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DETAILS OF PUBLICATIONS OF RESEARCH PAPERS OF OUR FACULTY MEMBERS IN ONLINE & PRINTED JOURNALS; 2018-19 TO 2022-23

3.3.1 Details of Web link to re-directing journal source – site website of Digital Journals

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Measurement of Agricultural Productivity and Levels of Development in the Malaprabha River Basin, Karnataka, India	Dr. S. L. Chitragar	https://scientifictemper.com	https://scientifictemper.com/index.php/tst/article/view/1207	Yes
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Unveiling the Changing Sex Ratio Trends in Karnataka, India: A Spatial Analysis	**Dr. S. L. Chitragar**	https://www.ijsr.net	https://www.ijsr.net/getabstract.php?paperid=SR23728143215	
Urban - Rural Differentials in Literacy in Malaprabha River Basin, Karnataka State, India; A Regional Approach	**Dr. S. L. Chitragar**	https://www.ijsr.net	https://www.ijsr.net/getabstract.php?paperid=SR23829212027	
Trend and Pattern of Growth of Urban Population by Size Class of Towns and Cities in Belgaum District, Karnataka State, India; A Geographical Analysis	**Dr. S. L. Chitragar**	https://www.worldwidejournals.com/	https://www.ijsr.net/getabstract.php?paperid=SR20508214759	

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Regional Analysis of Sectoral Differentials in Literacy in Karnataka, India

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Abstract: *The present paper is an attempt to study the spatial distribution of population and literates by sectoral literacy rates, the trends and spatial pattern of sectoral differentials in literacy and the relationship between urban and rural literacy rates among the districts of Karnataka state, India. The literacy in Karnataka as per 2011 presents a highly inspiring portrait but the spatial pattern shows the disparities in literacy is not only in overall but it is displayed in sectoral literacy also. The spatial pattern of sectoral, male and female sectoral differentials in literacy is marked with notable variations in its distribution among the districts of the state. The overall sectoral differential index is found to be high in the north-eastern part and it tends to decline towards western part of the state. The relationship between urban and rural literacy rates are marked by a substantial increase from western to eastern regions of the state.*

Key words: urban population, rural population, literacy rate, sectoral differential index, relationship

Introduction:

Literacy is one of the biggest and the most difficult issues that people in the developing countries are facing. The developing countries of the world, of which India is a part, are characterized not only by low literacy rates but also by a great disparity in the literacy rates between urban and rural, between males and females and between young and the aged, a disparity in consonance with differences in necessity, prosperity, and opportunity to become literate. Equally striking are the regional disparities in literacy and differentials in literacy itself. Literacy is one of the dynamic demographic elements, a human right, a tool of personal empowerment and a means for social and human development (Shakir, 2012), main components of Human Development Index (Khan, 2004 and Jhariya, 2014) and also one of the important indices of the social and cultural advancement and economic progression of a society, which is good measure of human process towards modernization (Sule and Barakade, 2012). It acts as a catalyst for social upliftment enhancing the returns on investments made in almost every aspects of development efforts, be it population control, health, hygiene, environmental degradation control, empowerment of women and weaker sections of the society. Illiteracy, on the other hand takes away from man his dignity, perpetuates, ignorance, poverty and mental isolation, deters peaceful and friendly international relations and free democratic processes and hamper social advancement, economic growth and political maturity.

Above all, literacy rate is considered to be key variables influencing demographic attributes such as fertility, mortality, sex-ratio, migration and occupation etc. it greatly contributes in improving quality of life, particularly with respect to life expectancy, infant mortality, learning levels and nutritional levels of children. Higher level or literacy and educational progress lead to greater awareness on the one hand and help to people in acquiring new skills on the other. As per the definition of the Census of India 2011, a person who can both read and write with understanding in any language is taken as literate. All children below the age of seven years have been treated as illiterate. In the 1961, 1971 and 1981 Censuses, children below the age of 5 years were considered as illiterates (Census of India, 2011).

Sectoral differences are essentially a function of the differential rates of change occurring in towns and villages. Literacy, like other innovations, originates in urban places and diffuses subsequently into the countryside: The process of literacy begins in the town and trickles down to the village. The pace of the process depends on the intensity of interaction between the two. The degree of urban influence and the intensity of urban- rural interaction are evidently two major factors involved in the reduction of disparities between urban and rural literacy rates. Urban influence may also pay an indirect role by stimulating diversification of the rural economy. A diversified economic base in village generally accelerates the progress of rural literacy (Krishan and Shyam, 1978).

This problem has attracted attention of many scholars from different sciences resulting in a voluminous and diverse literature from various perspectives. Some of the important contributions are by Gurumurthy (1976), Siddique (1977), Krishan and Shyam (1978), Gosal (1979), Mishra (1980), Mamoria (1981), Usha Rao (1981), Mathur (1982), D'Souza (1982), Ahmad and Nuna (1986), Nain 1988), Chandna RC (1989), Sagar, (1990), Krishan (1991), Premi (1991), Jolly (1991), Ali (1995), Siddiqui and Naseer (2004), Shafiqullah (2011) A. Kaushik and K. Kaushik (2012), Sule and Barakade (2012), V. Shuklaand and U. S. Mishra (2014), R. Jangra and S. P. Kaushik (2016) Patil and Patel (2016) and others. But perhaps there is no particular study on sectoral differentials in literacy at district level.

Keeping these observations in view, in the present study, an attempt has been made to study the 'Regional Analysis of Sectoral Differentials in Literacy in Karnataka, India'. The objectives of this analysis are:

To analyse the spatial distribution of population and literates by range of sectoral literacy rates in Karnataka state for 2001 and 2011 censuses.

1. To examine the trends of sectoral differentials in literacy rates in Karnataka and India from 1971 to 2011.
2. To describe the spatial distribution of sectoral, male and female differential indices in literacy in the districts of Karnataka state and,
3. To examine the relationship between rural and urban literacy rates in the of Karnataka state.

Study Area:

Karnataka is one of the developed states of India which is located in the south-western part of the Indian peninsular and lies between 11^0 31^I to 18^0 45^I Northern latitude and 74^0 12^I to 78^0 40^I Eastern longitude. The state is bounded by Maharashtra and Goa from north, Tamil Nadu and Kerala from south, Arabian Sea from west and Andhra Pradesh from east (Fig.1). The Karnataka state extends for about 750 Kms from north to south and about 400 Kms from east to west. The total land area is 1.91.791 sq. kms. It accounts for 5.83% of the total area of the country (32.88 lakhs sq. kms) and ranks 8^{th} among the major states of India in terms of size. In 2011, the state had 30 districts, 176 Taluks, 29340 villages, 347 towns and 22 Urban Agglomerations.

Karnataka state has total population of 6,10,95,297 persons in 2011, out of which 3,09,66,657 are males and 3,01,28,640 females. The state occupies 9^{th} place (5.05% of the country total population) in India with regard to population. Out of thirty districts only 7 districts have registered decennial growth rates higher than the state average of 15.60 per cent. Of the remaining 23 districts as many as 14 districts have registered a growth rate of below 10 per cent. The density of population is 319 persons per sq. km and the sex ratio recorded 973 females per thousand males, which is more than national average. Karnataka state has 38.67 percent urbanization which varies from 90.94 percent in Bangalore to 14.61 percent in Kodagu district preceded by Koppal District (16.81 per cent), Mandya District (17.08 per cent), Chamarajanagar District (17.14 per cent) and Yadgir District (18.79 per cent). The predominance of rural population makes the state economy primarily agrarian. The State's more than 65 per cent of the work force, however, is still dependent on the agriculture and its allied activities for their livelihood. The economic development and prosperity of the masses depend mainly on agricultural base. It has witnessed rapid industrialization in the recent past particularly after the launch of policies of economic liberalization in the state.

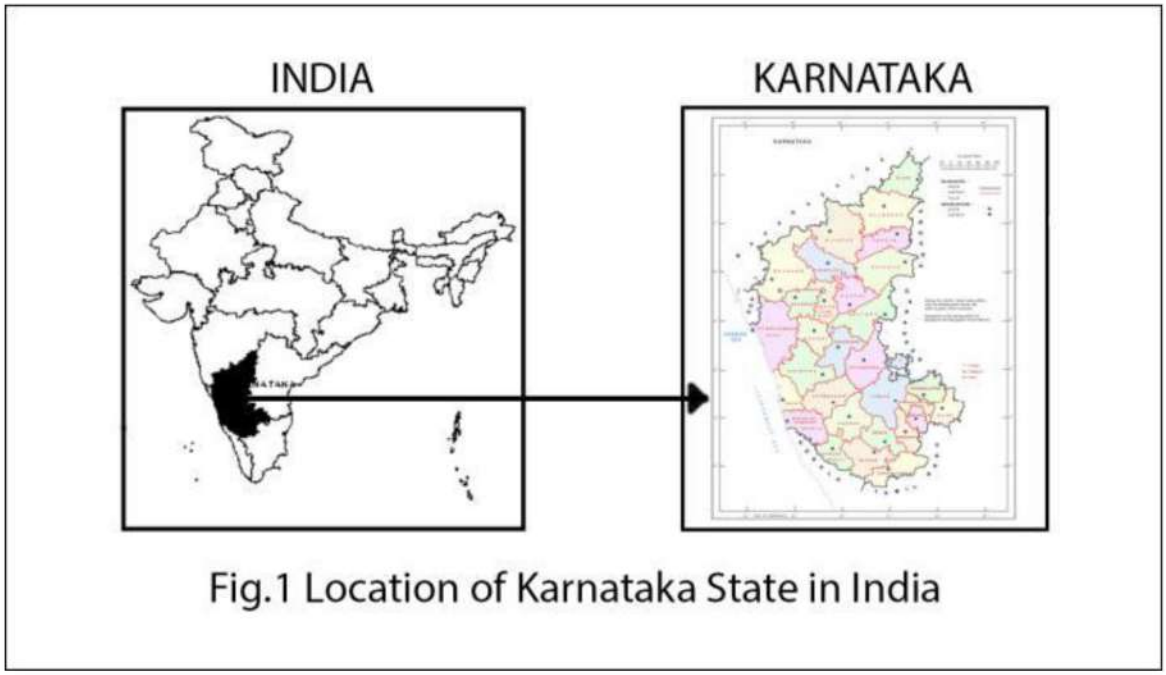


Fig.1 Location of Karnataka State in India

Karnataka state has 4,06,47,322 literate person out of which 2,26,49,176 are males and 1,79,98,146 are females in 2011. In other words, the state has 75.36 per cent literacy rate with differential of 82.47 per cent male literacy and 68.08 per cent female literacy. The corresponding figures for urban and rural literacy rates are 85.78 and 68.73 per cent respectively. Among the districts of state, Dakshina Kannada District with overall Literacy rate of 88.57 per cent retains its top position, closely followed by Bangalore District (87.67 per cent) and Udupi District (86.24 per cent). The lowest overall Literacy rate of 51.83 per cent is recorded in the newly created Yadgir district, preceded by Raichur District which has recorded 59.56 per cent. Apart from these two districts, all the remaining 28 districts have registered more than 60 per cent Literacy rates.

Data Base and Methodology:

The present study is based on the secondary sources of data. Mainly, the following documents are used to obtain the required data, related to the selected variables such as, the data about decadal change of literacy rates from 1971 to 2011, overall, sectoral and male and female sectoral literacy rates in-light of growth and distribution of population of Karnataka state from the decades 1991 to 2011 are collected from Karnataka PCA 1991, 2001 and 2011, Indian Census Handbook;1991, Indian Census Report;2001 and Census of India 2011, PCA Data Highlights, Series 30, Karnataka State and other related reports. A large number of books, articles, various websites, dissertations, published and unpublished works from different sources have been used.

The district has been considered as the smallest unit of study. In 2011, the Karnataka state comprises of 30 districts, but information required for the present study is not available for newly formed three districts i.e. Ramanagar, Chikkaballapur and Yadagir in 2001 census. Hence, the study has been used restructured 2001 population census data in to 30 districts instead of the old classification of 27 Districts of Karnataka state. After collecting data, these were compared and analysed in a suitable manner by using simple statistical and cartographic techniques along with Microsoft Excel and STATA 12. The analysis and inferences were finally carried out through textual and tabular formats followed by the description of the study results. The study is based on 2011 census data and differential index of sectoral, male and female sectoral literacy rates is calculated by using the following formula (Krishna and Shyam, 1978).

$$\textbf{Differential Index of Sectoral Literacy} = \frac{\textbf{ULR-RLR}}{\textbf{TLR}}$$

ULR: Urban Literacy Rate, **RLR**: Rural Literacy Rate & **TLR**: Total Literacy Rate

$$\textbf{Differential Index of Male Sectoral Literacy} = \frac{\textbf{MULR-MRLR}}{\textbf{TMLR}}$$

MULR: Male Urban Literacy Rate, **MRLR**: Rural Literacy Rate & **TMLR**: Total Male Literacy Rate

$$\textbf{Differential Index of Female Sectoral Literacy} = \frac{\textbf{FULR-FRLR}}{\textbf{TFLR}}$$

FULR: Female Urban Literacy Rate, **FRLR**: Female Rural Literacy Rate & **TFLR**: Total Female Literacy Rate

Result and Discussions:

The Concept of Literacy:

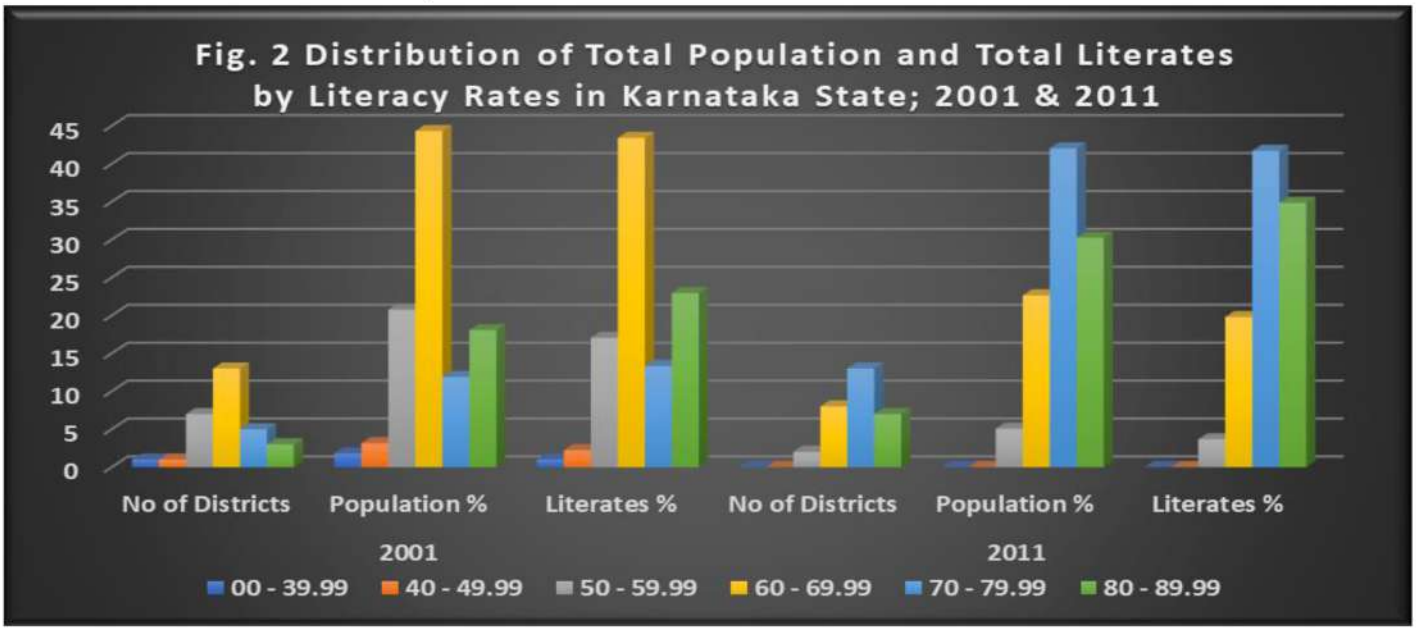
According to the 2011 Census of India, a person aged seven and above, who can both read and write with understanding in any language is treated as literate. A person, who can only read but cannot write, is not considered as literate. In the census, prior to 1991, all children below the age of five years are necessarily treated as illiterate. The age limit was raised to seven years based on the advice of experts that the ability to read and write with understanding is not ordinarily achieved until that age. It was, therefore decided at the 1991 Census that all children in the age group 0-6, would be treated as illiterate by definition and the population aged seven years and above only would be classified as literate or illiterate. The literacy rate is defined as the proportion of literates in the population. In censuses up to 1981, the literacy rate was being estimated taking into account the total population in the denominator has been now termed as '**crude literacy rate**' while the literacy rate is more meaningful if the sub-population in the age group 0–6 is excluded from the total population, and then it is calculated taking into account the seven years and above population in the denominator is called as '**effective literacy rate**'. The same concept is retained in all the censuses since 1991.

Spatial Distribution of Population and Literates by Sectoral Literacy Rates (2001-2011):

According to 2011 Indian census, Literates in Karnataka state founds 75.36 per cent of the population of aged seven years and above as compared to 66.64 per cent in 2001. The matching figures for male and female are 82.47 and 68.08 per cent and for urban and rural are 85.73 and 68.73 per cent in 2011 respectively. Thus 3/4th of the population of aged seven years and above is literate in the state. Four out of every five males or urban residents and two out of every three females or rural peoples in the state are literates.

Table 1 and Fig. 2 to 4 depicts comparable analysis of spatial distribution of population and literates in absolute numbers and in per centage for 2001 and 2011 censuses by range of total and sectoral literacy rates in Karnataka state. In Census 2001, only two districts had reported literacy rate less than fifty per cent and had a share of 4.97 per cent of the state's population and 3.24 per cent of state's total literates. It is really satisfying to note that in Census 2011 none of the districts has reported literacy rate below fifty per cent rate. There were seven, thirteen and five districts having literacy in the ranges of the fifty-sixty, sixty-seventy and seventy-eighty per cent in Census 2001, accounting for 20.76 per cent, 44.31 per cent and 11.90 per cent of the state's population and 17.04 per cent, 43.41 per cent and 13.35 per cent of state's total literates respectively, but in Census 2011, the corresponding number stands in the same ranges at only two, eight and thirteen districts with 5.08 per cent, 22.64 per cent and 42.03 per cent of the state's population and 3.67 per cent, 19.79 per cent and 41.70 per cent state's total literates respectively. The number of the districts having more than eighty per cent literacy rate in Census 2001 was only three districts and had a share of 18.06 per cent of the

state's population and 22.95 per cent of state's total literates. This has increased to seven districts with the share of 30.25 per cent of the state's population and 34.85 per cent of state's total literates at the Census 2011 (Fig. 2).

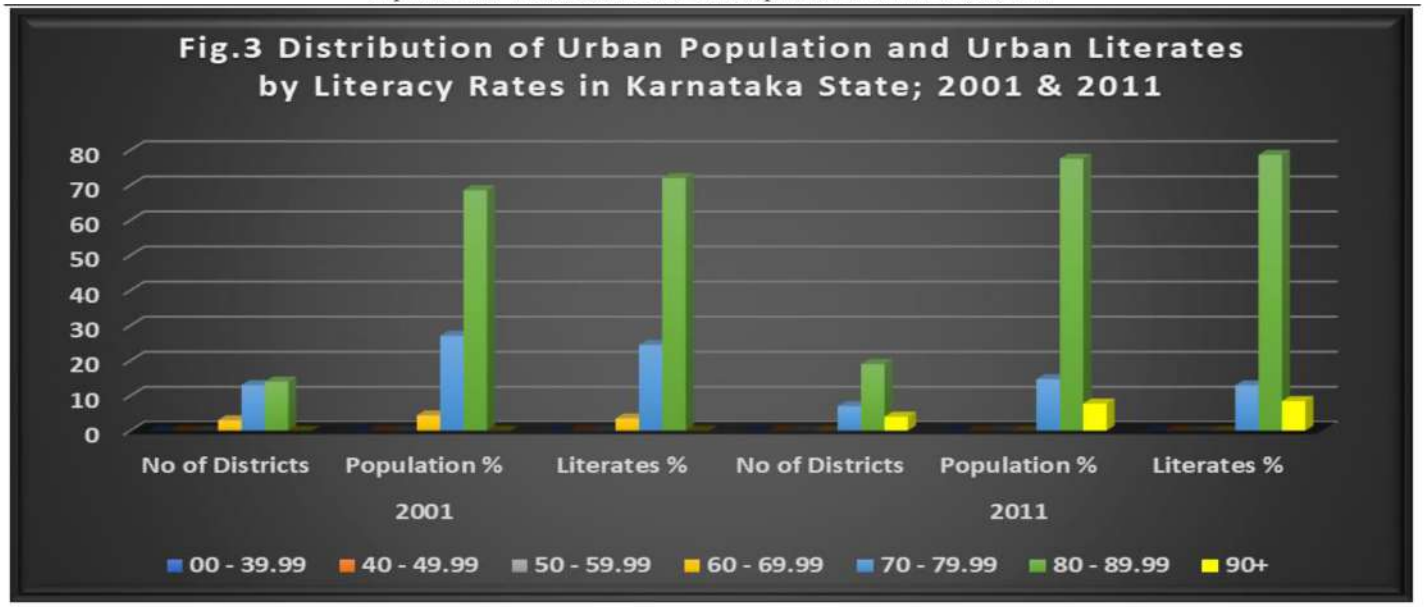


There were only three districts having urban literacy rate in the range of the sixty-seventy per cent in Census 2001, accounting for 4.35 per cent of the state's urban population and 3.50 per cent of state's urban literates. It is heartening to note that in Census 2011, in all districts of the state the urban literacy rate is above seventy per cent. The number of districts having urban literacy of seventy per cent and above was twenty-seven districts in Census 2001 covering 95.64 per cent of states urban population and 96.50 per cent of states urban literates. The corresponding number for Census 2011 is all thirty districts covering cent per cent state's urban population and cent per cent of state's urban literates. There are thirteen and fourteen districts having urban literacy in the ranges of seventy-eighty and eighty and above per cent in Census 2001, accounting for 27.05 per cent and 68.59 per cent of the state's urban population and 24.46 per cent and 72.04 per cent of state's urban literates respectively, whereas in Census 2011, the corresponding number stands in the same ranges at only seven and nineteen districts with 14.70 per cent and 77.55 per cent of the state's urban population and 12.93 per cent and 78.64 per cent state's urban literates respectively. One of the most outstanding and interesting fact is that in Census 2011 four districts of the state have the urban literacy rate is ninety per cent and above and covering 7.75 per cent of states urban population and 8.43 per cent of states urban literates (Fig. 3).

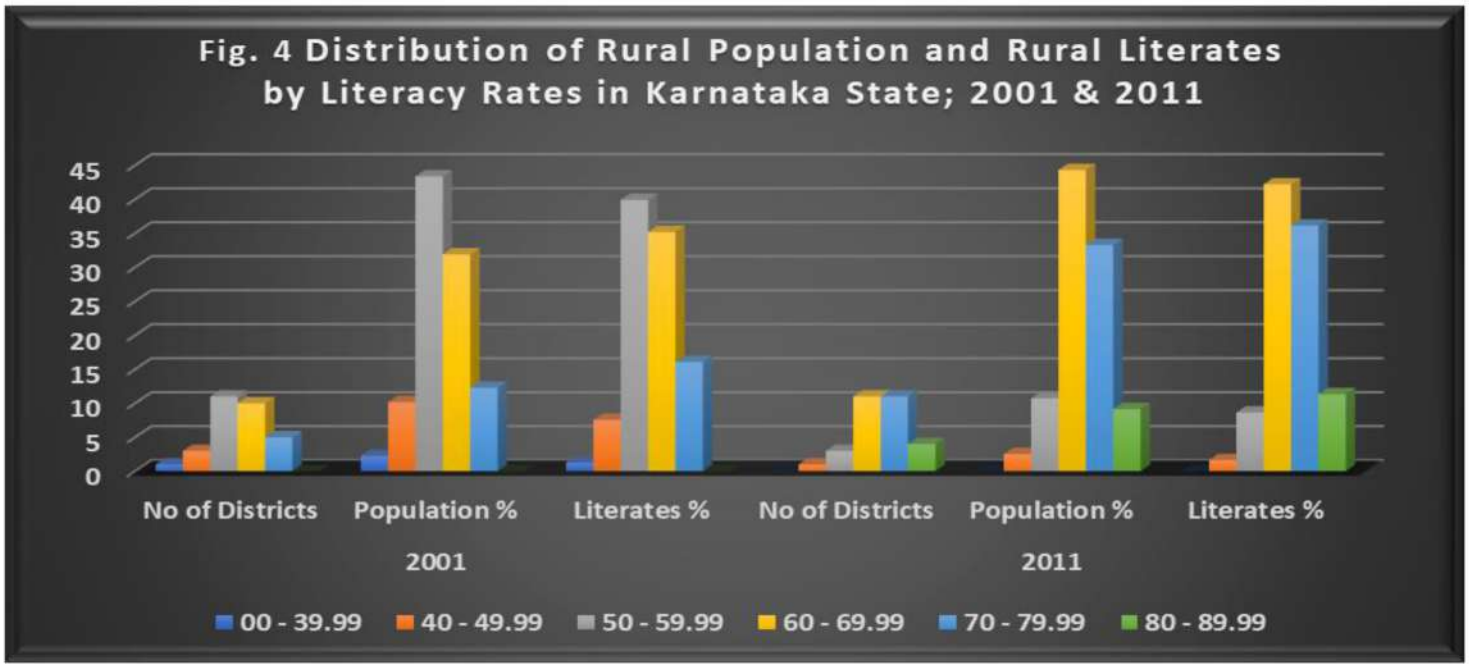
Table 1 Spatial Distribution of Population and Literates by Sectoral Literacy Rates in Karnataka State; 2001 & 2011

Range of Literacy Rates	2001					2011					Range of Literacy Rates
	No of Districts	Population		Literates		No of Districts	Population		Literates		
		Absolute	%	Absolute	%		Absolute	%	Absolute	%	
1	2	3	4	5	6	7	8	9	10	11	12
Total	**30**	**52850562**	**100.00**	**30434962**	**100.00**	**30**	**61095297**	**100.00**	**40647322**	**100.00**	**Total**
00 - 39.99	1	956180	1.81	310588	1.02	--	--	--	--	--	00 - 39.99
40 - 49.99	1	1669762	3.16	676799	2.22	--	--	--	--	--	40 - 49.99
50 - 59.99	7	10971250	20.76	5187429	17.04	2	3103083	5.08	1489772	3.67	50 - 59.99
60 - 69.99	13	23416365	44.31	13212600	43.41	8	13834455	22.64	8043013	19.79	60 - 69.99
70 - 79.99	5	6289908	11.90	4062659	13.35	13	25677734	42.03	16950046	41.70	70 - 79.99
80 - 89.99	3	9547097	18.06	6984887	22.95	7	18480025	30.25	14164491	34.85	80 - 89.99
90 +	--	--	--	--	--	--	--	--	--	--	90 +
Urban	**30**	**17961529**	**100.00**	**12662850**	**100.00**	**30**	**23625962**	**100.00**	**17998146**	**100.00**	**Urban**
00 - 39.99	--	--	--	--	--	--	--	--	--	--	00 - 39.99
40 - 49.99	--	--	--	--	--	--	--	--	--	--	40 - 49.99
50 - 59.99	--	--	--	--	--	--	--	--	--	--	50 - 59.99
60 - 69.99	3	782184	4.35	443003	3.50	--	--	--	--	--	60 - 69.99
70 - 79.99	13	4859324	27.05	3097925	24.46	7	3473339	14.70	2328040	12.93	70 - 79.99
80 - 89.99	14	12320071	68.59	9121912	72.04	19	18322507	77.55	14153323	78.64	80 - 89.99
90 +	--	--	--	--	--	4	1830116	7.75	1516783	8.43	90 +
Rural	**30**	**34889033**	**100.00**	**17772112**	**100.00**	**30**	**37469335**	**100.00**	**22649176**	**100.00**	**Rural**
00 - 39.99	1	793125	2.27	224160	1.26	--	--	--	--	--	00 - 39.99
40 - 49.99	3	3551473	10.18	1344756	7.57	1	953594	2.54	374244	1.65	40 - 49.99
50 - 59.99	11	15127519	43.36	7094776	39.92	3	4015056	10.72	1959028	8.65	50 - 59.99
60 - 69.99	10	11126551	31.89	6252870	35.18	11	16599956	44.30	9558782	42.20	60 - 69.99
70 - 79.99	5	4290365	12.30	2855550	16.07	11	12472147	33.29	8186370	36.14	70 - 79.99
80 - 89.99	--	--	--	--	--	4	3428582	9.15	2570752	11.35	80 - 89.99
90 +	--	--	--	--	--	--	--	--	--	--	90 +

Sources: Census of India 2001 and 2011, PCA Data Highlights, Series 30, Karnataka State Published by the Office of Registrar General, India, Ministry of Home Affairs, New Delhi.



There were four districts having rural literacy rate in the range of fifty per cent and below in Census 2001 and had a share of 12.45 per cent of the state's total rural population and 8.83 per cent state's rural literates whereas in Census 2011, the corresponding number stands at only one district with 2.54 per cent of the state's total rural population and 1.65 per cent state's rural literates. Census 2011 marks the decade when the state achieved more than fifty per cent literacy for rural in twenty-nine districts of the state. There were eleven and ten districts having rural literacy in the ranges of the fifty-sixty and sixty-seventy per cent in Census 2001, accounting for 43.36 per cent and 31.89 per cent of the state's rural population and 39.92 per cent and 35.18 per cent of state's total rural literates respectively, whereas in Census 2011, the corresponding number stands in the same ranges at only three and elven districts with 10.72 per cent and 44.30 per cent of the state's rural population and 8.65 per cent and 42.20 per cent state's rural literates respectively. The number of districts having rural literacy of seventy per cent and above was only five districts in Census 2001 covering around 12.30 per cent of states rural population and 16.07 per cent of states rural literates. The corresponding number for Census 2011 is as high as fifteen districts covering 42.44 per cent state's rural population and 47.49 per cent of states rural literates. Another notable and most highlighting status of rural literacy is that in Census 2011 four districts have the rural literacy rate is eighty per cent and above covering 9.15 per cent of states rural population and 11.35 per cent of states rural literates (Fig. 4).



