

# Perception of E-learning among the Students Studying in Higher Education Institutions with Reference to Kerala

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**Abstract -** The advent of the internet and innovative technologies has rendered learning solutions for universities currently navigating an environment of passionate change. Universally, the COVID-19 lockdown has impacted every facet of life, and education is no exception. Understanding students' perceptions of e-learning technologies is essential for the successful growth of academic programs. This study aims to investigate college students' current status and future expectations regarding e-learning. It is an empirical research study encompassing students pursuing higher education in arts, sciences, humanities, engineering, and health sciences. The purposive sampling, with a sample size of 497 is adopted for the study. Primary data are collected through a questionnaire. Cross-tabulation and Chi-square tests, aided by IBM SPSS Statistics 22, are employed for analysis and interpretation. The study reveals a low awareness level towards e-learning.

**Keywords:** E-learning System, Intention to Use, Student Satisfaction, Technology

## I. INTRODUCTION

Currently, the government of India is encouraging higher education institutions to utilize ICT as an alternative tool to enhance services for the student community. In this virtual era, several institutions leverage ICT to gain a competitive advantage. E-learning is an ideal tool to capture student attention, maintain education quality, expedite communication, and replace traditional methods. During the COVID-19 lockdown, e-learning facilitated uninterrupted services (Alqahtani & Rajkhan, 2020). However, despite its advantages, a significant limitation lies in the perception of the student community towards e-learning. India's diverse economic classes and students from various backgrounds raise questions about the reach of e-learning. Nevertheless, due to the pandemic, many institutions have made e-learning compulsory (Sudipa et al., 2022). This presents an opportune moment to assess students' perceptions of e-learning (Sumithra & Sakshi, 2024).

## II. RESEARCH PROBLEM

The pandemic's universal impact has affected all facets of life, with education being no exception. Despite the crisis,

many educational institutions planned to sustain services to prevent disruption for students. This led to the widespread adoption of e-learning as an alternative. However, several issues, such as network availability, technical problems, and device utility knowledge gaps, hinder the effectiveness of e-learning for both providers and users. Against this backdrop, it becomes crucial to study students' perceptions of e-learning (Arasu et al., 2024).

## III. REVIEW OF EARLIER RESEARCH

Previous studies have yielded insights into e-learning perceptions. Almahamid & Rub (2011) found no demographic differences in the intention to use e-learning systems based on age, gender, or education level. Cidral et al., (2018) identified collaboration, system quality, and information as crucial determinants of e-learning success in Brazil. Furthermore, age, gender, computer experience, acceptance of technology, and unique learning styles were all identified (Keller & Cernerud, 2002) as important determinants of students' acceptance of technology. In the study (Abdulkadir & Mohammed, 2021), there is a need for research examining student engagement and learning outcomes in the context of e-learning in Nigerian academic libraries. Similarly, Almahamid & Rub, (2011) highlight the need for further research on the specific factors influencing the intention to continue using e-learning systems in different educational contexts and user groups. The study (Almaiah et al., 2020) emphasizes the need for research on the long-term effects of the pandemic on the adoption and utilization of e-learning systems. Further investigation is required to understand the sustained challenges faced and also to develop strategies to address them effectively. Additionally, Furthermore, research is needed to explore the application of specific e-learning theories in different educational settings and their impact on learning outcomes, as mentioned (David, 2015). The book (Garrison, 2011) emphasizes understanding emerging trends and innovations in e-learning and their implications for teaching and learning (Llopiz-Guerra et al., 2024).

**IV. RESEARCH GAP**

The above researches provide avenues for future studies to advance the level of perception, understanding, and effectiveness of e-learning platforms, user intentions and adoption, institutional policies and leadership, determinants of e-learning success, application of e-learning theories, emerging trends, and challenges faced by specific student populations (Johnson et al., 2021).

This research gap suggests the importance of understanding the unique factors that drive user adoption and continued usage of e-learning platforms. Furthermore, research is needed to explore the application of specific e-learning theories in different educational settings and their impact on learning outcomes

**V. OBJECTIVES**

To analyze the demographic profile of higher education students and explore the relationship between demographic profiles and e-learning perceptions among higher education students with reference to Kerala (Kickham-Samy & McCarthy, 2018).

**VI. RESEARCH METHODOLOGY**

**Methodology:** The study adopts an empirical approach to examine the self-efficacy levels of college students in various higher education disciplines, including arts, sciences, humanities, engineering, and health sciences.

