# E-learning Usage Pattern by Agricultural Undergraduate Students of SKNAU, Jobner

## Ayana Mohan[1]., Khan. I. M[2]., Sharma. M .K[3] and Kulkarni Srinivas[4]

Sri Karan Narendra Agriculture University, Jobner, Rajasthan, India 303328

## ABSTRACT

Education through digital means is becoming one of the most progressive and dominating form of education. E-learning has opened new avenues to education in India and has changed the dynamics of educational content. It is emerging as one of the most effective and efficient method for imparting education especially in Open and Distance learning mode.Keeping this scenario in mind, the present study was intended to study the role of socio-personal characteristics of agricultural undergraduate students of SKNAU, Jobner, Rajasthan and their relation with the usage pattern of e-learning device with objectives to analyse different socio-personal characteristics of agricultural undergraduate students, to identify their usage pattern of e-learning devices and to find out the relationship between socio-personal characteristics and usage pattern of e-learning devices by the agricultural undergraduate students of SKNAU, Jobner, Rajasthan. The usage pattern of e-learning devices was considered as dependent variable whereas independent variables considered were gender, educational status, academic performance, area of residence, family size, dependent family members, father's education, mother's education, father's occupation and mother's occupation. A sample of 120 respondents was selected using simple random sampling with proportional allocationand a pretested questionnaire was used for data collection. The respondents for the study were selected randomly from two constituent accredited colleges of SKNAU, Jobner namely; SKNCOA, Jobner and COA, Lalsot. The obtained data was analysed, tabulated and subjected to quantitative as well as qualitative analysis using suitable statistical tools.

**Keywords**: usage pattern, e-learning, competence, educational status, academic performance

Education of 21st century is showing a shifting trend to technological advancement. In 2019, India had nearly 700 million internet users across the country which is projected to grow over 974 million users by 2025 showing a giant potential for rapid climb in internet users. Out of total population of internet users, 2/3rd of users are seen within the age group of 12-29 years indicating more users are among the youth (KPMG report, 2019).

E-learning also called online learning is a diverse platform where anyone within their busy schedule time can learn anything of their interest from anywhere in the world. It also helps to urge more people educated as there is no restriction within the users. The availability and accessibility to internet and new technologies in fingertips through smart phones, computers, laptops etc make a huge progress in electronic learning. During this digital era, where most of the people especially youth has either a smart phone, laptop or both and a web connection are easily accessible to the online mode of education. It is comparatively less costly and user friendly. It could be easily managed and also saves time. It creates and enhances the technical and designing skills of scholars since they are the one who uses the web most. Apart from this, it also helps to educate those people residing in rural areas who don't seem to be able to access educational infrastructure.

E-Learning has been defined by different researchers in various ways. Some researchers view e-learning as a medium for delivering learning materials whereas some others believe that it's an online based learning which uses web based communication for teaching and learning. In some others point of view, it is a method which aid or support face to face learning.

As per definition by Khan (2005), e-learning is an innovative approach for delivering well designed, learner-centered, interactive, and facilitated learning environment to anyone, any place, anytime by utilizing the attributes and resources of varied digital technologies together with other sorts of learning materials suited for open, flexible, and distributed learning environment. Briefly e-learning provide a platform for the scholars to access to their lessons or courses at anytime from anywhere in the world.

E-learning is very popular in developed countries and they make use of that in their academic, business and even they use in daily basis. But developing countries like India has not yet been able to keep same pace with the developed countries as far as e-learning usage is concerned (Sood and Singh, 2014). So, it is important to know the usage pattern of e-learning devices inorder to bring a big step in the field of e-learning technology. In addition to that,

various researchers like Modritscher*et al.* (2013), Owate*et al.* (2017), Kellar*et al.*(2008)and Yuen and Ma (2008) have conducted researches regarding concepts and usage of e-learning technology. But these researches were conducted in developed countries where availability and affordability of e-learning devices were not a problem. In case of developing and under developed countries availability and affordability of e-learning devices are major issue.