The state of literacy in Karnataka state as per Census 2011 figures presents a highly inspiring portrait. The highlights have been the decline of the number of illiterates and rise in the number of literates across the state. The most encouraged trend has been the narrowing down of the sectoral and also gender gap in literacy. Though a detailed analysis would reveal more contours a prime face inference is that a large proportion of the children born after 2001 are becoming literate. A note of caution has however to be struck. A few districts have shown a tendency to ship back into illiteracy after having attained a certain level of literacy. This slide back has to be arrested and the momentum to be sustained in order to achieve the cherished goal of universal literacy.

Trends of Sectoral Differentials in Literacy in Karnataka, 1971 to 2011:

The Karnataka state is witnessing constant increase in the literacy rate over the past decades. In continuation of the trend witnessed during the previous decades the literacy rate of the state has increased from 66.64 per cent in 2001 to 75.36 per cent in 2011 (Table 2.) State of literacy in state is characterized by sharp contrast between one part of state to another, between males and females, between urban and rural residents and between various social groups. Such contrasts are manifestation of differences in the socio-economic background of the concerned regions/peoples. A brief analysis of such literacy differentials is necessary for a comprehensive understanding of the process of literacy transition which is taking place in the districts of the state.

Table 2 and Fig.5 shows the analysis of differentials in literacy by sectoral/residence in Karnataka state and also in India from 1971 to 2011. Table 2 reveals that the literacy rate improved from 31.51 per cent in 1971 to 56.05 per cent in 1991 and rose further to 75.36 in 2011. Similarly, the literacy rate for urban areas which was 52.09 per cent in 1971 rose to 74.25 per cent in 1991 and then increased further to 85.78 per cent in 2011. In rural areas, the literacy rate which was only 29.23 per cent in 1971 increased to 47.69 per cent in 1991 and further improved to 68.73 per cent in 2011 (Table 2 and Fig.5).

Table 2. Literacy Rate and Differential Index of Sectoral Literacy in Karnataka & India, 1951 to 2001

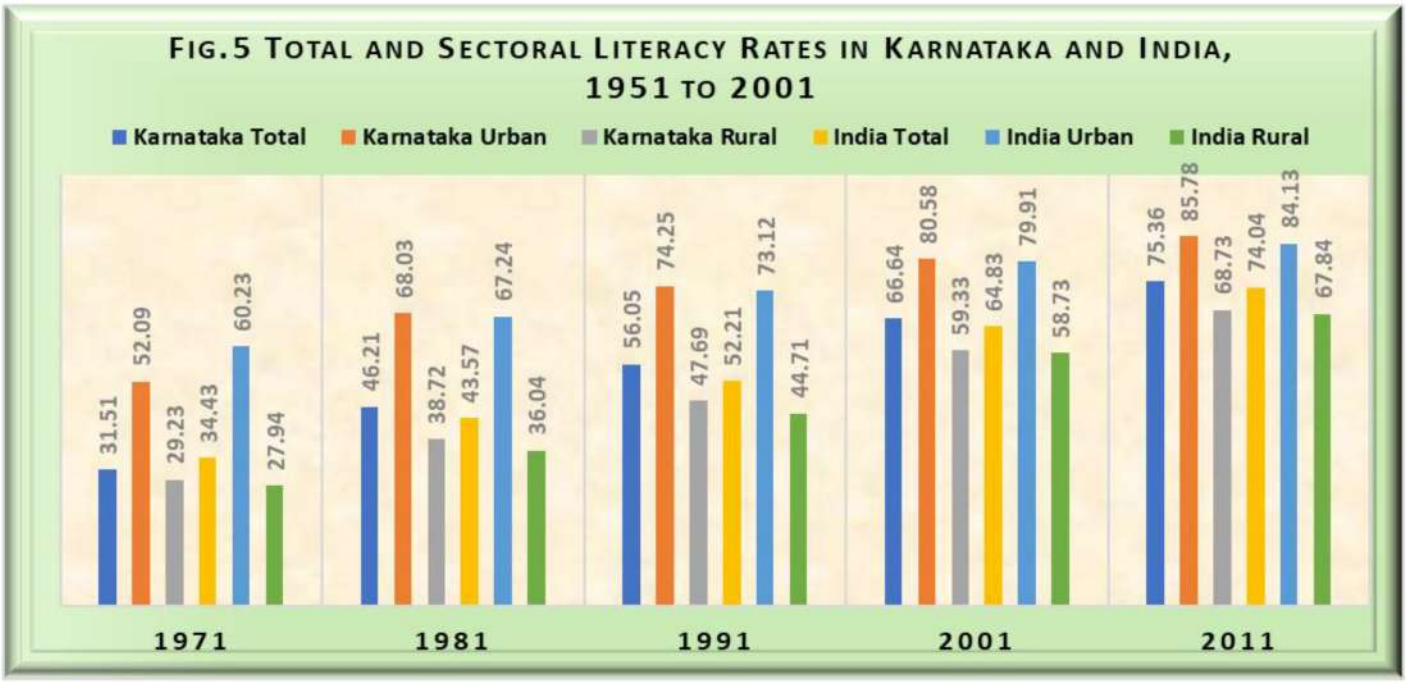
Census Years	Karnataka				India			
	Persons	Urban	Rural	DI	Persons	Urban	Rural	DI
1971	31.51	52.09	29.23	0.726	34.43	60.23	27.94	0.936
1981	46.21	68.03	38.72	0.634	43.57	67.24	36.04	0.716
1991	56.05	74.25	47.69	0.474	52.21	73.12	44.71	0.544
2001	66.64	80.58	59.33	0.319	64.83	79.91	58.73	0.327
2011	75.36	85.78	68.73	0.226	74.04	84.13	67.84	0.220

Sources: Indian Census Report;2001 and Census of India 2011, PCA Data Highlights, Series 30, Karnataka State published by Registrar General and Census Commissioner, GoI, New Delhi.

A considerable growth has taken place in literacy during 20th century, but it has not been satisfactory. It is however, well known that this progress is mainly concentrated in the urban areas, while the vast rural areas are far behind. An encroaching feature is that the growth rate of literacy in the decade ending 2001 has been higher in the rural areas. Despite these improvements, literacy in urban areas was 80.58 per cent and that in rural areas, 59.33 per cent. The most important reason behind the increase in literacy is the new definition and concept of literacy in the census of 1991 which excludes the population in the age-group of 0 to 6 years from the total population. In this way, the 1991 census uses the term 'Effective Literacy Rate' in relation to the age-group of seven years and above (Census of India, 1991).

The sectoral differential index in literacy rate in Karnataka state decreased continuously from 0.726 point in 1971 to 0.226 point in 2011. India has also made remarkable differences in literacy since independence. It has decreased during the same period from 0.936 point in 1971 to 0.220 point in 2011. The sectoral differential index of Karnataka has been decreasing continuously over the time since 1971, when it was louder (0.726), as there was only the rural literacy rate for nearly every two (1:1.78). This disparity ratio declined from 1.78 in

1971 to 1.25 in 2011. The rural literacy had, nonetheless, registered as gradual increase from 29.23 per cent in 1971 to 68.73 per cent in 2011 and differential index narrowed down gradually from 0.726 in 1971 to 0.226 in 2011. From 2001 to 2011, the sectoral differential literacy index fell sharply to 0.226 and 0.220 point in the state and country, respectively. If progress is made at the same rate in the coming decades as well, then it would be possible to remove illiteracy by 2040 A.D.



The narrowing down of the sectoral differential index as well as disparity ratio was associated with increasing degree of sectoral interaction, increasing socio-economic functional values of education in the countryside, improving standards of living, and increasing facilities for schooling in the countryside. The 1991 to 2001 decade is the first census period when the absolute number of Karnataka illiterates declined (by 1.00 million), indicating that the literacy growth rate is now outstripping the population growth.

Differential Index in Sectoral Literacy in Karnataka:

Table 3 depicts that there is wide disparity in overall and sectoral literacy rates, with urban literacy rates far exceeding rural literacy rates in the districts of Karnataka state. The state is witnessing constant growth in the overall, urban and rural literacy rates over the past decades. In continuation of the trend witnessed during the previous decades the overall literacy rate of the state has increased from 66.64 per cent in 2001 to 75.36 per cent, the urban literacy rate has improved from 80.58 per cent in 2001 to 85.78 per cent and the rural literacy rate has enhanced from 59.33 per cent in 2001 to 68.73 per cent in 2011 respectively. The increase in the overall literacy rate by 8.72 per cent points and urban literacy rate by 5.20 per cent points against the rural literacy rate increase of 9.40 per cent points has substantially narrowed the gap between sectoral literacy rates.

Again, there are large variations in overall as well as sectoral and gender literacy rates in different districts of the state. According to 2011 census figures, the state has 75.36 per cent overall literacy rate with differential of 82.47 percent male literacy and 68.08 percent female literacy, among the districts it varies from 88.57 per cent in Dakshina Kannada to 51.83 per cent in Yadagir district, apart from these two districts, all the remaining 28 districts have registered more than 60 per cent literacy rates. Out of thirty districts, 12 districts have high literacy in compare to state average while 18 districts are below state average. Disparities in literacy is not only in overall but it is also displayed in sectoral as well as gender literacy also.

Table-3 Percentage of Overall and Sectoral Literates in Karnataka (2011)

Districts	Total			Urban			Rural		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Bagalkot	68.82	79.23	58.40	78.58	86.55	70.65	64.20	75.77	52.58
Bangalore	87.67	91.01	84.01	88.61	91.66	85.27	78.21	84.54	70.92
Bangalore Rural	77.93	84.82	70.63	85.37	89.57	80.95	75.16	83.06	66.80
Belgaum	73.48	82.20	64.58	85.56	91.10	79.95	69.28	79.12	59.20
Bellary	67.43	76.64	58.09	76.63	83.58	69.62	61.81	72.42	51.02
Bidar	70.51	79.09	61.55	81.81	87.42	75.88	66.73	76.28	56.82
Vijayapur	67.15	77.21	56.72	81.33	87.80	74.79	62.81	74.03	51.10
Chamarajanagar	61.43	67.93	54.92	78.39	83.29	73.54	57.95	64.80	51.06
Chikkaballapur	69.76	77.75	61.55	81.57	86.01	77.06	66.39	75.41	57.10
Chikmagalur	79.25	85.41	73.16	87.93	91.40	84.51	76.95	83.82	70.15
Chitradurga	73.71	81.37	65.88	85.89	90.22	81.55	70.68	79.19	61.91
Dakshina Kannada	**88.57**	**93.13**	**84.13**	92.12	**95.50**	88.83	**85.33**	**90.97**	**79.83**
Davanagere	75.74	82.40	68.91	84.02	88.19	79.77	71.77	79.63	63.69
Dharwad	80.00	86.37	73.46	85.92	90.49	81.31	72.09	80.98	62.72
Gadag	75.12	84.66	65.44	80.94	88.01	73.92	71.86	82.83	60.62
Gulbarga	64.85	74.38	55.09	78.61	85.12	71.91	58.09	69.08	46.86
Hassan	76.07	83.64	68.60	88.36	91.94	84.81	72.79	81.41	64.29
Haveri	77.40	84.00	70.46	83.39	87.39	79.29	75.69	83.05	67.89
Kodagu	82.61	87.19	78.14	91.48	94.41	88.58	81.09	85.94	76.37
Kolar	74.39	81.81	66.84	86.13	90.05	82.18	69.08	78.11	59.82
Koppal	68.09	78.54	57.55	78.03	85.48	70.59	66.05	77.12	54.85
Mandya	70.40	78.27	62.54	83.24	87.78	78.75	67.78	76.34	59.21
Mysore	72.79	78.46	67.06	86.09	89.50	82.67	63.29	70.64	55.78
Raichur	59.56	70.47	48.73	75.12	83.10	67.10	54.11	66.01	42.37
Ramanagara	69.22	76.76	61.50	81.54	85.47	77.51	65.26	73.96	56.36
Shimoga	80.45	86.07	74.84	87.79	91.35	84.24	76.37	83.14	69.60
Tumkur	75.14	82.81	67.38	87.32	90.93	83.67	71.66	80.48	62.71
Udupi	86.24	91.41	81.58	**92.13**	95.22	**89.21**	83.91	89.85	78.65
Uttara Kannada	84.06	89.63	78.39	90.73	94.49	86.91	81.31	87.63	74.87
Yadgir	**51.83**	**62.25**	**41.38**	**72.01**	**80.03**	**63.92**	**47.05**	**58.02**	**36.05**
State	**75.36**	**82.47**	**68.08**	**85.78**	**90.04**	**81.36**	**68.73**	**77.61**	**59.71**

Sources: Indian Census Report;2001 and Census of India 2011, PCA Data Highlights, Series 30, Karnataka State published by Registrar General and Census Commissioner, GoI, New Delhi.

Among the districts, Udupi district with urban literacy rate of 92.13 per cent retains its top position, closely followed by Dakshina Kannada (92.12), Kodagu (91.48) and Uttara Kannada (90.73) districts. The lowest urban literacy rate of 72.01 per cent is recorded in the newly created Yadgir District, preceded by Raichur District which has recorded 75.12 per cent, Bellary (76.63), and Koppal (78.03) districts of the state. The districts with urban literacy rate above the states average (85.78) are noticed in the thirteen districts namely Udupi (92.13), Dakshina Kannada (92.12), Kodagu (91.48), Uttara Kannada (90.73), Bangalore (88.61), Hassan (88.36), Shimoga (87.79), Chikmagalur (87.93), Tumkur (87.32), Kolar (86.13), Mysore (86.09), Dharwad (85.92) and Chitradurga (85.89) districts of the state. Apart from these thirteen districts, all the remaining seventeen districts have registered below the state average of urban literacy rate.

Similar variations are also found in rural literacy rates which ranged from to 47.05 in Yadagir to 85.33 per cent in Dakshina Kannada district. The

districts with rural literacy rates below the states average (68.73) are observed in Mandya (67.78), Bidar (66.73), Chikkaballapur (66.39), Koppal (66.05), Ramanagar (65.26), Bagalkot (64.20), Mysore (63.29), Vijayapur (62.81), Bellary (61.81), Gulbarga (58.09), Chamarajanagar (57.95), Raichur (54.11) and Yadgir (47.05) districts of the state. The districts with rural literacy rate above 75 per cent are noticed in Dakshina Kannada (85.33), Udupi (83.91), Uttara Kannada (81.31), Kodagu (81.09), Bangalore (78.21), Chikmagalur (76.95), Shimoga (76.37), Haveri (75.69) and Bangalore Rural (75.16) district of the state. Apart from these twenty-one districts, all the remaining nine districts have registered in the range of state average (68.73) to 75 per cent of rural literacy rate.

Spatial Pattern of Differential Index in Sectoral (Urban- Rural) Literacy:

The differential index in sectoral literacy is marked with notable variations in its distribution among the districts of the Karnataka state. It varies from 0.077 in Dakshina Kannada to 0.482 in Yadagir district with a state average of 0.226 in 2011 (**Table 4**). Out of thirty districts only eight districts of state have more differential index in sectoral literacy than the state average, while remaining twenty-two districts have lower differential index in sectoral literacy than the state average. These variations may be conveniently grouped into five grades (**Table 5 and Fig.6**) to appreciate the spatial patterns in differential index in sectoral literacy in Karnataka state. The graded distribution of differential index in sectoral literacy as given in Table 5 shows that only one district (3.33 per cent) of the state falls under very high grade (>0.400+) covering the district of Yadagir (0.482) in the north-eastern part of the state. This district having very high differential index which is more than double of the state average (0.226). The reasons for this differential are low level of urbanization, basically traditional agricultural economy, high concentration of socio-economically backward sections of the society, inadequate educational infrastructure and late start of education in rural areas.

Only four districts (13.33 per cent) having high differential index of 0.300 to 0.400 forms a one separate region in the southern part of the state. The former which is relatively small in size comprises the Chamarajanagar (0.333) and Mysore (0.313) districts of the state. The other two districts located in the north-eastern part, namely Raichur (0.353) and Gulbarga (0.316) of the same grade is scattered in nature and fails to form a definite region in the state. The sectoral differential has been reducing continuously due to faster increase in rural literacy in the recent decade.

Twelve districts (40.00 per cent) which are very close to the differential index in sectoral literacy of state average (0.226) ranging from 0.200 to 0.300 point are found to be grouped into a number of medium differential regions of which the most important region covers Bellary (0.220), Chitradurga (0.206), Hassan (0.205), Tumkur (0.209), Mandya (0.220), Ramanagar (0.235), Chikkaballapur (0.218) and Kolar (0.229) districts in the south-eastern part of the state and formed a compact region. Another region located in the north-western part of the state comprises Vijayapur (0.276), Bagalkot (0.209) and Belgaum (0.222) districts and formed a distinct region. The rest of the district namely Bidar (0.214), belonging to this grade are scattered sporadically in the northern part of the state. The sectoral gap in terms of literacy is minimizing continuously due to educational facilities in rural mass and the rural population is more aware about the benefit of literacy.

About eleven (36.67 per cent) districts fall under the low grade of 0.100 to 0.200 differential index in sectoral literacy in the state. These districts are found to be grouped into a number of regions of which the most prominent one covers eight districts such as Uttara Kannada (0.112), Dharwad (0.173), Gadag (0.121), Koppal (0.176), Haveri (0.100) Davanagere (0.162), Shimoga (0.142) and Chikmagalur (0.139) districts in the central part of the state. The second region though less prominent, lies in the south-eastern part and comprises Bangalore Rural (0.131) and Bangalore (0.119) districts. The other only one district viz. Kodagu (0.126) of the same grade is scattered in nature and fail to form a notable region in the state.

Table-4 Differential Index of Sectoral (Urban- Rural) Literacy in Karnataka (2011)

Sl. No	Districts	Differential Index of Sectoral Literacy		
		General Sectoral	Male Sectoral	Female Sectoral
1	Bagalkot	0.209	0.136	0.309
2	Bangalore	0.119	0.078	0.171
3	Bangalore Rural	0.131	0.077	0.200
4	Belgaum	0.222	0.146	0.321
5	Bellary	0.220	0.146	0.320
6	Bidar	0.214	0.141	0.310
7	Vijayapur	0.276	0.178	0.418
8	Chamarajanagar	0.333	0.272	0.409
9	Chikkaballapur	0.218	0.136	0.324
10	Chikmagalur	0.139	0.089	0.196
11	Chitradurga	0.206	0.136	0.298
12	Dakshina Kannada	**0.077**	**0.049**	**0.107**
13	Davanagere	0.162	0.104	0.233
14	Dharwad	0.173	0.110	0.253
15	Gadag	0.121	0.061	0.203
16	Gulbarga	0.316	0.216	0.455
17	Hassan	0.205	0.126	0.299
18	Haveri	0.100	0.052	0.162
19	Kodagu	0.126	0.097	0.156
20	Kolar	0.229	0.146	0.335
21	Koppal	0.176	0.107	0.273
22	Mandya	0.220	0.146	0.312
23	Mysore	0.313	0.240	0.401
24	Raichur	0.353	0.242	0.508
25	Ramanagara	0.235	0.150	0.344
26	Shimoga	0.142	0.095	0.196
27	Tumkur	0.209	0.126	0.311
28	Udupi	0.095	0.059	0.129
29	Uttara Kannada	0.112	0.076	0.154
30	Yadgir	**0.482**	**0.354**	**0.673**
	State	**0.226**	**0.151**	**0.318**

Sources: Based on Table-3 and calculated by Author.

The districts of very low differential index (< 0.100) covers about less than seven percent of the state's area and has one distinct region in the western part of the state. These districts (6.67 per cent) are Udupi (0.095) and Dakshina Kannada (**0.077**) of the state.

The general picture emerged from this discussion is that there is a gradual increase in differential index in sectoral literacy from western to eastern part of Karnataka state.

Table 5.
Category wise Differential Index in Sectoral Literacy in Karnataka (2011)

General Sectoral		Male Sectoral		Female Sectoral	
Literacy Gaps	No. of Districts	Literacy Gaps	No. of Districts	Literacy Gaps	No. of Districts
Very High '> 0.400 +	**1 (3.33)**	Very High '> 0.300 +	**1 (3.33)**	Very High '> 0.600 +	**1 (3.33)**

High 0.300 – 0.400	**4** **(13.33)**	High 0.225 – 0.300	**3** **(10.00)**	High 0.450 – 0.600	**2** **(6.67)**
Medium 0.200 – 0.300	**12** **(40.00)**	Medium 0.150 – 0.225	**5** **(16.67)**	Medium 0.300 – 0.450	**12** **(40.00)**
Low 0.100 – 0.200	**11** **(36.67)**	Low 0.075 – 0.150	**17** **(56.67)**	Low 0.150 – 0.300	**13** **(43.33)**
Very Low < 0.100	**2** **(6.67)**	Very Low < 0.075	**4** **(13.33)**	Very Low < 0.150	**2** **(6.67)**
Total	**30**		**30**		**30**

Sources: Based on Table-3 and prepared by Author.

i. Spatial Pattern of Differential Index in Male Sectoral (Urban- Rural) Literacy:

Differential index in male sectoral literacy varies between 0.049 in Dakshina Kannada to 0.354 in Yadagir with a state average of 0.151 in 2011 (**Table 4**). Out of thirty districts only six districts of state have more differential index in male sectoral literacy than the state average while twenty-four districts have low differential index in male sectoral literacy than the state average. Districts are grouped into five categories on the basis of the differential index in male sectoral literacy to realize the spatial patterns in male sectoral literacy in Karnataka state **(Table 5 and Fig.7)**.

Yadagir (0.354) district (3.33 per cent) is alone fallen under very high (> 0.300+) category and Chamarajanagar (0.272), Raichur (0.242) and Mysore (0.240) districts (10.00 per cent) are lies under high (0.225-0.300) category of differential index in male sectoral literacy. Among these Chamarajanagar and Mysore districts are form a distinct region in the southern part of the state. Raichur district alone form a isolated region in the north-eastern part of the state. The reasons for very high and high differentials are basically traditional agrarian economy, high concentration of deprived habitants of the backward society, inadequate educational and infrastructural facilities, late start of education in rural areas, prejudices against female education and movability and low level of urbanization.

Five districts (16.67 per cent) of the state i.e. Mandya (0.220), Gulbarga (0.216), Ramanagar (0.150), Vijayapur (0.178) and Koppal (0.176) having medium (0.150-0.225) differential index in male sectoral literacy. These districts are found to be grouped into two small regions of which the most popular one covers two districts namely Gulbarga (0.216) and Vijayapur (0.178) located in north-eastern part of the state. The second region though less prominent, lies in the south-eastern part and comprises Mandya (0.220) and Ramanagar (0.150) districts. The other only one district viz. Koppal (0.176) of the same grade is scattered in nature and fail to form a notable region in the state.

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Editorial…

Libraries have to go to the users and offer the services to them. They should publicize their presence among the user community and attract them to the libraries. All these necessitate the librarians to have the knowledge of the business and marketing for managing the libraries in this world of free marketing and offer quality library and information services. District libraries have to provide quality services using latest technologies. So the libraries are now more concerned about the library customers, their satisfaction, and the quality of library and information products and services, and their marketing. Academic library is an important component of any academic institution, responsible for providing academic research support to all members of the institutional community. Higher education is a very important sector for the growth and development of human resource which can take responsibility for social, economic and scientific development of the country. High quality of library performance is crucial for each academic library to survive.

Now a day's even developing countries like India are showing interest in digitizing their library materials. In digitization, software is one of the key requirements .Open source software is new genre of software. They are increasingly becoming popular for the simple reason that mostly they are available free and can be easily downloadable from the web. The ultimate goal of any library service is to ensure that the students and staff are able to access the information for purposes for which they require it. This raises the need to teach information literacy to users with the goal of assisting clients to identify and select right information using right direction search strategies and being able to evaluate, organize and synthesize that information into a meaningful presentation. Information and Communication Technology have introduced a new era in traditional methods of teaching and offering new teaching and learning experiences to both teachers and students. One of the most important determining characteristics of our century is that information is increasing at a level too fast to catch up. In such an atmosphere, it is unavoidable to create, develop, and update the skills of people in the society; otherwise, their professional skills and status may be questionable.

Job satisfaction is an important area to determine the view of the library professionals towards their job in the library, and it is the condition of establishing a healthy organizational environment in an institution. Satisfaction of an employee plays an important role in the development of its organization. Therefore the regulatory bodies such as University Grants Commission and Higher Education Council must frame uniform guidelines for both teachers and librarians, which can definitely enhance the job satisfaction of librarians and allow them to play a greater role in the academic development and scholarly communication and accomplish their institutional objectives effectively.

Managing Editor *Editor in Chief*

Digital Libraries in promoting Culture: An Overview

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Abstract

It is essential to define the parameters that define each concept in order to comprehend the relationship that exists between culture and digital libraries. This is especially crucial in the context of cultural institutions and examples like museums, galleries, festivals, arts organizations, and broadcasters, whose information infrastructure has not traditionally been dominated by the physical library idea.

Key Words: Digital Libraries, Culture, ICT in Education, Academic Libraries

Introduction

Large, well-organized collections of informational objects are known as digital libraries. Digital libraries incorporate the treasure itself, specifically the information objects that make up the library's collection, whereas standard library automation systems provide a computerized version of the catalog, a gateway into the treasure house of information stored in the library. Even large digital libraries can be light, despite the fact that traditional libraries are, by definition, bulky establishments that require a lot of space and money. Digital libraries are nimble, whereas standard libraries, whose mandate includes access as well as preservation, are "conservative" by definition and have the appropriate institutional infrastructure: They place an emphasis on accessibility and are rapidly evolving.

Digital Libraries and Culture

Concept of Digital Library: There are many different definitions of digital libraries, and many of these definitions try to figure out what the library does with digital content. A library can now be defined as a collection of almost anything, departing from its original etymological meaning of "collection of books": digital images or software routines, for example Every digital library is equally unique, and various players are advancing numerous definitions of the digital library. Numerous libraries differ with distinct features. A digital library, for instance, is defined by Arms as a managed collection of information that is stored digitally and accessible over a network with associated services. A vital piece of this definition is that the data is made due." (Arms, 2000)

Concept of Culture: In addition to being a synonym for "art," "culture" can also refer to a society's traditions, creative expression, leisure activities, and values. Heritage, arts and creativity, museums, creative industries, tourism, and activities involving societal customs and diversity are all included in UNESCO's definition of culture. All of these definitions of culture—from the arts to leisure activities to a society's heritage to its traditions—will be included in this report. As a result, cultural resources can clearly reach a small number of people or an entire community or population. As will be demonstrated by the resources listed in this report, digital cultural resources assume a worldwide audience but frequently target a specific community or audience. As a result, digital cultural resources ought to address or include at least one of the following:

* Tradition;
* Creativity and the arts;
* Galleries;
* Tourism and creative industries;
* The diversity and customs of societies;
* Life practices.

The primary goals of major cultural institutions like museums and national libraries—namely to educate and clarify, to promote and disseminate culture, and to preserve it—have made it increasingly important to provide cultural resources. Many digitization programs and the move toward digital repositories are largely driven by these efforts to re-engage and expand existing audiences. Since the returns on investment are relatively low (Tanner, 2004), the justifications for digitally distributing cultural resources are rarely based on economic or commercial considerations. On the other hand, the returns on investment for cultural, educational, and prestige are quite high (Tanner, 2004).

Data and information can now be sent to any part of the world thanks to the digital revolution. Despite the fact that there are still political, cultural, and financial obstacles preventing low-cost access in many parts of the world and certain social strata, some predict that we are approaching a time when everyone will have access. The advanced gap exists and could additionally drawback poor people, the under-taught and those in emerging nations as the good, the bettereducated and the financially formed continue onward into the computerized space.

Implication of Digital Library Innovations to Culture

The social area frequently needs to use creative innovation to convey relics in a manner that envelops their characteristically general media nature. Documentary sources are still very important, but the challenges that culture faces are different in materials that are heard and seen. Digital preservation and descriptive metadata are the most important aspects of culture's interaction with digital libraries.

* Describing Culture through Metadata
* Digital Preservation
* Art for Everyone: Democratising Access to the Arts

The arts are the most well-known and easily accessible cultural resources made available by cultural organizations and digital library technologies. It is generally accepted that the arts include at least the visual, written, and oral arts of literature, music, and theater. Because it facilitates equal access to and participation in the arts, the digital domain has a democratizing effect.

An increasingly diverse audience responds to the arts in a setting that offers numerous advantages. Not least of these are:

- by making accessible a minimum amount of works;
- The advantages of virtual unification, which consolidates all of an artist's works into a single source rather than distributing them across a number of institutions (possibly both physically and logically);
- The advantages of more open access, which make resources that are otherwise unavailable to the public accessible;
- The advantages of increased accessibility, which include the ability to view or use the resource in novel and interesting ways, such as by adapting it for different audiences (such as multilingual audiences);
- The advantages of integration by making it easier to find resources that can be used in a variety of settings and for a variety of purposes, especially when they are incorporated into instructional materials;
- Benefits to mission: Cultural organizations can reach new audiences and demonstrate value to their community and stakeholders by democratizing access.

Preserving Culture

Preserving culture is one of the most important roles that libraries, museums, and other institutions of memory play. This could be preserving a way of life's history or the language, literature, music, and customs of a culture's earliest days. Culture is preserved and people are connected to their national and regional identities thanks to digital libraries.

Culture is constantly at risk, and the digital realm may, to some extent, exacerbate this risk by storing resources in formats that make it difficult to retrieve them over time. However, the digital library itself is a potent instrument for stemming the tide of cultural loss and diffusion. Digital libraries are frequently the most important means by which citizens can interact with their own history, culture, and language. They also play a crucial role in bringing cultural artifacts back into the public eye when the originals have been lost or are too fragile to be displayed normally.

