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Digital Awareness and Resource Utilization in State Agricultural Universities: Haryana, Himachal Pradesh, Punjab, Uttar Pradesh, Uttarakhand - Insights from Faculty and Scholars

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Abstract

State Agricultural Universities (SAUs) in Haryana, Himachal Pradesh, Punjab, Uttar Pradesh, and Uttarakhand are pivotal in advancing agricultural education and research. The integration of digital resources has transformed educational methodologies, yet challenges persist in awareness and utilization among faculty and scholars. This study investigates the levels of digital awareness, resource utilization, and barriers encountered, offering actionable recommendations for improvement. Findings reveal significant disparities across states and suggest infrastructural and policy-based interventions to maximize the impact of digital resources on agricultural academia.

Keywords: Digital Awareness, Resource Utilization, State Agricultural Universities, Faculty, Scholars, Agricultural Education, Northern India, Technology Adoption

Introduction

Agriculture is the backbone of the economy in northern India, and the State Agricultural Universities (SAUs) in Haryana, Himachal Pradesh, Punjab, Uttar Pradesh, and Uttarakhand play a crucial role in knowledge dissemination and research. Digital resources, including online journals, digital libraries, e-books, and specialized software, have become integral to modern education and research. However, the extent of their adoption varies, influenced by factors like infrastructure, training, and accessibility.

This paper aims to explore the levels of awareness and utilization of digital resources among faculty and scholars in these SAUs, identifying barriers and providing tailored recommendations for improvement. It seeks to bridge the gap between technological potential and practical implementation in agricultural academia.

Objectives

1. To evaluate digital awareness among faculty and scholars at SAUs in northern India.
2. To analyse patterns of digital resource utilization for teaching, learning, and research.
3. To identify key barriers affecting the effective use of digital resources.
4. To propose state-specific recommendations for improving digital resource access and usage.
5. To compare digital resource adoption across the five states.

Literature Review

The integration of digital resources in education has been widely acknowledged as transformative. Studies reveal that digital tools enhance accessibility, foster collaborative learning, and improve research outcomes. However, challenges such as inadequate infrastructure, lack of training, and limited awareness remain pervasive, especially in rural and semi-urban educational institutions.

Sharma and Gupta (2020) highlighted that internet connectivity and infrastructural inadequacies limit digital adoption in Indian universities. Similarly, Kumar and Singh (2021) emphasized the need for training programs to equip educators and students with necessary digital competencies. Despite these studies, limited attention has been paid to agricultural universities in northern India, which face unique challenges due to their rural focus and resource constraints.

Additionally, Singh and Yadav (2019) argue that while digital libraries and open-access journals have grown their full potential remains untapped in agricultural education. The literature consistently points to the need for region-specific interventions to ensure equitable access to digital tools.

Methodology

A mixed-methods approach was adopted, combining quantitative surveys and qualitative interviews to gather comprehensive data from faculty and scholars at SAUs in Haryana, Himachal Pradesh, Punjab, Uttar Pradesh, and Uttarakhand.

Data Collection

1. **Quantitative Data**: A structured questionnaire with Likert-scale items was distributed to 500 participants across the five states to assess awareness, usage, and barriers.
2. **Qualitative Data**: Focus group discussions and interviews were conducted with 50 participants to gain deeper insights into their experiences and challenges.

Data Analysis

Quantitative data were analysed using SPSS software. Descriptive statistics, chi-square tests, and ANOVA were used to identify patterns and differences. Qualitative data were analysed thematically, with key themes categorized into barriers, benefits, and recommendations.

Sampling Framework

The study employed stratified random sampling, ensuring representation across all five states. Participants were categorized into faculty and scholars, with proportional representation from each state's SAUs.

Findings and Discussion

Awareness of Digital Resources

- **Faculty**: 85% of faculty members reported awareness of digital resources, with Punjab leading at 90% and Himachal Pradesh lagging at 78%.
- **Scholars**: Awareness among scholars was slightly lower, averaging 70%, with significant variations across states.

Usage Patterns

State	Stakeholder Group	Frequent Users (%)	Occasional Users (%)	Non-Users (%)
Haryana	Faculty	62	30	8
	Scholars	48	42	10
Himachal Pradesh	Faculty	58	32	10
	Scholars	46	40	14

Punjab	Faculty	70	25	5
	Scholars	60	35	5
Uttar Pradesh	Faculty	64	28	8
	Scholars	50	38	12
Uttarakhand	Faculty	61	29	10
	Scholars	47	40	13

Barriers to Utilization

Barrier	Faculty (%)	Scholars (%)
Inadequate infrastructure	40	50
Limited training opportunities	30	35
Poor internet connectivity	35	45
Lack of awareness about availability	20	40

State-wise Trends

Punjab emerged as a leader in digital resource adoption, reflecting robust infrastructure and targeted training initiatives. Himachal Pradesh and Uttarakhand reported the highest barriers, with frequent mentions of inadequate funding and connectivity issues. Haryana and Uttar Pradesh displayed moderate adoption levels, with a need for capacity-building programs.

Interpretation of Findings

The findings indicate that while awareness of digital resources is relatively high among faculty, it remains moderate among scholars. Usage patterns show that Punjab leads in frequent utilization, while Himachal Pradesh and Uttarakhand face significant barriers. Infrastructure, internet connectivity, and training gaps were consistently identified as critical challenges across all states.

Recommendations

1. **Infrastructure Enhancement**: Improve internet connectivity and establish state-of-the-art digital labs in all SAUs.
2. **Capacity Building**: Conduct regular workshops and training sessions to enhance digital competencies among faculty and scholars.
3. **Awareness Campaigns**: Promote the availability and benefits of digital resources through targeted campaigns.
4. **Policy Support**: Develop state-specific policies to ensure equitable access to digital tools and resources.
5. **Collaboration**: Partner with technology providers to offer customized digital solutions for agricultural education.
6. **Monitoring Mechanisms**: Implement robust systems to track and evaluate the utilization of digital resources.
7. **State-specific Interventions**: Allocate resources and tailor programs based on the unique needs of each state's SAUs.
8. **Student-centric Initiatives**: Introduce incentives, such as free training modules, for scholars to encourage adoption of digital tools.

Conclusion

The study highlights the transformative potential of digital resources in enhancing agricultural education and research in northern India. However, addressing barriers such as infrastructure deficits, training gaps, and uneven awareness is essential. Tailored strategies for each state can bridge these gaps, fostering a more inclusive and efficient educational ecosystem. By prioritizing investments in technology and capacity building, SAUs

can unlock the full potential of digital resources to drive agricultural innovation and growth. Collaboration between policymakers, technology providers, and academic institutions will be crucial in realizing this vision.

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