Discussions or researches about e-learning perceptions and preferences of students were also been conducted. A large majority of the students have access to internet at their home or residence and majority responding going online daily (Buzzetto-More, 2008). Some studies focussed on analysis of students attitude towards e-learning in which the researchers found statistically significant correlation between student attitudes toward technology and their levels of access to various technologies (Rhema and Miliszewska, 2014). Research undertaken regarding e-learning shows that there was high ownership to digital devices as well as applications and services and almost all students in the study consider they have a medium and advances expertise in using a computer or laptop (Anca and Cosmina, 2015). An attempt to conduct study on "Students' Perceptions of E-Learning in the Department of Information Science at the University of South Africa" reveals that majority of students frequently used e-learning resources such as electronic mail, search engines and social media networks and the students spent average time of more than 18 hours per week on internet (Ncube, 2015). The study conducted on Faculty and Students' Perceptions about E-learning for Enhancing Interactive Learning in Higher Learning Institutions in Tanzania shows that majority of the students use smart phones followed by internet services provided by the institution thereafter services from internet cafe and least students had their own computers (Anthony, 2016).

Hence, keeping this scenario in mind the "E-learning usage pattern by agricultural undergraduate students of SKNAU, Jobner" has undertaken with the following objectives:

1. To study the socio-personal characteristics of agricultural undergraduate students of SKNAU, Jobner
2. To analyse the usage pattern of e-learning devices by the agricultural undergraduate students
3. To measure the relationship between usage pattern of e-learning devices by agricultural undergraduate students and their socio-personal characteristics

## METHODOLOGY

The population comprised of undergraduate students of the only two accredited colleges coming under SKNAU, Jobner namely SKNCOA, Jobner and COA, Lalsot. The total number of students in both colleges coming under B.Sc. (Hons.)Ag. Part II, B.Sc. (Hons.) Ag. Part III and B.Sc. (Hons.) Ag.Part IV were 519 and about 23% of the total population was considered as sample size i.e. 120. Using simple random sampling technique 60 students were selected from SKNCOA, Jobner and 60 students from COA, Lalsot.

The study which was survey research adopted the descriptive study design. A pretested questionnaire was developed by the researcher in guidance with subject experts which had two sections comprising of twenty eight questions.

## RESULT AND DISCUSSION

The objectives of the present study were to analyse the usage pattern of e-learning devices by the students and to find out the socio-economic factors affecting the usage pattern of e-learning devices of the students of SKNAU, Jobner, Rajasthan.The data of the study was tabulated and analysed using suitable statistical tools in Microsoft Excel. The findings of the studyare given in the following tables.

**Table 1: Average usage pattern of e-learning devices of the students**

| Usage pattern of e-learning devices | College | Mean scores | S.D. | 't' value |
|---|---|---|---|---|
| Access to e-learning devices | SKNCOA, Jobner | 1.8667 | 1.00 | 3.19** |
| | COA, Lalsot | 1.3833 | 0.61 | |
| Time period of access to e-learning devices | SKNCOA, Jobner | 3.8500 | 2.58 | 0.00$^{NS}$ |
| | COA, Lalsot | 3.8500 | 2.65 | |
| Time period of access to internet | SKNCOA, Jobner | 2.4167 | 0.72 | 1.79$^{NS}$ |
| | COA, Lalsot | 2.1667 | 0.81 | |
| Location of access to internet | SKNCOA, Jobner | 1.8000 | 0.82 | 4.81** |
| | COA, Lalsot | 1.1000 | 0.77 | |
| Time spend online in a day | SKNCOA, Jobner | 1.8667 | 0.85 | -0.11$^{NS}$ |
| | COA, Lalsot | 1.8833 | 0.74 | |
| Time spent online for educational purposes in a day | SKNCOA, Jobner | 2.3667 | 0.80 | -0.70$^{NS}$ |
| | COA, Lalsot | 2.4667 | 0.77 | |