Rebuilding Digital Libraries

There is a proposal for a program that aims to protect cultural heritage and includes suggestions for:

* Create institutional, regional, and national cultural property inventories;
* Choose short-term projects to protect vulnerable property in an emergency;
* Form partnerships and connections with relevant international institutions that hold world-class collections;
* Get started digitizing cultural heritage that is written or printed;
* Retake the task of creating a national bibliography;
* For the relevant institutions, develop emergency plans and provide staff with training in risk mitigation and recovery;
* To ensure the systematic preservation and documentation of the cultural heritage as well as its open dissemination via the Internet, a digitization project ought to be started. A broad definition of cultural heritage, which includes cultural, religious, historical, and ethnic documents, items, images, and sounds, among other things;
* both languages should be represented, and the project should try to cover as much as possible;
* The widespread dissemination of content on the Internet will, to some extent, make up for the damage to significant texts and documentation caused by oppression and war. The missing material ought to be digitized outside, in close collaboration with relevant foreign museums, libraries, and institutions.

Connecting with Home and Family

1. Social inclusion and cultural cohesion are problems that a growing number of heritage and cultural organizations are working to solve. In this cutting edge time, with overall constrained and monetary movement, there is a requirement for computerized assets to assist with keeping a feeling of home and family as people groups become dislodged and their social character possibly becomes diffused. In a similar vein, indigenous peoples have every right to anticipate that digital resources will aid in consolidating their sense of home and family through family histories and culturally relevant resources.
2. The following resources are all examples of how these issues are being addressed by digital library resources. The ability to communicate with an audience that is not necessarily constrained by borders and the capacity to maintain remote access to cultural resources that are meaningful to that audience are two of the benefits offered by the digital domain. The digital domain also offers numerous opportunities for the creation and upkeep of virtual communities. Some of these centers on a cultural resource, such as a religious codex, a resource for family history, or oral histories.

* Digital Shikshapatri
* Digital Imaging India
* Aboriginal Resources in India
* Native Indian Heritage
* Indian Online Digital Library

Digital Futures and Culture

Metadata: Heritage and cultural resources are open to a wide range of interpretations, uses, and perspectives. As a result, utilizing their full digital potential often necessitates sophisticated systems and extensive metadata. The digital library community has a lot of controlled vocabularies and descriptive metadata schemas, but these things also make it hard to cross-reference resources and make it possible for them to work together. The main technical challenge for digital cultural resources is still how to effectively access a wide range of resources in a variety of settings to meet different audience expectations.

Digital Preservation: Digital libraries must address a significant problem with digital preservation in addition to access and usability. Individuals and organizations, both large and small, are creating massive amounts of digital data on a massive scale. Digitization programs are responsible for the creation of some of this data, but an increasing amount of it is born, lives, and dies entirely digitally. Cultural resources' digital preservation faces a number of difficulties:

* Maintaining the integrity of the data stream;
* Keeping the tools for analyzing the data stream;
* Keeping the ways people experience the resource alive.

The technical issues underlying data stream storage and preservation have become somewhat simplified as storage media continue to reduce in price per terabyte. Even though more open standards for data representation are being used, the technical issues surrounding interpretation and usability are not getting any easier. What remain as key challenges are:

* The will and capacity to put in place a strategic preservation plan;
* Development of institutional policy that will continue for the long term;
* Building a sustainable economic model to enable the plans and policy to be carried forward

Digital Divide

Status to take advantage of the accessible advances is a vital calculate computerized library take-up for social assets. Investment and development opportunities for providers of cultural resources will be affected by a population's ability to access digital resources.

Conclusion

Digital libraries counter a potential threat to the commercialization of information in line with practices developed by the entertainment industry and extend the applications of modern technology in socially responsible directions by making it simple to create and distribute large information collections. Digital libraries may be a "killer app" for computer technology in the developing world—an application that creates a sustainable market for a promising but underutilized technology. The World Wide Web is frequently referred to as the Internet's most powerful tool. However, the developing world does not actually have access to the Internet, and as a result, they are deprived of the enormous influence that the Internet has on promoting and internationalizing business opportunities as well as the enormous amount of basic, everyday human information that it provides. Due to its vast size, rapid change, and questionable information value per gigabyte, there is little incentive to make copies of the entire Web available locally. However, it is simple to provide focused information collections on both the Internet and in the same format on removable media like CD-ROM, DVD, or bulk disk storage devices. In fact, the Greenstone software described above lets you quickly and easily create a complete, runnable, self-installing CD-ROM image from a Web collection. Non-textual content should also have first-class status in a digital library, perhaps even first-class status in "the literature," under universal access. This has significant social repercussions. It ought to be feasible to make computerized library assortments expected

for use by individuals in oral societies, who might be ignorant or semi-educated. or people who are unable to speak or read the language of the digital library despite being able to read and write in their native tongue. Imagine having access to collections created by people who grew up in the rich cultures of China or Arabia without having to learn a new language. New interface technology's radical and potentially revolutionary benefit is making digital libraries accessible to the illiterate.

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Use of Mobile Technology in Library Services

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Abstract

Libraries have always set an example in experimenting with new technology developments, whether it is automation or adopting other information and communication technologies to improve their services. This paper presents an outline of the application and use of developments in mobile telecommunication systems, web technologies (internet/intranet) and geographic systems like GPS/GPRS to provide ubiquitous, user-friendly, personalized and dynamic up to date information services to library users. This new technology will be of great help to libraries towards strengthening their relationship and providing enhanced user experience to existing users. Libraries may well reach out to the new/remote users who were considered unlikely to connect because of absence of a medium. This should be adopted in compliance with the information security policies and standards of the parent organization.

Keywords: Mobile Application, Mobile Websites, Mobile Technology-Library.

Introduction

The International Telecommunication Union (ITU) estimated that more than 7 billion mobile subscriptions would exist worldwide by the end of 2020, which more than tripled home Internet access. ITU also predicts Web access from mobile devices will exceed access from desktop computers within the next five years. Therefore, libraries should be exploring mobile devices as a way to connect with users. Librarians care about access to information for everyone, and mobile interfaces are making access easier for people of all abilities. Mobile phones aren't just phones anymore, they can access e-mail, search the Web, video chat, and play games. Even mobile devices like IPad and iPod touch can bring social media, productivity tools, and entertainment literally into the palm of your hand. Creating a library application ("app") or mobile Web site that allows users to access library hours, view their library account or even search databases.

Assessing the Demand for Mobile Services

Libraries are facing a considerable and never-ending challenge; Libraries are innovating and trying to meet the evolving technological challenges. Mobile devices such as smart phones, iPad's and table computers are rapidly proliferating in society and changing the way information is organized, received and disseminated. Similarly our library world must adopt mobile services which maximize and adapt to these significant technological changes. Innovations in mobile services include mobile apps to administer library records, text message services reminding users of book return dates, instant chat services and live lab initiatives involving the rental of mobile devices to users. There is no doubt that the potential range of mobile services a library could offer its users is considerable. Is it possible for libraries, so often weighed down by heavily bureaucratic structures, to create and deliver cutting-edge and quench the users' thirst for efficient new mobile services.

Mobile applications for learning

* **Classics-23,469 Books to Go.** :-Large collection of free classic literature packaged.
* **Dropbox :-** Store, sync, and share files online and across computers.
* **Evernote :-** Create text, video, and audio memos. All
* H**istory:-Maps of the World.** Features include category/era views and keyword search History
* **SSRN:-** Created by the Social Science Research Network (SSRN)
* **Word Web Dictionary :-** Extensive English dictionary and thesaurus that includes more than 2,85,000 words, phrases, and derived forms.

Mobile Web sites

Library websites which are especially designed for viewing on mobile devices. In addition to or in place of mobile applications, some companies and organizations also develop mobile versions of their Web site that are better optimized for viewing on mobile devices. There are several free mobiles sites developers available on the internet.

· **Encyclopedia Britannica Mobile.** Offers a search box and a list of suggested searches. Results include full-text entries with enlargeable images.

· **MedlinePlusMobile.** Produced by the U.S. National Library of Medicine, MedlinePlus Mobile provides information about specific diseases, conditions, and wellness issues. The site also contains prescription drug information, medical dictionary, and current health news.

· **WorldCat Mobile.** Search the WorldCat catalog for books, movies, music, games, and more. Results include items available at local libraries.

· **Word Press.** The commercial version of WordPress with the mobile detection formatting enabled. Library mobile site (**http//mobilelib.wordpress.com/**) was authored with the free version of Wordpress.

· **LibGuides platforms.** As of July 2011 the Springshere website lists over 2000 libraries in the world using the LibGuides platforms. It is mobile friendly and free if the library already subscribes to LibGuides.

Features Included in Mobile App for Academic Libraries

1. **Catalog Search :-**Provide patrons with real-time access to your library's collection via their smartphones and tablets.
2. **Library Locator :-** GPS-aware technology shares branch location and contact information.
3. **Additional e- Content Integration :-**Deliver e-Book e-Audio books and video contents to your users via Mobile App.
4. **Star Partners :-**Deliver one-click access to Overdrive, one click digital literature and more.
5. **ILS Integration :-** Give users the ability to manage their accounts including placing holds and renewals.
6. **Mobile instruction :-**This includes the application of mobile devices for library instruction. Can be text-based, audio or video.
7. **Ask a Librarian :-**With direct connection to reference services via text, email or phone, your users can reach you from any location.

8. **Calendar and Events :-**Anytime, Anywhere access to your calendar of events, classes and other schedules.

9. **Social Tools** :-Help users stay up-to-date with your library's latest news via your Twitter, Facebook, YouTube or blog posts.

10. **Library SMS** :-Text messaging provides an opportunity for libraries of all sizes to create new services and to reduce cost of operations. For example, users can be offered reference service in which they send inquires to their library from their cell phones get reply back to the users phone.Similarly, a library may automate its reminder or book renewal process through the use of text messaging. There are no downloads, installation or training required.

11. **WhatsApp**:-It is a direct and user-friendly service for Library users to use WhatsApp to contact librarians. WhatsApp is mobile application which allows exchange of images, messages, videos and audio clips via Smartphone in library and Information center. The service is good for asking quick and simple questions that can be answered in short responses.

12. **SMS Alert Service** :- Few library automation software's provide option to send SMS alerts for reservation items, due items to users. The users can get notified instantly with SMS alerts such as bringing new books, intimation of new arrivals, availability of reserved documents, appraising about overdue books, outstanding fines, reminders to returns library items etc.

13. **Reference Services** :- Users can ask librarians anything through the live chat and texting with mobiles. The reference services can be provided with the help of sending and receiving SMS which allow users to send a query by text message and receive a reply the same way.

14. **mOPAC** :- A mOPAC is a mobile version of a library's online public access catalogue . With the help of mOPAC users are able to access the library catalogue from a mobile phone. It allow users to search for and find books and other materials available in their libraries.

15. **Mobile Internet/ Wi-Fi Access** :- Libraries can offer Wi-Fi facility to access electronic information sources increasing mobile internet use by users.

16. **Mobile Content Delivery** :- Libraries putting development resources into delivering content such as e-books and e-journals listen to podcast or audio books, listen to music, view photos, watch videos to the mobile phone.

17. **e- resources with Mobile Interfaces** :- Library Journals Finders provides access to Full text journals, magazine, and newspaper content as well as links to title held in print. e-books, e- journals, web database, e-dissertation, audio books, streaming music, films, images and articles are accessible via mobile phone.

18. **And more** :-And many more features that are described in detail under the benefits section.

Conclusion

Finding the right technology to use in the library, particularly the kind of devices that will best suit the largest number of users, can be a difficult task. The prevalence of smart phones and mobile devices with internet capabilities is hard to ignore. More and more of the population have access to smart phones, which incorporate information access and smart phone technology an appealing option for education and libraries. They can be implemented in a number of ways within libraries. As the use of mobile technology grows, library staff will need to learn and use the technology to serve library users where they are, and libraries will face management, funding and training challenges in meeting this need.

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E- Resources: An Overview

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Abstract:

E-resources are resources in which information is stored electronically and it can be accessible through electronic systems and network environment. E-resources are a very broad term that includes a variety of different file formats. Acquiring knowledge from E-Books, E-Journals, Online resources, CDROM, Internet with related Databases are the impact of E-Resources. The E- Resources have become very popular in Libraries & Information Centers.

Keywords - E-Resources, E- Books, E-Journal, E-Databases, CD-ROM, Online Resources.

Introduction:

Research is a continuous activity for finding the new and better solutions of the problem or finding the new techniques. For research work only thing required is huge amount of data. There are so many ways of data collection but now days there are no other alternate better then the internet. In the scientific environment it is very essential for librarians to know about the users demand for e-resources which forms an integral part of their information needs. Understanding today's user's need of information sources is no doubt a challenge and it poses a more challenge for heterogeneous users. To satisfy the varied user needs, libraries require availability and accessibility to a variety of electronic resources. E- Resources have occupied a vital role in the collection and budget of almost all libraries, use of electronic information resources in the libraries for rapid development is necessary and important. Electronic resources have great potential and bright future to attract users, it combines all the benefits of the multimedia, digital coding and Internet. It enable user to carry everywhere and can be read on all types of computers including handled device. Electronic resources are easily accessible in remote areas. Electronic resources solve storage problems and control the flood of information. Electronic information sources are becoming more and more important for the academic community these resources are important source of information for the students, teachers and research scholars.

Definition of E-Resources :

An E- Resources is collection of digital content delivered to the user via internet.

According to Sukula "An E resources is an electronic information resources that can be accessed on the web, on or off campus. User can get the information what he or she want, when it is needed".

Advantages of E-Resources:

Electronic resources are able to meet the users increasing demands and expectations. There are many advantages of e-resources in enhancing and supporting research and education.

* E-Resources can be accessed from any computer on campus or off campus and usually any computer, any time of the day or night, so there is no need to make a trip to the library.
* Electronic information sources can be searched quick and easy often through the complete full text of articles and via online index.

* E-resources are inexpensive; saving can be made over printing costs, distribution costs and extra cost by new features.
* It is beneficial, especially to distance learners or those with limited time to access the library, is their availability from outside the library by dial-up access.
* E-resources have impact on the competence level of an individual and improve the intellectual activity necessary for research. Electronic resources allow users to directly access and use the materials which cannot be found otherwise.
* Information being available 24/7, the ability to work from any location, the information being available all in one place, the diversity of resources provided.
* E-resources are quick to access, save time and keep up-to-date with the current happenings in the specific fields and related areas.
* Inexpensive - savings can be made over printing costs, distribution costs and extra costs by new features.

Disadvantages of E- resources:

* E- Resources provide too much information; there is a need to sort through the vast amounts of information to find what is useful.
* Electronic searching, downloading and printing replace the traditional activities of physically browsing, scanning and photocopying journal articles. The intricate steps to accomplish the previously simple or habitual tasks might frustrate users.
* Difficulty in searching and navigating within a library Web site
* Difficulty in reading computer screen
* Often not included in indexing and abstracting services

ELECTRONIC RESOURCE SELECTION CRITERIA

The criteria used to select electronic resources are the same as for the selection of print and other formats, i.e., the resource must contribute to the Library's mission of providing support for instruction and research for its primary clientele; have an anticipated or demonstrated demand; be published/provided by an author/publisher with a good reputation; contain accurate information; be within the Library's budget, etc.

Types of E-Resources /Online Resources:

The E- resources are basically dived in two major types are

Online E-Resources

E-Books, E-Journals (Full text and Bibliographic), E-Magazine , E-News Papers,

E- Databases Full-text (aggregated), Reference databases (biographies, dictionaries, directories, encyclopedias, etc.), Indexing and abstracting databases, Bibliographic Databases, Numeric and Statistical Databases,

E-Thesis and dissertation (ETD), E-conference proceedings, E- Reports, Subject Gateways, Web Sites, Web OPAC, E-images , E-Maps, E-audio/visual resources, Consortium based e- Resources

Off lines E- Resources

CD-ROMs, Diskettes, Other Portable computer databases etc.

E-Book :

An e-book is also known as electronic book, A book provided in a digital format for checkout or use via an Internet browser, a computer, or another electronic device like an E-Book Reader.

* Project Gutenberg: Project Gutenberg offers over 53,000 free eBooks that can be downloaded to users' PC or portable device.(https://www.gutenberg.org)
* Digital Library of India (DLI): is a digital collection of freely accessible rare books collected from various libraries in India. Digital library of India has currently 550603 ebooks
* Bookboon.com: Bookboon is currently the world's largest online publishing company of eBooks, with over 50 million downloaded eBooks, Bookboon.com provides 1000+ *free eBooks*.
* E-Books Directory : Provide 9488 free e-books in 667 categories (www.e-booksdirectory. com)
* Digital Book Index: It provides links to more than 165,000 full-text digital books from more than 1800 commercial and non-commercial publishers, universities, and various private sites. More than 140,000 of these books, texts, and documents are available free (www.digitalbookindex.com)

E-magazine: E-magazine is a magazine published on the World Wide Web.

E-Newspaper : E-newspaper is a newspaper that exists on the World Wide Web or internet and holds the information electronically. It may exist either separately or as an online version of printed.

E- Journals: Electronic journals also known as e- journals, e-journals and electronic serials, are scholarly journals that can be accessed using computer and communication technology. It means that they are usually published on the web. They are a specialized form of electronic document they provide material for academic research and study.

* J-STOR: JSTOR is often the mostly used e-journals, 2585 Journals , followed by Oxford University Press and then Cambridge University Press.
* Web of science: Access to multidisciplinary information from approximately 8,700 of the most prestigious, high impact research journals in the world.
* OMICS Journals : Access over 400 leading- edge peer reviewed Open Access Journals
* Hindawi :Publishes 434 peer-reviewed, open access journals covering all areas of Science, Technology, and Medicine, as well as several areas of Social Sciences.
* ScienceDirect: ScienceDirect provides subscription-based access to a large database of scientific and medical research. It hosts over 12 million pieces of content from 3,500 academic journals and 34,000 e-books.
* Taylor and Fracis :Taylor & Francis publishes more than 2,400 journals, and approximately 6,500 new books each year with a backlist of over 110,000 specialist titles in 40 subject categories, available in print and digital formats.

E- Databases: An E-Database is an organized collection of information of a particular subject area. The information of an e-database can be researched and retrieved electronically. It can easily be accessed, managed and updated on a daily, weekly, monthly or quarterly basis. E-databases can be classified according to types of contents: full text and bibliographic.

* Full text :A full text database is a database that contains the complete text of books, magazines, newspapers, diagrams and tables.
* Bibliographic database: only contain citation information of an article such as author name, journal title, publication date and page numbers.

Most of the universities provide e-databases to their users to support teaching, research and development. There are many, different types of electronic databases in the world today, including statistical databases, image databases, Indexing and Abstracting Databases.

Reference Databases

* EBSCO (http://search.ebscohost.com/)
* Emerald (http://www.emeraldinsight.com/)
* Scopus (www.scopus.com) (Indexing & Abstracting)
* Kluwer Patent Law (http://www.kluwerpatentlaw.com)
* Kluwer Competition Law (http://www.kluwercompetitionlaw.com)
* JSTOR Archival database: (www.jstor.org)
* Frost and Sullivan (www.frost.com)
* A-Z Databases (https://csulb.libguides.com)

E-Thesis and dissertation Repositories:

An ETD is an electronic document that explains the intellectual works or research of a researcher. Thesis and Dissertation are a rich and unique source of information resources in any University. The ETD Repositories originated to facilitate open access to thesis throughout the academic community. The Directory of Open Access Repository lists 71 ETD repositories in India. Some of the Indian ETD repositories are:

Information & Library Network Centre (INFLIBNET) :

* Shodhganga (http://shodhganga.inflibnet.ac.in/)
* Shodhgangotri (http://shodhgangotri.inflibnet.ac.in/)
* DSpace (http://dspace.inflibnet.ac.in/)

Documentation Research and Training Centre (DRTC):

* Librarian's Digital Library (http://drtc.isibang.ac.in/)

Indira Gandhi National Open University (IGNOU):

* eGyankosh (http://www.egyankosh.ac.in/)

Indian Institute of technology, Delhi (IITD):

* Eprints@IITD (http://eprint.iitd.ac.in/dspace)

Consortium based E- Resources:

A Consortium refers to a "temporary cooperation of a number of powers, companies etc, for a common purpose. It is an association of similar types of Organization / institution who are engaged for producing and servicing the common things for providing services for a specific purpose of its users." Consortia-based subscription to electronic resources provides access to wider number of electronic resources at substantially lower cost. Following consortium are successfully working in India and helping the librarians to expand the number of electronic resources.

* UGC-INFONET Digital Library Consortium
* INDEST-Consortium
* National Knowledge Resource Consortium (NKRC)
* Consortium for E-Resources in Agriculture (CeRA)
* Indian Institute of Management Consortium (IIM)
* ISRO Library Consortium

* UGC-DAE- Consortium for Scientific Research
* Health Science Library and Information Network (HELINET)

These E-resources are becoming very important these days as they are more up-to-date, and can be accessed anywhere, crossing all geographical boundaries. Such electronic resources are very valuable and useful for time-saving while conducting R&D activities.

Conclusion:

Libraries are now increasingly involved in creating and acquiring e-resources due to extra ordinary features of electronic resources. More number of libraries subscribes to e-journals and e-books and few libraries have online database and CD ROM database collection. Most of the libraries have internet facility in their premises. Majority of the institution libraries have OPAC. However in order to meet the ever increasing demand of the user community in digital environment, libraries have to develop a way to manage access to materials available in electronic format.

E-Resources are occupying a significant portion of the global literature .The uses of e- resources are very common among the users. The majority of teachers and research scholars are dependent on e-resources to get desired and relevant information. E-resources offer a range of potential advantages to libraries and end-users: multiple simultaneous access to the same issue, remote access, in-built searching facilities, multi-media capabilities and reduced storage concerns, consortium based library subscriptions to e-journals, e-books and electronic full-text databases are picking up good momentum in India. Electronic resources are more convenient and less intimidating than the library, while they don't replace the library, they are a good supplement; with the uses of e- resources improve quality of research output and academic excellence within shortest time.

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NAAC ACCREDITATED COLLEGES : A REVIEW OF LITERATURE

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Abstract:

The review of literature in this study has specific objectives, aiming to provide a profile of the subject under investigation and identify key studies and research gaps that this study aims to address. The literature review examines the existing published literature on academic libraries, focusing on IT applications, quality services, awareness, collection development of electronic resources, and contemporary issues in the changing media environment. The researcher has reviewed studies from Western and Asian countries, utilizing secondary resources such as Library and Information Science Abstracts (LISA), JCCC-Info net, Emerald, Project Muse, and others. The literature review is organized into five facets: collection development and management, print and electronic resources and services, library services, application of information technology, and ranking parameters and assessment of academic libraries. The review aims to draw key inferences and correlate the literature to the research problem at hand, with a focus on papers published from 2020 onwards.

The review of literature has certain objectives and it is intended to project profile of the subject under study. It also identifies key studies and the gaps and those gaps are to be considered to be filled by this research effort. A review of the related literature reveals the magnitude of the published literature on the study with reference to academic libraries in the context of present investigation. It is observed from the literature survey that there are several in- depth studies conducted on the specific aspects of academic libraries viz IT applications, Quality services and awareness, collection development of electronic information resources and some of the contemporary issues arising out of the changing media environment. The researcher has endeavored to go through some basic studies made in Western countries and Asian countries as well. In order to collect the relevant primary literature on the subject of study the following secondary resources have been used and scanned for the purpose. They are: a) Library and Information Science Abstracts (LISA) (Online Version) c) JCCC-Info net, d) Emerald e) Project Muse and others

An attempt has made in the following paragraphs to review the content of the relevant published literature on the selected topic (from 2000 onwards) and to correlate them to the problem under study. In order to draw key inferences from the papers under review they are grouped into five facets as follows:

* Collection Development and Management in Academic Libraries
* Print and Electronic Information Resources and services in Libraries
* Library services in Academic Libraries
* Application of Information Technology in Academic Libraries
* Ranking parameters and Assessment of Academic libraries

Collection Development and Management in Academic Libraries

The process of collection development revolves around the careful selection and acquisition of materials in order to establish a well-rounded collection that effectively supports the academic programs and research interests of both faculty and students within the institution. Additionally, collection management encompasses

various essential tasks, including the organization, preservation, and provision of access to the collection. This involves activities such as cataloging, classification, and shelving of materials to ensure efficient retrieval and usage. Regular assessment and evaluation of the collection are fundamental to maintaining its relevance and currency. By implementing a systematic approach to collection development and management, academic libraries are able to meet the diverse information needs of the academic community and deliver high-quality library services.

Maurya and Choudhary (2021) emphasize the crucial role of higher education in uplifting society and the world. They argue that it helps individuals develop well-rounded perspectives on various aspects of human life, ultimately making them better individuals. In the context of Indian society, higher education is seen as a means to enhance job opportunities and prospects for marriage. However, the authors also point out that the higher education system in India faces numerous challenges. With a significant number of both public and private institutions, the private sector's involvement has increased post-globalization. To encourage competition among these institutions, ranking systems have been introduced, a practice followed worldwide. Unfortunately, Indian universities fare poorly in global rankings, lagging behind those in developed countries and even in other Asian countries. Notably, universities in the United States, the United Kingdom, Singapore, China, and Japan consistently outperform Indian universities across various parameters.

Pakkan, Sudhakar, Tripathi, & Rao, (2021) higher education institutions must undergo evaluation by ranking agencies to establish their reputation in the field. A position in the rankings is crucial for attracting students, faculty, and successful foreign student exchange programs. The prominence of research plays a vital role in determining an institution's eminence, with the quantity and quality of publications being significant factors. Evaluations primarily focus on quantitative measures like total publications, citations, and the h-index. Institutions need to develop strategic plans to achieve ambitious scientific goals.The study presents innovative analysis using valuable metrics and focuses on top-ranked institutions in India, with the potential for global application. The identified metrics, including fused index metrics, highlight the importance of scholarly output, cited and uncited publications, and different collaborations, impacting an institution's overall research performance.

Singh Joorel, et al (2021) highlights India Rankings i.e. National Institution Ranking Framework (NIRF) started in 2015 and completed its fifth year of yearly exercise in 2020. This article is based on evolutionary study of India Rankings. The study highlights the life cycle of India Rankings including different disciplines and their framework. It also focuses on how the framework is being matured year by year on the basis of availability of data in Institutions. There were several changes / deviations that happened due to non-availability of data or garbage data entered by the Institutes.

Saloi (2021) focuses on evaluating the contributions of central universities in Northeast India to the open access repository of Shodhganga by INFLIBNET. Out of the 10 central universities in the region, 9 have signed an MoU with Shodhganga and are actively contributing their theses and dissertations to the repository. The North Eastern Hill University (NEHU) took the lead by being the first to sign the MoU and has the highest number of contributions with 2,093, ranking first among all the central universities in Northeast India. The Department of Education at NEHU has the highest number of contributions in the Shodhganga repository. English emerged as the most preferred language for the theses and dissertations from these universities.

Bitherman (2022) offers valuable insights into the challenges faced by the library at Ghana Communication Technology University (GCTU) in acquiring resources and provides practical recommendations for improving their collection. The article highlights the significance of having a well-defined collection development policy and suggests strategies like strategic partnerships, resource sharing, and efficient budget allocation. The use of

statistical data and case studies strengthens the credibility of the author's arguments. Overall, this article contributes significantly to the field of library science, particularly in the context of GCTU, by offering relevant and applicable solutions for enhancing library collections facing similar challenges in resource acquisition.

Onyancha,(2022), presents a comprehensive analysis of the collaboration between faculty and librarians in the collection development process, focusing on electronic resources, at the University of Namibia. The article discusses the challenges encountered in acquiring and managing electronic resources and underscores the importance of effective communication and partnership between faculty and librarians. The authors provide practical recommendations to enhance collaboration, such as establishing regular communication channels, involving faculty in collection decisions, and implementing training programs. Overall, this article significantly contributes to understanding the critical role of faculty-librarian cooperation in collection development, specifically regarding electronic resources, and offers valuable insights and recommendations for academic libraries seeking to improve this collaboration.

Mada (2022), offers a valuable comparative analysis of collection development practices in academic libraries within Sokoto and Zamfara states. The study examines the challenges faced by these libraries in acquiring and managing collections, while also identifying key factors that influence their practices. The authors provide insights into the role of collection development policies, budget allocation, and resource sharing. The article emphasizes the importance of collaborative efforts, efficient resource allocation, and professional development to enhance collection development in these academic libraries. Overall, this study contributes to our understanding of collection management practices in Nigerian academic libraries and provides practical recommendations for improving the effectiveness and efficiency of collection development processes in Sokoto and Zamfara states..

Ravi Kumar, and Chakravarthy,(2022). the article provides valuable insights into the unique challenges faced by these libraries in acquiring, organizing, and managing agricultural information resources. The authors effectively highlight the importance of strategic planning, collaboration, and adequate funding for addressing the issues related to information resource development and management. This article contributes significantly to the field of library and information science, offering practical recommendations for enhancing the effectiveness of information resource management in state agricultural university libraries in India.

Frempong-Kore, et al (2022). the article sheds light on the challenges and strategies involved in acquiring and managing collections in academic libraries in Ghana. The authors provide a comprehensive overview of the collection development process, including policy formulation, resource selection, and budget allocation. They also discuss the role of collaboration with faculty and other stakeholders in enhancing the library's collection. This article contributes valuable insights into the context of collection development practices in Ghanaian academic libraries, specifically focusing on the Ghana Communication Technology University Library, and offers practical recommendations for improving collection development strategies in similar institutions.

Print and Electronic Information Resources and services in Libraries

Academic libraries frequently subscribe to electronic resources to support specific academic programs and research areas. However, the inclusion of electronic resources necessitates careful selection, acquisition, and management due to licensing restrictions, specialized software requirements, and the need for regular updates. Libraries also need to ensure the provision of adequate infrastructure and technical support to enable users to effectively utilize these resources.

Yusuf, T. I., Ayeni, F. A., Aminu, M. T., and Mahammoud, S. O. (2020) examine the challenges encountered by students in using electronic and print resources in selected tertiary institutions in Kwara State. The authors identify specific difficulties faced by students in accessing and utilizing these resources for their academic needs. The article highlights issues such as limited access to electronic resources, inadequate infrastructure, lack of digital skills, and limited availability of print resources. These challenges hinder students' ability to effectively engage with information sources and impact their learning outcomes. The study enhances our understanding of the barriers students face in accessing and utilizing information resources, providing insights for interventions and improvements in resource provision, infrastructure, and digital literacy programs in tertiary institutions in Kwara State. Published in the Library Philosophy and Practice (e-journal), this article is a valuable resource for educators, librarians, and policymakers aiming to address the challenges students face in utilizing electronic and print resources..

