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Research Paper

Analyzing the contents of websites of Indian Agricultural Universities for their conformity with Middleton Standards

Renu Panwar and Sunil Goria
Institute of Library & Information Science, NIMS University, Shobhanagar, Jaipur, Rajasthan, India
University Library, Babasaheb Bhimrao Ambedkar University (A Central University), Lucknow, Uttar Pradesh, India
*Corresponding author Email: nain.renu14@gmail.com

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Abstract: The agricultural universities and institutions in India play a very important role in ensuring food security and also earning significant amount of revenues through agricultural exports. These institutions are able to do so because they are anchoring a comprehensive programme of agricultural education, research and extension. In the endeavours of ascertaining food security a lots of information flows from one section of the society to another. Websites have become a very good source of information exchanges. Therefore, all agricultural universities and institutions have kept lots on information for its clients/stakeholders. A study has been conducted entitled "Analyzing the contents of websites of Indian Agricultural Universities for their conformity with Middleton Standards" for anlyzing status of websites of Indian agricultural Universities. Study suggests there are at least 13 Indian agricultural universities, which provides more than 75% contents on the websites as suggested by Middleton. Another finding of study is that the primary aim of the administrator of websites of Indian Agricultural institutions is to provide as much as possible information to the External Users. The Internal Users have been given least preference by the Indian Agricultural Institutions. Study also clearly indicates that most of Indian websites of Agricultural institutions prefer the English (74.5 %).

Keywords: Middleton Standards, Indian Agriculture University, Deemed-to-be University, Website, Web Contents

Introduction:

The backbone of Indian economy is agriculture, which contribute about 18.3% to its GDP (PIB 2023) and about 45.76% (GOI, 2023) its workforce. Indian Government and state governments have given lots on emphasis on agricultural education and therefore a score of agricultural universities and institutions have been established. The agricultural universities of India has three major objectives: i) preparing skilled human resources to address the growing environmental and geopolitical challenges, ii) to conduct research for addressing the

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farm and farming issues, and iii) to disseminate the knowledge amongst the farmers so that technologies developed in the laboratories could be taken to stakeholders.

Agricultural Universities and Institutions uses websites as resources to communicate with the clients/stakeholders. There are two types of users "internal" and "external". Internal users are usually students and faculty members, while external users are mostly farmers and all other who are interested in gardening or farming. Middleton (1999) has given comprehensive guidelines as to what kinds of contents should be kept on website for different types of the users, which are still relevant (Gonzalez-Llinares, 2020). However, Middleton (1999) has given major emphasis on academic programmes of the University, while research and extension components have been largely overlooked. Chadha (2008) analyzed the contents / features of the websites of Indian universities, however he had not paid due attention to the websites of Indian agricultural universities, which bears the responsibilities of the agricultural development in the country. The Indian agricultural universities cater to the needs of higher agriculture education, agricultural research and extension services in the country and are having varying kinds of audience ranging from students, faculty, researcher, staff to the farmers.

Considering above facts in mind a study entitled "Analyzing the contents of websites of Indian Agricultural Universities for their conformity with Middleton Standards" has been formulated to analyze the contents of the websites of Indian agricultural universities/institutions as to how close these websites are with the standards given by Middleton (1999).

Materials and Methods:

Materials:

The websites of all Indian Agricultural Institutions including state agricultural universities, central agricultural universities, state horticultural universities, state veterinary universities, and deemed-to-be universities have been considered in the present study. Hereafter, the phrase "Agricultural Institutions" has been used to represent all types of universities and deemed-to-be universities. The deemed to be Universities include Indian Agricultural Research Institute (IARI), Pusa, New Delhi, National Dairy Research Institute (NDRI), Karnal, Haryana, Indian Veterinary Research Institute, Izzatnagar, Bareilly, Uttar Pradesh, Central Institute of Fisheries Education, Mumbai, Maharashtra and Allahabad, Agricultural Institute, Allahabad, Uttar Pradesh.