**Universe:** The researchers aim to include students studying higher education courses across these disciplines.

**Sampling Method:** The study utilizes a purposive sampling method to select participants who meet specific criteria related to the research objectives.

**Sample Size:** The study includes a sample size of 497 participants.

**Data Collection:** Primary data are collected for this study by a questionnaire as the main tool for data collection. To facilitate the data collection process, Google Forms were utilized, and the questionnaire was distributed to the participants through social media (Peter, 2015).

**Analysis Used:** The collected data is analyzed using cross-tab and Chi-square tests to identify relationships and patterns within the data.

**Analysis Tools:** IBM SPSS Statistics 22.0 is employed as the statistical software to conduct the data analysis and explore the findings of the study.

**VII. ANALYSIS & INTERPRETATION**

In this study, the researchers examined the demographic profiles and e-learning perceptions of higher education students. The analysis and inference of the collected data included the following variables:

*Demographic Variables and Perception of E-Learning*

The study examined the demographic profiles of higher education students, including age, gender, discipline, type of institution, location, level of education, source of information, and device used for e-learning. The age distribution was analyzed to understand the range and distribution of participants. Gender disparities or differences in e-learning perceptions were explored through the gender distribution analysis (Samsudeen & Mohamed, 2019). The field of study or discipline was considered to identify any discipline-specific variations in e-learning perceptions. The type of institution and geographic location were examined to understand their potential influence on e-learning perceptions. The participant's level of education was analyzed to determine if it affected e-learning perceptions (Trakru Monica, 2016). The sources of information and devices used for e-learning were explored to understand common channels and potential impacts on e-learning perceptions. By analyzing these demographic variables, the study aimed to gain insights into the factors that may influence e-learning perceptions among higher education students (Rao & Saha, 2019).

The relationships between demographic variables (age, gender, discipline, type of institution, location, level of education, source of information, and device used) and e-learning perceptions were analyzed.

Statistical techniques such as cross-tab and chi-square tests were employed to explore potential associations or differences between demographic variables and e-learning perceptions (Yacob et al., 2012).

TABLE I AGE AND PERCEPTION OF E-LEARNING

			Perception on E-Learning				Total
			Very Bad	Bad	Good	Very Good	
Age	Less than 18	Count	47	58	23	12	140
		% within Age	33.6%	41.4%	16.4%	8.6%	100.0%
	19 & 20	Count	90	118	67	15	290
		% within Age	31.0%	40.7%	23.1%	5.2%	100.0%
	21 & 22	Count	23	24	15	5	67
		% within Age	34.3%	35.8%	22.4%	7.5%	100.0%
Total		Count	160	200	105	32	497
		% within Age	32.2%	40.2%	21.1%	6.4%	100.0%

The data presented in Table I reveals that among students below the age of 18, 58 individuals (equivalent to 41.4 percent) perceive E-Learning as bad, while 47 individuals (33.6 percent) perceive it as very bad. It is imperative to note that all participants fall within the age range of 17 to 22 and are currently pursuing higher education. To test the hypothesis, we employed the Pearson Chi-square analysis. The variables are not independent of one another and there is

a statistically significant association between the categorical variables if the p-value (Asymp. Sig.) is less than 0.05.

H0: Age and impression of e-learning do not significantly correlate.

Chi-Square Test			
	Value	df	Significance
Pearson Chi-Square	4.557 <sup>a</sup>	6	.602

Result of the chi-square test, we can interpret the findings as follows:

The P value is 4.557 with 6 df which yields an asymptotic significance (p-value) of 0.602. Since this p-value is higher than 0.05 the typical significance level, we fail to reject the null hypothesis. This suggests that there is not enough evidence to conclude that there is a significant relationship between the variables being tested.

TABLE II GENDER AND PERCEPTION OF E-LEARNING

			Perception on E-Learning				Total
			Very Bad	Bad	Good	Very Good	
Gender	Male	Count	98	130	56	14	298
		% within Gender	32.9%	43.6%	18.8%	4.7%	100.0%
Female	Female	Count	62	70	49	18	199
		% within Gender	31.2%	35.2%	24.6%	9.0%	100.0%
Total		Count	160	200	105	32	497
		% within Gender	32.2%	40.2%	21.1%	6.4%	100.0%

Table II shows gender differences, out of the 497 respondents, 298 (59.96%) were male, and the majority were male. Their perception level varies from very good to very bad from 4.7 percent – 32.9 per cent. In addition, 199(40.04%) out of 497 females represent 9 to 31.2 percent variation in their perception. The table clearly shows that based on gender perception 43.6% of males and 35.2% of females are opinioned that their perception of e-learning is bad. That may be due to not having been exposed to using online as a mode of learning earlier. The following hypothesis was tested by using Chi-square tests.

