1	.997			
	Monthly income of the family (Rs.)	1.784	.401	19.831	1	.000	5.953	2.715	13.054
	Time actually spent for education by using Internet per day	-.519	.254	4.167	1	.041	.595	.361	.980

	[Stream of Study=1]	19.193	5624.955	.000	1	.997	216500201.636	.000	.[b]
	[Stream of Study=2]	20.024	5624.955	.000	1	.997	497187351.822	.000	.[b]
	[Stream of Study=3]	19.627	5624.955	.000	1	.997	334141764.423	.000	.[b]
	[Stream of Study=4]	-.094	.000	.	1	.	.910	.910	.910
	[Stream of Study=5]	0[c]	.	.	0	.	.	.	.
	[Medium of study (अध्ययनकामाध्यम)=1]	-.354	1.089	.106	1	.745	.702	.083	5.932
	[Medium of study (अध्ययनकामाध्यम)=2]	0[c]	.	.	0	.	.	.	.
	[Residential area=1]	-.451	.899	.251	1	.616	.637	.109	3.713
	[Residential area=2]	-2.065	1.257	2.697	1	.101	.127	.011	1.491
	[Residential area=3]	0[c]	.	.	0	.	.	.	.
	[Gender=Male]	1.107	.834	1.760	1	.185	3.026	.590	15.529
	[Gender=Female]	0[c]	.	.	0	.	.	.	.
30.00%	Intercept	-2.460	1.263	3.793	1	.051			
	Monthly income of the family (Rs.)	1.429	.335	18.175	1	.000	4.175	2.164	8.055
	Time actually spent for education by using Internet per day	-.306	.160	3.647	1	.056	.736	.538	1.008
	[Stream of Study=1]	.674	1.059	.405	1	.524	1.962	.246	15.622
	[Stream of Study=2]	2.626	.944	7.738	1	.005	13.819	2.172	87.910
	[Stream of Study=3]	.074	1.396	.003	1	.957	1.077	.070	16.622
	[Stream of Study=4]	-.572	1.491	.147	1	.701	.564	.030	10.488
	[Stream of Study=5]	0[c]	.	.	0	.	.	.	.
	[Medium of study (अध्ययनकामाध्यम)=1]	-.992	.741	1.794	1	.180	.371	.087	1.583
	[Medium of study (अध्ययनकामाध्यम)=2]	0[c]	.	.	0	.	.	.	.
	[Residential area=1]	-.023	.684	.001	1	.974	.978	.256	3.734
	[Residential area=2]	-.609	.805	.572	1	.450	.544	.112	2.635
	[Residential area=3]	0[c]	.	.	0	.	.	.	.
	[Gender=Male]	-.140	.606	.053	1	.817	.869	.265	2.851
	[Gender=Female]	0[c]	.	.	0	.	.	.	.
40.00%	Intercept	-2.652	.977	7.361	1	.007			
	Monthly income of the family (Rs.)	1.242	.294	17.897	1	.000	3.463	1.948	6.158
	Time actually spent for education by using Internet per day	-.050	.117	.185	1	.667	.951	.756	1.196
	[Stream of Study=1]	.737	.635	1.346	1	.246	2.089	.602	7.248
	[Stream of Study=2]	1.757	.682	6.637	1	.010	5.796	1.522	22.067
	[Stream of Study=3]	.966	.808	1.430	1	.232	2.627	.540	12.792
	[Stream of Study=4]	-.687	1.100	.389	1	.533	.503	.058	4.349
	[Stream of Study=5]	0[c]	.	.	0	.	.	.	.
	[Medium of study (अध्ययनकामाध्यम)=1]	-.173	.643	.072	1	.788	.841	.239	2.965
	[Medium of study (अध्ययनकामाध्यम)=2]	0[c]	.	.	0	.	.	.	.
	[Residential area=1]	-.157	.551	.081	1	.776	.855	.290	2.520
	[Residential area=2]	-1.065	.617	2.976	1	.084	.345	.103	1.156
	[Residential area=3]	0[c]	.	.	0	.	.	.	.
	[Gender=Male]	.920	.459	4.020	1	.045	2.510	1.021	6.170
	[Gender=Female]	0[c]	.	.	0	.	.	.	.
