RCHUB: JOURNAL OF CONTEMPORARY TRENDS IN MANAGEMENT, COMMERCE AND ECONOMICS (JCMCE)
VOL: 2, ISSUE 3, JUL – SEP 2026
RCHUB PUBLISHER
ISSN: 3108-3501
DOI: https://doi.org/10.65725/JCMCE/2/3/010

MEASURING THE EFFECTIVENESS OF RURAL YOUNGER GENERATION E-LEARNING ADOPTION: A MULTI-DIMENSIONAL SCALING APPROACH

K. Moneesh Kumar[1 a)], P. M. Ramesh Kumar[2 b)], and P. Balaji[3]

Author Affiliations
[1]Assistant Professor, PG & Research Department of Commerce (Shift-I), Dwaraka Doss Goverdhan Doss Vaishnav College (Autonomous), Chennai, Tamil Nadu, India
[2]Assistant Professor, PG & Research Department of Commerce (Shift-I), Dwaraka Doss Goverdhan Doss Vaishnav College (Autonomous), Chennai, Tamil Nadu, India
[3] Assistant Professor, PG and Research Department of Commerce (Shift-I), Guru Nanak College (Autonomous), Chennai, Tamil Nadu, India.

Author Emails
[a)] Corresponding author: rameshkumarpm@dgvaishnavcollege.edu.in

Abstract. The present study aims to explore the effectiveness of e-learning adoption among the younger generation hailing from rural areas of Tamil Nadu. The study was primarily focused to understand the key factors influencing the e-learning adoption behaviour and its effectiveness. The researchers have adopted descriptive and empirical research design and used survey method to collect opinion from youth belongs to rural areas of Thiruvallur and Kanchipuram districts of Tamil Nadu. The researchers have adopted multi-dimensional scaling approach in order to explore the various facets of importance and performance related to key dimensions of effectiveness towards e-learning adoption.

Keywords: E-learning, Rural Area, Rural Youth, E- learning Program
JEL Code: I25, P25, J13

INTRODUCTION

E-learning has enhanced and improved the quality of education worldwide. In recent years the rapid growth in digital technologies is also transforming our environment and educational institutions. Sustainable education in E-learning is the way of teaching that combines the sustainable principles and it also develop the rural younger by understanding the environmental

ISSN: 3108-3501
DOI: https://doi.org/10.65725/JCMCE/2/3/010

issues and how to solve it. Further Sustainable education in E-learning is essential to educating everyone from public to professionals. Sustainability can be used in the fields like e-learning. (Saman Sattar Saleh & et al., 2022). The Eastern Mediterranean University (EMU) promoted Corporate Social Responsibility (CSR) activities by providing free internet facilities for students and academic staff. In recent years technologies have played a vital role in E-learning and overcoming the various barriers to promoting E-learning throughout the society. The culture has influenced every aspect of our society's educational institution and adopting information technology as a culture played an important role. Social empowerment accepts that E-learning must be reflective to change and create a positive environment. (Ajay Singh & et al., 2022). In today's generation E-learning is important for business personnel because by adopting it offers a wide range of skills and behaviour for employees and it is ease of use for employees to adopt it anywhere and anytime. Further there is a need to develop a cooperation and partnership with world and national organizations to promote latest technologies in E-learning and it leads to social empowerment. The statistics proves that wearable technologies such as smart phone, tablets and so on are the very usable tool for E-learning. In United Stated around 39.5 million adults of age 18 and above are wearables. (Ajay Singh & et al., 2023). The past study states that E-learning has five distinct aspects they are 1) new tool that combines equipment, hardware and software 2) facilitate interaction between instructors and learners 3) learning 4) decrease in distance helps to overcome the geographical barriers and 5) collaborative business. In Korea, the central officials training institute (COTI) established the cyber education centre in 2009 to render a E-learning classes for government employees and every year thousands of government employees will participate in E-learning through cyber education centre. (Mann Hyung Hur & et.al., 2013). Conclusion during this study a key question arises: 1) How can E-learning accelerate sustainability? 2) What is E-learning role in Societal Development and Empowerment? 3) What is successful E-learning based Societal Empowerment Initiatives? This study aims to Measure the Effectiveness of Rural Younger Generation E-Learning Adoption: A Multi-Dimensional Scaling Approach.