H0- there is no significant relationship between Gender and perception of e-learning.

Chi-Square Tests			
	Value	df	Significance
Pearson Chi-Square	7.650 <sup>a</sup>	3	.054

With six degrees of freedom, the Pearson Chi-Square test produced a score of 7.650 and a p-value of 0.054 for asymptotic significance. Given that the p-value is above the conventional significance level of 0.05, the null hypothesis cannot be rejected. This implies that there is not enough data to conclude that the variables under study are related.

TABLE III DISCIPLINE \* PERCEPTION OF E-LEARNING

		Crosstab					Total
		Perception on E-Learning					
Discipline	Arts	Count	42	57	34	16	149
		% within Discipline	28.2%	38.3%	22.8%	10.7%	100.0%
Science	Science	Count	29	42	15	2	88
		% within Discipline	33.0%	47.7%	17.0%	2.3%	100.0%
Com & Mgt	Com & Mgt	Count	41	64	30	9	144
		% within Discipline	28.5%	44.4%	20.8%	6.3%	100.0%
E&T	E&T	Count	9	4	7	2	22
		% within Discipline	40.9%	18.2%	31.8%	9.1%	100.0%
HS	HS	Count	39	33	19	3	94
		% within Discipline	41.5%	35.1%	20.2%	3.2%	100.0%
Total		Count	160	200	105	32	497
		% within Discipline	32.2%	40.2%	21.1%	6.4%	100.0%

Students from various disciplines were included in this study, above Table III shows 149 students belong to Arts, 144 students belong to Commerce and /Management, 94 students belong to Health Sciences, 88 belong to Science and only 22 students from engineering and technology. Out of 497, 32.2% (160) opinioned that the e-learning method is very bad, 40.2% (200) opinioned a bad way of learning, 21.1 % accepted it as good, and 6.4 % opinioned that very good.

Chi-Square Tests			
	Value	df	Significance
Pearson Chi-Square	20.267 <sup>a</sup>	12	.062

We were unable to reject the null hypothesis despite the p-value of 4.557 and asymptotic significance (p-value) of 0.602 being more than the standard significance level of 0.05. This implies that there may not be sufficient data to conclude that the variables under investigation have a meaningful relationship.

TABLE IV TYPE OF HIGHER EDUCATIONAL INSTITUTION \* PERCEPTION OF E-LEARNING

Crosstab							
			Perception on E-Learning				Total
			Very Bad	Bad	Good	Very Good	
Type of Higher Educational Institution	SU	Count	19	19	12	4	54
		% within the Type of Higher Educational Institution	35.2%	35.2%	22.2%	7.4%	100.0%
	DU	Count	111	147	74	24	356
		% within the Type of Higher Educational Institution	31.2%	41.3%	20.8%	6.7%	100.0%
	AC	Count	30	34	19	4	87
		% within the Type of Higher Educational Institution	34.5%	39.1%	21.8%	4.6%	100.0%
Total		Count	160	200	105	32	497
		% within the Type of Higher Educational Institution	32.2%	40.2%	21.1%	6.4%	100.0%

Chi-Square Tests			
	Value	df	Significance
Pearson Chi-Square	1.534 <sup>a</sup>	6	.957

From the Chi-square table, there is no relationship between the type of higher educational institution and perception of

e-learning. The p-value indicates in Table IV, that the type of higher educational Institution and perception of e-learning are independent.