The Horticultural Universities namely Dr Yashwant Singh Parmar University of Horticulture & Forestry, Nauni, Solan, Himachal Pradesh, University of Horticultural Sciences, Bagalkot, Karnataka, Andhra Pradesh and Horticultural University, West Godavari District, Andhra Pradesh; and Veterinary Universities like Guru Angad Dev Veterinary and Animal Science University, Ludhiana, Punjab, Maharashtra Animal Science & Fishery University, Nagpur, Maharashtra, Sri Venkateswara Veterinary University, Tirupati, Andhra Pradesh, Tamil Nadu Veterinary & Animal Science University, Chennai, Tamil Nadu, UP Pandit Deen Dayal Upadhaya Pashu Chikitsa Vigyan Vishwa Vidhyalaya Evam Go Anusandhan Sansthan, Mathura, Uttar Pradesh, West Bengal University of Animal & Fishery Sciences, Kolkata, West Bengal, Karnataka Veterinary, Animal and Fisheries Sciences University, Bidar, Karnataka, Rajasthan University of Veterinary and Animal Sciences, Bikaner, Rajasthan, and Kerala Veterinary and Animal Sciences University, Thiruvananthapuram, Kerala have been included in the study. Overall, 35 state agricultural universities, one central

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agricultural university, three horticultural universities, nine veterinary and animal science universities, and five deemed-to-be universities were considered. The complete list of all Indian Agricultural Universities including horticulture and veterinary university was acquired from ICAR website (ICAR, 2024).

Methods

Retrieval of contents / features for comparing with Middleton standards: Middleton et al., (1999) mainly focused on the academic components of the university. The research and extension components were not comprehensively covered in the list of content / features suggested by Middleton et al., (1999). They have categorized the contents of academic websites mainly in three categories namely internal users, external users and both internal and external users.

The list of all contents / features with their codes has been given in the Table 1. The average contents / features were computed for each university considering equation - 1. Also the frequency of individual content / feature was calculated and arranged in descending order to get the idea of most featured content on the websites of Indian Agricultural universities.

Table 1. The content features of the Indian Agricultural Universities as suggested by Middleton (1999) with their code values.

Sr. No.	Audience	Sr No.	Contents / Features	Code Values
1	Internal Users	1.1	Semester Exam, results, syllabus date-sheet etc	Absent = 0, Present = 1
		1.2	Mail Facility for students and faculty members	Absent = 0, Present = 1
		1.3	Library catalogues	Absent = 0, Present = 1
		1.4	Internal Social group / Club Activity	Absent = 0, Present = 1
2	External Users	2.1	Programme / Courses offered	Absent = 0, Present = 1
		2.2	Department / college / institute	Absent = 0, Present = 1
		2.3	Facilities	Absent = 0, Present = 1
		2.4	Admission information	Absent = 0, Present = 1
		2.5	Entrance Examination Result	Absent = 0, Present = 1
		2.6	Job Opening in University	Absent = 0, Present = 1
		2.7	Contact us	Absent = 0, Present = 1
		2.8	About University / About Us	Absent = 0, Present = 1

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3	Both Internal & External Users	3.1	University News	Absent = 0, Present = 1
		3.2	Event calendar	Absent = 0, Present = 1
		3.3	Telephone Directory	Absent = 0, Present = 1
		3.3	Search Feature	Absent = 0, Present = 1
		3.4	Local City information	Absent = 0, Present = 1
		3.5	Alumni Section	Absent = 0, Present = 1
		3.6	Faculty contact	Absent = 0, Present = 1
		3.7	Faculty research projects, publication etc	Absent = 0, Present = 1
		3.8	Website Language	English = E, Regional = R, Both = B

Statistical Analysis: The ANOVA technique has been deployed for statistical analysis to evaluate the hypothesis 'Ho: μ1= μ2= ……μn'. In the analysis, the different types of universities such as 'Agricultural University', 'Horticultural University', and 'Veterinary University' were taken as treatments and the Universities in a group has been considered as replications. The hypothesis has been tested on the average / mean content / feature of the University listed in Table 1. The analysis was carried out separately for different groups of parameters.

Results and Discussion:

Analyzing contents / features for comparing with Middleton standards

The contents / features of the websites of Indian Agricultural Universities (including horticultural, veterinary and animal sciences) and deemed-to-be universities were compared with the contents / features suggested by Middleton et al., (1999) for academic websites of Universities of United Kingdom and Chadha (2008) for academic websites of India. Both researchers mainly stressed on the academic components of the university and categorized the contents of academic websites mainly in three categories, namely internal users, external users and both internal and external users. The contents / features were retrieved from the websites of Agricultural institutions and the codes were assigned as illustrated in the Table 1. The average contents / features computed for each suggests that out of 51 websites of different agriculture related institutions only one university Chandra Shekhar Azad University of Agriculture & Technology, Kanpur, has all four contents considered under the internal user category namely 1) Semester Exam, results, syllabus date sheet etc 2) Mail Facility for students and faculty members, 3) Library catalogues, and 4) Internal Social group / Club Activity, while 12 institutional websites contain three features, 19 websites contain two features, and 15 websites contain one features. There were 4 institutional websites, which did not feature any content. Figure 1

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shows the contents / features of websites of all agriculture related institutions in India for internal users.