Balasubramani, & Anbalagan, (2020) focuses on the research productivity of faculty members in state universities of Tamil Nadu. Data from eight state universities, including Alagappa University, Annamalai University, Bharathiar University, Bharathidasan University, Madurai Kamaraj University, Manonmaniam Sundaranar University, Periyar University, and University of Madras, were collected. Research productivity data were obtained from the Web of Science Database. The study reveals that a total of 1949 faculty members in various positions are present in the state universities of Tamil Nadu. Among the universities, Annamalai University has the highest number of faculty members, totaling 654. The study further analyzes the publications from the Web of Science database by the faculty members of Annamalai University, which amounted to 3375 publications. The research also examines the distribution of faculty members across universities and positions, state university publications, h-index, citations, and identifies the top faculty members in each institution.

Jan and Hussain, (2020) examines the current state of government college libraries in Khyber Pakhtunkhwa, Pakistan.The paper highlights the limitations faced by government college libraries in the province, as expressed by the librarians. It suggests that improving the college library system requires sufficient funding, regular training programs, the introduction of Library Science education, and the adoption of emerging technologies. The paper emphasizes the need for the Pakistan Library Association, the Higher Education Department of the Government of Khyber Pakhtunkhwa, library experts, and policy makers to play an active role in addressing these challenges in a timely manner.

Varghese and Thirunavukkarasu, (2020) In this paper an effort has been made to assess the quality of information resources and services offered by three autonomous colleges of Thrissur District (Kerala) using the three dimensions of LibQUAL+ tool, i.e., Effect of Service, Information Control, and Library as a Place. LibQUAL+ is a tool for measuring library users perceptions of service quality, and it identifies the gap among minimum, desired and perceived expectations of service.

Naveen and Kannappannavar,(2020) highlights Libraries have been the integral &vital part of the Higher Education system which extends support in teaching-learning &fulfillment of objectives and mission of the educational institutions they are part of. NAAC- the National Assessment and Accreditation Council is an autonomous body established by UGC-University Grants Commission of India to assess and accredit institutions of higher education in the country. The positions of libraries are good but after the NAAC assessment there is a development in libraries facilities and infrastructure in libraries. In this context, the study recommends that Government first grade colleges need to get 12(f) &12(B) recognition by the UGC and should undergo NAAC accreditation. College libraries need to develop a model library to satisfy the NAAC assessment process and prove their importance in the colleges.

Yar'adua, K. I. (2021). presents a comprehensive overview of the current state of electronic information

resources in academic libraries in Katsina State, discussing challenges and opportunities for their effective utilization. The author advocates for increased investment in electronic resources, infrastructure, and digital literacy programs to maximize the impact of these resources on national development. Overall, the article provides valuable insights into the role of electronic information resources in academic libraries and their contribution to the broader goals of national development in Katsina State, Nigeria.

Singh and Kumar (2022), examines the usage and accessibility of these resources, aiming to assess their effectiveness in meeting the needs of users. The study provides valuable insights into the current state of electronic resources, identifying strengths and areas for improvement. It addresses important aspects such as resource availability, user satisfaction, and the impact of these resources on research and learning outcomes. The article serves as a valuable resource for librarians, educators, and researchers in the field of technical education, offering recommendations for enhancing the electronic resource infrastructure in technical university libraries.

Bhardwaj and Sharma (2022) article contributes to the scholarly discourse by providing valuable insights into the trends, challenges, and benefits associated with electronic information resources. The findings presented in the article are of significant relevance to librarians, researchers, and practitioners in the field of library and information science. The article serves as a valuable resource, helping readers gain a comprehensive understanding of the current landscape of electronic resources in libraries and informing future improvements and developments in this area.

Library Services in Academic Libraries

Library Services and its Awareness in Academic Libraries." This indicates their focused analysis or review of this particular aspect within the broader field of study, suggesting its relevance and interest to their research question. It also implies their intent to explore the correlation between the quality of services provided by libraries and the level of awareness or understanding among their customers regarding these services.

Udem, Ikenwe, and Ugwuamoke (2020) present a case study that examines the perception of undergraduates regarding library service quality and value in Southeast Nigeria in the 21st century. Through empirical research, the authors explore students' perspectives on various aspects of library services, including resources, facilities, staff, and technology. This article contributes to the understanding of user perceptions and expectations in library settings and serves as a valuable resource for library professionals and researchers in the field. The availability of the article through the Library Philosophy and Practice e-journal ensures its accessibility to a wide audience.

Sarmah and Singh (2021) present a comprehensive review on the assessment of service quality in libraries in higher education settings. This article serves as a valuable resource for researchers, librarians, and administrators seeking to understand and improve service quality in higher education libraries. The availability of the article through the Library Philosophy and Practice e-journal ensures its accessibility to a wide audience.

Kotur and Mulimani (2022) investigate the awareness and utilization of digital resources and services among students in government first-grade college libraries of Dharwad District. The authors examine the level of familiarity and engagement with digital resources and services, as well as the factors influencing their usage. This article contributes to the understanding of digital literacy and user behavior in library settings and serves as a valuable resource for librarians, educators, and policymakers seeking to enhance digital resource utilization among college students.

Application of Information Technology in Academic Libraries

Academic libraries also employ social media, mobile applications, and online platforms to engage users, promote services, and provide personalized support. Information technology revolutionizes academic libraries, enhancing their user-friendliness, efficiency, and effectiveness in providing high-quality information resources

and services to support research, teaching, and learning.

Ambika and Ganesan (2020) surveyed twenty-six NAAC accredited engineering college websites and based on the contents available NHCE and RVCE were ranked as excellent. While exploring they found special features such as AIT was providing services for differently-abled users, and NHCE had a calendar of library events and had a notice board on its website. They suggested developing the website to make it more innovative and interactive and also to educate the users about its importance.

Bhat, Prasad, & Rao, (2021) suggested to provide a separate digital library with the adequate numbe of computers with high speed internet connectivity, Wi-Fi, access to more number of e-resources including CDs/DVDs and online journals to the users in the library. The library needs to explore innovative methods by making use of technology in reaching out to users. College libraries are integral part of higher education institutions and they play an important role in raising the standard of education. The study was conducted at Sri JCBM College, Sringeri to assess users' awareness and utilization of library resources and services. The data were collected using a structured questionnaire and personal visits to the said college library. Convenience sampling technique was used to collect the data.

Kumar, Singh, & Siwach, (2021) explains National Institutional Ranking Framework was launched on 29 September 2015 by the Ministry of Human Resource Development, Government of India to rank the academic &research institutions across the country. The average library expenditure of top-10 universities was 9.45 crore per annum. It was also found that library expenditure has a positive correlation with RP and the universities with higher research productivity also have a more outstanding quality of publication in terms of citations.

Dadhe & Kuthe, (2021) find out the sudden outbreak of the coronavirus and the consequent precautionary measures has compelled education systems worldwide to find alternatives to physical teaching-learning process. The findings revealed that before the COVID-19 pandemic, Information and Communication Technology was used infrequently, however after the outbreak of the coronavirus following the shutdown of educational institutions, the situation changed dramatically and majority of students started using the technology on a daily basis to cope with need of the hour. The unprecedented situation brought numerous challenges to the fore and technological issues and limitations among others were frequently experienced by the students. Based on the findings suggestions are provided to enhance the efficacy and accessibility of technology supported education post COVID-19 pandemic.

Chakraborty, Upadhyay, & Upadhyay, (2021) reveals that Institutions ranking are getting more attention nowadays, as it shows institutions' status globally and influences students' decisions in selecting Institutions for admissions. Open access publications in scholarly research communication are important, but its significance in institutions' ranking is yet to explore. In this study, the authors tried to demonstrate and compare open access and commercial publication documents of the top twenty institutions overall category as per the National Institutional Ranking Framework (NIRF) 2020 report. This study may help ranking agencies evaluate approaches or a new policy for parameters weighted and researchers interested in research in this field.

Ambika, & Ganesan, (2021) discusses library is one of the fastest growing sectors in the modern education system. University libraries in the present era are providing high quality digital information to the user community. Most of the university libraries have either their own library website or integrated it into the home page of the parent organization. They are the channels that link library patrons with its resources and services and provide unique opportunities for the users to judge its relevance to them. Digital libraries have integrated all the resources into its website and the majority of the services can be accessed online. They are ranked based on the assessment of the result and a few suggestions are recommended to make the websites

more users friendly. Analysis revealed that variations are found in the websites and the librarians have to put more efforts to standardize it on par with other international library websites. The study will be more useful to the librarians, website designers and policy makers in improving their websites

Ghule (2022) presents a case study on the use of information and communication technology (ICT) in college library services. The author examines the implementation and impact of ICT tools and services in enhancing library operations, information retrieval, and user experience. The findings highlight the positive effects of ICT on service efficiency, accessibility of resources, and user satisfaction. This article serves as a valuable resource for librarians, educators, and researchers interested in understanding and maximizing the potential of ICT in college library settings. The availability of the article through the Journal of Research in Humanities and Social Science ensures its accessibility to a wide audience.

Durge (2022) explores the utilization of Information Communication Technology (ICT) in library services. The author examines the various ways in which ICT is employed to enhance and streamline library operations, resource management, and user experience. The article delves into the benefits and challenges associated with integrating ICT tools and services, highlighting the positive impact they have on information retrieval, accessibility, and service efficiency. Durge's research contributes to the understanding of the role of ICT in modern library services and provides valuable insights for librarians, researchers, and practitioners in the field. This article, available through the International Journal of Creative Research Thoughts (IJCRT), offers a comprehensive overview of the use of ICT in library services and contributes to the growing body of knowledge in the field.

Walia and Chand (2022) examine the uses and purposes of information and communication technology (ICT) and its impact on women library professionals in Bhopal. The authors explore the various ways in which ICT is utilized by women librarians in their professional roles and the effects it has on their work. The study highlights the positive impact of ICT on improving access to information, enhancing communication, and facilitating efficient library operations. Additionally, the authors discuss the challenges faced by women library professionals in utilizing ICT and suggest strategies for overcoming them. This article provides valuable insights into the role of ICT in the library profession and its specific impact on women professionals. It is a valuable resource for researchers, practitioners, and policymakers in the field of library science and technology.

Jakati and Kumar (2022) explore the impact of the Internet of Things (IoT) on academic libraries and their users. The authors examine how IoT technologies, such as smart sensors, RFID tags, and data analytics, are being employed to enhance library operations, improve resource management, and provide personalized services to users. The study discusses the benefits and challenges associated with the integration of IoT in academic libraries and highlights the positive effects it has on information access, user experience, and efficiency. The article provides valuable insights into the transformative potential of IoT in the library environment and offers guidance for librarians and researchers interested in leveraging IoT technologies to enhance library services. The availability of the article through the International Journal of Multidisciplinary Research and Development ensures its accessibility to a wide audience.

Abba and Saidu (2022) examine the library implications of the increasing power of information technology in transforming research practices in the 21st century. The authors explore how information technology has revolutionized the means of conducting research and its impact on libraries. The article highlights the need for libraries to embrace and leverage information technology to enhance their services, support researchers, and provide efficient access to scholarly information. It serves as a valuable resource for librarians, researchers, and professionals interested in understanding the evolving role of libraries in the digital age.

In the article by **Sherpa (2022),** the author explores the application of information and communication technology

(ICT) in the fields of library and education. The article discusses the various ways in which ICT has transformed library services and educational practices. It examines the impact of ICT on resource management, information retrieval, digital libraries, and online learning platforms. The author emphasizes the importance of incorporating ICT tools and strategies in libraries and educational institutions to enhance access to information, improve learning outcomes, and facilitate knowledge sharing. This article provides valuable insights into the integration of ICT in the library and education sectors, making it a relevant resource for researchers, librarians, educators, and practitioners interested in leveraging technology for information and educational purposes. The availability of the article in the Journal of Emerging Technologies and Innovative Research (JETIR) ensures its accessibility to a wide range of readers.

Ranking Parameters and Assessment of Academic Libraries

The researcher's analysis or review is centered around this particular subtopic within the broader field of study, indicating their interest in and recognition of its relevance to their research question. The researcher aims to explore the evaluation, measurement, and assessment of college libraries, potentially with a focus on identifying strengths, weaknesses, and opportunities for improvement.

Soltani and Nikou (2020) aimed to assess academic library services from the perspectives of both international and domestic students. Through their research, they explored the experiences, expectations, and satisfaction levels of students regarding various library services. The study provided valuable insights into the effectiveness of library resources, facilities, staff assistance, and overall service quality. The findings highlighted the importance of tailoring library services to meet the diverse needs of international and domestic students, addressing areas for improvement, and enhancing the overall student experience. This research contributes to the understanding of how academic libraries can better serve their student population and improve their services based on students' perspectives.

Kumar, Balaji, and Monika (2020) conducted an empirical analysis to explore the relationship between the national ranking of higher education institutions and the funding of academic libraries. The study aimed to identify the correlates and potential impact of funding on the ranking of academic libraries. The findings of the analysis shed light on the intricate relationship between funding and ranking, providing valuable insights for policymakers and library administrators. The article contributes to the understanding of the factors influencing the performance and status of academic libraries in relation to the broader context of higher education institutions. The research findings serve as a valuable resource for decision-making and strategic planning in the field of academic librarianship.

Kabo's (2021) explores the relationship between university rankings and resource sharing among academic libraries. The study investigates whether higher-ranked universities engage in more extensive resource sharing practices compared to lower-ranked institutions. Through empirical analysis and examination of data, Kabo provides insights into the associations and implications of university rankings on resource sharing within the academic library context. The findings contribute to the understanding of how rankings influence collaborative efforts and resource allocation among libraries, highlighting the significance of fostering effective resource sharing networks to support academic institutions' goals and enhance overall research and educational outcomes.

Kumar, Pandey, and Gupta (2022) conducted a study to examine the relationship between research publications and the return on library investment in NIRF ranking university libraries in India. The article explores the importance of research output and its impact on the value of library investments. The findings shed light on how libraries can contribute to the research performance of universities and the overall scholarly output. The study provides valuable insights for library management and decision-makers in optimizing resource allocation and strategic planning to enhance research productivity in academic libraries.

The article by **Sahoo and Panigrahi (2022**) examines the relevancy ranking assessment of a discovery tool. The study focuses on evaluating the effectiveness of the discovery tool in providing relevant search results. Through a systematic analysis, the authors assess the ranking algorithm of the tool and its impact on the search experience. The findings contribute to the understanding of information retrieval and the enhancement of discovery systems in facilitating efficient and accurate access to information. The article provides valuable insights for researchers, practitioners, and developers in the field of information science and technology.

INFERENCES DRAWN FROM THE REVIEW OF LITERATURE

Based on the observations from the literature and review, the following inferences are drawn.

1. The relevant literature has been discussed and reviewed in five headings viz. Collection Development and Management in Academic Libraries, Electronic Information Resources in Libraries, Application of Information Technology in Academic Libraries, Quality Services and its Awareness, Assessment of College libraries
2. The authors Kalimuthu, Jayabal, Baby, Anbalagan, Tamizhchelvan, Ansari, Jamal, Ali Tunga, Naseer are the pioneers in the field of accreditation and have enormously contributed to the literature.
3. The results of the various studies also reveal that the case studies especially under graduation and Post-graduation level are undergoing NAAC accreditation which is must for the colleges and universities.
4. The NAAC accreditation in colleges particularly in RCU affiliated colleges that to in Indian universities / institutions / organizations is very meagre.
5. The study also reveals the fact that the use and adoption of the NAAC accreditation are gaining momentum in Indian universities and colleges.
6. The review of literature also indicates that the NAAC is being used not only for colleges but also in Universities and it can be mandatory for academic purposes.
7. Few studies emphasize on the use of NAAC accreditation in colleges to provide possible services to the students.

SUMMING UP

Though abundant material has been composed on the subject of accreditation very little has been distributed with regards to significance. While the term accreditation ' may not be normal, perceived or appropriate in some random setting, the capacity to adequately utilize information, comprising finding, assessing, putting away, recovering, conveying, is imperative to the achievement of any association. The development and significance of information and interchanges innovations and assets, combined with the requirement for staff to be information educated, gives an exceptional chance to custodians to demonstrate their worth by assuming a larger part in their associations. The connected writing uncovers that no such examinations in these lines have been attempted. Henceforth, investigating the circumstance, the specialist has embraced the current review. The third chapter presents an outline of the Growth and Development of NAAC Accredited College Libraries.

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Libraries in Career Guidance: A Role and responsibilities of College Librarian

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Abstract

Education and career guidance are based on information; In fact, it frequently takes precedence over other guidance functions. The library is the center of an academic institution, where staff and students are energized and empowered by knowledge. Libraries should support all fields of study, and by providing users with information about careers, they can help them set goals for their lives. Students and recent graduates can get assistance from a high-quality career service in discovering their interests and skills and landing the job of their dreams.

Introduction

Education is a useful tool for bringing about social change and societal renaissance. The largest single activity in the world involving billions of students, educators, and supporters is education. The growth of education is crucial to the development of necessities, priorities, and excellent principles. The current trend in education is to cultivate a thoughtful individual who should be self-reliant in all aspects of life. The goal is to have young people who are creative and skilled enough to meet the needs of the current job market and pave the way for the future with their ideas and inventions. This kind of potential can only be created by introducing them to the channels that guide him in the right directions for his mental development. This is possible through extensive reading, which aids in the development of independent judgment. This, in turn, can be accomplished by using a library's vast collection of books, periodicals, and other materials to gain knowledge. Only by bringing to light the hidden knowledge, talent, and skills of library users could education spread. The library is the ideal medium for completing this task because it nurtures human talent, efficiency, and experience.

"In the library, each student will have the freedom to grow at his own speed and along his own lines, to his own fullness, with the help of books just suited to him under the guidance of the teacher and the librarian," Ranganathan (1965) explains succinctly.

Academic librarianship is undergoing transformation. The faces across the desk may be the most significant change, despite the fact that new technologies, information sources, and management practices have received a lot of attention. Higher education students are becoming more diverse, their needs and demands are changing, and their personal backgrounds and values are changing. Race, national origin, religion, gender, age, physical and mental ability, and socioeconomic status are all included in today's multiculturalism. The idea of career guidance is not new; its origins can be found in ancient times. However, the United States and other developed nations are the origins of career guidance in its current form. Information, guidance, and counseling services for making choices regarding education, training, and employment make up career guidance. The purpose of higher education institutions' career guidance and counseling programs is to help students become more informed about their educational and career options. By teaching self-awareness, decision-making and planning skills, personality development, and other skills, it also helps students understand their strengths and weaknesses. The need for career guidance services in college libraries is growing at the moment.

From the school level, many developed nations have well-developed career guidance plans in their educational system. This kind of planning is not done well in India. The majority of the career information needs of students in higher education institutions are met by informal and limited formal means by libraries. As a result, this sector must be planned and organized.

The manner in which graduates and other adults are provided with career guidance has been influenced by information and communication technology. Western nations recognize the importance of career guidance and see it as a crucial tool for personal development and for connecting people with jobs based on their interests and abilities. As a result, many research projects are being conducted in this field. Software packages like SIGI3, SIGI PLUS, DISCOVER, and others are used to offer career advice.

A good career resource center like a library can be proud of its users' growth and well-being. The staff of the library should work hard and change as the times change to achieve this. In order for graduates to be equipped with the knowledge necessary to seek, evaluate, and select career information, as well as to make better decisions about the quality of their future lives, career information literacy must be provided.

Career development: an overview

Career development helps people concentrate on their goals, interests, skills, and qualifications. It enables them to relate their knowledge of themselves to their comprehension of the educational and labor market systems. The goal of comprehensive career development is to teach people how to plan and choose between work and school. Career development is important in higher education because it helps students understand their career goals, stick to their academic goals, gain work experience that is related to their career, find employment in their chosen fields, and inspire an interest in lifelong learning. The majority of students can benefit from superior guidance and information to make sound career choices after graduation. High-quality career guidance is more important than ever before because of the massive structural changes in the global workplace.

Guidance for Careers in Higher Education

Educators are always looking for better ways to help students achieve academic and technical skills; helping them understand who they are and where they should go in life; to satisfying their mental, social, and emotional needs. The ever-evolving nature of modern society necessitates a flexible approach to lifelong learning that keeps skills and knowledge up to date. As a result of the increased variety of jobs and skills required in modern society and a greater awareness of the wide range of interests and abilities among individuals, the requirement for a coordinated and comprehensive career guidance program has increased. A person must have self-knowledge in order to comprehend his or her own abilities, aptitudes, intelligence, and personality in order to choose his or her own path for the individual's overall development of personality. The majority of individuals find themselves at a crossroads following graduation. One will have a better chance of getting a good job and being successful in life if they choose the right courses from the start. As a result, higher education institutions need to provide career guidance. Many levels of the educational and professional ladder may see significant reductions in waste as a result of systematic career guidance and information services.

The University Grant Commission (UGC) in India has approved a plethora of value-added, career-focused diploma programs offered by colleges and universities. In order to meet the nation's employment requirements, higher education institutions welcomed the UGC's project and began numerous vocational courses. Colleges establish a Career Guidance Cell to provide students with career advice. The guidance cell assists students in clarifying their career goals, comprehending the workplace, and developing skills for career management; It also offers individual guidance, advice, or counseling to help with decisions about initial courses of study, vocational training, further education, and job selection, among other things.

Career guidance: The role of libraries

Libraries can have a significant impact on career guidance. The library is known as the "heart of education" in formal education. In higher education, the library system is committed to providing students with an environment for independent learning. To share the knowledge on their shelves, libraries have moved from book stores to private residences. As a result, it can be deduced that an effective library system is necessaryfor the success of career counseling in educational institutions. As a result, career information must be disseminated and the library system must be strengthened by the education system.

With their expertise in knowledge organization and dissemination, librarians have the potential to inspire and support young people to follow their passions and aspirations. In developing nations like India, college librarians can have a significant impact on the career development of young people who come to the library for advice and support with their studies and to prepare for future career opportunities.

Development of College Libraries

The libraries of educational establishments are said to be their center. It is accurate when academy education succeeds in cultivating knowledge rather than merely awarding certificates. It is now in doubt whether the majority of colleges are effectively educating their students and cultivating knowledge. The role that libraries play in creating an environment that is conducive to study has emerged as a major issue. It has been noticed that library development in the direction of efficient services was not taken into account as much as it should have.

Role of University Grants Commission (UGC)

Since decades ago, institutions have collaborated with the UGC to share library resources. The traditional primary objective of establishing a library consortium is to share members' physical resources, such as books and periodicals. However, with the introduction of new information technology, the mode of cooperation has changed from a print-based environment to a digital one. Web-based full-text online resources proliferated as a result of the Internet's rise as a new media for information delivery, particularly the World Wide Web (WWW). The Internet is being utilized by an increasing number of publishers worldwide to offer their publications to the international scientific community. The technology provides an unparalleled medium for faster and more cost-effective information dissemination. As heavy users of electronic journals and online databases, libraries and information centers stand to gain significantly from this technology-driven revolution. Libraries are being put under ever-increasing pressure to acquire or access web-based online full-text search services, CD-ROM products, and online databases as a result of the increasing availability of IT-based electronic information products. In order for the libraries to get the most out of their limited financial resources, which are, at best, static or decreasing, they need to think of new ways to divide up global resources among them. The creation of "shared subscription" or "consortia-based subscription" to journals all over the world is the result of the convergence of these developments. On the one hand, shared subscription to electronic resources or consortia-based subscription through consortia of libraries allows for successful deployment and desktop access to electronic resources at highly discounted subscription rates. On the other hand, it meets the increasing pressures of decreasing budgets, rising user demand, and the rising cost of journals.

The Principles of Career Guidance Handbook on Career Counseling, which was published by UNESCO in 2002, made a number of assumptions about how career counseling works. The following are examples of these:

1. People can and should choose their careers for the rest of their lives. Individuals' social, economic, and cultural contexts influence their level of choice freedom.
2. Regardless of sex, socioeconomic status, religion, disability, sexual orientation, age, or cultural background, everyone should have access to opportunities and choices.

3. Throughout their lives, people are naturally presented with career options.
4. Over the course of their lives, people typically take on a diverse array of work responsibilities. Work for these roles can be paid or unpaid.
5. People can get help from career counselors in finding, pursuing, and achieving their career goals.
6. There are basically four parts to career counseling: a) assisting individuals in gaining a greater self-awareness in areas such as interests, values, abilities, and personality style; b) connecting students to resources so that they can become more knowledgeable about jobs and occupations; c) involving students in the decision-making process so that they can choose a career path that is well suited to their own interests, values, abilities, and personality style; and d) assisting individuals in becoming active managers of their career paths (including managing career transitions and
7. Personal preferences, such as interests, or external influences, such as trends in the labor market or parental expectations, both play a role in determining why people choose particular occupations.
8. Making decisions about one's career isn't something that happens once in a person's life; rather, it's a process that can happen at any age.
9. According to UNESCO's 2002 report, "all forms of work are valuable and contribute to the success and well-being of a society."

In educational establishments, a large number of guidance services may be established. The following are significant guidance services:

The College Librarian's Role in Career Guidance:

- Individual inventory service
- Educational information service
- Occupational information service
- Counseling service • Placement service
- Follow-up service

Role of College Librarian in Career Guidance

According to Wiley and Andrew (1955), in order for the librarian to effectively carry out this function within the guidance program, they should:

1. Introduce him to the guidance program's offerings.
2. Protect and archive unbound educational and occupational data.
3. Keep bound materials on an "occupational shelf" at all times.
4. Make the library into a laboratory for students looking for resources to help them.
5. Inform teachers and counselors about new guidance materials arriving at the library.
6. Make the library a resource for learning and career advancement by working with teachers, counselors, and administrators.

Conclusion

As societies prepare to face the challenges posed by the shift to knowledge-based economies, the provision of career information and guidance throughout a citizen's life has become a global issue of great importance. Because guidance is regarded as a crucial tool for facilitating personal development and employment in relation to the requirement for a constant engagement with learning and training, Western nations are conducting a great deal of research on career guidance. Education and career guidance are

based on information; In fact, it frequently takes precedence over other guidance functions. From the client's perspective, information should help them learn more about themselves, the job market, and opportunities for education and training. As an information organizer and provider, a librarian can certainly contribute significantly to college career guidance programs.

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Transformation of Libraries from Digital to QR Code Technology

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Abstract

Quick Response (QR) code is one such technology which can cater to the user demand of providing access to resources through mobile. The main objective of this article to review the concept of Quick Response Code (QR code) and describe the practice of reading and generating QR codes. Research paper attempt to the basic concept, structure, technological pros and cons of the QR code. The literature is filled with potential uses for Quick Response (QR) codes in the library practices like e-resource management, library orientation, OPAC, Linking to electronic resources from within the library, information about library space, the library catalogue, etc. Paper also attempts to identify the example set by different library to use successfully QR code as a comprehensive tool for the library system.

Keywords: Academic Libraries, QR Codes, Information Services, Information Technology

Introduction

QR Code means Quick Response Code, which was invented by Denso Wave in 1994, a subsidiary of Toyota Japanese corporation. It is the trademark for the type of matrix barcode. QR code is defined by the ISO/IEC 18004 industrial standard. Normal barcodes had information stored in horizontal dimension only and were limited in the amount of data they could contain. Denso Wave developed this QR code as a way of holding information in both horizontal and vertical dimensions; hence a QR code is able to accumulate 10 times more information than a normal barcode. Statistically, QR codes are capable of symbolizing same amount of data in approximately one tenth of the space of a traditional barcode. Information such as URL, SMS, contact information and plain text and videos can also be embodied into this two dimensional matrix.

Structure of QR Code

QR code looks like a small box which includes a random series of black and white pixels. Even though QR code is a tiny symbol. Currently, various versions of QR code (from Version 1 to Version 40) are freely available along with decoding applications. QR code consist of different areas that are reserved for specific purposes version 1 does not contain all these areas. Therefore, we refer to version 2 of QR code.

1. Finder Pattern: The finder pattern consists of three identical structures that are located in all corners of the QR code except from the bottom right one. Each pattern is based on a 3×3 matrix of black modules surrounded by white modules that are again surrounded by black modules. These patterns facilitate the decoder software to identify the QR code and determine the correct orientation.
2. Separators: The white separators have a width of one pixel and improve the recognizability of the finder patters as they separate them from the actual data.
3. Timing Pattern: Alternating black and white modules in the timing pattern enable the decoder software determine the width of a single module.
4. Alignment Patterns: Alignment Patterns support the decoder software in compensating for moderate i mage distortions. With growing size of the code, more alignment patterns are added.

5. Format Information: Format Information section consists of 15 bits next to the separators and stores information about the error correction level of the QR code and the chosen masking pattern.
6. Data: Data is converted into a bit stream and then stored in 8 bit parts (called code words) in the data section.
7. Error Correction: Similar to data codes, error correction codes are stored in 8 bit long code words in the error correction section.
8. Remainder Bits: Consists of empty bits, if data and error correction bits can not be divided into 8 bit code words without remainder.

The surface QR code has to be surrounded by Quiet Zone, an area shaded as white modules, to increase code recognition by the decoder software. The capacity of a QR code depends on several factors, such as the version of the code that defines its size, the chosen error correction level and the type of encoded data influence capacity.

Pros and Cons

At present, QR code have already overtaken the popularity of Universal Product Code (UPC)barcode in many areas because of several advantages like increase in data storage and Kanji-Kana character set capacity, reduced size, dirt and damage resistant, high speed reading, small print out size, 360 degree reading and etc. Combined with the diversity and extendibility offered, makes the use of QR code more appealing than that of the classical barcodes, as QR code also ties the physical to digital world. However, using QR codes is also not free from disadvantages of any new inventions. Mobile camera and internet connections are the prerequisites for using QR codes. Lack of awareness about use of QR codes among consumers and Lack of offline ability to authenticate source/sponsor of code is another problem.

QR Code Function

When customer scan QR code, they immediately redirected to one the following function.

* A website URL: where the detail information is available.
* Wi-Fi access point credentials to initiate the connection from your smartphone
* An email or a text-message ready to be sent
* A business card which can be directly stored in your smartphone's contact list.
* Any events that can be automatically added to your smartphone calendar
* Phone numbers recognized by your smartphone for dialling
* Any simple text to display
* Specifications of particular products or personal information's.