TABLE V LOCATION OF THE INSTITUTE \* PERCEPTION OF E-LEARNING

Crosstab							
			Perception on E-Learning				Total
			Very Bad	Bad	Good	Very Good	
Location of the Institute	Rural	Count	78	60	32	16	186
		% within the Location of the Institute	41.9%	32.3%	17.2%	8.6%	100.0%
	Urban	Count	82	140	73	16	311
		% within the Location of the Institute	26.4%	45.0%	23.5%	5.1%	100.0%
Total		Count	160	200	105	32	497
		% within the Location of the Institute	32.2%	40.2%	21.1%	6.4%	100.0%

The Table V reveals that the majority of the institutions (311) are in an urban area and the respondent in an urban area, most of them (140) said their perception of e-learning is bad. Of the respondents who are in a rural area, most of them (41.9%) replied that their perception towards E-Learning is very bad followed by 60(32.3%) respondents whose perception towards E-Learning is bad and 32(17.2%) respondents have good perception towards E-Learning. Over most of the respondents 40.2% (200 respondents) perception towards E-Learning is bad.

Chi-Square Tests			
	Value	Df	Significance
Pearson Chi-Square	17.797	3	.000

From the Chi-Square Tests it is understood that p- the value is less than the 5% level of significance the null hypothesis is accepted. It reveals that there is no relationship between the location of the institution and the respondent's perception of E-Learning.

TABLE VI LEVEL OF EDUCATION \* PERCEPTION OF E-LEARNING

Crosstab							
			Perception on E-Learning				Total
			Very Bad	Bad	Good	Very Good	
Level of Education	UG	Count	149	193	95	30	467
		% within Level of Education	31.9%	41.3%	20.3%	6.4%	100.0%
	PG	Count	9	6	10	2	27
		% within Level of Education	33.3%	22.2%	37.0%	7.4%	100.0%
	3.0	Count	2	1	0	0	3
		% within Level of Education	66.7%	33.3%	0.0%	0.0%	100.0%
Total		Count	160	200	105	32	497
		% within Level of Education	32.2%	40.2%	21.1%	6.4%	100.0%

From the above Table VI, it is understood that almost 467 respondents are perusing under graduation level followed by (27 respondents) the post-graduation. The majority of the undergraduates 193 (41.3%) responded their perception of E-Learning is bad. The 10 (37.0%) respondent who pursuing post graduation said their perception towards E-Learning is good. Most of the student community is either pursuing undergraduate or postgraduate (200 respondents 40.2%) their overall perception towards E-Learning is bad.

Chi-Square Tests			
	Value	df	Significance
Pearson Chi-Square	7.719 <sup>a</sup>	6	.259

The chi-square test is used to reveal the relationship between the various levels of education and the perception towards E-Learning. From the above table, it is clear that the p-value is greater, the null hypothesis is rejected, and there is a relationship between the various education levels and the perception towards E-Learning.

TABLE VII SOURCE OF INFORMATION \* PERCEPTION OF E-LEARNING

Crosstab								
		Perception on E-Learning				Total		
		Very Bad	Bad	Good	Very Good			
Source of information	As a part of Syllabus	Count	25	38	20	7	90	
		% within the Source of information	27.8%	42.2%	22.2%	7.8%	100.0%	
	Faculty	Count	52	62	35	9	158	
		% within the Source of information	32.9%	39.2%	22.2%	5.7%	100.0%	
	Friends & Relatives	Count	9	11	4	1	25	
		% within the Source of information	36.0%	44.0%	16.0%	4.0%	100.0%	
	Compulsory on COVID-19	Count	40	47	23	12	122	
		% within the Source of information	32.8%	38.5%	18.9%	9.8%	100.0%	
	Own Interest	Count	34	42	23	3	102	
		% within the Source of information	33.3%	41.2%	22.5%	2.9%	100.0%	
	Total		Count	160	200	105	32	497
			% within the Source of information	32.2%	40.2%	21.1%	6.4%	100.0%

The above Table VII reveals the various sources of information on how the students are using the E-Learning platform. Out of 497 respondent's majority of the (158) respondents said that they are using E-Learning by the words of their faculty members. Most of the respondents 62 (39.2%) have a bad perception towards E-learning. 122 respondents are using E-Learning due to the compulsory situation during the pandemic COVID-19 lockdown and the majority, 47 respondents (38.5%) their perception of E-learning is bad.

Only 102 respondents are using the E-Learning platform in their interest.

Chi-Square Tests			
	Value	df	Significance
Pearson Chi-Square	6.643 <sup>a</sup>	12	.880

From the above chi-square table, it is understood that the p-value is greater. So, the null hypothesis is rejected. There exists a relationship between the sources of information and the perception of E-learning.