| | | | | |
|---|---|---|---|---|
| Time spent online for entertainment in a day | SKNCOA, Jobner | 1.3833 | 0.83 | 0.11[NS] |
| | COA, Lalsot | 1.3667 | 0.86 | |
| Competence in basic internet skills | SKNCOA, Jobner | 2.9833 | 1.00 | 0.39[NS] |
| | COA, Lalsot | 2.9167 | 0.87 | |
| Level of computer skills | SKNCOA, Jobner | 3.1833 | 0.91 | 2.13* |
| | COA, Lalsot | 2.8333 | 0.89 | |
| Interest in guidance on e-learning | SKNCOA, Jobner | 0.9167 | 0.28 | 0.60[NS] |
| | COA, Lalsot | 0.8833 | 0.32 | |
| Source of e-learning skills | SKNCOA, Jobner | 2.0833 | 1.52 | 4.042** |
| | COA, Lalsot | 1.2167 | 0.67 | |
| Frequency of using e-learning tools | SKNCOA, Jobner | 47.5000 | 12.20 | -0.79[NS] |
| | COA, Lalsot | 49.3000 | 12.80 | |
| Purpose of using e-learning tools | SKNCOA, Jobner | 39.1167 | 7.64 | -0.55[NS] |
| | COA, Lalsot | 39.8833 | 7.72 | |
| Level of usage pattern of e-learning devices | SKNCOA, Jobner | 112.3333 | 20.91 | 0.02[NS] |
| | COA, Lalsot | 112.2500 | 20.23 | |

** indicating that values are significant at 1% level of significance

* indicating that values are significant at 5% level of significance

NS indicating that values are not found significant at desired level of significance

A comparative analysis of usage pattern of e-learning devices by the students of SKNCOA, Jobner and COA, Lalsot has been conducted for the study. For the purpose of study, fourteen components regarding usage pattern of e-learning devices were studied. It was clearly found that access to e-learning devices, location of access to internet, level of computer skills and source of e-learning skills were showing significant effect when students of both colleges are compared. In the above mentioned components, SKNCOA, Jobner is showing comparatively higher mean scores that COA, Lalsot. All other variables does not show any significant difference in case of both colleges even though they showed differences in mean scores. Further the study also revealed that time spend online in a day, time spent online for educational purposes in a day, frequency of using e-learning tools and purpose of using e-learning tools were showing negative non significant difference between students of SKNCOA, Jobner as well as COA, Lalsot.

**Table 2: Socio-economic factors affecting the usage pattern of e-learning devices of the students of SKNCOA, Jobner**

| Socio-economic factors | Coefficients | Standard error | 't' value |
|---|---|---|---|
| (Constant) | 52.559 | 35.206 | 1.493[NS] |
| Gender | 13.921 | 6.327 | 2.200* |
| Educational status | 4.408 | 3.039 | 1.450[NS] |
| Academic performance | 2.374 | 4.053 | 0.586[NS] |
| Area of residence | 7.429 | 5.967 | 1.245[NS] |
| Family size | -2.684 | 1.391 | -1.929[NS] |
| Dependent family members | 1.206 | 1.961 | 0.615[NS] |
| Father's education | 3.330 | 1.884 | 1.767[NS] |
| Mother's education | -1.372 | 2.357 | -0.582[NS] |
| Father's occupation | 3.242 | 3.881 | 0.835[NS] |
| Mother's occupation | 0.444 | 1.746 | 0.254[NS] |

Adj $R^2$= 0.211, F value =2.582*

** indicating that values are significant at 1% level of significance

* indicating that values are significant at 5% level of significance

NS indicating that values are not found significant at desired level of significance