Use of QR Code

QR code can be used for anytime-anything. It will direct its scanner to a destination of the creator's choice, by breaking out of the mundane banal crowd and engaging in a artistic manner. QR codes are helpful for each customers and vender. For example, a vendor saves advertising costs by distributing a QR code to their web site or universal resource locator. A client will scan this QR code and this enables them to store the data for future reference. The large variety of languages in Republic of India will create problem for vernacular speakers once they move to another state which usually contains a different tongue. Once QR codes is scanned it offers language choices to the customers so as to avail the service in a language of their comfort.

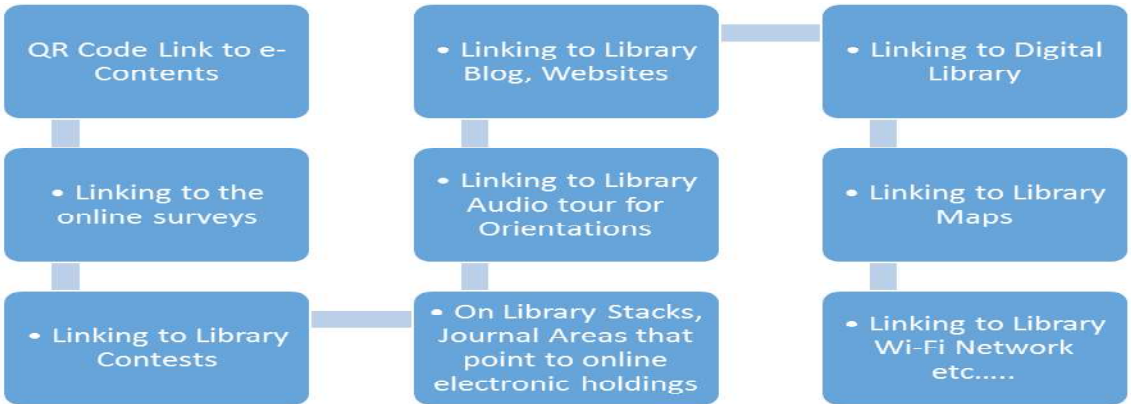
Why use QR codes in Libraries? (General Benefits)

Though, the QR code technology was invented in 1994, the actual application beyond the manufacturing sector has started much later. It took some time for the people in other sectors to realize the benefits. Some of the benefits applicable to all segments are listed here;

* It's easy to add tools to provide a virtual experience in the library.
* Offers more content at the point of need.
* Interactivity with the medium i.e., smartphones.
* It is easy to acquire and implement as many generators are available online and simple to use,
* Just in put brief information, generate code and copy and paste it on the item.
* There is hardly any cost involved.
* QR code is well designed, with a higher capacity than other matrix codes and with error correction capabilities.
* Does not need any extra equipment. All that is required is using of already available technologies i.e. computer and printer.
* The inventor Denso-Wave holds no patent rights on the QR codes, so no royalties need to be paid.
* It does not need extra staff as it is not labor intensive
* Easy to modify and has error correction capability

QR Code Use in the Library

Areas of application in Libraries



The selected review of recent literature presented in the previous section gives us an idea that the application of QR codes in libraries for various purposes is gaining momentum and wider acceptance. The literature also presents specific areas/tasks/ purposes for which QR code is used in our libraries.

Some of the areas where QR codes are often used are listed here:

* Exhibitions of resources or materials: Most of the libraries used QR codes on the list of reading materials for reaching the end users through the exhibition of resources. It's a part of strategy for promoting collection and library services.
* Library stacks, near journals to point to online holdings: Through using QR codes, users can get access to holding information without any waste of time while retrieving through a mobile device.
* Library audio/visual collection tours: Many libraries are using the QR code for promoting their audio/ visual collection.

* Catalogues and bibliographic records: QR code can be used for catalog records or bibliographic information of the book(s), and other reading materials.
* Contact information: To disseminate the details of contact information about faculties/staff and directory pages.
* Audio/visual collections: Linking to the online videos/DVDs in the form of summary or trailers which helps the user about the particular resources.
* Website links: Many a time user community needs the details about author's interviews, link to their sites. To provide a quick link and retrieve information libraries offer QR codes.
* Tutorials and e-resources: QR codes for tutorials of print and electronic resources which will help users to understand as to how to use these resources.
* Other links: Link to useful URLs, Email, SMS, phone numbers, text, images and PDF files, etc.

Observations, experiences and lessons learnt

Here are few observations, experiences and lessons learnt through implementing of this technology;

* We did not spend any extra money to implement this technology but added it to our workflow.
* It also did not need much technical expertise, nor did take much time to learn as to how to both generating the code and reading technology works.
* The process of application of this technology helped us understand and identify the core areas of work where users expect the ease of access to library resources.
* This process also helped to identify where repetitive work was done and resources are wasted by printing, downloading, and sharing certain documents with users.
* As most users, especially students, use Android based smart phones, we could meet the needs of large number of users.
* Most users found it is much easier to use.
* By making this technology as part of our workflow, we have been able to reach out too many users and enhance the usage of the library.
* The authors also have observed that most visitors who come to the campus for participating in the workshops, conferences, courses etc. find such codes useful as they are able to search many of our resources lists and instantly access resources.

·Certainly, the use of such a small but essential technology saves a lot of time for both users and library staff.

·Experience gained through using such technology boosts the confidence of staff and also explores other newer tools which mainly developed for other areas, but could easily adapt to the library wok environment.

With these experiences, library has already identified some new and more areas to apply QR Codes and are in the process of implementation.

Conclusion

QR Code is an innovative technology for the libraries helps to the information professional to integrate bidimensional code composed of black and white pixels into a squared matrix, containing information to be enjoyed with the help of smart phones or similar devices. This research paper analyse structures of QR code and process how it is work? A library user can easily get information regarding library collection, e-resource, library web site, Web-OPAC in a user-friendly environment. Number of libraries adopted this technological code to spread information worldwide. Library information professional using this technology without any dependency. Many QR code generator also available to generate QR Code for library collection, architecture design of library building, e-books, visiting cards, bookmarks, user manual or blog.

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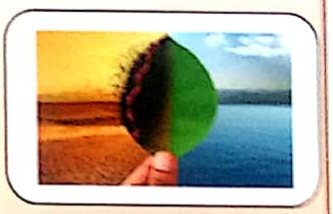

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Texture and Fertility Status of Soils in the environs of Malaprabha River Basin, Karnataka State, India

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Abstract:

Soil, water, air, and plants are vital natural resources that help to produce food and fiber for human beings. They also maintain the ecosystem on which all life on Earth ultimately depends. Soil serves as a medium for plant growth; a sink for heat, water, and chemicals; a filter for water; and a biological medium for the breakdown of wastes. Soil interacts intimately with water, air and plants and acts as a damper to fluctuations in the environment. Soil mediates many of the ecological processes that control water and air quality and that promote plant growth. However over the time soil resources have been continuously degraded and depleted. The degradation of soil resources has long been recognized as a primary threat to fruitful and sustainable agriculture. Moreover ongoing climatic changes have added complexities to the challenges faced by the farmers and policy makers in developing nations particularly in India. Hence, the present study is an attempt to make an analysis of texture and fertility status of soils which are necessary for the growth of green plants in the environs of Malaprabha River Basin. In the absence of any one of these elements, a plant fails to complete its life cycle. The disorder, of course, can be corrected by the addition of that elements and to suggest appropriate strategies in the light of prevailing government policies and programmes to improve the fertility status of soils in the study area.

Key Words: natural resources, texture, soil fertility, degradation and agriculture development

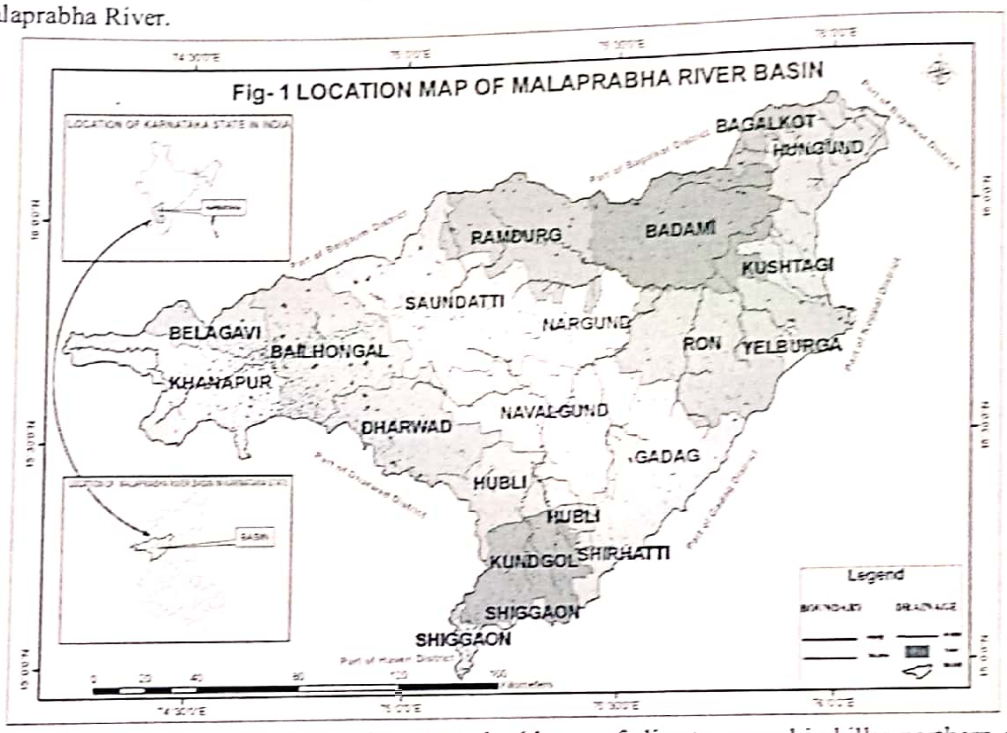
Introduction:

Soils constitute the most important basic resources for agriculture (Bennet, 1955). It is a dynamic living entity and is a medium of plant growth and a product of the interaction of the biosphere, hydrosphere and atmosphere with the lithosphere. It is a three-dimensional body that has depth, length and breadth, and as such cannot be fully comprehended from the surface. Besides climatic considerations, the texture and depth of the soil, its ingredients, salinity and alkalinity status, drainage conditions and the position of ground water table all go to determine the crops which would be suitable for an area and the mode and extent of irrigation to be applied to them (Government of India, 1976). The information of soil profile of a region including its morphological, physical, mechanical and chemical properties and processes of formation is necessary for simulating the hydrological character and also understanding its agricultural land use and production dynamics of a region. Soils undergo changes rapidly in their physical, chemical and biological properties. Addition of inputs such as chemical fertilizers, organic manures, insecticides and pesticides alter the properties of soil. Hence, the present study is an attempt to make an analysis of texture and fertility status of soils, which are necessary for the growth of green plants in the environs of Malaprabha River Basin. In the absence of any one of these elements, a plant fails to complete its life cycle. The disorder, of course, can be corrected by the addition of that elements and to suggest appropriate strategies in the light of prevailing government policies and programmes to improve the fertility status of soils in the study area.

Study Area:

The Malaprabha River Basin of Karnataka state is approximately triangular shape, located in the extreme western part of the Krishna basin. It lies between $15^0\ 05^{l}\ 02^{ll}$ to $16^0\ 20^{l}\ 19^{ll}$ N. latitudes and $74^0\ 05^{l}\ 43^{ll}$ to $76^0\ 05^{l}\ 33^{ll}$ E. longitudes, covering an area of 11549 sq.km, out of which 3880 sq.km in Belgaum (33.59%), 1950 sq.km in Bagalkot (16.89%), 2739 sq.km in Dharwad (23.72%), 2657 sq.km in Gadag, 220 sq. km in Koppal and 103 sq. km in Haveri District (23.01%) [Fig-1]. Topographically the Malaprabha river basin presents the two important divisions, viz. Western Ghats and typical of the eastern part of Deccan/Karnataka plateau with the distinct characteristics. The plateau has two natural sub divisions, the Semi-Malnad and the Northern Maidan, which includes the northern upland or the Deccan trap of the state [Fig-2]. An exhumed structure with superimposed drainage is also responsible for the sharp relief in the Kaladgi

sandstones in which Ghataprabha forms a waterfall near Gokak and the Malaprabha, a gorge near Saundatti (Spate and Learmonth, 1967). The river Malaprabha is the most important right bank tributary of the river Krishna. The Benni hall, Hire hall and others are the principal tributaries of the Malaprabha River.



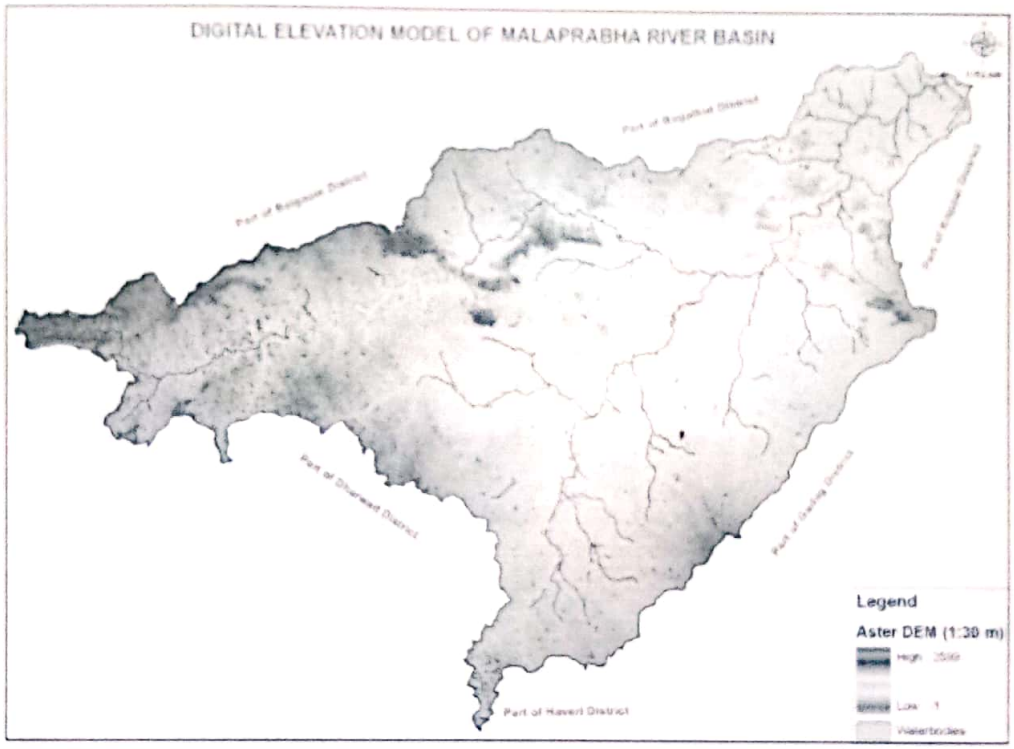
The entire river basin experiences semi-arid type of climate, spread in hilly, northern dry and northern transition zone of agro-climatic zones of Karnataka state, and it is very warm during summer, especially in April and May, with temperature ranging between 35^{0} to 40^{0}C in eastern part of river basin. The annual normal rainfall of the Malaprabha basin area is over 759 mm spread over 50 days, which receives monsoon rainfall as much as our nation with slight variations. Deep black cotton soils are ubiquities in basin area. Jowar besides other drought-resistant inferior small millet crops are traditionally predominant crops. Geographically ubiquities deep black cotton soils, Unpredictable monsoonal rainfall, Droughts and famines are part of life of people in the study region. The present study is a natural region and occupies 6.02% area of the Karnataka state. As per 2011 census, the population of Malaprabha River Basin is 3.38 million (5.53% of the state's total population) of which 77.66% is rural and 22.34% is urban inhabitants. The dominance of rural population makes the regional economy mainly agrarian. The basin's 68.37% of the workforce (61.75% of males and 79.55% of females), however, is still dependent on the agriculture and its allied activities for their livelihood. The economic development and prosperity of the masses depend mainly on agricultural base.

Objectives:

The present paper is an attempt to make an analysis of texture and fertility status of soils in the environs of Malaprabha River Basin, Karnataka State, India. In this context, the study has been undertaken with the following specific objectives:

1. To escalate the soil texture and fertility status of soils (talukas-wise) in the talukas of the river basin and
2. To suggest appropriate strategies in the light of prevailing government policies and programmes to sustain the fertility status of soils in the environs of the Malaprabha river basin.

Fig. 2



Materials and Methods:

The present study is mainly based on the secondary sources of data. Data for the present analysis has been obtained mainly from Survey Report of Soil Fertility Status of Karnataka State by the Department of Agriculture, Govt. of Karnataka in association with International Crops Research Institute for the Semi-Arid Tropics, (ICRISAT) Patancheru, Hyderabad, Andra Pradesh in 2011, The Directorate, Department of Economic and Statistics, Bangalore, District Statistical Offices of Belgaum, Dharwad, Gadag & Bagalkot districts and District Census of Belgaum, Dharwad, Gadag and Bagalkot districts from 1971 to 2011 Census from Directorate of Census Operations, Bangalore Karnataka State; besides this, data were also collected from various government offices and websites.

Presently the taluka has been considered as the smallest unit of analysis. To achieve the objectives mentioned above the relevant statistical tools like, percentages, averages, variations and others and method of quantitative analysis have been employed. To describe the spatial pattern of soil texture and fertility status of soils in the Malaprabha river basin in 2011, all the talukas are grouped into different categories to show the existing concentration of fertility of soils in the basin area. At last results were presented with a suitable diagrams and figures.

Result and Discussions:

The Regional Center of the National Bureau of Soil Survey and Land Use Planning (ICAR), Bangalore, broadly classified the soils of entire state of Karnataka into six major groups, such as Red, Lateritic and Laterite, Black, Alluvial, Brown Forest and Coastal soils. The Malaprabha river basin is blessed with varied soil resources having geographical origin from different parent materials like, granite, gneiss complex, Deccan trap, Dharwad schist's, sandstone and limestone sedimentary formations. The soils found in this river basin could be broadly classified into seven groups namely, shallow black soils, medium black soils, deep black soils under black soils, gravelly red loam soils, gravelly red clay soils, non-gravelly red loam soils and

non-gravelly red clay soils under red soils. These soils vary in depth, texture, gravelliness and physiographic setting, depending on the parent rock type and climatic conditions prevailed. By and large black soils predominate in the north and eastern part of the river basin and the red soils in the southern and eastern gneissic terrain.

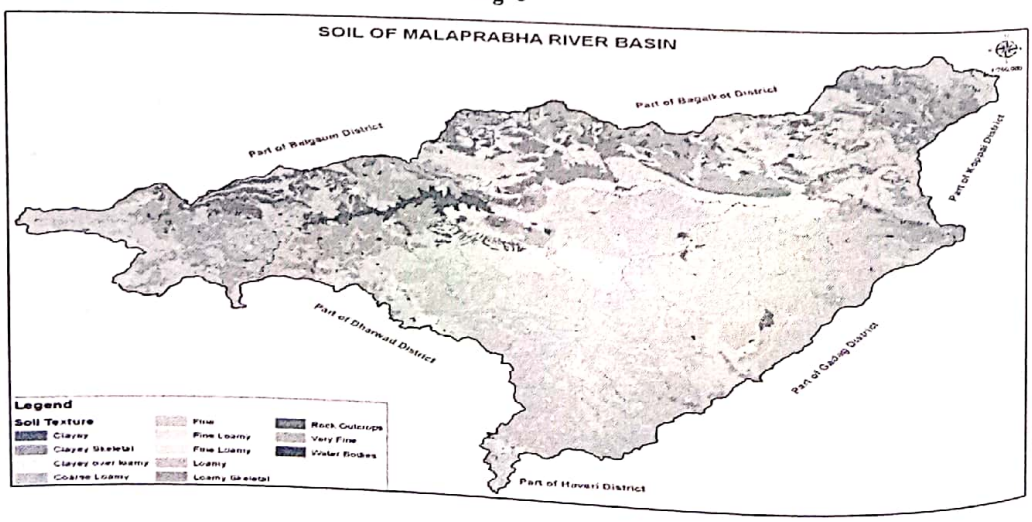
Soil Texture in the Malaprabha River Basin:

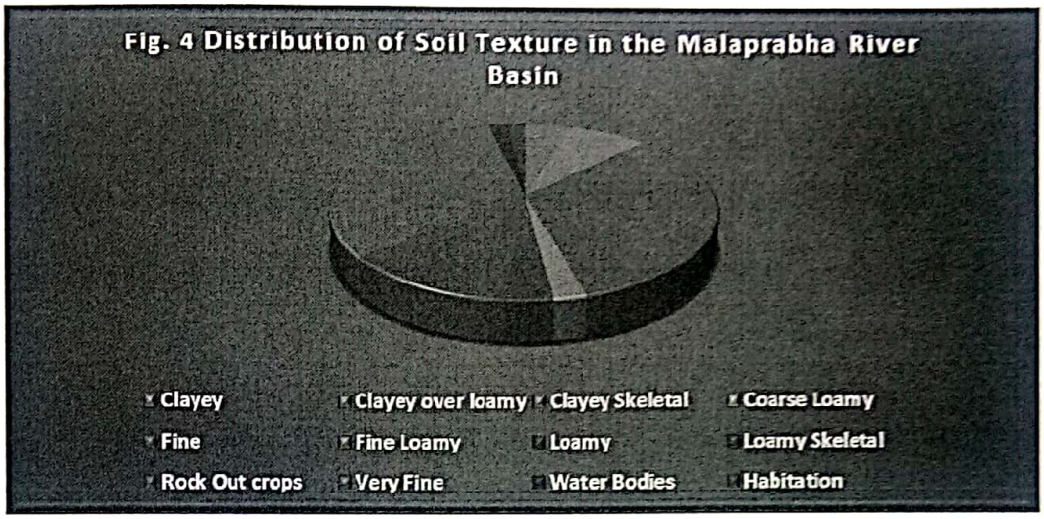
Farming is a business and good soil is part of farmer's stock-in-trade. Our standard of living positively depends on agriculture which often determined by a combination of the physical, chemical and biological characteristics of the soils texture and fertility, and the crops and livestock raised on them. Soil texture is one of the prime entities, largely influencing on microbiological activities and physio-chemical behaviour of soils and also determines the water retention and transmission properties of soils. The Table-1 and Fig-3 and 4 shows the distribution of soil texture in the Malaprabha river basin. Most area of the basin is having Fine and very fine texture of Soil. Based on texture major part falls under fine texture category have an area about 3824.6 sq. km (33.11%) and very fine texture category have an area about 3751.4 sq. km (32.47%) with rocky and water bodies accounting for the minimum of 7.35%. clayey skeletal (7.58%), loamy skeletal (7.09%), clayey (4.44%), others like, loamy, fine loamy, clayey over loamy, coarse loamy texture (6.28%) and habitation (1.69%) are also found in some areas of the river basin.

Table- 1 Distribution of Soil Texture in the Malaprabha River Basin

Sl. No.	Soil Family	Area (Sq. Km)	In %
1	Clayey	512.8	4.44
2	Clayey over loamy	57.4	0.50
3	Clayey Skeletal	876.1	7.58
4	Coarse Loamy	2.5	0.02
5	Fine	3824.6	33.11
6	Fine Loamy	273.4	2.37
7	Loamy	391.3	3.39
8	Loamy Skeletal	818.5	7.09
9	Rock Out crops	618.5	5.35
10	Very Fine	3751.4	32.47
11	Water Bodies	231.4	2.00
12	Habitation	194.7	1.69
Total area (sq km)		11552.6	100.00

Fig -3





Fertility Status of Soils:

Soils in the Malaprabha river basin constitute diverse orders with extreme variability in origin, parent material, water retention and nutrient status. In addition to the parent material, climatic variables such as rainfall, temperature and sun light influences the types and key properties of soils in a region. Accordingly, soils within the river basin show variation in terms of physical and chemical properties of the soils. At least 16 plant food elements are necessary for the growth of green plants. In the absence of any one of these elements, a plant fails to complete its life cycle. The disorder, of course, can be corrected by the addition of that element. These 16 elements are; carbon, hydrogen, oxygen, nitrogen, phosphorus, sulphur, potassium, calcium, magnesium, iron, manganese, zinc, copper, molybdenum, boron and chlorine. Green plants receive carbon from carbon dioxide in the air, oxygen and hydrogen from water and the remaining elements from the soil. Of all the plant food elements, organic carbon (nitrogen), phosphorus and potassium play an extremely important role in plant growth.

A comprehensive survey report of soil fertility status of Malaprabha river basin is presented in the following paragraphs with supportive tables. It explains that the chemical characteristics of soil mainly Organic Carbon (Nitrogen), Phosphorus, Potassium, P^H, Electric Conductivity, Sulphur, Zinc and Boron in Malaprabha river basin.

Organic Carbon or nitrogen induces vegetative development of plants by imparting a healthy green colour to the leaves. It also controls to some extent, the efficient utilization of phosphorus and potassium. Its deficiency retards growth and root development, turns the foliage yellowish, hastens maturity, causes the shriveling of grains and lowers the crop yield. Table-2(A) presents the spatial distribution of organic carbon (N) status of soils in the talukas of Malaprabha river basin and also comparatively with the status of karnataka state. It revealed the fact that, 38.46% of the talukas (52% of the state soil) namely Ron (0.28%), Gadag, (0.40%), Navalgund (0.44%), Naragund (0.45%) and Kundagol (0.48%) are deficient (< 0.5 %) and 61.54% of the talukas (48% of the state soil) namely Badami (0.53%), Hunagund (0.63%), Saundatti (0.64%), Bailhongal (0.65%) Ramadurga (0.67%), Hubli (0.67%), Khanapur (0.78%) and Dharwad (0.84%) are sufficient (> 0.5 %) category group of organic carbon status of soils in the river basin.

Table- 2(A): Organic Carbon (Nitrogen) Status of Soils in the talukas of MRB

Category	Range of Parameter (in %)	% of State Average	No. of Talukas	% of Talukas	Name of the Taluka (0.28% to 0.84%)
Deficient	**< 0.5**	**52**	**5**	**38.46**	Ron (0.28%), Gadag, (0.40%), Navalgund (0.44%), Naragund (0.45%) & Kundagol (0.48%)
Sufficient	**> 0.5**	**48**	**8**	**61.54**	Badami (0.53%), Hunagund

					(0.63%), Saundatti (0.64%), Bailhongal (0.65%) Ramadurga (0.67%), Hubli (0.67%), Khanapur (0.78%) & Dharwad (0.84%)
		100	13	100	0.57 % (Less= 6 + More=7)

Phosphorus influences the vigor of plants and improves the quality of crops. It induces the formation of new cells, promotes root growth and accelerates leaf developments, emergence of ears, formation and maturation of grins. The below Table- 2(B) depicts the spatial distribution of available phosphorus status of soils in the talukas of Malaprabha river basin. This is another important element whose deficiency is widespread and constrains the productivity of crops in the river basin. Based on the information, deficiency of phosphorus status is a serious observable fact, 61.54% of the talukas like Saundatti (1.9), Ramadurga (1.9), Bailhongal (2.3) Badami (2.6), Hunagund (2.6), Khanapur (2.6), Navalgund (4.3) and Gadag, (4.6) are deficient (< 5 ppm) and remaining 38.46% talukas namely Ron (5.6), Naragund (5.8), Hubli (7.2), Kundagol (8.1) and Dharwad (15.9) are sufficient (> 5 ppm) category of the available phosphorus status of soils in the river basin.

Table- 2(B): Available Phosphorus Status of Soils in the talukas of MRB

Category	Range of Parameter (ppm)	% of State Average	No. of Talukas	% of Talukas	Name of the Taluka (1.9 to 15.9)
Deficient	**< 5**	**41**	**8**	**61.54**	Saundatti (1.9), Ramadurga (1.9), Bailhongal (2.3) Badami (2.6), Hunagund (2.6), Khanapur (2.6), Navalgund (4.3) & Gadag, (4.6)
Sufficient	**> 5**	**59**	**5**	**38.46**	Ron (5.6), Naragund (5.8), Hubli (7.2), Kundagol (8.1) & Dharwad (15.9)
		100	**13**	**100**	**5.03 (Less= 8 + More=5)**

Potassium enhances the endurance and ability of plants to resist disease, insect attack and cold. It is essential for starch formation and translocation of sugar and especially useful to starch rich crops like sugarcane, potato, etc. Table- 2(C) shows the spatial distribution of available potassium status of soils in the talukas of Malaprabha river basin. On the bases of existing information, deficiencies of potassium are not serious fact, except Bailhongal (41), Badami (43) and Khanapur (44); all other the talukas (76.92%) are sufficient (> 50 ppm) in the available potassium status of soils in the river basin.

Table- 2(C): Available Potassium Status of Soils in the talukas of MRB

Category	Range of Parameter (ppm)	% of State Average	No. of Talukas	% of Talukas	Name of the Taluka (41 to 321)
Deficient	**< 50**	**23**	**3**	**23.08**	Bailhongal (41), Badami (43) & Khanapur (44)
Sufficient	**> 50**	**77**	**10**	**76.92**	Hunagund (65), Ramadurga (66), Saundatti (71), Hubli (180), Gadag, (183), Dharwad (193)

					Ron (193), Kundagol (243), Naragund (289) & Navalgund (321)
		100	**13**	**100**	**148.62 (Less= 8 + More=5)**

Also, important to plant growth is the chemical balance of the soil i.e., its P^H value, which indicate the degree of salinity, alkalinity or normality etc. The P^H value of soil, i.e. whether the soil is acidic, alkaline or normal, plays an important role in plant growth. Soil acidity exceeding a particular limit is injurious to plant growth. The availability of certain nutrients, particularly phosphorus, calcium and magnesium, decreases with increase in acidity. Lime has to be added as an amendment to reduce acidity and bring it to a normal level. Table-2(D) depicts the spatial distribution of P^H status of soils in the talukas of the river basin. Based on the P^H status of soils, except Khanapur (7.69%) all other talukas (92.31%) are lies in the normal (6.5 to 8.5) category, it is included under acidic (< 6.5) and none of the talukas are not observe in the alkaline (> 8.5) category group of the river basin.