VOL: 2, ISSUE 3, JUL – SEP 2026
RCHUB PUBLISHER
ISSN: 3108-3501
DOI: https://doi.org/10.65725/JCMCE/2/3/010

REVIEW OF LITERATURE

Previous studies have been conducted to explore the e-learning to reduce the educational gaps among rural youths. Zarina Denan et al. (2020) past research found that the technological factors and learner characteristics that drive the effectiveness of e-learning, providing insight into how to further enhance educational opportunities. Present developments in the field of ICT for rural development are addressed by this empowerment perspective. In Niyanta Shetye's research, the effect of ICT on learning in rural Africa has been investigated (2022). Researcher exhibited how fast organizations need to work together to promote sustainable growth through the use of digital facilities. It also identified the potential of ICT in community and social learning, raising the need to have appropriate digital solutions that are easily affordable and accessible. Wan-Tze Vong et al. (2019) have discussed the transformative effect of ICT training program among rural youth. This kind of program enables young people to be empowered and enhances their socio-economic status, consequently contributing to the adoption of community-driven technologies. C.S.H.N. Murthy (2008) had proposed the development of socially relevant e-learning programs matching with the needs of rural communities. Furthermore, the researcher incited that the such flexible and interactive courses would facilitate faster social transformation. In addition, Sabit Rahim et al. (2014) explored the role of E-Community Learning Resource Centers (E-CLRCs) in empowering rural youth through ICT literacy. It searched for means through which ICTs could increase access to education and, by extension, improve socio-economic opportunities for disadvantaged communities. Recent research projects yield more detailed information on how e-learning is affecting the rural scenario. Balamani et al. (2024) investigated exactly how the smart learning environments are creating pathways of empowerment for rural populations through avenues of learning opportunities and self-directed learning. The author discussed how online and offline resources could serve useful purposes in knowledge empowerment and community development. Similarly, García-Mieres (2023) explored the potentiality of e-learning to enhance the intergenerational relationship for the purpose of preserving cultural heritage in rural areas. This study underlined the advantages of e-learning in knowledge sharing and social enhancement. It is essential to understand the problems arising during the implementation of e-learning in rural contexts. Magda Pischetola et al. (2011) discussed the need to consider cultural needs, pedagogical innovation, and social capital in advocating e-learning adoption among rural youth. This

ISSN: 3108-3501
DOI: https://doi.org/10.65725/JCMCE/2/3/010

interconnectivity of technology, culture, and methods of teaching provides insights into the challenges and opportunities of ICT projects that deal with rural education. Abdon Ramirez (2022) continued discussing these challenges further as an effect of low internet connectivity on their e-learning initiatives. It pointed out innovation in educational strategies and adult learning models as the likely intervention to promote e-learning in rural communities. Matodzi 2007 explored South Africa on how e-learning can help in making sure the rural youth is empowered by reducing the digital divide to enhance education and reduce socio-economic challenges.

RESEARCH GAP

The existing research has explored the potential of e-learning in rural areas, but there is a gap in understanding the long-term impact, and it focuses only on the immediate benefit of e-learning among the rural area younger generation. The existing research studies clearly proves that there is a required to attempt to make discuss various determinants such as the long-term impact of e-learning on rural community development, the relationship between technology, education, and society, e-learning programs for underprivileged rural groups, innovation and investments in learning support, and the impact of connectivity issues in remote areas on the learning process. These factors should be taken into consideration, and research needs to be explored how e-learning can contribute to rural development and empowerment.

STATEMENT OF THE PROBLEM

The technological advancement has given new ways for education, especially in rural areas where the opportunity for traditional education is not very much, with the potential to bridge the knowledge gap and give everyone to information, e-learning provides an opportunity to empower the younger generation living in rural areas. The use of e-learning in these communities relies on various determinates such as availability of technology and social cultural factors. This study aims to investigate the effectiveness of e-learning adoption contribution to the social empowerment and sustainable development of rural younger generation.

VOL: 2, ISSUE 3, JUL – SEP 2026
RCHUB PUBLISHER
ISSN: 3108-3501
DOI: https://doi.org/10.65725/JCMCE/2/3/010

OBJECTIVES OF THE STUDY

The present study aims to explore the effectiveness of e-learning adoption among the rural younger generation in India. It aims to understand the factors influencing e-learning adoption and its impact on social development and empowerment by using a multi-dimensional scaling approach. It also examines how e-learning can be an important factor in empowering rural youth and promoting economic development in India.

NEED AND SIGNIFICANCE OF THE STUDY

The present study will help to measure the effectiveness and key factors influencing the e-learning adoption among rural youth belongs to Thiruvallur and Kanchipuram districts of Tamil Nadu. This study will pave the way for the understanding towards importance and performance factors connected with measurement of effectiveness in the e-learning adoption behaviour of the rural youth.

