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### Accessibility and mass media utilization of extension personnel towards e-extension tools

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#### Abstract

This study, conducted in Uttar Pradesh during 2023-2024, aims to evaluate the accessibility and utilization of e-extension tools among extension personnel affiliated with Krishi Vigyan Kendras (KVKs). Uttar Pradesh was selected purposively due to its high number of KVKs, totaling 89, and the study focused on those hosted by Acharya Narendra Deva University of Agriculture and Technology (ANDUAT), which has the maximum number of KVKs in the state. Data was collected using a web-based questionnaire from 137 extension personnel out of 158 contacted. The findings reveal that extension personnel have high accessibility to essential e-extension tools, including mobile devices, computers, the internet, and various web-based platforms, indicating a strong infrastructure for their activities. However, access to tools like tablets, web cameras, LCD projectors, and decision support systems is comparatively lower. The study also highlights varying engagement levels with different information sources, with agricultural and rural development programs frequently accessed via community radio stations and kiosks, while farm magazines and newspapers are commonly used for reading agricultural information. These findings suggest that the robust availability and utilization of e-extension tools significantly enhance the effectiveness of extension personnel in their roles.

**Keywords:** e-extension, accessibility, mass media utilization, extension personnel

#### Introduction

The agricultural development is very essential for poverty alleviation and overall economic development of any country. Agricultural sector in India has been successful in being on par with the rising food demand of a growing population. The green revolution has been the milestone of India's agricultural achievement, transforming the country from one of the dependencies to self-sufficiency. Agricultural research and extension played a major role in green revolution and attaining food self-sufficiency. Despite rapid strides by the agriculture sector, still there exist many grey areas and several challenges which require immediate attention. These include sustaining investment, climate change, high fluctuations in prices and production, undeveloped markets, relative profitability of agriculture and allied sectors, raising small holder productivity, providing livelihood to large numbers, containing the cost of production and retaining international competitiveness. Agricultural extension in the current scenario of a rapidly changing world has been recognized as an essential mechanism for delivering knowledge (information) to modern farming. Extension agencies are concerned with what should be the appropriate means and approaches in getting the right agricultural information to the clients

(farmers). Adoption of new technologies is one of the promising approaches for increasing and sustaining the agriculture sector. Lack of information and lack of credit are the prominent constraints in technology adoption. Hence, technology dissemination has a long way to go in India. e-Extension is also known as cyber extension. It is defined as the 'extension over cyber space'. But, in applied context of agriculture, cyber extension means, "using the power of online networks, computer communications & digital interactive multi-media to facilitate dissemination of Agril. Technology". It includes effective use of ICT, national & international information networks, internet, expert systems, multi-media learning systems & computer-based training systems to improve information access to the farmers, extension workers, research scientists and extension managers. The electronic extension or e-Extension services to agriculture are a network of institutes that provide a more efficient alternative to a traditional extension system for agriculture and its allied sectors. It is a collaboratively built internet-based learning environment delivering science-based farm information on a 24\*7\*365 basis. e-Extension means "using the power of online computer networks with the help of communication channels to deliver the content in the form of text, graphics, audio and

video either passively or interactively to facilitate dissemination of agricultural technology”.

**Research Methodology**

This study was conducted in Uttar Pradesh during the year 2023-2024. Uttar Pradesh was chosen purposively because it has the maximum number of KVKs (Krishi Vigyan Kendras) across India, totaling 89. In Uttar Pradesh, four types of organizations host KVKs: NGOs, ICAR Institutes, State Agricultural Universities, and other educational institutes. Among these, Acharya Narendra Deva University of Agriculture and Technology (ANDUAT) was selected for the study because it hosts the maximum number of KVKs in the state.

Data was collected using a google form questionnaire from the extension personnel of the KVKs under ANDUAT. Out of 158 extension personnel, 137 responded to the questionnaire. Thus, the sample size of the study was 137. The data was classified, tabulated, and analyzed to make the findings meaningful for interpretation and drawing inferences. Various statistical methods were used accordingly.

**Results and Discussion**

The data gathered from extension personnel through Google Forms was organized, tabulated, and examined. The study's findings are presented following.