Table-2(D): P^H Status of Soils in the talukas of MRB

Category	Range of Parameter	% of State Average	No. of Talukas	% of Talukas	Name of the Taluka (5.9 to 8.4)
Acidic	**< 6.5**	**39**	**1**	**7.69**	Khanapur (5.9),
Normal	**6.5 to 8.5**	**59**	**12**	**92.31**	Dharwad (6.9), Bailhongal (7.0) Ramadurga (7.4), Hubli (7.4), Badami (7.5), Saundatti (7.8), Hunagund (8.1), Kundagol (8.3), Navalgund (8.3), Ron (8.3), Gadag, (8.3) & Naragund (8.4)
Alkaline	**> 8.5**	**2**	**--**	**--**	**--**
		100	**13**	**100**	**7.65 (Less= 5 + More=8)**

The **Electric Conductivity** of soluble salt in the root zone also prevents plant growth. The soluble salts mainly consist of chlorides and sulphates of sodium, calcium and magnesium. Table-2(E) presents the spatial distribution of Electric conductivity status of soils in the talukas of Malaprabha river basin. It observed the fact that; all most all the talukas are normal (< 0.8 dS/m) category, the others like critical to salt sensitive crops (0.8 to 1.6 dS/m), critical to salt tolerant crops (1.6 to 2.5 dS/m) and injurious (> 2.5dS/m) categories are noticed in the electric conductivity status of soils in the river basin.

Table- 2(E): Electric Conductivity Status of Soils in the talukas of MRB

Category	Range of Parameter (dS/m)	% of State Average	No. of Talukas	% of Talukas	Name of the Taluka (0.22 to 0.40)
Normal	**< 0.8**	**96**	**13**	**100**	Kundagol (0.22), Dharwad (0.24) Gadag, (0.25), Hubli (0.25), Ron (0.26), Khanapur (0.30), Navalgund (0.30), Badami (0.32), Hunagund (0.34), Saundatti (0.37),

					Bailhongal (0.39), Naragund (0.38) & Ramadurga (0.40)
Critical to Salt Sensitive Crops	**0.8 to 1.6**	**3**	--	--	--
Critical to Salt Tolerant Crops	**1.6 to 2.5**	**0.5**	--	--	--
Injurious	**> 2.5**	**0.5**	--	--	--
		100	**13**	**100**	**0.31 (Less= 7 + More=6)**

In addition to that, an element like available Sulphur, Zinc and Boron are also plays an important role in the plant growth. The following Table- 2(F) to 2(H) represents the spatial distribution of available sulphur, zinc and boron status of soils in the talukas of Malaprabha river basin. **Sulphur** availability is considered to be sub-optional in vast majority of the soils where oilseeds and pulses are more grown. The Gadag (4.8), Kundagol (6.0), Ron (6.8) and Navalgund (6.9) talukas are observed in deficient (< 10 ppm) (30.77%) and the others namely Hubli (10.7), Hunagund (10.7), Badami (11.5), Dharwad (11.8), Naragund (15.2), Saundatti (129.9), Khanapur (141.0) Bailhongal (141.2) and Ramadurga (160.0) talukas are noticed in sufficient (>10 ppm) (69.23%) category of sulphur availability status of soils in the river basin.

Zinc deficiency has been most commonly reported in the talukas of Malaprabha river basin. Table-2.15 (G) shows the fact that, 61.64% of the talukas are deficient and 38.46% of talukas are sufficient category of available zinc status of soils in the river basin. The deficient (< 0.75 ppm) category comprises of Saundatti (0.38), Ron (0.40), Gadag, (0.42), Naragund (0.46), Navalgund (0.59), Ramadurga (0.59), Bailhongal (0.62) and Kundagol (0.73) talukas, while Badami (0.79), Hunagund (0.88), Khanapur (0.94), Hubli (1.12) and Dharwad (1.12) talukas are incorporated under sufficient (> 0.75 ppm)category of available zinc status of soils in the river basin.

Table- 2(F): Available Sulphur Status of Soils in the talukas of MRB

Category	Range of Parameter (ppm)	% of State Average	No. of Talukas	% of Talukas	Name of the Taluka (4.8 to 160.0)
Deficient	**< 10**	**52**	**4**	**30.77**	Gadag, (4.8), Kundagol (6.0), Ron (6.8) & Navalgund (6.9)
Sufficient	**> 10**	**48**	**9**	**69.23**	Hubli (10.7), Hunagund (10.7), Badami (11.5), Dharwad (11.8), Naragund (15.2), Saundatti (129.9), Khanapur (141.0) Bailhongal (141.2) & Ramadurga (160.0)
		100	**13**	**100**	**50.50 (Less= 9 + More=4)**

Table- 2(G): Available Zinc Status of Soils in the talukas of MRB

Category	Range of Parameter (ppm)	% of State Average	No. of Talukas	% of Talukas	Name of the Taluka (0.38 to 1.12)
Deficient	**< 0.75**	**55**	**8**	**61.54**	Saundatti (0.38), Ron (0.40), Gadag, (0.42), Naragund

					(0.46), Navalgund (0.59), Ramadurga(0.59), Bailhongal (0.62) & Kundagol (0.73)
Sufficient	**> 0.75**	**45**	**5**	**38.46**	Badami (0.79), Hunagund (0.88), Khanapur (0.94), Hubli (1.12) & Dharwad (1.12)
		100	**13**	**100**	**0.70 (Less= 7 + More=6)**

Table- 2(H): Available Boron Status of Soils in the talukas of MRB

Category	Range of Parameter (ppm)	% of State Average	No. of Talukas	% of Talukas	Name of the Taluka (0.48 to 1.14)
Deficient	**< 0.58**	**62**	2	15.38	Saundatti (0.48) & Ramadurga (0.57)
Sufficient	**> 0.58**	**38**	11	84.62	Badami (0.68), Dharwad (0.70), Hunagund (0.70), Bailhongal (0.75), Khanapur (0.81), Hubli (0.84), Ron (0.85), Kundagol (0.91), Gadag, (0.99), Naragund (1.22) & Navalgund (1.14)
		100	**13**	**100**	**0.82 (Less= 7 + More=6)**

The deficiency of **Boron** is not critically reported in the talukas of Malaprabha river basin. Table-2.15 (H) explains the fact that, 84.62% of the talukas are included under the sufficient (< 0.58 ppm) category. This category comprises of Badami (0.68) Dharwad (0.70), Hunagund (0.70), Bailhongal (0.75), Khanapur (0.81), Hubli (0.84), Ron (0.85), Kundagol (0.91), Gadag, (0.99), Naragund (1.22) and Navalgund (1.14) talukas, while 15.38% of talukas like, Saundatti (0.48) and Ramadurga (0.57) are sufficient (> 0.58 ppm) category of available zinc status of soils in the river basin.

Conclusions:

Soils of the talukas of Malaprabha river basin are varied in soil texture and fertility status. Soils are high in organic matter and acidic in reaction. Amelioration of soil acidity and external inputs of essential nutrients is necessary for successful crop production. The status of available nutrition provides the basis for soil and crop specific mineral nutrition recommendation in all the land uses in order to maintain soil nutrient balance and also to enhance higher crop production and productivity. Thus the study suggest the following approaches to improve the fertility status of soils in the basin area. They are:

1. To plan to reduce the distance between 'Lab and Land' through interactive sessions between agricultural scientists and farmers of the basin area.
2. To establish the soil testing centers in the all talukas of the study area.
3. More efforts to participation of farmers in the 'Soil Test Campaign' in the basin area and
4. To sustain the existing fertility of soils status, organize regular "Awareness Programme on Soil Health Status" for the basin areas farmers.

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Editorial…

Libraries have to go to the users and offer the services to them. They should publicize their presence among the user community and attract them to the libraries. All these necessitate the librarians to have the knowledge of the business and marketing for managing the libraries in this world of free marketing and offer quality library and information services. District libraries have to provide quality services using latest technologies. So the libraries are now more concerned about the library customers, their satisfaction, and the quality of library and information products and services, and their marketing. Academic library is an important component of any academic institution, responsible for providing academic research support to all members of the institutional community. Higher education is a very important sector for the growth and development of human resource which can take responsibility for social, economic and scientific development of the country. High quality of library performance is crucial for each academic library to survive.

Now a day's even developing countries like India are showing interest in digitizing their library materials. In digitization, software is one of the key requirements .Open source software is new genre of software. They are increasingly becoming popular for the simple reason that mostly they are available free and can be easily downloadable from the web. The ultimate goal of any library service is to ensure that the students and staff are able to access the information for purposes for which they require it. This raises the need to teach information literacy to users with the goal of assisting clients to identify and select right information using right direction search strategies and being able to evaluate, organize and synthesize that information into a meaningful presentation. Information and Communication Technology have introduced a new era in traditional methods of teaching and offering new teaching and learning experiences to both teachers and students. One of the most important determining characteristics of our century is that information is increasing at a level too fast to catch up. In such an atmosphere, it is unavoidable to create, develop, and update the skills of people in the society; otherwise, their professional skills and status may be questionable.

Job satisfaction is an important area to determine the view of the library professionals towards their job in the library, and it is the condition of establishing a healthy organizational environment in an institution. Satisfaction of an employee plays an important role in the development of its organization. Therefore the regulatory bodies such as University Grants Commission and Higher Education Council must frame uniform guidelines for both teachers and librarians, which can definitely enhance the job satisfaction of librarians and allow them to play a greater role in the academic development and scholarly communication and accomplish their institutional objectives effectively.

Managing Editor *Editor in Chief*

An Overview on Virtual Libraries

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Abstract

The concept of the virtual library has developed with the growth in telecommunication networks, especially the internet. The virtual library emulates a 'real' library, but is understood to be a product of the virtual world of the internet. The virtual library environment encompasses the concept of the digital library but is more than a collection of digitized resources. The virtual library provides access to an integrated collection of print, electronic and multimedia resources delivered seamlessly and transparently to users regardless either of their physical location or the location and ownership of the information. The Virtual Library has changed the traditional focus of librarians on the selection, cataloguing and management of information resources such as books and periodicals. The virtual library is putting emphasis on access without the need to allow for the time required by these technical processes.

Key Words: Virtual Library, E-learning, Internet, ICT.

INTRODUCTION:

There has been a considerable growth over the last decades of all types of learning in which students, teachers, managers and researchers, though maybe dispersed from a geographical point of view, all share the same virtual environment. A great number of new tools and a more generalised access to computer networks are revolutionising learning systems, teaching models and research, and as a consequence, libraries and documentation centres too.

There have been a lot of misconceptions about what a virtual library is: some consider the World Wide Web as a virtual library, while others consider the collection of URLs on a webpage a virtual library. A virtual library provides access to tools such as databases, electronic journals, alerting services, electronic reference, and quality-vetted e-resources. The term electronic library, digital library and virtual library have been used synonymously. However, there exists some basic difference as noted by Tenant (1999, np.) who posits that an electronic library consists of electronic materials and services such as video tapes and CD-ROM, while a digital library consists of digital services and materials that are stored, processed and transferred via digital (binary) devices and networks. The Virtual libraries on the other hand consist of both digital and electronic libraries existing virtually.

The term virtual library is simply defined as "...an organised set of links to items on the network..." (Charles Stuart University) The term came about as the result of various efforts to organise information resources accessed on the World Wide Web. As the information content on the Web grew, more and more users were faced with the following two major problems:

* How find information on the Internet; and
* How to be sure that the information accessed was of good quality (e.g. authoritative source).

Therefore, the goal of virtual libraries is to save the time and effort of the end-users searching for information on the Web and to provide access to the information that has been examined for content and reliability. Virtual libraries exist in cyberspace only, they have no buildings or shelves, all information materials are in digital format and are accessible via the Internet.

WHAT IS VIRTUAL LIBRARY?

The term has been defined by many different people in many different ways. It is a library in which the holdings are found in electronic stacks. It is a library that exists, without any regard to a physical space or location. It is a technological way to bring together the resources of various libraries and information services, both internal and external, all in one place, so users can find what they need quickly and easily.

Virtual Library is another kind of Digital Library which provides portal to information that is available electronically elsewhere. This is referred so to emphasize that the Library does not itself hold content. Librarians have used this term for a decade or more to denote a Library that provides access to distributed information in electronic format through pointers provided locally.

The Virtual Library has changed the traditional focus of librarians on the selection, cataloguing and management of information resources such as books and periodicals. The virtual library is putting emphasis on access without the need to allow for the time required by these technical processes. Virtual Libraries have induced libraries, scholars, publishers and document delivery vendors to develop new partnerships that are working for the good of scholarly communication in both developed and developing countries.

PURPOSE OF THE VIRTUAL LIBRARY

In general, the purpose of a Virtual Library is to underpin learning and acquisition of knowledge, to provide a more solid basis for education and to enhance quality of life by drawing on digitally available (preferably on-line) books, materials and journals via ICT-based tools. A Virtual Library provides remote (on-line or CD-ROM-based) access to a variety of national and international content (e.g. curricula, learning materials, books, journals, magazines, newspapers), services traditionally offered by libraries and other information sources. Virtual Libraries thus combine materials in electronic format with an electronic network which ensures access to and delivery of those materials.

CHARACTERISTICS OF VIRTUAL LIBRARY

Virtual libraries may have the following characteristics associated with them

* Provides speedy and wide access to updated information in a global manner.
* It has changed the traditional library system of cataloguing only book materials. Cataloguing of NBM (Non Book Materials) includes not only databases but also websites.
* Greater emphasis is on access and not on collection.
* Time saving
* It results in a creation of digital divide because only developed countries with strong funds for automation and fulfilling infrastructural requirements for VL can afford to support VL services.

FUNCTIONS OF A VIRTUAL LIBRARY

The function of a Virtual Library is to ensure the systematic development of the means to collect, store, and organize information and knowledge in digital form and to provide easy and affordable access to it around the clock from various locations. In general, a Virtual Library should:

1. provide ICT-based access to a range of digitally available publications for educational purposes available in the public domain and from other sources;
2. provide access to distance education materials;

3. contribute to the efficient delivery of information to students, researchers and teachers of all universities and other educational institutions;
4. strengthen communication and collaboration between and among the research, library and educational communities, nationally, regionally and internationally;
5. Offer lifelong learning opportunities.

PRINCIPLES OF DEVELOPMENT OF VIRTUAL LIBRARY COLLECTION

The stages of development that are involved in creating a virtual library, or converting portions of a traditional print library into a virtual library, can be broken down into seven areas:

* The Decision-Making Process
* New Training and Skills for Library Staff
* Installation and Testing
* Creating a Structure for Organizing and Accessing Materials
* Marketing and Promoting Materials
* Training Users
* Evaluation and Revaluation

The last three are actually a continuous loop. With new users constantly coming and going, and changes and upgrades being made to the products, marketing, training and evaluating is an ongoing process.

Six principles have been identified that drive the development of a Virtual Library Collections as enumerated below:

1. **Priority of Utility:** Usefulness is the ultimate reason behind all collection decisions. Predicting utility is, however, notoriously difficult.
2. **Local Imperative:** Local collections are built to support local needs, and expenditure of local resources must have a demonstrable local benefit.
3. **Preference for Novelty:** Although historical collections are essential for research, only limited resources can be devoted to the collection and maintenance of older material.
4. **Implication of Intersexuality:** To add an item to a collection is to create a relationship between it and other items. Building a collection always creates new textual relationships.
5. **Scarcity of Resources:** All collection development decisions have to balance scarce resources – funding, staff time, document size, user time and attention.
6. **Commitment to the Transition:** More and more information will become available in digital form. Libraries are responsible for promoting this transaction and assisting users to adjust to it.

DIFFERENTIATING ELEMENTS IN VIRTUAL LIBRARIES

The current static shape of libraries, usually based on the compilation and storage of more or less fixed documents and indexing diagrams, is now under change. Libraries are now taking a new direction, heading for dynamic virtual libraries which use efficient and flexible mechanisms to locate, organise, accede to and, above all, personalise the content and services they develop. New distance-learning systems are gradually introducing themselves into academic institutions, and are changing the traditional concept of services conceived of for users located in specific places at specific times. This generalised geographical dispersion, together with this absence of coincidence in time, have brought about the thinking and the design of new library content and services, while at the same time have revolutionised our traditional concept of libraries and documentation centres.

Many are the elements facilitating the creation of virtual libraries. Among them: -

* The communications networks which are improving telematic access in two senses: in the speed of access, and in capacity, all of which favours the inclusion of multimedia materials (text, image, sound, video, etc.).
* The appearance of information management programs, facilitating the creation of databases of documentary resources and the retrieval of information.
* Technology becomes more and more user-friendly.
* The standards and protocols facilitating simultaneous access to databases.
* The information digitalisation and creation systems.
* The continuous appearance of more and more powerful languages for the creation of information.

BUILDING A VIRTUAL LIBRARY

The building blocks for a virtual library are its digital collections, which are not just a random assemblage of digital objects or uniform resource locators of free web- based resources (URLs). Building digital collections requires traditional library skills, in addition to information and web technology skills. The process of building a virtual library includes:

* **Digitization:** Digitization involves the process of making non-digitally created materials available in digital format. The retrospective conversion of printed library cards into a machine-readable catalogue represents one of the earliest digitization processes librarians have been involved with. The digitization process includes selection of collection/materials; scanning, transcribing, and creating mark-up and an index, creating metadata, quality control by subject specialists, processing images, populating the appropriate digital asset management software (DAM).
* **Acquisitions and Collection Development:** Acquisition involves acquiring and securing ownership of electronic resources such as databases, e-books and journals through licence. Subscribed electronic resources are stored on a remote server hosted by the vendor and made accessible to a target community after authentication and authorization.

ADVANTAGES

The advantages of virtual libraries include:

* Physical libraries operate with designated hours, virtual libraries are available anytime and anywhere where there is an Internet connection
* Well-designed virtual library collections are organized and managed to increase productivity and efficiency of the user.
* Virtual libraries offer opportunities for learning that are not possible in their physical counterparts. Virtual libraries complement other virtual learning environments, such as those provided in distance education and courses offered online, and like virtual learning environments, providing flexibility of time and place.
* It often adds enhanced searching capabilities in a digital format.
* The library materials are available at the user's desktop, regardless of where the user is physically located.
* It allows for the inclusion of materials only available on the Internet or in digital format.
* It provides the user with the capability to download and manipulate text.
* It often allows for multiple, concurrent users.
* It eliminates the problem of a book being missing or off the shelf.
* It is less labour intensive.

DISADVANTAGES

The disadvantages of virtual libraries are:

* Every product has its own distinct user interface.
* Users need to remember different passwords for different products.
* The scope of coverage and available archives is often limited.
* There are often difficulties with downloading or printing.
* Often there is no cost savings, especially when both the virtual and print products are maintained.
* Everything is NOT available in digital format.
* There are restrictions, which vary from vendor to vendor, on how the product can be used.
* The virtual library relies on power and computer networks in order to be available for use.
* Users can't spread everything out in front of them and use it all at once.
* Users are most comfortable using books.

CONCLUSION

The possibilities offered by virtual world have a great importance in all aspects relating to it. Evidently, libraries and documentation centres are not strange to this new virtual environment facilitated by the social, economic and, above all, technological change which has made it possible for librarians- information scientist to gain access to large amounts of information and documentation, allowing them to act as intermediary agents between this new scenario and the use that can be made of it by the different types of users. Virtual Libraries are the new vision of the Libraries of future. The development of Virtual Library will take place when libraries transform themselves into three dimensional electronic information centres. It will be possible when data storage, data representation and image processing technologies mature to cope with the great amounts of graphically represented data held by the Virtual Libraries.

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AUTOMATION OF ACADEMIC LIBRARIES: PROBLEMS AND SOLUTIONS

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Abstract :

The history of library automation is the world is not an old one. It dates back to 1950s to 1960s in America and Europe. The ancient and traditional methods of managing libraries are no longer dynamic and efficient in the age of information Technology. A properly computerized library will help its users with quick and prompt services. The rapid growth and uses of emerging technogies has changed the traditional library into automated, electronic, virtual and digital library. The paper discusses about Academic library, library Automation meaning, need, problems & solutions.

Keyword : Academic Library, Automation.

Introduction :

The term automation was first introduced by D.S. Harder in 1936. He defined it as ' the automatic handling of parts between progressive production processes' in relation to engineering industries. Since then the term has been applied to a wide variety of automatic machinery and automatic systems, and is commonly used to describe any operation in which there has been a substantial substitution of controlled action for human efforts or intelligence.

The rapid growth and uses of emerging technologies has changed the traditional library into automated, electronic, virtual and digital library. The study present library automation, problem and solutions and use of information Technology. In the process of automation most of the library faced various types of problem. Trained manpower, library automation, Budget, infrastructure, preservation, space other are major problems. Many challenges are overcoming to the academic libraries for discharging better services.

Library automation Due to ICT revolution and information revolution. College libraries should have play the modern role of making computerized database to give better access and technological services to the readers. The college library should make all services available on computer base to maximize the library collection. To provide virtual and digital resources through library automation to the student, teacher and scholars in their field of internet. But many libraries have or do not have library software.

AUTOMATION :

According to webster's dictionary "Automation is the technique of making an apparatus, a process or a system operate automatically."

Library automation is the general term for information and communication technologies that are used to replace manual system in the library.

LIBRARY AUTOMATION:

An automated library means refers to computerization of all activities. Library automation is regarding the human intervention in all library services so that any user can received the desirable information in less time. A computer system used to manage in house operation of library such as acquisition, cataloguing, circulation, serial control and OPAC etc.

Automation is a technique to make a system automated means self active. For these electronic machines are used to automate the libraries. The library automation means the application of machines to perform the different routines, repetitive and clerical job involved in functions and services of the libraries.

NEED OF LIBRARY AUTOMATION:

The need of library automation has several reasons. Need of computers in all areas depending upon is usage highlight the aspect of library automation in the Indian libraries.

a) Information explosion to well management and retrieval of information.
b) Availability of information in various formats, Offer flexibility.
c) Increasing numbers of users.
d) Operational advantages.
e) Speed up processing.
f) Reduces repetitive clerical work.
g) Provide the users and the library staff with more information.
h) Accurate and extensive information.
i) Reasonably economical.
j) Simple method of updating records.

AREAS OF LIBRARY AUTOMATION IN LIBRARIES:

Areas of library automation and networking are as follows:

- Acquisition of reading materials
- Cataloguing and indexing
- Circulation control
- Serial control
- Library administration and management
- Online public access catalogue
- Information retrieval and dissemination
- CD-ROM databases searches
- Inter-library loan or ILL (cooperative sharing of library materials)/ resource sharing through library network

PROBLEMS IN LIBRARY AUTOMATION :

Evolution is being observed in each point mentioned above for better services from the library such as book acquisition, cataloguing, classification and Technical process, stacking, circulation. CAS, SDA and Photocopying etc. These all services can be provided only by trained staff but untrained staff can't do better services, old and untrained staff of library doesn't want to motivate them self. Old staff get benefits to their service period and get promotion without any trainings and any advanced Qualifications. Thus the old staff doesn't require any development in library. They are always satisfied in old methods. Due to such staff, development of ICT is the difficult thing this is the bad impact a library services.

The problems is library automation in be categorized in problems related to management, staff, infrastructures, incomplete bibliographic record and time problems.

1) No separate Library Building :

Many academic colleges do not have separate library building and library is placed anywhere in class or some other places. In this library it has only issues and stack room that's why we can't provide better services to the readers. Some library have big collection but there is no proper section of book like acquisition reference section, Rare book section, circulation section, stock volume, technical, biding section, etc.

2) Management :

In college library development college management playsmajor role. The management includes both the college management and the library management means library committee as the secretary of the management whose task is the carry out the decisions taken by the executive of the college. If the librarian give the proposal of library automation the college management first ask the cost of the entire work and need of the automation, many of the management members are the old and the they think that in their time without any problem the library work is going fluently now what is the need of automation.

3) Staff :

In the academic college there was no standard pattern of recruitment of the library staff. The management people think that the work in library is very peaceful and tensionless, they just give appointment of their near and dear in library. The staff of the library are just completed 12^{th} class and passing the LTC.

To providing better services and to fulfill all needs of student at college level, library should have trained and qualified librarians. Not librarian qualified but also the other library staff is also trained and qualified. In some colleges professor library incharge is appointed to do library work, but is very harmful to the libraries. The college should recruited library staff is qualified and is most important for good library services to readers.

4) Adequate budget :

The management of the institure providing low budget for libraries which is allotted form student's fees only, but they donot agree to provide more budget form their own share or contribution. So ICT development in library is difficult for libraries. ICT's requirement is high, so many Hardware's and software's prices are high, such as computers printers, scanners, Xerox Machine, Barcode printer. Library automation is costly but provided low budget can't be spend on computerization. The UGC plan provided various grant for ICT development but the UGC allot the grant only to the colleges who that are registered under 12 b and 2 f. those that are not registered under 12 b and 2 f are not eligible for such grant without management share, ICT development is not possible.

5) Library preservation and maintenance problem :

Library of colleges has many problems of maintence such as weeding out book, fire security, old collection preservation, etc. In big college library now a days ther is a big collection of rare books in bad condintion, there is a need to preserve it. But llibrary have not sufficient or not affordable the cost of that preservation like digitization of books.

6) Time problems :

As per college time schedule library staff busy in day to day work regularly.They don't have interest in qutomation work. If we give outsourcing of the work then all responsibility came on librarians. The people who do this date feeding job they don't know about users need and what we require, also they don't know the correct names, pseudo names of the authors and publishers so it take many time to check and verify the work of the date feeding by others.

7) Library used for other work :

Library staff is used to other work in the college and library get suffered its function and management. Library staff is only for library work to discharging library services to students, but college authorities not get important to these library operations.

8) Infrastructure :

If the all people give positive response than the question arise about well and good infrastructure in market there are many library automation software's are available but some or them are not fulfill the requirement of the library and users need. Much software's run on only particular system. Computer, printer, scanner's xerox machines, bar code readers etc.

Library have not separate library building, no seprarage sections and no proper furniture like tables, chair racks, display board. Display racks. There is no internet and online resources facility in the library.

9) Poor Library Services :

Academic library have low budget so it cannot give services related to book bank scheme more book cannot issued due to less number of copies and having not reference and periodical facilities.

10) Incomplete bibliographic Record :

In academic libraries the only one record maintains regularly i.e. accession register it provides the all detail of the records of the books which was entered in library. If the institute was much old there was many person work in past and they write it. In many cases the same book can be classified in different manner as per their thinking and some prisons are not fill all the entire information in the register.

11) Library not provide better access :

College libraries have increased its collection in current situation but dose not have separate library building maintaining all section. This problems create access of information systematically and technically. Libraries main function to provide better access of all resources to the readers. Many libraries have not qualified staff. Many Libraries do not have open access to the readers, book are putted in closed room and only protect them form theft, librarian also could not play role in academic Libraries because of poor facility.

12) Transfer of librarians & library staff :

Transfer of library staff is also a harmful to the library operation management, Because library is information hub, there are a lot of information resource and to know it properly they should not transfer to other place.

WEB BASED SOLUTION OF LIBRARY AUTOMATION

* **Open Source Software :**

  For the library automation the KOHA, Information and NGL open source software's are available for the library.

* **Web OPAC :**

  Many libraries' give availability of their database with the help of web OPAC we can use the correct information of bibliographic record form the various web OPAC.

* **Free Software foundation :**

  Free software foundation is a non-profit organization founded by Richord Stallman on 4 October 1985 to support the free software movement, which promotes the universal freedom to study. The foundation develops the GNU library management software for free access and downloading the current version and later updates in future.

* **OCLC :**

  Provides online world catalogue and metadata sharing and online classification services for all subjects, which was helpful to the work of automation of the unknown title of the books.

* **Book Review :**

  Some of the literature books translated form the other Indian language but we can't know the subject of the book at that lime we can use the review of the books in that particular language and translate it in the help of google translate.

* **Marathi Website :**

  Website are useful for the Marathi literature books. All the detail about Marathi books are provides by the following websites for the information of Authors, publishers, price, puges and classification of the books. The websites are www.bookganga.com, www.granthdwar.com, www.googlebook.com, www.erasik. com , www.pustak.org , www.rekhata.org.

* **Wikipedia :**

  Wikipedia provides the detail about English literature books and the classification about the books.

CONCLUSION

User satisfaction is the moto of library. Computerization is available in Academic Library even good impact on the staff. The work smart, save time and users get more satisfaction form library services. There is a great impact of internet on libraries, Library Automation is prime activity in the age of information & communication technology. Librarians are facing many problems in advancement of the library activities and services. Still the progress in library automation is inevitable.

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Libraries of NAAC Accredited Colleges Affiliated To Rani Channamma University Belagavi : A Survey

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1.Introduction

The library in an educational institution is now considered as actively participating intermediary between the learners and the vast storehouse of information resources, between classroom lectures and the vast sources of information where the content of the lectures are drawn. The librarian has an extended role now from keeper of information resources to become a true friend and a perfect guide for the learners in an academic setting. Dissemination of knowledge in any academic institution is attained by means of (i) Teaching, (ii) Research, iii) Publication, and iv) Extension programmes. Academic library is therefore an integral part of the entire academic system; it promotes teaching, research, learning, and problem-solving and provides endless services to the real education; and ascertains that it is a veritable center of academic learning for self-achievement[1].

The impact of information and communication technology has created lasting changes in the overall organization, administration and in the service delivery in the Academic Libraries. The availability of cost-effective and user friendly technology, academic libraries have automatically adopted the ICT to enhance their service impact and gain needed visibility. This has been accelerated with the essentiality of library automation and networking since the late 1990s and has been on the accelerated pace since the process of Assessment and Accreditation of academic institutions was taken up by an autonomous agency of the UGC the National Assessment and Accreditation Council (NAAC). The NAAC suggested some best practices to be adopted in the Academic libraries and also published a brochure and case studies on guidelines and best practices in College Libraries. Among the list of best practices suggested by NAAC the first is on computerization of libraries and in collection development to build adequate strength of e-information resources. Automating the libraries once was optional and considered as luxury as it was not cost-effective but now it is an essential routine course of library management. The libraries are now adopting management principles in their administrative work like quality assessment and quality management[2]. In the recent past the National Knowledge Commission set up by Government of India has also stressed on the importance of the academic libraries as sources for 'access to knowledge'[3]. Thus they are adapting to the changing scenarios managerially, technologically and organizationally which has brought changes that has influenced them from outside as well as within. Majority of library tasks are of repetitive and mechanical nature and are amenable to quantitative analysis. These processes include ordering, cataloguing, card filing, binding, circulation and book shelving. Scientific Management can enhance routine efficiency. This helps a librarian to develop quantitative and factual argument in his favors for securing additional funds. The natural result of efficient management is development. Development involves changes and changes for the better which is possible through mechanization, rationalization and integration of several key inputs.