RESEARCH METHODOLOGY

The present study is descriptive and empirical in nature. The researchers have adopted survey method to gather the responses from younger generation respondents hailing from Thiruvallur and Kanchipuram districts of Tamil Nadu. The researchers have adopted survey method and structured questionnaire was used to measure the effectiveness of e-learning adoption behaviour among the respondents. The primary data collected using purposive or judgement non-random sampling were subjected to pilot study testing using Cronbach's Alpha reliability test and the results indicates that the value of 0.872 proves the higher reliable and consistency in the data. The data collected were subjected to data analysis using simple frequency distribution, descriptive statistics, cluster analysis and muti-dimensional scaling approach. The socio-economic characteristics of the rural youth participated in the survey shows that majority of the respondents are male (62.0%), hailing from nuclear family (53.0%), pursuing Under-Graduates (56.5%) from self-finance institutions (57.5%).

VOL: 2, ISSUE 3, JUL – SEP 2026
RCHUB PUBLISHER
ISSN: 3108-3501
DOI: https://doi.org/10.65725/JCMCE/2/3/010

RESULTS AND DISCUSSION

The study adopted a K-means cluster and to identify the e-learning usage classification groups. The K-Means cluster result explored that the three groups were classified according to the respondents among the rural area e-learning apps usage. The name of the cluster groups is firstly, Highest rated E-learning Access Group, secondly most relevant E-learning content access group, and third final group is perceived E-learning access group.

Table 1: E-Learners Cluster Classification

Cluster 1	92.000
Cluster 2	44.000
Cluster 3	64.000
Valid	200.000

- **Highest Rated E-Learning Access –** Highest rated group consist of individuals that is rural youths who have been provided the highest rating for the accessing of E-learning content. Rural youths might face easy to access the relevant E-learning content. By understanding the needs and preference of rural youths it will enhance the accessing of E-learning content.
- **Most relevant E-Learning content Access Group –** Most relevant group of rural youth consider e-learning content they access are more relevant to their needs and content in the e- learning apps are aligned with their objective to achieve their goals.
- **Perceived E-learning Apps Usage Group –** Perceived E-learning users are those who perceived the E-learning applications. They are actively engaged with E-learning platforms among rural youths.

Furthermore, the purpose of the study to explore the effectiveness of e-learning adoption among the rural younger generation in India and using multi-dimensional scaling technique to find the position of e-learning apps usage determinants and its position among rural areas e-learning effectiveness cluster groups.

ISSN: 3108-3501
DOI: https://doi.org/10.65725/JCMCE/2/3/010

Table 2: Cluster Groups of the Respondents based on the E-Learning Adoption Effectiveness

Variables	Discriminant Function Coefficients		Structure Matrix		Group Statistics			Tests of Equality of Group Means		
	Function		Function		Highest Rated E-Learning Access Group	Most Relevant E-Learning Content Access Group	Perceived E-Learning Apps Usage Group			
	1	2	1	2	Mean (SD)	Mean (SD)	Mean (SD)	Wilks' Lambda	F-Value (df = 2,197)	Sig.
Accessing E-Learning Applications	-0.619	0.921	-0.440	.860*	4.204 (0.475)	2.445 (0.749)	4.400 (0.521)	0.345	187.247	0.000
Relevance of E-Learning Content	0.091	-0.216	-0.084	.364*	4.261 (0.442)	3.803 (0.515)	4.469 (0.474)	0.786	26.739	0.000
Perception of E-Learning Apps	0.405	0.064	.339*	0.223	3.748 (0.671)	4.155 (0.422)	4.506 (0.374)	0.723	37.730	0.000
Social Media Integration on E-Learning Apps Use	0.212	0.071	.336*	0.161	3.639 (0.607)	4.109 (0.548)	4.338 (0.441)	0.750	32.836	0.000
Challenges Faced in E-Learning Apps Use	0.638	0.313	.505*	0.344	3.009 (0.664)	3.673 (0.541)	4.288 (0.554)	0.536	85.270	0.000
Government Support on E-Learning Apps Use	0.426	0.290	.474*	0.358	3.104 (0.585)	3.673 (0.721)	4.313 (0.483)	0.552	79.835	0.000
Satisfaction Towards E-Learning	0.008	0.153	0.299	.322*	3.596 (0.555)	3.818 (0.528)	4.363 (0.458)	0.703	41.591	0.000
(Wilks' Lambda: Test of Function(s) = 1 through 2 Wilks' Lambda = 0.098; Chi-Square = 450.985; df = 14; Sig. = 0.000) (Wilks' Lambda: Test of Function(s) = 2 Wilks' Lambda = 0.343; Chi-Square = 207.511; df = 6; Sig. = 0.000) Function 1: Eigen Value = 2.508; Variance = 56.7%; Canonical Correlation = 0.846 Function 1: Eigen Value = 1.914; Variance = 43.3%; Canonical Correlation = 0.810 Test Results: Box's M = 238.949; F. Approx. = 4.027; df=1,56; df=2, 62375.676; Sig.=0.000 Tests null hypothesis of equal population covariance matrices.										