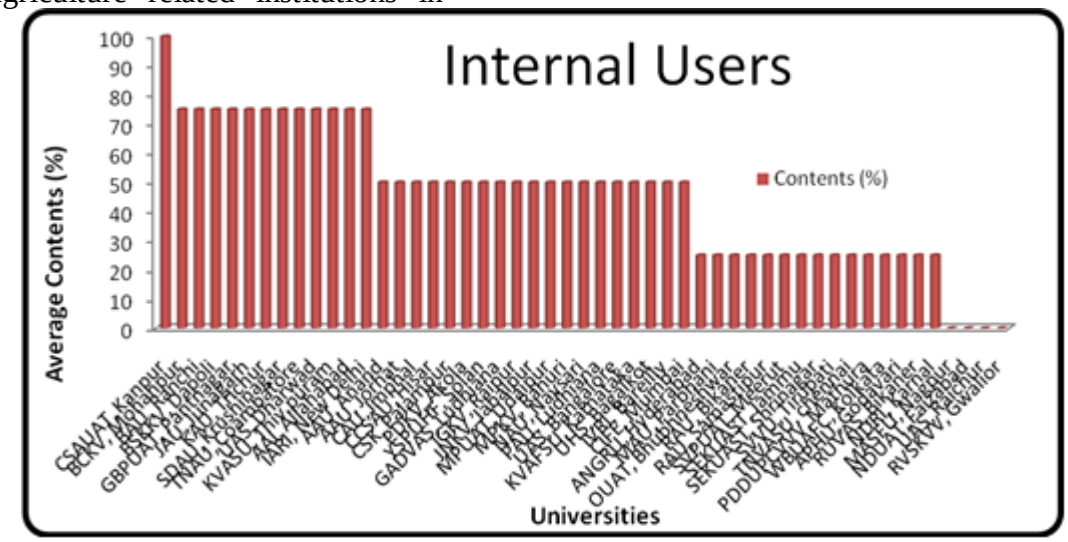

Figure 1. Contents / Features for internal users on websites of Agricultural Insitutions in India.

Figure 2 shows the contents / features given on websites of Indian Agricultural institutions for the category "external users". Eight different parameters (Programme / Courses offered, Department / college / institute, Facilities, Admission information, Entrance Examination Result, Job Opening in University, Contact us, About University / About Us) have been considered for external users.

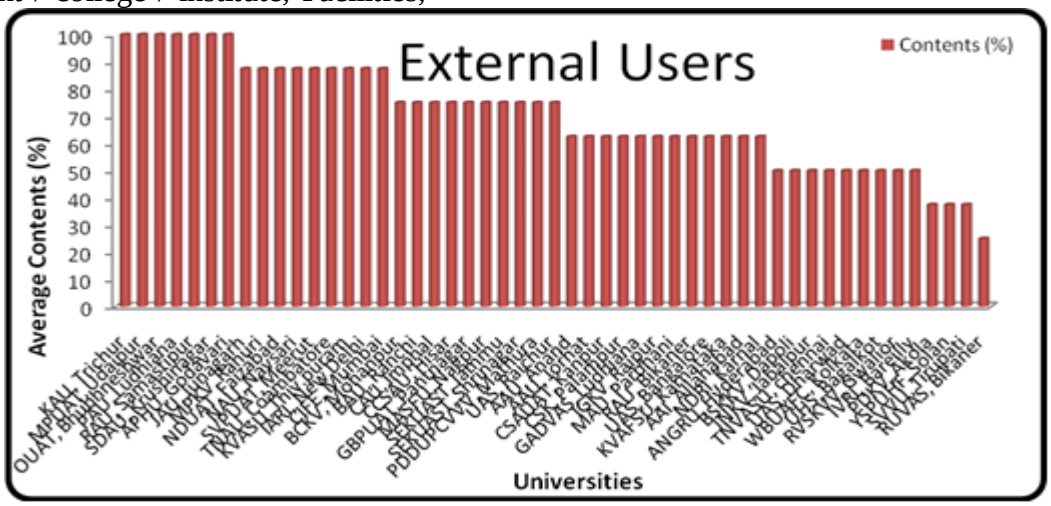

Figure 2. Contents / Features for external users on websites of Agricultural Insitutions in India.