Need For the Study

The National Assessment and Accreditation Council (NAAC) was established to evaluate the infrastructure, instruction, research, and learning standards at universities. NAAC-certified institutions meet all requirements, obtain the highest grades (A++, A+, A), and get the most student enrollment applications. The NAAC has set criteria for grading colleges. They can check these criteria to determine whether they are eligible to apply for NAAC accreditation. Additionally, access to funding programs run by the federal and state governments is provided by certification.

NAAC on basis of its criteria's evaluate the quality and development of education in NAAC accredited colleges and it is the college library which play important role in imparting good education. So the main aim of this study is to know the development of NAAC accredited college libraries. The NAAC accredited College Libraries have to fulfill the criteria's which are laid by NAAC. Inspite of NAAC accreditation the college libraries have not yet made themselves efficient to provide the best services to its users.

Objectives of the Study

The focus of the present study of NAAC accredited college libraries which are affiliated to Rani Channamma University, Belagavi.The specific objectives of the study are as follows.

1. To examine the status of NAAC accredited college libraries affiliated to Rani Channamma University Belagavi.
2. To ascertain funding sanctioned to NAAC accredited college libraries by UGC and government for last five years.
3. To know the printed and electronic information resources and services in NAAC accredited college libraries.

Hypothesis of the Study

The following hypothesis are formulated to test the relevance of results of the study:

1. Ho: There is no sufficient availability of library resources for users in the NAAC accredited college libraries.

   Ha: There is sufficient availability of library resources for users in the NAAC accredited college libraries.
2. Ho: There is lack of ICT infrastructure for users in NAAC College libraries.

   Ha: There is availability of ICT infrastructure for users in NAAC College libraries.

Scope And Limitations of the Study

The present study confined to the 80 college libraries by NAAC accredited libraries and users under Rani Channamma University, Belagavi will be collected from the librarians and users. **The National Assessment and Accreditation Council (NAAC) , Bengaluru pursuing the colleges covered under the study are as follows whose accreditation in the year 2021**

Research Methodology

The Methodology for the present research study is Survey Method. The Research Methodology is the details of techniques used to solve a research problem. The sampling plan is the one in which they have specified different ways in which the research work should be done. An integral component of a research design is the sampling plan, specifically, as it addresses three questions, whom to survey (the sampling unit), how many to survey (the sample size) and how to select them (the sampling procedure). The survey method was adopted and the structured questionnaire tool to collect the data from the NAAC accredited college libraries affiliated to Rani Channamma University, Belagavi. There are 80 NAAC accredited college libraries affiliated to Rani Channamma University, Belagavi.

Review of Literature

Review of literature plays a crucial role in the process of conducting a thesis. It serves as a guide, showcasing how previous research has been conducted, particularly in the context of similar topics. By studying previously published theses, one can understand the systematic approach taken in those works. This knowledge helps in outlining the current research, determining the necessary steps to be followed, and identifying what should and should not be done.

The research conducted on "Collection Development and Management in Academic Libraries" highlights the vital role these processes play in supporting academic programs and research interests within institutions. Collection development involves careful selection and acquisition of materials, while collection management includes organization, preservation, and provision of access. Regular assessment ensures the collection remains relevant. Additionally, electronic resources have become essential, providing convenient and round-the-clock access to information. However, managing electronic resources requires careful consideration of licensing, software, and technical support. The research also indicates a focus on "Application of Information Technology in Academic Libraries," showcasing the significant impact of technology on library services, including online resources, library management systems, and digital engagement. Furthermore, "Library Services and its Awareness in Academic Libraries" and "Ranking Parameters and Assessment of Academic Libraries" are subtopics explored in the research, highlighting the interest in evaluating service quality and customer awareness in libraries. Overall, the research underscores the importance of efficient collection development, utilization of electronic resources, and the integration of information technology to enhance academic library services.

In addition to assisting with the thesis process, the review of related literature helps in understanding specific methods for designing questionnaires, collecting data, and interpreting findings. It allows the researcher to observe how ideas are captured and implemented, providing insights that can be applied to their own work.The review of literature encompasses 104 reviews of related literature, enabling a deeper understanding of conceptual foundations. Each research work can be examined from a different perspective, as researchers have approached their topics in innovative ways. Several themes emerge from the review, showcasing the benefits of different theses. Some theses highlight the evolutionary development of libraries in vivid detail, while others present well-crafted questionnaires that stimulate the mind to initiate development despite obstacles.

Data Collection

After necessary revisions were made preliminary questionnaires we pretested through a pilot study. The purpose of pre testing the questionnaire was to obtain information to improve its content, eliminate ambiguity in some questions and to fine tune the questionnaire. A total of 80 Questionnaires were distributed but initially only 50 % of the colleges were responded to the questionnaire. Sufficient time was given to the library staff to fill the questionnaire. Two reminders were sent to the librarians where there was no response. The researcher personally visited some of the colleges to collect the data. Out of 80 colleges, only 78 colleges have professional staff and there was no proper response from these 6 colleges. Hence only 72 questionnaires were then finally considered for the study.

NAAC was established to evaluate the infrastructure, instruction, research, and learning standards at universities and first grade colleges. NAAC-certified institutions meet all requirements, obtain the highest grades (A++, A+, A), and get the most student enrollment applications. The NAAC has set criteria for grading colleges. Institutions with A++ and A+ grades are considered to be of excellent quality, while those with A and B grades are considered to be of good quality. Institutions with C grade are advised to improve their quality and are given a timeline for the same.Financial assistance is linked to NAAC grades as institutions with higher grades are eligible for more financial assistance from various sources such as the UGC, government

agencies, and private organizations. For example, institutions with A++ and A+ grades are eligible for more funding from the UGC under its various schemes such as the College Development Grant, Special Assistance Program, and Capac AAC grades are more likely to receive financial assi for research and infrastructure development.

Table 1:NAAC Grade of the Colleges

SL.No	Grade	No of Colleges	Percentage
1	A	14	19.5
2	B	27	37.5
3	B+	15	20.8
4	B++	11	15.3
5	C	5	7.0
Total		72	100.0

The Table 1 reveals that 37.5% of the colleges have secured B grade, 20.8% of them have secured B+, 19.5% of them se e colleges have secured C. No Col A++ to C, with A++ being the high

Table 2 :Types of colleges

S.No	Types of the colleges	No of Respondents	Percentage
1	Government colleges	11	15.3
2	Private Aided colleges	48	66.7
3	Unaided colleges	13	18.1
Total		72	100.0

The Table 2 shows what type the surveyed colleges belongs to, College is important for many reasons, including increased career stability and satisfaction, and the ability to make an impact on your community. With more and mor to your success in today's workforce. I itutions which are 48 in number and th eges.

Table 3:Sources of Finance

Sl.No	Sources of Finance	No of Respondents	Percentage
1	State Govt.	18	25.0
2	UGC	25	34.7
3	Management	29	40.3
Total		72	100.0

The Table 3 provides information with the source of income to the college libraries. Sources of funding are very important and it plays a crucial role in access to higher education. It is revealed that According to the data, 25% of the respondents reported that they received finance from the State Government, while 34.7% of the respondents received finance from the University Grants Commission (UGC), which is a central government body that provides funding to higher education institutions in India. The highest percentage of respondents, i.e., 40.3%, repo indicates that the management of ved by the UGC, which is a majo

Table 4:Membership of Libraries

SL.No	Membership	Total No	Percentage
1	Students	57385	*98.17%*
2	Teachers	1068	*01.83%*
	Total	*58453*	

The data s nprising 98.17% or 57,3 a small percentage of tl

Table 5 : Library effectiveness and credibility

Sl.No	Library effectiveness and credibility	Yes	No
1	Library Website	22	50
2	Printed Library Brochure	28	44
3	Conduct User Orientation regularly	64	8
4	Introduced 'Earn while you Learn' scheme	19	53

The Table 5 shows that credibility is defined as the quality of being trusted. In literature, having a credible text means that the information therein is reputable and a trusted source for those looking for information on the subject. It reveals that among the surveyed colleges 64 college libraries conduct user orientation regularly for their new st ave their own library website nt's benefit. Therefore, the

Table 6 : Library Sections& facility

SL.No	Library Sections	Yes	No
1	Reading hall	13.9	10
2	Circulation Counter	6.9	5
3	Librarian's Chamber	20.8	15
4	Periodical section	18.1	13
5	Reprography	27.8	20
6	Generator facility	38.9	28
7	Internet facility	11.1	8
8	Drinking water facility	12.5	9
9	Wash room facility	41.7	30
10	Wheel chairs for handicapped students	75.0	54
11	Library have Library Committee	0	0

Table 6 depicts the availabilities of general facilities in the college libraries under survey.Sections in a library are: Acquisition, Technical Processing, Circulation, Reference, Periodicals, Maintenance, and Administration & Finance. It shows that 100% of college libraries have library committee, 93.1% have circulation counter, 88.9% have internet facilities, 87.5% have drinking water facility, 86.1% of the college libraries consists of reading hall, 81.9% have periodical section, 79.2% have librarian chamber, 72.2% have reprography facilities, 61.1% have generator facilities, 58.3% have washroom facility and 25% of the college libraries have wheel chair facilities.

According to the table all 72 college libraries have the library committee, Circulation Counter are available in 67 college libraries, 64 college libraries have Internet facility, 63 colleges have Drinking water facility, 62 college libraries have reading hall, 59 of them have Periodical section, 57 of them have librarians chamber, 52 of them have reprography facility, 44 of them have generator facility in times of power cut off, 42 of them have washroom facility [illegible] 'ed students.

Table 7 :Method(s) adopted for procuring books

Sl.No	Method(s) adopted	No of Colleges	Percentage	P* value
1	E-Tendering	8	11.1	0.001*
2	Reputed Vendor	44	61.1	
3	Quotations	20	27.8	
	Total	72	100.0	

The Table 7 shows that Information sources building, an important function of the library, should be based on sound policies and programmes. It involves a series of operations performed according to systemic procedures. It reveals that 61.1% of the college libraries procure books from reputed vendor, 27.8% of them procure books by quotat

Table 8: Total Information resources in Libraries

Sl.	Print form library resources	Collection
1	Books/monographs	2130974
	Electronic	1292000
2	Secondary periodicals	13021
	Foreign	139
	Indian	949
	Electronic	25200
3	Theses	1149
4	Back volumes of Journals	31918
5	Cases	270
6	Dissertations	4192
7	Patents	130
8	Standard	25
9	Govt. publications	6737
10	Technical reports	115
11	Maps and charts	1692
12	Scientific data bases (please describe type)	13
13	Others(please specify)	186

The Table 8 specifies the number of resources in print form. In a library, we find a variety of printed material in various forms like books, periodicals, newspapers, reference books, etc.The Table shows the number of printed foreign and Indian journals along with gifted journals. The total number of Indian journals is 949 where as foreign journals are 139 in number and there are 194 gifted journals.

Table 9:Subject wise Books available in Library

Sl. No.	Subject Books	No. of books
1	Kannada	1004872
2	English	430769
3	Geography	50209
4	History	528835
5	Sociology	165113
6	Education	23214
7	Political Science	337243
8	Economics	154806
9	Statistics	88424
10	Computer science	3588
11	Commerce	325714
Total		**3112787**

The Table 9 statistical analysis shows the significant outcome.. Therefore, the alternate hypothesis, "***There is availability of library resources for users in the library***" was accepted.

12. Major Findings of the Study

The objectives of this study is to summarise, the major findings obtained from the discussion. Further, It has the suggestions to improve the best practices in resources and college library services and highlight the further research recommendations and conclusion of research work.

1. Out of 72 respondents of Libraries of NAAC Accredited Colleges Affiliated to Rani Channamma University Belagavi. considered for this study, 53 (74%) are male and 19 (26%) are female respondents from Libraries of NAAC Accredited Colleges Affiliated to Rani Channamma University Belagavi (Table no.1)
2. It is evident from the data that 27 (37.5%) respondents are B grade Libraries of NAAC Accredited Colleges Affiliated to Rani Channamma University Belagavi.. (Table no 2)
3. It is evident from the data that 40 (56%) libraries each have centralized structure of the organization (Table no 3)
4. The majority (48 in number) are private aided institutions. This indicates that private aided colleges play a dominant role in the higher education landscape of the surveyed area. (Table 4)
5. It is observed that all the (29) colleges got funds from management (Table 5)
6. Majority of the surveyed colleges, accounting for about 59.7%, are situated in urban localities. This indicates a higher concentration of colleges in urban areas compared to rural and semi-urban regions.(Table 6)
7. The Majority of the members in this group, specifically 98.17% or 57,385 out of the total 58,453 members, are students. This indicates that students form the largest segment within this group. (Table 7)

8. Majority of college libraries (88.9%) conduct regular user orientation programs for their new students. This indicates a proactive approach by these libraries in familiarizing students with the library resources, services, and facilities, thereby promoting effective utilization of the library. (Table 8)
9. The results indicate that 100% of college libraries have library committee, (Table 9)
10. The major finding from the given data is that among the surveyed colleges, 51 of them have a written collection development policy. (Table 10)
11. The major finding from the given data is that among the surveyed colleges, the most commonly adopted method for procurement of goods and services is through reputed vendors, with 44 colleges utilizing this approach i.e., 61.1% of the college libraries , 27.8% of them procure books by quotations and 11.1% of them procure books from E-Tendering. (Table 10)

12.1 Suggestions and Recommendations of the Study

Based on the data collected from the professionals of Libraries of NAAC Accredited Colleges Affiliated to Rani Channamma University Belagavi., the following suggestions are made.

1. It is suggested to the authorities of the Libraries of NAAC Accredited Colleges Affiliated to Rani Channamma University Belagavi. to provide more number of computer terminals to the library to help the LIS professionals to conduct the programmes effectively and efficiently.
2. It is suggested to the authorities of the Libraries of NAAC Accredited Colleges Affiliated to Rani Channamma University Belagavi. to subscribe e-Shodh Sindhu Consortium.
3. It is suggested to the Librarians to conduct the Information Literacy Programmes frequently to help the students to learn the technology time to time.
4. It is suggested to the Librarians to either to increase the duration of the programmes or the ILPs should be conducted frequently.
5. It is suggested to the authorities of the Libraries of NAAC Accredited Colleges Affiliated to Rani Channamma University Belagavi. to support the library in the benefit of the student's community, as the users constitute an important component in the trinity of library science.
6. It is suggested to the Librarians to publicize by using either of the options to the help the users.

Conclusion

Education plays a very important role in the growth of society today where in the 21st century everything changes so fast that it is very difficult for institutions to cope up with the growing competition. This lead to the need of Libraries of NAAC Accredited Colleges Affiliated to Rani Channamma University Belagavi. education to create young competent and dynamic engineers to face the challenges. These Libraries of NAAC Accredited Colleges Affiliated to Rani Channamma University Belagavi. institutions should work with growing industry to produce quality and relevant young engineers. Information Literacy, it is a skill required to find retrieve, analyze and use of information. Thus, the librarians working in different types of libraries in general and Libraries of NAAC Accredited Colleges Affiliated to Rani Channamma University Belagavi. in particular have to play a significant role to promote information literacy in the society. They can play an imperative role in the educational changes taking place in teaching, learning and research in higher education by creating and providing an appropriate information environment for the efficient and effective use of all types of information resources. To sum up, the integration of library awareness related programme in Libraries of NAAC Accredited Colleges Affiliated to Rani Channamma University Belagavi. is entirely the responsibility of library and information professionals, library associations, library and information science schools and policy makers. Hence, it is strongly advocated that the higher education system must devise ways and means to implement programme at all levels especially in Libraries of NAAC Accredited Colleges Affiliated to Rani Channamma University Belagavi and technology education..

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Academic Library in the changed Environment: Significance and Services

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Abstract

College and university libraries have also created ways to better serve faculty and students over the past few decades as higher education has developed. Early adopters of digital technologies, academic and research libraries have provided leadership and training to assist in reshaping the academic sector. The information environment in which universities and libraries operate is undergoing rapid change. In this context, libraries have been reimagined as facilitators of a world of information, providing access to global information through online resources and systems and also creating their own digital content. Nowadays, digital collections and digital scholarship are core to research and teaching in libraries. Libraries will need to provide excellent search and discovery experiences for their customers as the technology environment will be constantly and rapidly changing, as will the expectations and requirements of information users. Users will anticipate seamless access to information and services that can be obtained at any time, from any location, as mobile device access becomes increasingly common.

Introduction

A library, in the traditional sense, is a massive collection of books and can also refer to the location where the collection is kept. Any collection, including digital resources, services, and sources, can now be referred to by the term. Maps, prints, documents, microform (microfilm/microfiche), CDs, cassettes, videotapes, DVDs, video games, e-books, audio books, and a wide variety of other electronic resources can all be included in the collections.

This information can be stored in a variety of places, including libraries, subscription libraries, private libraries, and digital libraries that are accessible online or on computers. The phrase now has a secondary meaning: a collection of material that can be used by everyone." Computer science, mathematics, statistics, electronics, and biology all employ this sense. A library can be owned and operated by a private individual, a public organization, or an institution. People who don't want to or can't afford to buy an extensive collection themselves, who need material that no one can reasonably expect to have, or who need professional research assistance may be able to use public and institutional collections and services. Libraries offer more than just materials; they also offer librarians who are experts at finding, organizing, and interpreting information requirements. For studying, libraries frequently provide a quiet environment. Public facilities are frequently provided by libraries for Internet and electronic resource access. Libraries of today are increasingly being reimagined as places where anyone can get unlimited access to information in a variety of formats and from a variety of sources. They are providing services that go beyond the walls of a building by making material that can be accessed electronically and by helping librarians use a variety of digital tools to navigate and analyze enormous amounts of information.

Modern Libraries' Services

When it comes to the specifics of contemporary library services, the primary function of library services is still essentially facilitating access to information, despite advancements in technology. Access to the subject literature's traditional and online collections remains the primary focus of library services. The

consultation is just as important as the advisory services area. At the moment, library services come in a variety of forms and offer tools like chat, e-mail, social media, mobile apps, and others. However, the fundamental nature of library services suggests that they can be broken down into groups.

First, sharing data such as dates, names, facts, and so forth.

Secondly, providing catalog and bibliographic information to assist users in locating relevant information sources and navigating library resources.

Thirdly, facilitating on-site or remote access to both traditional and online collections through the lending of materials. As previously stated, the modern library service model frequently incorporates the provision of access to traditional electronic resources and information into a complicated procedure with the intention of locating a comprehensive solution to the user's issue. The provision of space and equipment, such as library rooms, computers, scanners, and information search tools, are another aspect of the library service model.

In the modern world, libraries play an important role in the fields of education competences and information/media literacy. Lastly, there is complex consulting and training on how to use the library, its contents, and information retrieval in general. One of the most important services provided by libraries is education on improving information quality.

Role of Academic Libraries

An academic library is a library that serves the teaching and research needs of staff and students at higher education institutions. There are two complementary uses for these libraries: to help the school's curriculum and the students' and faculty's research at the university.

Material for class readings and student papers is required for teaching support. Reserves were previously the name given to the material for class readings that were meant to accompany the instructor's lectures. Prior to the availability of electronic resources, the reserves were provided in the form of actual books or photocopies of appropriate journal articles. For large classes, this only works if paperback copies are available and the books are reused from term to term. Traditionally, one copy of a book was given to each 10 students.

Due to the fact that no single library can provide everything, academic libraries must decide which areas they prioritize when collecting materials. Niche collections are often used to describe academic libraries that specialize in a particular area. Original papers, artwork, and artifacts written or created by a single author or about a particular subject may be included in these collections, which frequently serve as the foundation of a special collection department.

Library Needs

In a situation where a distance learner is seen to be autonomous and independent (Sauve 1993), and that separation of teacher and learner is seen as a central characteristic of distance education, libraries play a significant role in supporting the process by, amongst other things, selecting relevant and useful reading materials; organising them in some order so that the students can find materials they need without wasting time; and making learning materials readily available for consultation or borrowing. This suggests that, under normal circumstances, distance education assumes that there would always be supporting institutions such as public libraries to provide support to distance learners. It is maintained that libraries are a key resource for many open learners as they provide "access to an enormous range of information... most of this will take the form of print on paper—that is, books, pamphlets, journals ..." (Rowntree 1991). But the development of information technology has also made it possible nowadays for libraries to acquire, organise, store, and disseminate information technology related learning materials

Importance of Information and Communications Technology (ICT)

The majority of tasks assigned to libraries involve acquiring, organizing, preserving, retrieving, and disseminating users' information. This has always been the primary goal of the library, from ancient times to the internet age. However, a lot has changed in the way this goal has been accomplished. because of how information technology has changed the way businesses work and how libraries are run. They are the driving force behind significant shifts not only in perspective but also in function, services, approaches, and techniques for information collection, development, processing, and dissemination. Business and management libraries are becoming more efficient and adaptable as a result of technological advancements and their direct application to libraries. Nowadays, the majority of libraries simplify the distribution of information. The growth of information and communications technology (ICT) and its applications in the science of library development have compelled. Right now, librarians and information professionals are working to change the way. Users are increasingly turning to the internet, according to LIS data. As a result, libraries' web-based information services are attracting a lot of attention. Users of libraries have benefited greatly from ICT because they can now access information from their desktops, increasing productivity. Due to its significant influence on the profession, ICT have evolved into centers of education and training for library and information science and services. In order to increase user satisfaction, the implementation of ICT in libraries has necessitated new forms of library services.

Cost-Benefit Analysis and ICT in Library and Information Science

Over the past ten years, a lot has changed in terms of ICT costs. In recent years, the custom duties on software imports have decreased from 112 percent in 1991 to just 10 percent. One of the five national priorities is the growth of ICT in recent years as a result of the IT sector's designation. The introduction of a ten-year tax exemption for software-producing businesses located in STPs and free economic zones makes it possible to conduct a cost-benefit analysis for ICT. As a result, the price of IT-related goods and services can be reduced to a reasonable extent. Utilizing ICT, the relevant staff is trained to maximize resource utilization through innovative collaboration, which results in an evaluation of the library's cost-benefit analysis. The information scientist/librarian uses cost-benefit analysis of various inputs to make the final strategic decisions regarding the implementation of ICT. The information itself must be managed, and cost-benefit analysis is the best way to use such information. Cost-benefit analysis measures the information. The cost-benefit analysis plays a crucial role in developing a plan to identify specific ICT innovation opportunities and envision a procedure for optimistically accelerating new technology adoption. The ICT learning and education program contributes to the efficient use of various ICT sources and, as a result, lowers the rising cost of education. An institution's or organization's basic costs can be reduced by using reliable information and communications technology to attract reputable investments and foreign players. ICT is a powerful force for integrating a nation into the global economy and a crucial contributor to its development. The cost-benefit analysis of various kinds of libraries and institutions should also take into account the evaluation of ICT-related staff and personnel, taking into account their job descriptions, specifications, and analysis, among other things.

Changes in Academic Libraries

It is suggested that academic librarians in India will need to rethink their roles and even improve their comprehension of what it was they were trying to accomplish in this decade because academic librarianship is said to have changed more in the last few decades than in its entire history. There are four categories of factors that influence change: technology, higher education, economics, and organization. Despite the fact that it is the

particular combination of factors that is causing the greatest impact on libraries, each category will be examined separately for clarity's sake. External and internal drivers are two additional drivers that have an impact on the academic library environment. Academic libraries are not only confronted with some of the most pressing issues in this sector, but they are also compounded by other forces. A growing demand for accountability in library spending and the promotion of quality audits and performance measurement as efficiency-enhancing tools have resulted from dwindling or stagnant funding. To address this issue, libraries are also increasingly turning to alternative revenue streams and fund-raising strategies like charging for particular services.

1. The end of libraries
2. Even in terms of money, libraries add value.
3. What is happening?
4. Libraries Make Use of Knowledge and Information
5. Important for the Education Process and the Continuous Growth of Intellectual Capital
6. At the local and national levels, a catalyst for economic growth
7. Direct Economic Benefits to Community Members
8. Participation and Empowerment, Social Inclusion and Cohesion
9. The Community Information Service and Civic Center
10. Essential Part of Physical Growth
11. Democracy, E-Government, and Libraries and Citizen Empowerment
12. Connect the Digital Divide and the Economic Gap
13. Information Technology, Libraries, and Society

Conclusion

Education and career guidance are based on information; In fact, it frequently takes precedence over other guidance functions. From the user's perspective, information should help them learn more about themselves, the job market, and opportunities for education and training. The library is the center of an academic institution, where staff and students are energized and strengthened by the power of knowledge. The provision of career information in college libraries will assist patrons in setting goals for their lives and should be extended to all fields of study. Students and recent graduates can receive assistance from a high-quality career service in discovering their interests and skills and landing the job of their dreams. College libraries can be proud of the growth and well-being of their patrons because they serve as high-quality career resource centers. The staff of the library should work hard and change as the times change to achieve this. Graduates need to be provided with career information through a variety of services so that they can learn how to look for, evaluate, and choose career information, which will help them make better decisions for a better life.

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Spatio-Temporal Analysis of Size of Holdings in the environs of Malaprabha River Basin, Karnataka State, India

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Introduction:

Land is a free gift of nature with fixed supply and is basic asset of an agrarian economy, is a prerequisite for cultivation, the major source of income and an index of household status. It is associated with control over and access to other resources. The agrarian structure of a region describes the relative position of different category of farmers with respect to ownership and operation of land. Since land constitutes the most important income generating asset of the rural people, a change in the agrarian structure due to landholding pattern reflects relative prosperity of the destitute of different sections of rural population.

The size of a farm is a matter of great importance to success in agricultural and for accelerating agricultural production by applying modern farm technology. A new concept in Indian agriculture has been introduced where a census operation centered round the operational holdings. Such a survey was first time conducted in 1970-71. In this basin, more than 87.4 percent of rural workers are engaged in farming, in which more than 60.0 percent are classed as cultivators. In absence of opportunities of other occupations sole reliance on land is legitimate, and it causes further subdivisions of land holdings into tiny scattered plots. Land, like other assets, is inherited private property and fathers land is equally divided among his children, mostly among sons, keeping in view the fertility and location of land. This unending process is still running and there is no such thing as a permanent farm. The size of holding is thus determined by the law of succession and increasing burden and dependency of population on land, and not by the socio-economic conditions in accordance with the type of farming practiced. Thus, the size of holding is bound to vary spatially and temporally. An attempt has been made a spatio-temporal analysis of size of operational holdings in the environs of Malaprabha river basin, Karnataka state, India.

Study Area:

The Malaprabha River Basin of Karnataka state is approximately triangular shape, located in the extreme western part of the Krishna basin. It lies between $15^0\ 05^l\ 02^{ll}$ to $16^0\ 20^l\ 19^{ll}$ N. latitudes and $74^0\ 05^l\ 43^{ll}$ to $76^0\ 05^l\ 33^{ll}$ E. longitudes, covering an area of 11549 sq.km, out of which 3880 sq.km in Belgaum (33.59%), 1950 sq.km in Bagalkot (16.89%), 2739 sq.km in Dharwad (23.72%), 2657 sq.km in Gadag, 220 sq. km in Koppal and 103 sq. km in Haveri District (23.01%) [Fig-1]. Topographically the Malaprabha river basin presents the two important divisions, viz. Western Ghats

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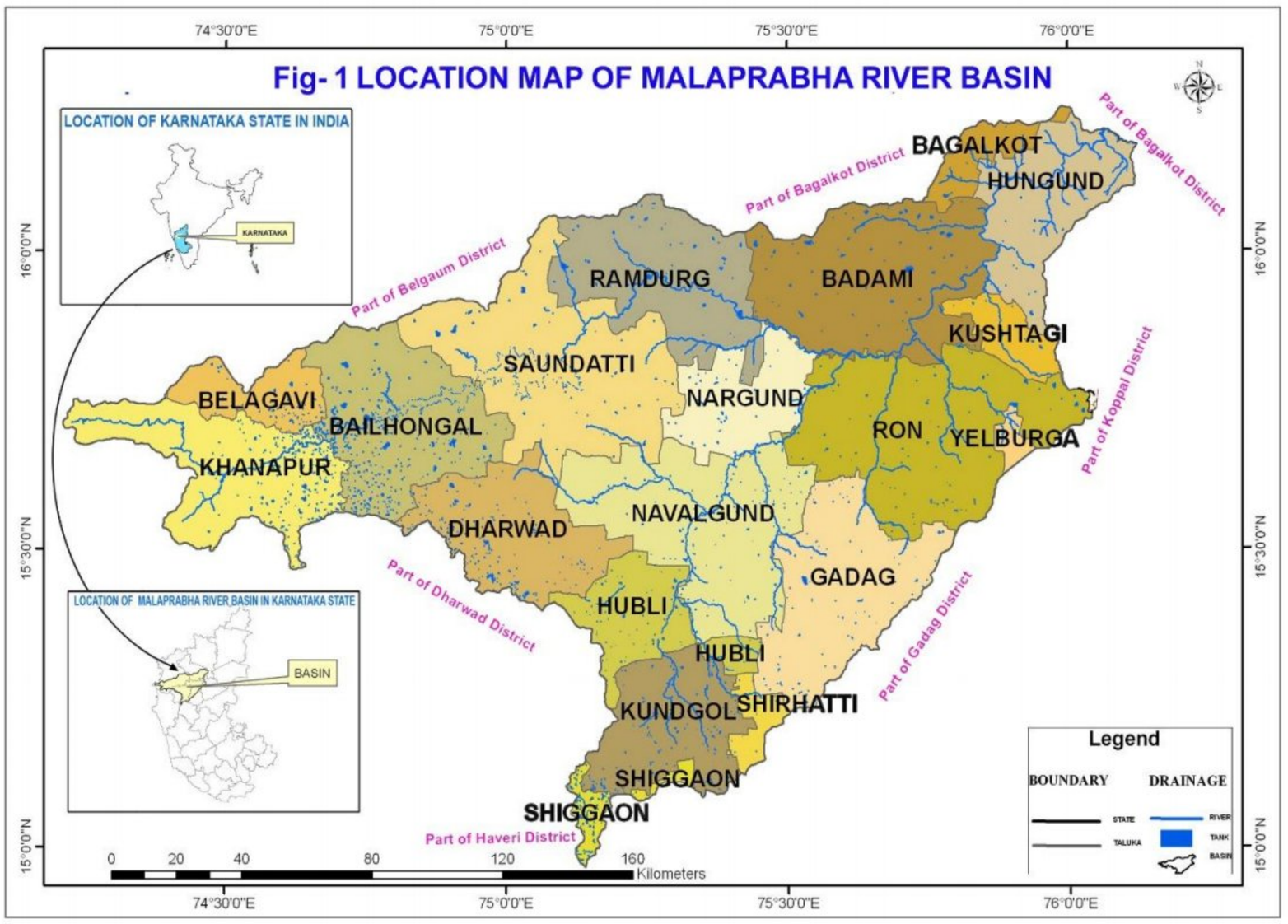
and typical of the eastern part of Deccan/Karnataka plateau with the distinct characteristics. The plateau has two natural sub divisions, the Semi-Malnad and the Northern Maidan, which include the northern upland or the Deccan trap of the state. The river Malaprabha is the most important right bank tributary of the river Krishna. The Benni hall, Hire hall and others are the principal tributaries of the Malaprabha River.