ISSN: 3108-3501
DOI: https://doi.org/10.65725/JCMCE/2/3/010

Table 3: Classification Results

E-Learning Adoption Effectiveness Cluster Groups			Predicted Group Membership			Total
			Highest Rated E-Learning Access Group	Most Relevant E-Learning Content Access Group	Perceived E-Learning Apps Usage Group	
Original	Count	Highest Rated E-Learning Access Group	92	0	0	92
		Most Relevant E-Learning Content Access Group	0	42	2	44
		Perceived E-Learning Apps Usage Group	2	0	62	64
	%	Highest Rated E-Learning Access Group	100.0	0.0	0.0	100.0
		Most Relevant E-Learning Content Access Group	0.0	95.5	4.5	100.0
		Perceived E-Learning Apps Usage Group	3.1	0.0	96.9	100.0
a. 98.0% of original grouped cases correctly classified.						

Table indicates that three dominant groups have been formed are significantly differentiated by E-Learning Adoption Effectiveness. The Discriminant Function 1 shows that WilksLamba = 0.098; Chi-square = 450.985, df = 14, and Eigen Value is 2.508, Canonical Correlation of 0.846 with P-Value of 0.000 proves that significant at 5% level of Significance. The Discriminant Function 2 with WilksLamba value of 0.343, Chi-square value of 207.511, df = 6, Eigen Value of 1.914 and Canonical Correlation value of 0.810 is statistically significant at 5% level of significance. Further, Table 3 shows that 200 respondents are significantly grouped in three clusters namely Highest Rated E-Learning Access Group, Most Relevant E-Learning Content Access Group and Perceived E-Learning Apps Usage Group. The first cluster of Highest Rated E-Learning Access Group formed has 92 respondents followed by cluster two of Most Relevant E-Learning Content Access Group formed has 44 respondents and final Perceived E-Learning Apps Usage Group has formed with 64 respondents.

RCHUB: JOURNAL OF CONTEMPORARY TRENDS IN MANAGEMENT, COMMERCE AND ECONOMICS (JCMCE)
VOL: 2, ISSUE 3, JUL – SEP 2026
RCHUB PUBLISHER
ISSN: 3108-3501
DOI: https://doi.org/10.65725/JCMCE/2/3/010

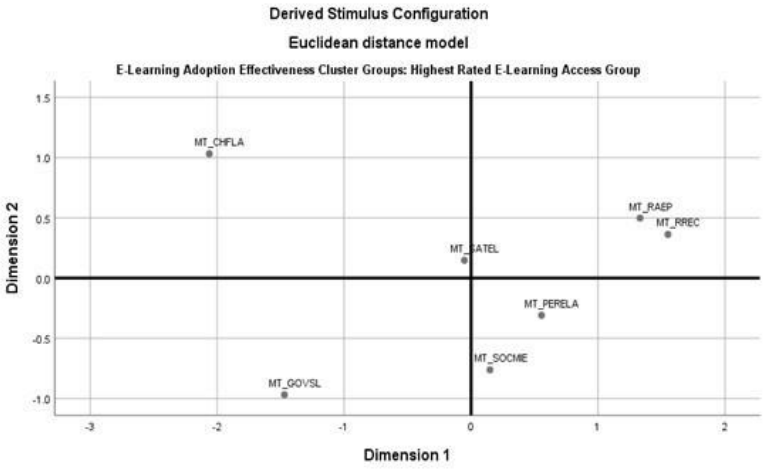
THE MULTI-DIMENSIONAL SCALING TECHNIQUE

The Multi-Dimensional Scaling Model is a statistical technique that is used to mapping the variables based on the study. It's renowned know as important performance analysis. The main objective MDS in this study is to mapping and analyses the positions of variables that influence E-learning adoption among rural youths in India.