50.00%	Intercept	-.056	.865	.004	1	.949			
	Monthly income of the family (Rs.)	1.003	.280	12.809	1	.000	2.726	1.574	4.721
	Time actually spent for education by using Internet per day	-.323	.111	8.517	1	.004	.724	.583	.899
	[Stream of Study=1]	.480	.576	.694	1	.405	1.616	.523	4.994
	[Stream of Study=2]	1.574	.617	6.506	1	.011	4.828	1.440	16.186
	[Stream of Study=3]	.241	.744	.105	1	.746	1.273	.296	5.471
	[Stream of Study=4]	-.461	.874	.278	1	.598	.630	.114	3.498
	[Stream of Study=5]	0[c]	.	.	0	.	.	.	.
	[Medium of study (अध्ययनकामाध्यम)=1]	-1.038	.582	3.183	1	.074	.354	.113	1.108
	[Medium of study (अध्ययनकामाध्यम)=2]	0[c]	.	.	0	.	.	.	.
	[Residential area=1]	.360	.520	.479	1	.489	1.433	.517	3.971
	[Residential area=2]	.170	.540	.100	1	.752	1.186	.412	3.415
	[Residential area=3]	0[c]	.	.	0	.	.	.	.
	[Gender=Male]	.363	.409	.788	1	.375	1.438	.645	3.203
	[Gender=Female]	0[c]	.	.	0	.	.	.	.
60.00%	Intercept	-2.905	.990	8.614	1	.003			
	Monthly income of the family (Rs.)	1.523	.290	27.583	1	.000	4.588	2.598	8.101
	Time actually spent for education by using Internet per day	-.194	.121	2.566	1	.109	.824	.649	1.044
	[Stream of Study=1]	.881	.646	1.858	1	.173	2.413	.680	8.563

	[Stream of Study=2]	1.239	.710	3.042	1	.081	3.451	.858	13.881
	[Stream of Study=3]	1.685	.783	4.638	1	.031	5.395	1.164	25.013
	[Stream of Study=4]	.184	1.021	.032	1	.857	1.202	.163	8.882
	[Stream of Study=5]	0[c]	.	.	0	.	.	.	.
	[Medium of study (अध्ययनकामाध्यम)=1]	-.019	.660	.001	1	.977	.981	.269	3.574
	[Medium of study (अध्ययनकामाध्यम)=2]	0[c]	.	.	0	.	.	.	.
	[Residential area=1]	.596	.574	1.081	1	.298	1.815	.590	5.586
	[Residential area=2]	-.562	.621	.818	1	.366	.570	.169	1.926
	[Residential area=3]	0[c]	.	.	0	.	.	.	.
	[Gender=Male]	.160	.454	.124	1	.725	1.173	.482	2.856
	[Gender=Female]	0[c]	.	.	0	.	.	.	.
70.00%	Intercept	-2.848	.977	8.500	1	.004			
	Monthly income of the family (Rs.)	1.335	.284	22.051	1	.000	3.800	2.177	6.633
	Time actually spent for education by using Internet per day	.000	.113	.000	1	.998	1.000	.801	1.247
	[Stream of Study=1]	1.092	.631	2.994	1	.084	2.980	.865	10.264
	[Stream of Study=2]	1.843	.688	7.188	1	.007	6.317	1.642	24.307
	[Stream of Study=3]	1.165	.810	2.070	1	.150	3.205	.656	15.666
	[Stream of Study=4]	-1.340	1.334	1.009	1	.315	.262	.019	3.579
	[Stream of Study=5]	0[c]	.	.	0	.	.	.	.
	[Medium of study (अध्ययनकामाध्यम)=1]	.019	.647	.001	1	.977	1.019	.287	3.620
	[Medium of study (अध्ययनकामाध्यम)=2]	0[c]	.	.	0	.	.	.	.
	[Residential area=1]	.074	.541	.019	1	.892	1.076	.373	3.110
	[Residential area=2]	-.708	.585	1.466	1	.226	.492	.156	1.550
	[Residential area=3]	0[c]	.	.	0	.	.	.	.
	[Gender=Male]	-.078	.442	.031	1	.861	.925	.389	2.199
	[Gender=Female]	0[c]	.	.	0	.	.	.	.