In order to find out the factor affecting the usage pattern of e-learning devices a multiple linear regression model has used. The scores of usage patter of e-learning devices has used as dependent variable and socioeconomic factors i.e. Gender,Educational status, Academic performance, Area of residence, Family size, Dependent family members, Father's education, Mother's education, Father's occupation, Mother's occupation were used as independent variables. The value of F test has found significant at 5% level of significance. It is indicating that model is significant and estimates will provide the good results. The value of Adjusted R square has observed as 0.211. The results presented in the table only gender is showing positive and significant effect on the usage pattern of e-learning devices. This might be due to the fact that male students responds more to the use of e-learning devices than their female counterparts and it might also be due to male students have more confidence and

interest in using electronic devices than female students. It is also observed that family size and mother's education are showing negative impact on usage pattern of e-learning devices but their coefficient are not significant, however all other factors showing positive impact but they have found not significant. It might be possible that majority of the students are from rural background and their family income is very high due to multiple occupations within the family. Majority of the student's family occupation is agriculture and they have large property of land along with additional income from other businesses. Hence, they might not have any challenges with accessibility of e-learning devices as far as money is concerned.

**Table 3- Socio-economic factors affecting the usage pattern of e-learning devices of the students of COA, Lalsot**

| Socio-economic factors | Coefficients | Standard error | 't' value |
|---|---|---|---|
| (Constant) | 108.402 | 33.726 | 3.214** |
| Gender | -1.882 | 6.928 | -0.272<sup>NS</sup> |
| Educational Status | 6.074 | 3.405 | 1.784<sup>NS</sup> |
| Academic Performance | -4.474 | 4.897 | -0.914<sup>NS</sup> |
| Area of Residence | 10.733 | 4.568 | 2.349* |
| Family Size | -0.298 | 1.675 | -0.178<sup>NS</sup> |
| Dependent Family Members | 0.896 | 1.995 | 0.449<sup>NS</sup> |
| Father's Education | 1.900 | 1.698 | 1.119<sup>NS</sup> |
| Mother's Education | 1.294 | 1.784 | 0.726<sup>NS</sup> |
| Father's Occupation | -1.263 | 2.797 | -0.452<sup>NS</sup> |
| Mother's Occupation | 1.093 | 2.121 | 0.515<sup>NS</sup> |

Adj $R^2$= 0.117, F value =1.784$^+$

** indicating that values are significant at 1% level of significance

* indicating that values are significant at 5% level of significance

NS indicating that values are not found significant at desired level of significance

It is observed from the table that value of F test is found significant at 10% level of significance indicating that the model is significant and will good results for the study. The value of Adjusted $R^2$ is found as 0.117. It is also evident from the table that only area of residence is showing significant effect on usage pattern of e-learning devices in case of students of COA, Lalsot whereas remaining independent variables were found to have no significant on dependent variable i.e. usage pattern of e-learning devices. It might be due to

the fact that students residing in urban areas might have easy accessibility and availability of e-learning devices and might also be due to high speed internet access in urban areas than in semi-urban and rural areas. It is also observable that gender, academic performance, family size and father's occupation are having negative impact on usage pattern of e-learning devices but are not significant.

**Table 4: Socio-economic factors affecting the usage pattern of e-learning devices of the all sampled students**

| Independent variable | Coefficients | Standard error | 't' value |
|---|---|---|---|
| (Constant) | 77.718 | 22.637 | 3.433** |
| Gender | 4.244 | 4.217 | 1.007[NS] |
| Educational Status | 4.739 | 2.200 | 2.154* |
| Academic Performance | 0.035 | 2.889 | 0.012[NS] |
| Area of Residence | 10.123 | 3.423 | 2.958** |
| Family Size | -0.761 | 0.989 | -0.770[NS] |
| Dependent Family Members | 0.683 | 1.280 | 0.534[NS] |
| Father's Education | 2.162 | 1.201 | 1.801+ |
| Mother's Education | 0.091 | 1.326 | 0.068[NS] |
| Father's Occupation | -0.337 | 2.157 | -0.156[NS] |
| Mother's Occupation | 1.054 | 1.260 | 0.836[NS] |

Adj $R^2$= 0.165, F value =3.36**

** indicating that values are significant at 1% level of significance

* indicating that values are significant at 5% level of significance

NS indicating that values are not found significant at desired level of significance