TABLE VIII DEVICE USED FOR ELEARNING \* PERCEPTION OF E-LEARNING

Crosstab								
		Perception on E-Learning				Total		
		Very Bad	Bad	Good	Very Good			
Device used for eLearning	Mobile	Count	144	192	98	31	465	
		% within the Device used for eLearning	31.0%	41.3%	21.1%	6.7%	100.0%	
	Personal Computer	Count	3	2	2	0	7	
		% within the Device used for eLearning	42.9%	28.6%	28.6%	0.0%	100.0%	
	Tablet	Count	1	1	1	0	3	
		% within the Device used for eLearning	33.3%	33.3%	33.3%	0.0%	100.0%	
	Laptop	Count	12	5	4	1	22	
		% within the Device used for eLearning	54.5%	22.7%	18.2%	4.5%	100.0%	
	Total		Count	160	200	105	32	497
			% within the Device used for eLearning	32.2%	40.2%	21.1%	6.4%	100.0%

The Table VIII states the various types of devices used to pursue E-Learning. Out of 497 respondents, almost 465 respondents use mobile to undergo E-Learning and most of their perception towards E-Learning is badly followed by laptops 22 respondents where the majority of the respondent 12 (54.5%) perception towards E-Learning is very bad, 7 respondents use personal Computer and most of the respondent 28.6% perception towards E-Learning is both

good and bad and only 3 of the respondents use a tablet for their E-Learning.

Chi-Square Tests			
	Value	df	Significance
Pearson Chi-Square	7.246 <sup>a</sup>	9	.611

The chi-square test is used to identify the relationship between the devices used for E-Learning and the perception towards E-Learning. As the p – p-value is greater from the

above table it is clear that there exists a relationship between the devices used for E-Learning and the perception towards E-Learning. It is understood depending upon the usage of the device, the student's perception towards E-Learning differs significantly.

### VIII. MAJOR FINDINGS

The chi-square tests indicate that there is no significant relationship between the type of higher educational institution and perception towards e-learning. Additionally, the location of the institution does not play a significant role in shaping e-learning perceptions. However, there is a significant relationship between the level of education, source of information, and device used for e-learning, and the perception towards e-learning. This suggests that these factors influence how e-learning is perceived. However, the specific nature of these relationships was not provided.

### IX. SUGGESTIONS

The level of education was found to have a significant relationship with the perception of e-learning. This suggests that higher education institutions should consider tailoring e-learning approaches and support mechanisms to meet the specific needs of students at different educational levels. The sources of information were found to influence e-learning perceptions significantly. Institutions should focus on providing accurate and comprehensive information about e-learning opportunities and resources through various channels to shape positive perceptions among students. The device used for e-learning was found to have a significant relationship with the perception of e-learning. Institutions should ensure that their e-learning platforms are accessible and compatible across different devices to enhance the user experience and improve students' perception of e-learning.

### X. SCOPES FOR FURTHER RESEARCH

Here we have some potential scope for further research, Factors affecting students' perception of e-learning, Enhancing awareness and acceptance of e-learning, Evaluating the effectiveness of e-learning policies, and Overcoming obstacles in e-learning implementation. Designing and implementing digital pedagogies and Tailoring e-learning for diverse learner categories etc. These research scopes can contribute to a better acceptance of the challenges and opportunities surrounding e-learning in higher education in India and help the development of effective strategies and policies to enhance its implementation and effectiveness.

### XI. CONCLUSION

The study "Perception of students on e-learning with special reference to students studying in higher education institutions in India" reveals that the perception of students towards e-learning is not so good. The study shows the awareness level towards e-learning is low. Even though the Central and State Governments adopt various strategies to enhance learning through online platforms success is lacking. The current

scenario, the Pandemic COVID-19 lockdown made it compulsory to learn through online platforms this mindset of the student has to be continued to achieve the vision of the government towards e-learning platforms. Institutions must have well-defined e-learning policies to effectively adopt e-learning at all levels. To enhance the effectiveness of e-learning for students, it is crucial to implement suitable policies and establish regular monitoring mechanisms. This monitoring should take place at both institutional and government levels. Additionally, it is imperative to recognize the importance of high-quality e-learning and to prioritize its development. To achieve this, new digital pedagogies need to be designed and implemented, specifically tailored to the demands of e-learning. Furthermore, the utilization of adaptive e-learning methods, tailored to the unique characteristics and needs of different types of learners, can greatly contribute to the success of e-learning initiatives.

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