The content analysis shows that out of 51 universities 7 institutional websites contain all eight features, while nine institutional websites contain 7 features, 10 websites six features, 12 websites five features, 9 websites four features, 3 websites three features and one website (RVSKVV, Gwalior, Madhya Pradesh) only one feature.

The contents / features, which are useful for both "internal and external users" were 8 in number (Figure 3) namely University News, Event calendar, Telephone Directory, Search Feature, Local City information, Alumni Section, Faculty

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contact, Faculty research projects / publication etc, and Website Language. Only three websites of agricultural institutions contain all eight features, while 7 websites contain seven features, 9 websites contain six features, 12 websites each contain four and three features, respectively. Four websites of agricultural institutions contain two features, and three institutional websites contain only one feature.

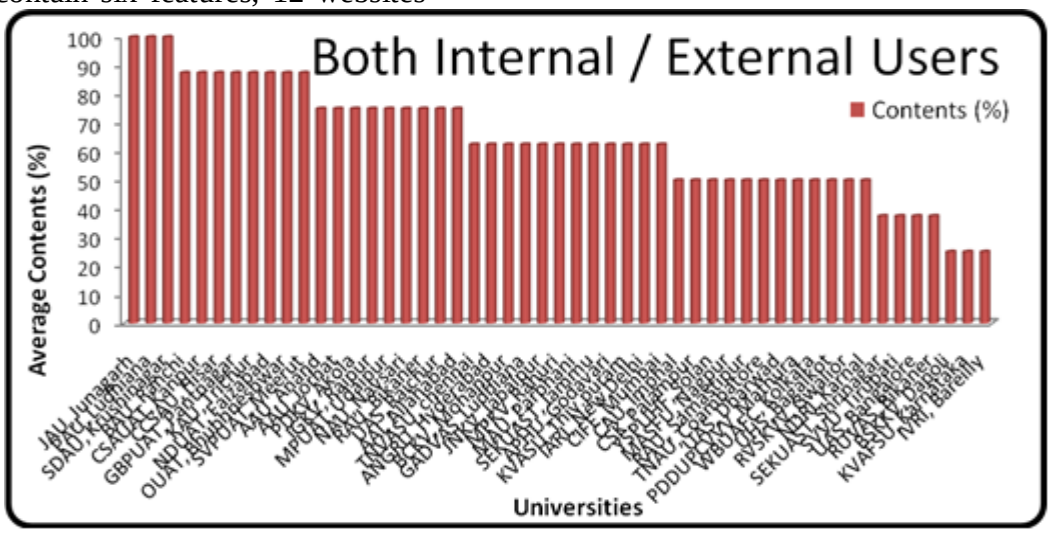

Figure 3. Contents / Features for both internal and external users on websites of Agricultural Insitutions in India.

The contents / features for institutional websites of Agriculture universities / deemed-to-be universities were arranged in the descending in order to analyze the target group of user. The order of all contents / features has been portrayed in Figure 4, which shows that the most featured content on the websites of Indian agricultural institutions is "contact us", which appeared on 96 % of websites, while the least featured content was "internal social groups" which only appeared on websites of only 12 % agricultural institutions. Out of first ten features listed in the diagram (Figure 4), five were related with the external users, while four contents were for both external and internal users and only one was exclusively for internal users.

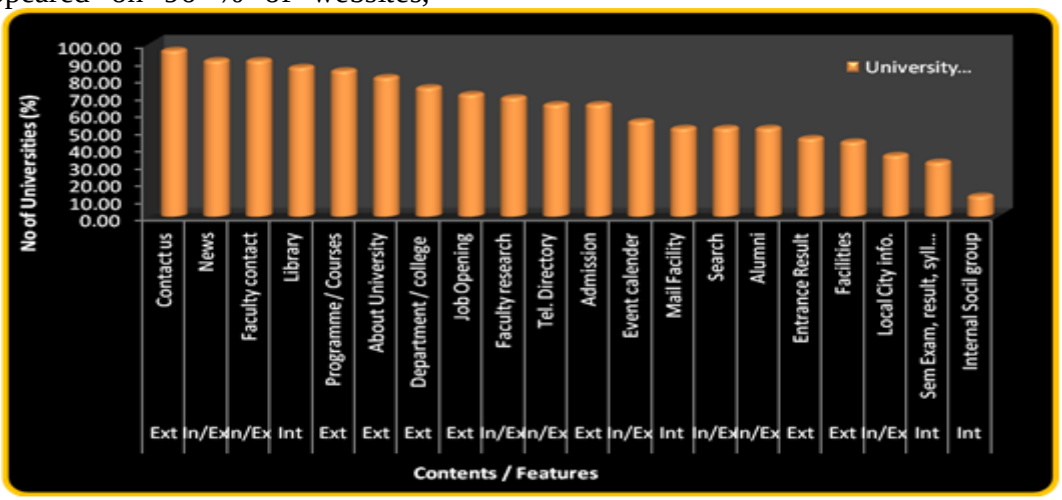

Figure 4. The contents / features of websites of Indian Agricultural Institutions in descending order with their user categories.