E-Learning Adoption Effectiveness Cluster Groups: Highest Rated E-Learning Access Group

The MDS results explores that the e-learning apps usage determinants and e-learning adoption effectiveness cluster groups among highest rated e-learning access group satisfies in terms of fit, Stress = .02901 RSQ = .99574

Figure 1: E-Learning Adoption Effectiveness Cluster Groups: Highest Rated E-Learning Access Group



- High Importance and High Performance: In e-learning adoption effectiveness Accessing e-learning applications and relevance of e-learning content are considered to be highly positioned determinants. The above-mentioned were regarded as important, useful, and powerful of the highest-rated e-learning access group.
- High Performance and Low Importance: In e-learning adoption effectiveness satisfaction towards e- learning and challenges faced in the e- learning apps use are low important determinants but the performance of these determinants are highly positioned.

ISSN: 3108-3501
DOI: https://doi.org/10.65725/JCMCE/2/3/010

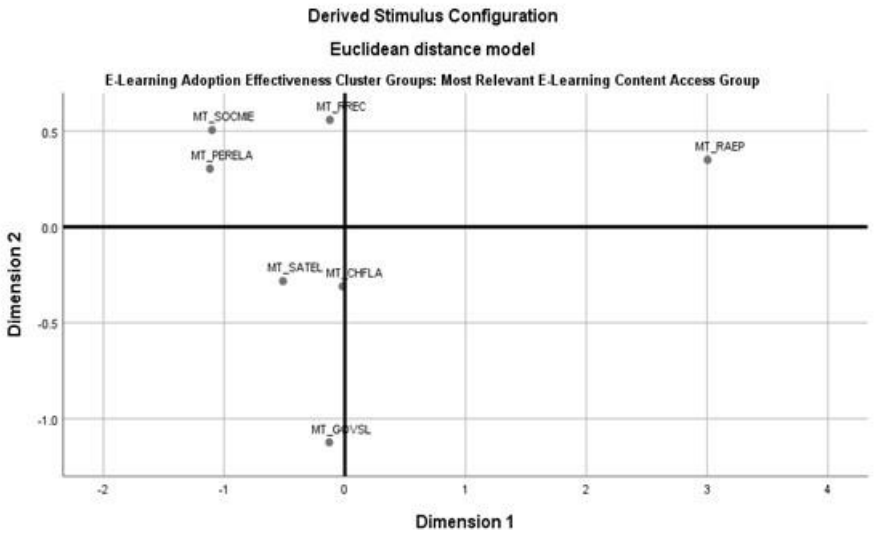
- High Importance and Low Performance: In e-learning adoption effectiveness Perception of e- learning apps, social media integration on e- learning apps use are considered to be high important determinants but the performance of the above determinants is low.
- Low Performance and Low Importance: In e-learning adoption effectiveness government support on e- learning apps determinant have low importance and low performance.

The MDS result shows that 99.5% of relationship predicted between e-learning apps usage determinants and E-learning adoption effectiveness cluster groups with respect to highest rated E-learning access group in the rural area.

E-Learning Adoption Effectiveness Cluster Groups: Most relevant E-Learning content Access Group

The MDS results explores that the e-learning apps usage determinants and e-learning adoption effectiveness cluster groups among most relevant e-learning content access group satisfies in terms of fit, Stress = .04395 RSQ = .99394

Figure 2: E-Learning Adoption Effectiveness Cluster Groups: Most relevant E-Learning content Access Group



- High Importance and High Performance: In e-learning adoption effectiveness relevance of e-learning content are considered to be highly positioned determinants. The above-mentioned were regarded as important, useful, and powerful of the highest-rated e-learning access group.

VOL: 2, ISSUE 3, JUL – SEP 2026
RCHUB PUBLISHER
ISSN: 3108-3501
DOI: https://doi.org/10.65725/JCMCE/2/3/010