80.00%	Intercept	-1.615	.982	2.701	1	.100			
	Monthly income of the family (Rs.)	1.112	.299	13.838	1	.000	3.040	1.692	5.460
	Time actually spent for education by using Internet per day	-.023	.120	.036	1	.850	.978	.773	1.237
	[Stream of Study=1]	.579	.705	.675	1	.411	1.784	.448	7.100
	[Stream of Study=2]	1.649	.715	5.319	1	.021	5.202	1.281	21.123
	[Stream of Study=3]	1.248	.802	2.423	1	.120	3.482	.724	16.753
	[Stream of Study=4]	-1.998	1.324	2.278	1	.131	.136	.010	1.816
	[Stream of Study=5]	0[c]	.	.	0	.	.	.	.
	[Medium of study (अध्ययनकामाध्यम)=1]	-1.272	.623	4.178	1	.041	.280	.083	.949
	[Medium of study (अध्ययनकामाध्यम)=2]	0[c]	.	.	0	.	.	.	.
	[Residential area=1]	.122	.581	.044	1	.833	1.130	.362	3.527
	[Residential area=2]	-.390	.617	.400	1	.527	.677	.202	2.268
	[Residential area=3]	0[c]	.	.	0	.	.	.	.
	[Gender=Male]	.031	.466	.004	1	.947	1.031	.414	2.571
	[Gender=Female]	0[c]	.	.	0	.	.	.	.
90.00%	Intercept	-20.138	4293.363	.000	1	.996			
	Monthly income of the family (Rs.)	1.320	.344	14.760	1	.000	3.744	1.909	7.342
	Time actually spent for education by using Internet per day	-.132	.153	.743	1	.389	.877	.650	1.182
	[Stream of Study=1]	18.683	4293.363	.000	1	.997	129937649.461	.000	.[b]
	[Stream of Study=2]	20.068	4293.363	.000	1	.996	519129196.586	.000	.[b]
	[Stream of Study=3]	17.477	4293.363	.000	1	.997	38917984.449	.000	.[b]
	[Stream of Study=4]	17.798	4293.363	.000	1	.997	53632083.552	.000	.[b]
	[Stream of Study=5]	0[c]	.	.	0	.	.	.	.
	[Medium of study (अध्ययनकामाध्यम)=1]	-.886	.784	1.276	1	.259	.412	.089	1.917
	[Medium of study (अध्ययनकामाध्यम)=2]	0[c]	.	.	0	.	.	.	.
	[Residential area=1]	-1.392	.732	3.620	1	.057	.249	.059	1.043
	[Residential area=2]	-19.332	3685.812	.000	1	.996	4.019E-9	.000	.[b]
	[Residential area=3]	0[c]	.	.	0	.	.	.	.
	[Gender=Male]	.882	.592	2.220	1	.136	2.416	.757	7.707
	[Gender=Female]	0[c]	.	.	0	.	.	.	.
100.00%	Intercept	-2.074	1.113	3.471	1	.062			
	Monthly income of the family (Rs.)	1.215	.321	14.354	1	.000	3.371	1.798	6.322
	Time actually spent for education by using Internet per day	-.060	.131	.210	1	.647	.942	.728	1.217
	[Stream of Study=1]	1.719	.883	3.788	1	.052	5.582	.988	31.534
	[Stream of Study=2]	2.060	.862	5.707	1	.017	7.847	1.448	42.532
	[Stream of Study=3]	1.254	.966	1.685	1	.194	3.505	.528	23.285

	[Stream of Study=4]	.347	1.035	.112	1	.737	1.415	.186	10.747
	[Stream of Study=5]	0[c]	.	.	0	.	.	.	.
	[Medium of study (अध्ययनकामाध्यम)=1]	-2.239	.709	9.984	1	.002	.107	.027	.427
	[Medium of study (अध्ययनकामाध्यम)=2]	0[c]	.	.	0	.	.	.	.
	[Residential area=1]	.011	.609	.000	1	.985	1.011	.306	3.338
	[Residential area=2]	-2.193	.907	5.845	1	.016	.112	.019	.660
	[Residential area=3]	0[c]	.	.	0	.	.	.	.
	[Gender=Male]	.517	.500	1.070	1	.301	1.677	.630	4.464
	[Gender=Female]	0[c]	.	.	0	.	.	.	.

Source : Authors' Computation using SPSS 25