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The language of the websites of Indian Agricultural institutions was also analysed and results have been shown in Figure 5. It clearly indicates that most of Indian websites of Agricultural institutions prefer the English (74.5 %) language for the communication. Only 15.7 % websites provided range of information in both Hindi and English language, while only 9.8 % administrator of websites keeps contents / features in English and regional language. It is important to mention here that no website of agricutural institution truly covers all the English features in regional language.

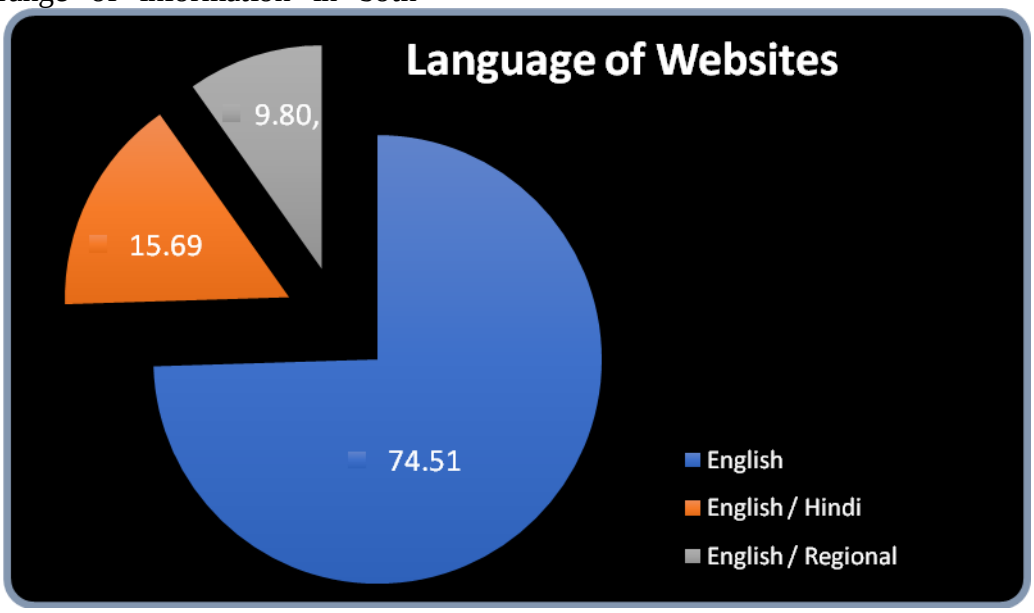

Figure 5. Language of the websites of Indian Agricultural Institutions.

Discussion:

The contents / features of the websites of Indian Agricultural Universities (including horticultural, veterinary and animal sciences) and deemed-to-be universities were retrieved as per the standard contents / features suggested by Middleton et al., (1999) for academic websites of the Universities of United Kingdom and Chadha (2008) for the academic websites of India. The average contents / features computed for each university suggests that out of 51 websites of different agricultural institutions, only one website of CSAUT, Kanpur contains all four contents considered under the internal user category. Twelve (12) institutional websites contain three features, 19 websites contain two features, and 15 websites contain one feature. There were 4 institutional websites, which did not feature any content. On the basis of these results, it can be concluded that most of Indian Agricultural institutions do not use their websites for "Internal Users".

The content analysis shows that out of 51 universities 7 institutional websites contain all eight features considered under "External User" category, while nine institutional websites contain 7 features, 10 websites six features, 12 websites five features, 9 websites four features, 3 websites three features and one website only one feature. It indicates that the websites of Indian agricultural institutions are pro "external users" as there is not even single university, which is not holding at least one external feature. It is unlike the previous case, in which four universities did not hold even a single feature.