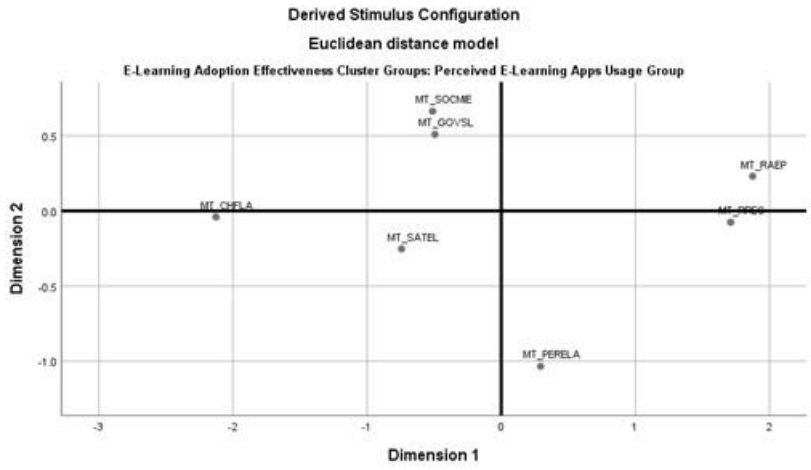
- High Performance and Low Importance: In e-learning adoption effectiveness Accessing e-learning applications, Perception of e- learning apps, social media integration on e- learning apps are low important determinants but the performance of these determinants are highly positioned.
- Low Performance and Low Importance: In e-learning adoption effectiveness government support on e- learning apps, satisfaction towards e- learning and challenges faced in the e-learning apps use determinant have low importance and low performance.

The MDS result shows that 99.4% of relationship predicted between e-learning apps usage determinants and E-learning adoption effectiveness cluster groups with respect to most relevant E-learning content access group in the rural area.

E-Learning Adoption Effectiveness Cluster Groups: Perceived E-learning Apps Usage Group

The MDS results explores that the e-learning apps usage determinants and e-learning adoption effectiveness cluster groups among perceived e-learning apps usage group satisfies in terms of fit, Stress = .06073 RSQ = .98115

Figure 3: E-Learning Adoption Effectiveness Cluster Groups: Perceived E-learning Apps Usage Group



ISSN: 3108-3501
DOI: https://doi.org/10.65725/JCMCE/2/3/010

- High Importance and High Performance: In e-learning adoption effectiveness relevance of e-learning content are considered to be highly positioned determinants. The above-mentioned were regarded as important, useful, and powerful of the highest-rated e-learning access group.
- High Performance and Low Importance: In e-learning adoption government support on e-learning apps, social media integration on e- learning apps are low important determinants but the performance of these determinants are highly positioned.
- High Importance and Low Performance: In e-learning adoption effectiveness Perception of e-learning apps, Perception of e- learning apps are considered to be high important determinants but the performance of the above determinants is low.
- Low Performance and Low Importance: In e-learning adoption effectiveness satisfaction towards e- learning and challenges faced in the e- learning apps use determinant have low importance and low performance.

The MDS result shows that 98.1% of relationship predicted between e-learning apps usage determinants and E-learning adoption effectiveness cluster groups with respect to perceived E-learning apps usage group in the rural area.

IMPLICATION AND CONCLUSION

The findings of the study prove that there is a higher satisfaction towards e-learning adoption among younger generation hailing from select rural districts of Tamil Nadu. The adoption of e-learning practices perception was significantly grouped in three cluster groups such as, Highest rated e-learning access group, most relevant e-learning access group and perceived e-learning apps group. The highest rated and most relevant learning group are showing positive intent towards adoption of e-learning practices such as, accessing e-learning applications, exploring relevance in e-learning content, higher perception towards e-learning applications, positive intent towards social media integration and overcoming the challenges for the e-learning adoption. The rural youth are expecting a continued delivery of high-quality content with regular updates on the industrial requirements in the e-learning contents. The periodic evaluation on continuous feedback are need to be done on the mode and quality delivery of e-learning contents. The Government support are expected to facilitate the infrastructural facilities and internet facilities need to be strengthen across every nook and corner of the state to ensure the more

ISSN: 3108-3501
DOI: https://doi.org/10.65725/JCMCE/2/3/010

adoption among younger generation learners. To conclude, the performance of e-learning applications and satisfaction towards e-learning applications were need to focused with blended learning strategies and gamification learning methods to involve the learning in efficient and effective learning pedagogies.

SCOPE FOR FUTURE RESEARCH AND LIMITATIONS

The present research was limited to only Thiruvallur and Kanchipuram districts of Tamil Nadu and it can be extended to other rural districts of Tamil Nadu in the near future. The study adopted non-probability sampling technique and limitations associated with the sampling technique are also applicable for the present study. The study can be further can be conducted as comparative study between rural and urban districts can be explored in the near future.