The data in the table depicts the socio-economic factors affecting the usage pattern of e-learning devices of all sampled students in which it is clearly visible that the value of F test is significant at 1% level of significance. This shows that model is significant and estimates will provide good results. The value of adjusted $R^2$ has observed as 0.165. It is also visible that educational status, area of residence and father's education were shown positive and significant effect on usage pattern of e-learning devices. The other independent variables like family size and father's occupation had shown negative but non significant effect on usage pattern of e-learning devices. With respect to educational status, it might be due to the fact

that digital literacy the students gained during their degree program might have improved their understanding about e-learning which might have resulted in more usage of e-learning devices. As far as area of residence is concerned, it might be due to the reason that the students residing in urban areas have easy accessibility and availability of e-learning devices and also might be due to high speed internet access in case of urban areas than semi-urban and rural area. Hence they might have been using e-learning devices without any challenges. In case of father's education of the students it might be due to the fact that the higher the educational qualification of the father they are more aware about the latest technology and its importance. Their knowledge and experience might be shared with their children who create an influence on the respondents.The remaining variables (gender, academic performance, dependent family members, mother's education and mother's occupation) were showing positive but non significant impact on usage pattern of e-learning devices.

## CONCLUSION

In this research paper the researched conducted a comparative analysis of usage pattern of e-learning devices of two colleges' viz. SKNCOA, Jobner and COA, Lalsot. The researcher also examined the influence of 14 usage components on the socio-economic variables of agricultural undergraduate students.  Independent variables such as educational status, area of residence and father's education were found to have significant relationship with the usage pattern of e-learning devices by the students. A particular focus has been set to examine the comparative analysis of usage pattern of e-learning devices of two colleges in which students of SKNCOA, Jobner had comparatively greater mean scores than students of COA, Lalsot.

## REFERENCES

AncaPopovici and CosminaMironov 2015.Students' Perception on using E-learning Technologies.*Procedia- Social and Behavioral Sciences*, **180**: 1514-1519. ISSN 1877-0428.

Anonymous 2019.Online Education in India. Report by Klynveld Peat Marwick Geordeler (KPMG).

Anthony Marwa 2016. Faculty and Students' Perceptions about E-learning for enhancing Interactive Learning in Higher Learning Institutions in Tanzania.The Open University of Tanzania. Tanzania.

Buzzetto-More, N. 2008.Students Perception of various E-learning Components.*Interdisciplinary Journal of E-learning and Learning Objects*, **4**: 113-135.

Khan, B.H. 2005. Managing E-learning: Design, Delivery, Implementation and Evaluation, Hershey. *Information Science Publishing*.

Keller, C., Hrastinski, S. and Carlsson, S.A. 2008. Students' Acceptance of E-Learning Environments: A Comparative Study in Sweden and Lithuania [online] In Proceedings of the Fifteenth European Conference on Information Systems (Österle H, Schelp J & Winter R. Eds.), pp. 395-406, http://is2.lse.ac.uk/asp/aspecis/20070083.pdf

Mödritscher, F., Andergassen, M. and Neumann, G. 2013.Dependencies between E-Learning Usage Patterns and Learning Results.*ACM International Conference Proceeding Series*, **24**:1-8.

Ncube, L. S. 2015. Students' Perceptions of E-learning in the Department of Information Science at the University of South Africa. M.Sc. thesis, University of South Africa, South Africa.

Rhema, A. and Miliszewska, I. 2014. Analysis of Student Attitudes towards E-Learning: The Case of Engineering Students in Libya. *Issues in Informing Science and Information Technology,***11**:169-190.

Sood, M. and Singh, V. 2014. E–Learning: Usage among Indian Students. *International Journal of Scientific and Engineering Research*, **5**(4).

Yuen, H.K.A. and Ma, W.W.K. 2008.Exploring Teacher Acceptance of E-Learning Technology.*Asia-Pacific Journal of Teacher Education*, **36**(3):229–243.