**Table 1:** Distribution of Extension Personnel according to their accessibility towards e-Extension tools n=137

S. N.	Categories	f	%
1.	Radio	122	89.05
2.	Television	112	81.75
3.	Mobile	137	100
4.	Computer	137	100
5.	Internet	137	100
6.	Laptop	137	100
7.	Tablet	96	70.07
8.	Scanner	137	100
9.	Printer	137	100
10.	Web Camera	104	75.91
11.	LCD Projector	91	66.42
12.	e-mail	137	100
13.	Web based search engine	137	100
14.	Web-based Agriculture information portals	137	100
15.	Video conferencing	137	100
16.	Kiosk	128	93.43
17.	e- Newspapers	137	100
18.	e-agricultural Magazines	137	100
19.	Agri. based mobile apps	137	100
20.	Decision support system	87	63.50

f=frequency, %= percentage

The data in table 1 indicates that extension personnel have high accessibility to e-extension tools, with 100% having access to mobile devices, computers, the internet, laptops, scanners, printers, e-mail, web-based search engines, web-based agriculture information portals, video conferencing, e-newspapers, e-agricultural magazines, and agricultural-based mobile apps. Additionally, a large majority have access to radios (89.05%), televisions (81.75%), and kiosks

(93.43%). However, access to other tools like tablets (70.07%), web cameras (75.91%), LCD projectors (66.42%), and decision support systems (63.50%) is slightly lower. Overall, these findings indicate a strong infrastructure for utilizing e-extension tools among extension personnel, which can significantly enhance their extension activities and effectiveness. A similar study was also reported by Cynthia and Nwabugwu (2016) [4].

**Table 2:** Distribution of Extension Personnel according to their Mass Media Utilization n=137

S. N.	Media	Type of Programmers/Information	Listening/Viewing/Reading					
			Regular		Occasional		Never	
			f	%	f	%	f	%
1.	Radio	Agricultural programmes	14	10.22	94	68.61	29	21.17
		Rural development programmes	43	31.39	64	46.72	30	21.90
		News	31	22.63	49	35.77	88	64.23
2.	Community Radio Station	Agricultural programmes	39	28.47	56	40.88	42	30.66
		Rural development programmes	42	30.66	63	45.99	32	23.36
		News	19	13.87	47	34.31	71	51.82
4.	Kiosk	Agricultural programmes	36	26.28	75	54.74	26	18.98
		Rural development programmes	29	21.17	83	60.58	25	18.25
		News	33	24.09	71	51.82	33	24.09
5.	Farm Magazine	Agricultural related information	41	29.93	59	43.07	37	27.01
		Rural development related information	48	35.04	67	48.91	22	16.06
		News	26	18.98	71	51.82	40	29.20
6.	Newspaper	Agricultural related information	87	63.50	39	28.47	11	8.03
		Rural development related information	64	46.72	50	36.50	23	16.79
		News	127	92.70	10	7.30	00	00.00

f=frequency, %= percentage

Table 2 presents the media consumption habits of extension personnel in terms of their listening/viewing/reading frequency for different types of programs and information sources.

**Radio:** Agricultural programs are occasionally listened to by 68.61% of respondents, while 10.22% listen regularly and 21.17% never listen. Rural development programs are occasionally listened to by 46.72%, with 31.39% regular listeners and 21.90% never listening. News is occasionally listened to by 35.77%, with 22.63% regular listeners and 64.23% never listening.

**Community Radio Station:** Agricultural programs are occasionally listened to by 40.88%, with 28.47% regular listeners and 30.66% never listening. Rural development programs are occasionally listened to by 45.99%, with 30.66% regular listeners and 23.36% never listening. News is occasionally listened to by 34.31%, with 13.87% regular listeners and 51.82% never listening.

**Kiosk:** Agricultural programs are occasionally listened to by 54.74%, with 26.28% regular listeners and 18.98% never listening. Rural development programs are occasionally listened to by 60.58%, with 21.17% regular listeners and 18.25% never listening. News is occasionally listened to by 51.82%, with 24.09% regular listeners and 24.09% never listening.

**Farm Magazine:** Agricultural-related information is occasionally read by 43.07%, with 29.93% reading regularly and 27.01% never reading. Rural development-related information is occasionally read by 48.91%, with 35.04% reading regularly and 16.06% never reading. News is occasionally read by 51.82%, with 18.98% reading regularly and 29.2% never reading.

**Newspaper:** Agricultural-related information is occasionally read by 28.47%, with 63.50% reading regularly and 8.02% never reading. Rural development-related information is occasionally read by 36.5%, with 46.72% reading regularly and 16.79% never reading. News is occasionally read by 7.29%, with 92.7% reading regularly and 00% never reading.

These findings indicate varying levels of engagement with different types of programs and information sources, with some being more frequently consumed than others among extension personnel. A similar study was also reported by Agwu *et al.* (2008)<sup>[1]</sup>.

## Conclusion

The data indicates that extension personnel have high accessibility to a wide range of e-extension tools, such as mobile devices, computers, the internet, and various web-based platforms, which demonstrates a robust infrastructure supporting their extension activities. However, there is slightly lower access to tools like tablets, web cameras, LCD projectors, and decision support systems. Engagement levels with different information sources vary significantly; agricultural and rural development programs are more frequently accessed through community radio stations and kiosks, while farm magazines and newspapers are

commonly used for reading agricultural-related information. Overall, the strong availability and utilization of these e-extension tools and information sources suggest a positive impact on the effectiveness of extension personnel's work.

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