REFERENCES

[1.] Abbad, M. M. (2021). Using the UTAUT model to understand students' usage of e-learning systems in developing countries. Education and information technologies,26(6), 7205-7224.
[2.] Abdou, D., & Jasimuddin, S. M. (2020). The use of the UTAUT model in the adoption of elearning technologies: An empirical study in France based banks. Journal of Global Information Management (JGIM), 28(4), 38-51.
[3.] Adedeji, O., Afolabi., Oluwaseun, K., Shaw. (2024). Examining E-Learning Adoption in Construction Education in a Developing Country during the COVID-19 Pandemic. doi: 10.1061/9780784485293.006
[4.] Aderonke, Adeshina. (2024). The Transformative Role of Digital Resources in Teaching and Learning. Open Journal of Educational Development, doi: 10.52417/ojed.v5i1.520
[5.] Almaiah, M. A., Alfaisal, R., Salloum, S. A., Al-Otaibi, S., Al Sawafi, O. S., Al- Maroof, R. S., & Awad, A. B. (2022). Determinants influencing the continuous intention to use digital technologies in Higher Education. Electronics, 11(18), 2827
[6.] Al-Omairi, L., Al-Samarraie, H., Alzahrani, A. I., & Alalwan, N. (2021). Students; intention to adopt e-government learning services: a developing country perspective. Library Hi Tech, 39(1), 308-334.
[7.] Anita (2024) E-Learning Initiatives in Teacher Education. International Council for Education, Research and Training, 3(1), 1. doi: 10.59231/sari7664
[8.] Chitla, A. (2012). Impact of information and communication technology on rural India. IOSR Journal of computer Engineering, 3(2), 32-35.
[9.] Dramani, I. E., Tang, Z., & Coffie, C. P. K. (2022). Usage intention of e-learning
[10.] systems in Ghanaian tertiary institutions: A case study of the university for development studies. Sustainability, 14(12), 7360.
[11.] Gabriela, Kiryakova. (2022). Engaging Learning Content for Digital Learners. TEM Journal, doi: 10.18421/tem114-65
[12.] Goel, D. R. Karnataka State Akkamahadevi Women's University, Vijayapura, Karnataka Profile (Doctoral dissertation, The MS University of Baroda).

ISSN: 3108-3501
DOI: https://doi.org/10.65725/JCMCE/2/3/010

[13.] Haleem, A., Javaid, M., Qadri, M. A., & Suman, R. (2022). Understanding the role of digital technologies in education: A review. Sustainable operations and computers, 3,275-285. doi: 10.1016/j.susoc.2022.05.004

[14.] Halili, S. H., & Sulaiman, H. (2019). Factors influencing the rural students' acceptance of using ICT for educational purposes. Retrieved from URL:https://www.researchgate.net/publication/322621995

[15.] Hans, V. (2024). E-Learning for Rural Development in India: Closing Disparities and Empowering Communities. E-Learning for Rural Development in India: Closing Disparities and Empowering Communities (January 22, 2024).

[16.] Hassan, A., El-Sabagh., Hassan, A., El-Sabagh. (2021). Adaptive e-learning environment based on learning styles and its impact on development students' engagement. International Journal of Educational Technology in Higher Education, doi: 10.1186/S41239-021-00289-4

[17.] Ihsaniyati, H., Sarwoprasodjo, S., Muljono, P., & Gandasari, D. (2024, June). Understanding the impact and driver of digital divide to support rural development policy: a review. In IOP Conference Series: Earth and Environmental Science (Vol. 1362, No. 1, p. 012016). IOP Publishing.

[18.] Karthiya Banu, R., Sundar, C., & Umarani, S. (2020, July). Indian Rural Students e-learning behavior using Structural Equation Modeling—A Novel Approach. In 2020 Fourth World Conference on Smart Trends in Systems, Security and Sustainability (WorldS4) (pp. 620-624). IEEE.

[19.] Korsah, D. P. (2022). Assessing the Influence of the Technology Acceptance Model on Social Media and eLearning Content Adoption: A Case Study of Colleges of Education in the Central and Western Zone of Ghana. Structural Equation Modeling, 19(4), 1951.

[20.] Kusuma, C. S. D., & Ramadhan, A. N. (2022, December). Youth Empowerment Through Digital Literacy Education. In 9th International Conference on Education Research, and Innovation (ICERI 2021) (pp. 285-293). Atlantis Press.

[21.] Mary, Galbraith. (2023). Validated digital literacy measures for populations with low levels of internet experiences. Development Engineering, doi: 10.1016/j.deveng.2023.100107

[22.] Mhlana, S., Chipangura, B., & Twinomurinzi, H. (2021, September). Conceptualizing factors that influence learners' intention to adopt ICT for learning in rural schools in developing countries. In Proceedings of Sixth International Congress on Information and Communication Technology: ICICT 2021, London, Volume 2 (pp. 391-401). Singapore: Springer Singapore.