There were only three websites of agricultural institutions containing all eight features, while 7 websites contain seven

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features, 9 websites contain six features, 12 websites each contain four and three features, respectively. Four websites of agricultural institutions contain two features and three institutional websites contain only one feature. Hence, it can be inferred that websites of Indian Agricultural Institutions do fairly well for the contents / features important for both external and internal user. The contents / features for institutional websites of Agriculture universities / deemed-to-be universities arranged in the descending order shows that the most featured content on the websites of Indian agricultural institutions is "Contact Us", which appeared on 96 % of websites, while the least featured content was "Internal Social Groups" which only appeared on websites of only 12 % agricultural institutions. Out of first ten features listed in the diagram, five were related with the external users, while four contents were for both external and internal users and only one was exclusively for internal users as given bellow.

On the basis of the occureance of the contents / features and the analysis of three groups separately, it can be concluded that the primary aim of the administrator of websites of Indian Aggricultural institutions is to provide as much as possible information to the External Users. The Internal Users have been given least preference by the Indian Agricultural Institutions. Further, the sequencing of websites of Agricultural Institutions in descending order as per contents considered in above three categories shows that first 10 places were reserved by the state Agricultural universities, except in one case, when Horticultural university ranked eighth in "External User" category. So on the basis of results it can be concluded that there is quite good scope for the improvement of websites of Agricultural Institutions especially those of horticulture, veterinary and deemed-to-be university. The inclusion of the more contents / features on website will make website more useful for internal and external audience. The results reported by Chadha (2008) for websites of Indian Universities (non agricutlural), were also at the same line. He also advocated for the inclusion of the more contents / features on the institutional websites.

The language anlalysis suggests that that the English is most preferend language by the Indian Agricultural institutions as 74.5 %, websites used English language for the communication. The study provides sufficient evidences that the primary audience of the Indian Agricultural Institution is english speaking users or the users living in urban areas. It is justifiable from the point of view of higher education. The medium of instruction in all higher education Institution (including agricultural institution) in India is English. It is important to mention here that no website of agricutural institution truly covers all the English features in regional language (regional language version of the website), however there are few contents which are kept in regional language. The findings of Chadha (2008) were also of the same nature. He concluded that 91 % websites of non-Agricultural institutions use english as medium of communication.

Therefore, the India Agricultural Institutions may think of providing the regional vesion of the website in order to attract the non English speaking users or semi urban or rural users. The regional version of the website will also attract the people of farming community to gain the knowledge of latest development in agricultural especially the literature available related to the newly developed varieties. This can help the entire nation in a big way as our economy is dependent on agriculture and there is urgent need to boost the agricultural productivity.

Conclusion:

The present investigation suggests that out of 51 websites only one institutional

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website contains all features suggested by Middleton, while 12 more websites contain more than 75% contents suggested by Middleton (1999). Study also suggests that the primary aim of the administrator of websites of Indian Agricultural institutions is to provide as much as possible information to the External Users. The Internal Users have been given least preference by the Indian Agricultural Institutions. So on the basis of results it can be concluded that there is quite good scope for the improvement of websites of Agricultural Institutions especially those of horticulture, veterinary and deemed-to-be university. The inclusion of the more contents / features on website will make website more useful for internal and external audience. The linguistic analysis shows that English is most preferred language by the Indian Agricultural institutions as 74.5 %, websites used English language for the communication. However, due to the variety of audience (including students, farmers, and traders) of agricultural websites, it is strongly recommended to providing the regional version of the website in order to attract the non-English speaking users or semi urban or rural users. This can help entire nation in general and the farmers, in particular, to boost the agricultural productivity.

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References:

PIB (2023) Contribution of Agricultural Sector in GDP. https://www.pib.gov.in/ PressReleasePage.aspx?PRID=1909213 (accessed on Marh 15, 2024).

GOI (2023) Workforce Engaged in Agriculture. https://sansad.in/ getFile /loksabhaquestions/annex/ (accessed on Marh 15, 2024).

Middleton, I. A., McConnell, M., Davidson, G. C. (1999) Presenting a model for the structure and content of a university WWW site. Journal of Information Science, 25(3), 219-227.

Gonzalez-Llinares, J., Font-Julian, C. I. and Orduña-Malea, E. (2020) Universities in Google: towards a multilevel analysis model of academic web positioning. *REVISTA ESPANOLA DE DOCUMENTACION CIENTIFICA*,43(2), e260. https://doi.org/10.3989/redc.2020.2. 1691.

Chadha, R. (2008) Wake-up call for Indian University Administrators?: A study of Indian University Websites. University News, 46(48), December 01-08.

ICAR (2024) Agricultural Universities in India. http://www.icar.org.in/en /universities.htm (accessed on March 15, 2024).