[23.] Mhlana, S., Chipangura, B., & Twinomurinzi, H. (2021, September). Conceptualizing factors that influence learners' intention to adopt ICT for learning in rural schools in developing countries. In Proceedings of Sixth International Congress on Information and Communication Technology: ICICT 2021, London, Volume 2 (pp. 391-401). Singapore: Springer Singapore.

[24.] Muttagi, F., & Deshpande, S. L. (2016). E-Learning A Linguistic Rural Perspective. IJRET: International Journal of Research in Engineering and Technology, 5(5), 118-122.

[25.] Nair, J., & Reddy, D. B. S. (2021). Leveraging Enterprise Resource Planning Systems to Digitize Business Functions. In Research Anthology on Digital Transformation, Organizational Change, and the Impact of Remote Work (pp. 165-190). IGI Global.

ISSN: 3108-3501
DOI: https://doi.org/10.65725/JCMCE/2/3/010

[26.] Nurdayana, Mohamad, Noor. (2023). The Impact of Educational Technology on Distance Learning in The Era of Post-Covid-19. doi: 10.51200/ijelp. v6i1.4301
[27.] Oyetade, K., Harmse, A., & Zuva, T. (2023). Factors Influencing Students' Use of eLearning Technologies. International Journal of Learning, Teaching and Educational Research, 22(9), 617-632
[28.] Paulo, Roberto, Tavares., Diego, Antônio, de, Souza, Pereira., Fabiana, Campos, De, Brito., Gilmara, Benício, De, Sá., Lucas, Ferreira, Gomes., Mirian, Roberta, dos, Santos, Fujiyoshi., Valéria, Teixeira, Modesto., Renan, Cesar, das, Virgens, Da, Cruz. (2024). The role of digital information and communication technologies in modern education. Contribuciones a las ciencias sociales, doi: 10.55905/revconv.17n.2-015
[29.] Sarker, S. I., Karim, A. H. M., & Suffiun, S. M. A. (2017). Parental educational aspiration and gender inequality of rural children in Bangladesh: the role of parental attitudes of traditional gender role, gender biased capability, and gender. Journal of International Women' s Studies, 18(2), 134-142.
[30.] Shraddha, Mehta., Kunal, Thakkar. (2024). ICT (Information and Communications Technology) in Education: Change brings Challenges. Indian Scientific Journal Of Research in Engineering And Management, doi: 10.55041/ijsrem36371
[31.] Stavros, Sindakis., G., Showkat. (2024). The digital revolution in India: bridging the gap in rural technology adoption. Journal of Innovation and Entrepreneurship, doi: 10.1186/s13731-024-00380-w
[32.] Suresha K.P (2023) Impact of Digitalisation Among The Rural Youth- A Study With Vijayapura District. International Journal of Southern Economic Light (JSEL), 11(4), 10-13.
[33.] Syafila Kamarudin, S. Z. O., Bolong, J., Osman, M. N., & Mahamed, M. (2019). ICT development of community in rural areas. International Journal of Academic Research in Business and Social Sciences, 9(9).
[34.] V., Basil, Hans. (2024). E-Learning for Rural Development in India: Closing Disparities and Empowering Communities. Social Science Research Network, doi:10.2139/ssrn.4702168
[35.] Vanitha, P. S., & Alathur, S. (2021). Factors influencing E-learning adoption in India: Learners & perspective. Education and Information Technologies, 26, 5199-5236.
[36.] Violaine, A., & Hwang, G. H. (2019). Key Factors Affecting Students' Satisfaction and Intention to Use e-Learning in Rwanda's Higher Education. Journal of digital convergence, 17(5).
[37.] Wang, F., Wijaya, T. T., Habibi, A., & Liu, Y. (2022). Predictors influencing urban and rural area students to use tablet computers as learning tools: combination of UTAUT and TTF models. Sustainability, 14(21), 13965.
[38.] Zhao, L., Cao, C., Li, Y., & Li, Y. (2022). Determinants of the digital outcome divide in Elearning between rural and urban students: Empirical evidence from the COVID-19 pandemic based on capital theory. Computers in Human Behavior, 130, 107177.
[39.] Zhou, Y., An, X., Li, X., Li, L., Gong, X., Li, Y., ... & Tsai, C. C. (2022). A literature review of questionnaires for the assessment of online learning with a specific focus on the factors and items employed. Australasian Journal of Educational Technology, 38(1), 182-204.