The entire river basin experiences a very warm during summer, especially in April and May, with temperature ranging between 35^0 to 40^0C in eastern part of river basin. The annual normal rainfall of the Malaprabha basin area is over 759 mm spread over 50 days, which receives monsoon rainfall as much as our nation with slight variations. Geographically ubiquities deep black cotton soils, unpredictable monsoonal rainfall, droughts and famines are part of life of people in the study region. The present study is a natural region, as per 2011 census, the population of Malaprabha River Basin is 3.38 million (5.53% of the state's total population) of which 77.66% is rural and 22.34% is urban inhabitants. The dominance of rural population makes the regional economy mainly agrarian. The basin's 68.37% of the workforce (61.75% of males and 79.55% of females), however, is still dependent on the agriculture and its allied activities for their livelihood.

Objectives:

The present study has been undertaken with the following specific objectives:

1. To study the distributional pattern of operational land holdings and their area in the environs of the river basin (2010-11);

2. To describe the spatial distribution (talukas-wise) of size of holdings and its changes in size-distribution of holdings in the talukas of the river basin (1995-96 and 2010-11);
3. To find out the determinates of agricultural land holdings by using Gini-coefficient of Concentration approach and to suggest appropriate strategies to improve the landholding conditions in the environs of the Malaprabha river basin.

Database and Methodology:

The present study is mainly based on the secondary sources of data. Data for the present analysis has been obtained mainly from Directorate, Department of Economic and Statistics, Bangalore, District Statistical Offices of Belgaum, Dharwad, Gadag & Bagalkot districts from 1995 to 2011; besides this, data were also collected from various government offices and websites. Presently the taluka has been considered as the smallest unit of analysis. To achieve the objectives mentioned above the relevant statistical tools like, percentages, averages, variations and others and method of quantitative analysis has been employed. At last results were presented with a suitable diagrams and figures.

Results and Discussions:

i. Distributional Pattern of Operational Land Holdings by Size in MRB:

In Malaprabha river basin a definite standard size of farm most suitable to a definite type of farming cannot be maintained because of the increasing burden and dependency of the agricultural population on arable land and the working of the law of succession. These result in the splitting of large size holding into small, often widely scattered pieces of land which fail to conform to any reasonable economic standard from the point of view of agricultural operations. To make discussion convenient, land holdings can be grouped into various classes. The all India Report on Agricultural Census 2010-11 recognized five classes of holdings; marginal (less than one hectare), small (one to two hectares), semi-medium (two to four hectares), medium (four to ten hectares) and large (more than ten hectares and above). Class-wise distribution of operational holdings and their total area in the Malaprabha river basin is furnished in Table-1.

Table-1 Distributional Pattern of Operational Land Holdings by Size in MRB, 2010-11

Sl. No.	Size of Holdings	Number of Holdings	Area (In hectares)	Percentage of Total		Size of Holding (In hectares)
				Number	Area	
1	Below 0.5	50239	15988	10.31	1.41	0.32
2	0.5 - 1.0	80830	63293	16.59	5.57	0.78
Marginal		**131069**	**79281**	**26.90**	**6.98**	**0.60**
3	1.0 - 2.0	164980	240187	33.86	21.15	1.46
Small		**164980**	**240187**	**33.86**	**21.15**	**1.46**
Marginal & Small		**296049**	**319468**	**60.76**	**28.13**	**1.08**
4	2.0 - 3.0	78323	187005	16.07	16.47	2.39

5	3.0 - 4.0	41845	141512	8.59	12.46	3.38
Semi-medium		**120168**	**328517**	**24.66**	**28.93**	**2.73**
6	4.0 - 5.0	23992	105253	4.92	9.27	4.39
7	5.0 - 7.5	27309	162920	5.60	14.35	5.97
8	7.5 - 10.0	10882	91797	2.23	8.08	8.44
Medium		**62183**	**359970**	**12.76**	**31.70**	**5.79**
9	10.0 - 20.0	8217	103915	1.69	9.15	12.65
10	20.0 & above	629	23623	0.13	2.08	37.56
Large		**8846**	**127538**	**1.82**	**11.23**	**14.42**
All Sizes		**487246**	**1135493**	**100**	**100**	**2.33**

Source: Agricultural Censuses Reports of 1995-96 to 2010-11 published by DES Bangalore.

The study reveals that, the important feature of Malaprabha basin's agrarian structure is the continuing predominance of the small level peasantry, both the number and area. There were more than 4.87 lakh farmers of basin area cultivate about 11.35 lakh hectares of land with an average operational land holding of 2.33 hectares as per agricultural census of 2010-11 (Table-1). There are 26.90 percent of marginal farmers in the study area, who cultivated only 6.98 percent of area and the average size of holding in this class is about 0.60 hectares. While 33.86 percent of small farmers hold 21.15 percent of area and the average size of holding is 1.46 hectares, followed by 24.66 percent of semi-medium farmers who cultivated only 28.93 percent of farm area. The average size of holdings is 2.73 hectares. There are 12.76 percent of medium farmers who cultivated 31.70 percent of farm area and the average size of holding in this category is about 5.79 hectares. The large farmers formed only 1.82 percent of total farm holdings and they occupy 11.23 percent of total area in the talukas of the basin area. The average size of holdings in this class is about 14.42 hectares.

The Lorenz curves in Fig.2 confirm the inequalities in the distribution of cultivated area in various size classes in Malaprabha river basin. The average values of Gini's coefficient of concentration ratios turn out to be around 0.449 and 0.446 for the years 1995-96 and 2010-11, an indication of the fact that there was a high concentration of holdings at the lower rung and, of cultivated area at the upper rung of the ladder. It has also been confirmed that even in state or nation there was little change in this pattern. Unfortunately, the consistency in the spatial pattern of distribution established that the process of diversification in rural economy and dis-agriculturalization were very weak in rural side of the study area.

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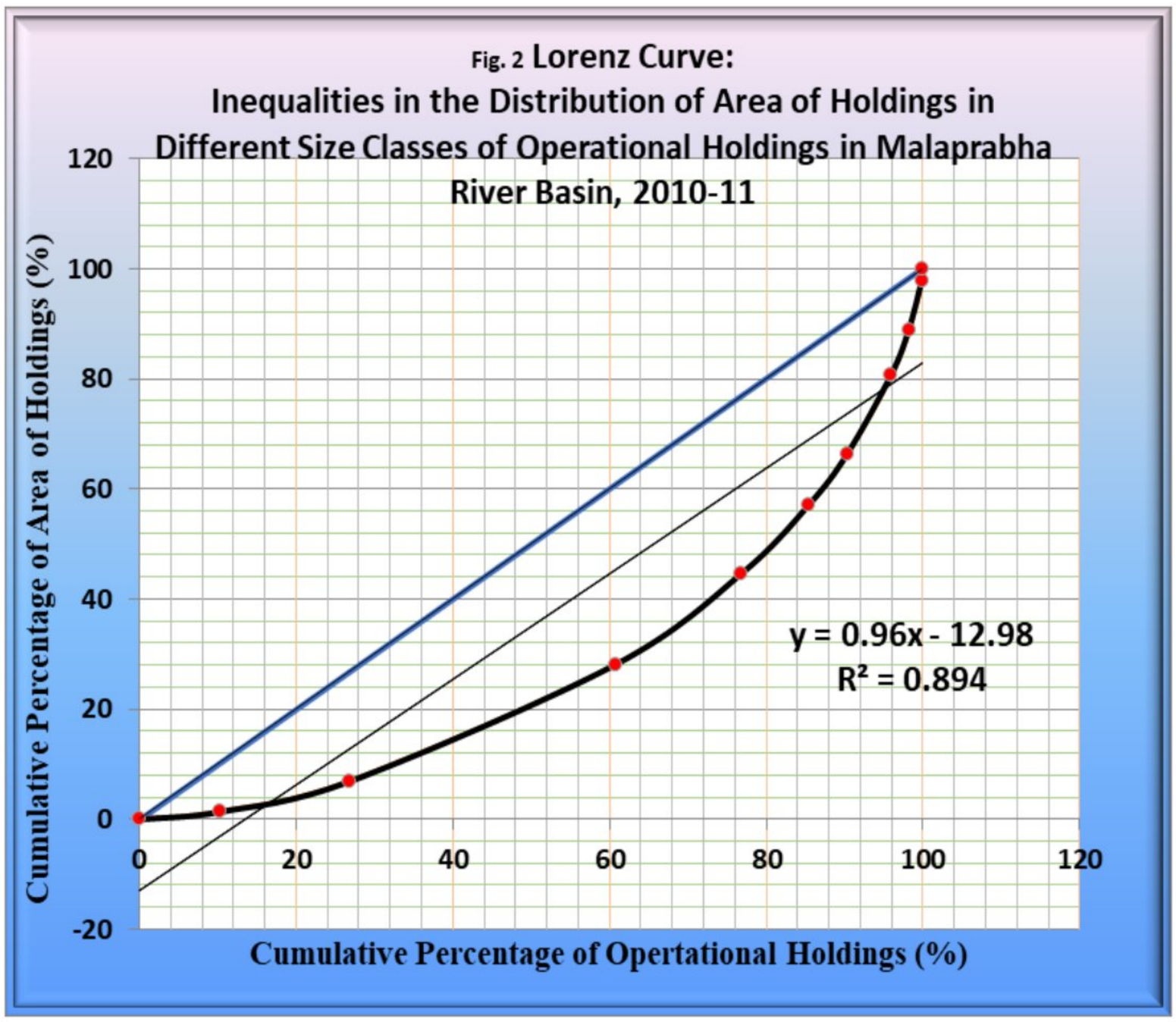

ii. Spatial Distribution of Size of Holdings:

The impact of the various land reform measures taken overtime should get reflected in the pattern of land distribution and can be roughly measured by looking at the concentration of land in various size classes of holdings. In the following paragraphs an attempt has been made to examine the pattern of land distribution in the basin area as well as to examine its spatial pattern (talukas-wise) also (Table-2). In 2010-11, the share of marginal and small farmers varies from a least of 50.95 percent in Navalgund to a highest of 72.03 percent in Bailhongal taluka with the average of 60.76 percent. The spatial distribution shows that, the **very high** concentration of this category of farmers is more than 70 percent only in Bailhongal (72.03%) taluka and **high** concentration noticed in the ranges from 65 to 70 percent only in Khanapur (68.41%) taluka of the basin. The **medium** zone ranges from 60 to 65 percent in Saundatti (60.18%), Naragund (60.36%), Hubli (61.80%), Dharwad (61.84%), Badami (61.86%) and Kundagol (62.35%) talukas of the basin. While Navalgund (50.95%), Hunagund (54.86%), Gadag (56.86%), Ramadurga (58.37%) and Ron (59.33%) talukas of the basin registered in **low** (less than 60%) zone.

Table-2 Spatial Distribution of Size of Agricultural Land Holdings in Malaprabha River Basin, Karnataka, 2010-11

Sl. No.	Talukas	Components	Marginal Farmers	Small Farmers	Marginal & Small Farmers	Semi-medium Farmers	Medium Farmers	Large Farmers	Total

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1	Khanapur	No's (%)	37.03	31.38	68.41	19.71	10.31	1.57	100.00
		Area (%)	10.86	21.58	32.44	25.74	28.58	13.24	100.00
		Average Size	0.62	1.44	0.99	2.74	5.81	17.74	2.10
2	Bailhongal	No's (%)	37.91	34.13	72.03	19.63	7.70	0.64	100.00
		Area (%)	14.05	27.05	41.10	29.83	24.41	4.65	100.00
		Average Size	0.66	1.41	1.02	2.71	5.65	12.96	1.78
3	Saundatti	No's (%)	28.79	31.39	60.18	24.23	13.57	2.02	100.00
		Area (%)	6.99	18.75	25.74	27.15	32.30	14.81	100.00
		Average Size	0.59	1.46	1.05	2.74	5.82	17.89	2.44
4	Ramdurga	No's (%)	27.19	31.19	58.37	25.83	13.81	1.99	100.00
		Area (%)	6.42	19.21	25.62	29.67	33.47	11.24	100.00
		Average Size	0.56	1.46	1.04	2.73	5.75	13.42	2.37
5	Badami	No's (%)	28.39	33.47	61.86	25.09	11.67	1.38	100.00
		Area (%)	7.48	21.93	29.41	30.82	29.90	9.87	100.00
		Average Size	0.58	1.45	1.05	2.72	5.68	15.87	2.22
6	Hunagund	No's (%)	19.50	35.36	54.86	29.21	14.10	1.83	100.00
		Area (%)	4.90	20.97	25.87	31.78	32.49	9.85	100.00
		Average Size	0.63	1.49	1.18	2.73	5.77	13.50	2.51
7	Naragund	No's (%)	25.79	34.58	60.36	24.15	14.17	1.31	100.00
		Area (%)	6.85	21.70	28.55	28.76	35.19	7.50	100.00
		Average Size	0.62	1.45	1.10	2.76	5.75	13.23	2.32
8	Ron	No's (%)	22.93	36.40	59.33	26.41	12.49	1.78	100.00
		Area (%)	5.88	22.94	28.82	30.85	30.43	9.89	100.00
		Average Size	0.60	1.48	1.14	2.75	5.73	13.10	2.35
9	Gadag	No's (%)	20.68	36.18	56.86	27.25	13.58	2.31	100.00
		Area (%)	4.80	21.01	25.82	29.45	31.66	13.07	100.00
		Average Size	0.58	1.45	1.13	2.70	5.82	14.14	2.50
10	Dharwad	No's (%)	28.40	33.44	61.84	24.35	12.10	1.71	100.00
		Area (%)	7.12	21.25	28.38	29.48	31.04	11.10	100.00
		Average Size	0.57	1.44	1.04	2.74	5.80	14.66	2.26
11	Hubli	No's (%)	29.19	32.61	61.80	22.93	13.14	2.13	100.00
		Area (%)	7.15	20.51	27.65	27.04	33.13	12.17	100.00
		Average Size	0.57	1.46	1.04	2.74	5.86	13.29	2.32
12	Navalgund	No's (%)	16.80	34.15	50.95	26.85	19.00	3.19	100.00
		Area (%)	3.81	17.29	21.10	25.50	38.82	14.58	100.00
		Average Size	0.66	1.47	1.21	2.76	5.94	13.29	2.91
13	Kundagol	No's (%)	26.22	36.13	62.35	23.39	12.25	2.02	100.00
		Area (%)	6.94	22.62	29.56	28.05	30.89	11.50	100.00
		Average Size	0.61	1.44	1.09	2.76	5.81	13.12	2.30
	MRB	No's	131069	164980	296049	120168	62183	8846	487246
		%	26.90	33.86	60.76	24.66	12.76	1.82	100.00
		Area (Hact)	79283	240187	319470	328518	359971	127536	1135495
		%	6.98	21.15	28.13	28.93	31.70	11.23	100.00
		Average Size	0.60	1.46	1.08	2.73	5.79	14.42	2.33
No's in %			26.90	33.86	60.76	24.66	12.76	1.82	100
Area (Hact) in %			6.98	21.15	28.13	28.93	31.70	11.23	100
Average Size of Holdings in State			0.48	1.41	0.81	2.68	5.69	14.71	1.55
Average Size of Holdings in India			0.38	1.42	--	2.71	5.76	17.37	1.16

Source: Agricultural Censuses Reports of 1995-96 to 2010-11 published by DES Bangalore.

The share of Semi-medium farmers ranges from as low as of 19.63% in Bailhongal to as high as of 29.21% in Hunagund taluka with the average share is 24.66 percent. The spatial distribution shows that, very high (more than 28%) only in Hunagund (29.21%), high (24 -28%) in Naragund (24.15%), Saundatti (24.23%), Dharwad (24.35%), Badami (25.09%), Ramadurga (25.83%), Ron (26.41%), Navalgund (26.85%) and Gadag (27.25%), medium (20-24%) in Hubli (22.93%) and Kundagol (23.39%) and low (less than 20%) in Khanapur (19.71%) and Bailhongal (19.63%) taluks of the basin.

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The concentration of Medium farmers ranges from 7.70 percent in Bailhongal to a highest of 19.00 percent in Navalgund taluka with an average of 12.76 percent. The spatial distribution shows that, the share is very high (more than 16%) only in Navalgund (19.00%), high (12-16%) in Dharwad (12.10%), Kundagol (12.25%), Ron (12.49%), Hubli (13.14%), Saundatti (13.57%), Gadag (13.58%), Ramadurga (13.81%), Hunagund (14.10%) and Naragund (14.17%), medium (8-12%) in Khanapur (10.31%) and Badami (11.67%) and it low (less than 8%) only in Bailhongal (7.70%) taluks of the basin. The Large farmers during 2011 vary from 0.64 percent in Bailhongal to a maximum of 3.19 percent in Navalgund taluka with an average of 1.82 percent. The spatial distribution of this category is very high (more than 3%) only in Navalgund (3.19%), high (2 - 3%) in Saundatti (2.02%), Kundagol (2.02%), Hubli (2.13%) and Gadag (2.31%), medium (1 - 2%) in Naragund (1.31%), Badami (1.38%), Khanapur (1.57%), Dharwad (1.71%), Ron (1.78%), Hunagund (1.83%) and Ramadurga (1.99%) talukas of the basin. The low (less than 1%) share is found in Bailhongal (0.64%) taluka of the basin.

The spatial pattern of average size of land holdings during 1995-96 and 2010-11 in the Malaprabha river basin shows varies from a least of 2.16 hectares in Bailhongal to a highest of 3.91 hectares in Navalgund taluka with the average of 2.94 hectares in 1995-96. To describe of the spatial distribution, it has grouped conveniently into six categories and it shows that, extremely very high zone noticed (more than 3.00) in Hunagund (3.09), Gadag (3.14), Ramadurga (3.15), Saundatti (3.26), Dharwad (3.19), Kundagol (3.20) and Navalgund (3.91)talukas , very high (2.75 to 3.00) in Ron (2.86), Naragund (2.93) and Hubli (2.99) talukas, high (2.50 to 2.75) only in Badami (2.71), low (2.00 to 2.25) in Bailhongal (2.16) and Khanapur (2.17) talukas, while none of the talukas observed in medium (2.25 to 2.50) and very low (less than 2.00) zone of the Malaprabha river basin (Fig-3).

During 2011, depicts that the decrease trend of average size of holdings in all talukas of the river basin and it varies from a least of 1.78 hectares in Bailhongal to a highest of 2.91 hectares in Navalgund taluka with the average of 2.33 hectares. The spatial distribution shows that, none of the talukas noticed in extremely very high zone which consist of more than 3.00 hectares of average size, the very high category is ranges from 2.75 to 3.00 hectares only in Navalgund (2.91) taluka and high noticed in the ranges from 2.50 to 2.75 hectares only in Gadag (2.50) and Hunagund (2.51) talukas of the basin. The medium zone ranges from 2.25 to 2.50 hectares in Dharwad (2.26) Kundagol (2.30), Naragund (2.32), Hubli (2.32), Ron (2.35), Ramadurga (2.37) and Saundatti (2.44) talukas of the basin. While Khanapur (2.10) and Badami (2.22) in low (2.00 to 2.25) and Bailhongal (1.78) taluka of the basin registered in very low (less than 2.00) zone respectively (Fig-3).

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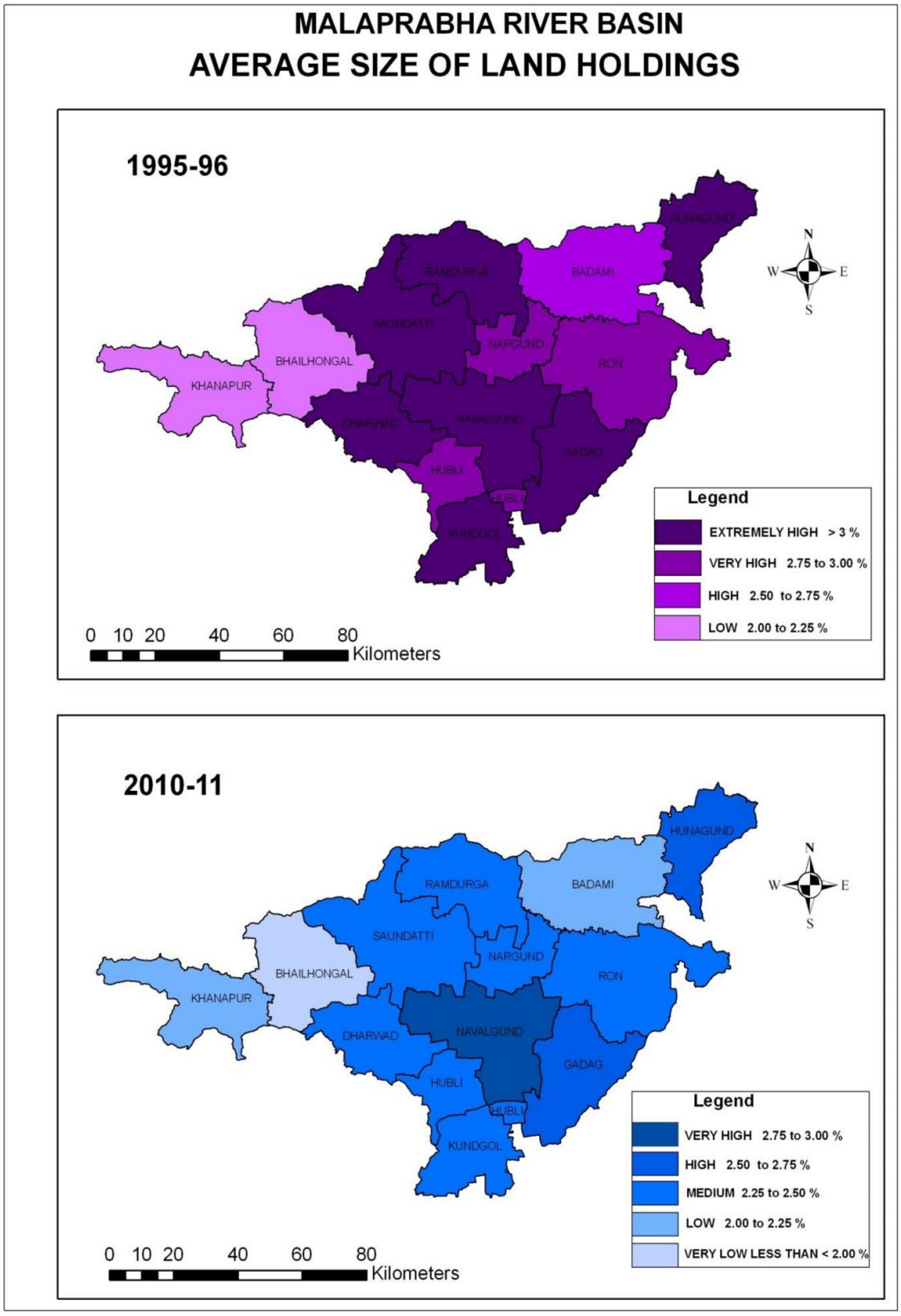

Fig.-3

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iii. Changes in Size-Distribution of Holdings:

To have a factual knowledge of the process of sub-division of holdings information pertaining to them at four censuses has been present in Table-3 to 5 and Fig.4. It is very clear from the tables and figures that number and area of operational holdings falling in marginal, small and semi-medium classes have been increasing at the cost of medium and large holdings. But the average size of respective groups is in decreasing trend in the basin area during the study period. Thus, under optimum holdings are multiplying which still degrades the situation. As per 2010-11 agricultural census the total number of operational holdings in the Malaprabha river basin area is about 4.87 lakhs, compared to 4.56 lakhs in previous census 2005-06, this has registered an increase of 6.84 percent (Table-3 and Fig.4). Among the five major size classes of holdings, the small holdings (one to two hectares) account for a maximum share of 33.86 per cent of the total number of holdings, followed by marginal holdings (less than one hectare) 26.90 per cent, semi-medium holdings (two to four hectares) 24.66 per cent, medium holdings (four to ten hectares) 12.76 per cent and large holdings (more than ten hectares and above) 1.82 per cent, being the least.

Table-3 Trends in Number of Operational Holdings According to Major Size Classes of Agricultural Censuses 1995-96 to 2010-11

Sl. No	Size of Class	1995-96	2000-01	2005-06	2010-11	Changes over 1995-96
1	Marginal	71403	95804	114928	131069	59666
	In %	18.36	22.20	25.20	26.90	60.70
% variation over preceding censuses			**34.17**	**19.96**	**14.04**	**83.56**
2	Small	123987	138105	146726	164980	40993
	In %	31.88	32.01	32.17	33.86	41.70
% variation over preceding censuses			**11.39**	**6.24**	**12.44**	**33.06**
3	Marginal & Small	195390	233909	261654	296049	100659
	In %	50.24	54.21	57.37	60.76	102.40
% variation over preceding censuses			**19.70**	**11.86**	**13.15**	**51.52**
4	Semi Medium	111505	118492	119636	120168	8663
	In %	28.67	27.46	26.23	24.66	8.81
% variation over preceding censuses			**6.27**	**0.97**	**0.44**	**7.77**
5	Medium	68940	68102	64959	62183	- 6757
	In %	17.72	15.78	14.24	12.76	- 6.87
% variation over preceding censuses			**- 1.22**	**- 4.62**	**- 4.27**	**- 9.80**
6	Large	13109	10978	9821	8846	- 4263
	In %	3.37	2.54	2.15	1.82	- 4.34
% variation over preceding censuses			**- 16.26**	**- 10.54**	**- 9.93**	**- 32.52**
	All Classes	**388944**	**431481**	**456070**	**487246**	**98302**
	In %	**100.00**	**100.00**	**100.00**	**100.00**	**100.00**
% variation over preceding censuses			**10.94**	**5.70**	**6.84**	**25.27**

Source: Agricultural Censuses Reports of 1995-96 to 2010-11 published by DES Bangalore

The total area operated under all operational holdings in the current census is found to be 11.35 lakh hectares, a marginal decrease by 0.14 per cent as compared to the previous census 2005-

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06 figure of 11.37 lakh hectares (Table-4 and Fig.4). As regards, the area operated by different size classes of holdings, medium size class holdings has the highest percentage of area operated i.e., 31.70 per cent, closely followed by semi-medium size class with 28.93 per cent, small size class with 21.15 per cent, large size class with 11.23 per cent and the marginal size class with 6.98 per cent, which has the least share.

Table-4 Trends in Area of Operational Holdings According to Major Size Classes of Agricultural Censuses 1995-96 to 2010-11 (Area in hectares)

Sl. No	Size of Class	1995-96	2000-01	2005-06	2010-11	Changes over 1995-96
1	Marginal	42228	55766	65680	79281	37053
	In %	3.69	4.85	5.78	6.98	469.32
% variation over preceding censuses			**32.06**	**17.78**	**20.71**	**87.75**
2	Small	185748	204697	216543	240187	54439
	In %	16.25	17.80	19.04	21.15	689.54
% variation over preceding censuses			**10.20**	**5.79**	**10.92**	**29.31**
3	Marginal & Small	227976	260463	282223	319468	91942
	In %	19.94	22.64	24.82	28.13	1158.86
% variation over preceding censuses			**14.25**	**8.35**	**13.20**	**40.13**
4	Semi Medium	311608	328803	331683	328517	16909
	In %	27.25	28.59	29.17	28.93	214.17
% variation over preceding censuses			**5.52**	**0.88**	**- 0.95**	**5.43**
5	Medium	412731	403702	382090	359970	- 52761
	In %	36.10	35.10	33.60	31.70	- 668.28
% variation over preceding censuses			**- 2.19**	**- 5.35**	**- 5.79**	**- 12.78**
6	Large	191073	157255	141106	127538	- 63535
	In %	16.71	13.67	12.41	11.23	- 804.75
% variation over preceding censuses			**- 17.70**	**- 10.27**	**- 9.62**	**- 33.25**
	All Classes	1143388	1150223	1137102	1135493	- 7895
	In %	100.00	100.00	100.00	100.00	100.00
% variation over preceding censuses			**0.60**	**- 1.14**	**- 0.14**	**- 0.69**

Source: Agricultural Censuses Reports of 1995-96 to 2010-11 published by DES Bangalore

The trend in area operated from the Agriculture Census 1995-96, shows slight increase of 0.60 per cent during 2000-01 censuses. Decreasing trend was observed during the subsequent other two censuses and it fell marginally by 1.14 per cent and 0.14 percent during 2005-06 and 2010-11census respectively. Pertaining to the area operated during the census 1995-96 is 11.43 lakh hectares, and decreased to 11.35 lakh hectares during 2010-11 with a decrease of about 0.69 percent.

The average size of operational holdings has come down marginally, from 2.49 hectares in 2005-06 censuses to 2.33 hectares in 2010-11 censuses by 0.16 hectare, which is mainly due to sub-division and fragmentation of land holdings that this trend is common in every Agricultural Census (Table-5 and Fig.4). One notable feature is that the average size of holdings increases with increase in size classes. The marginal size class showed the minimum of 0.60 hectare of average size holdings, followed by small size class holdings 1.46 hectares, semi medium size class 2.73 hectares, medium size class 5.79 hectares and large size class 14.42 hectares, being the maximum.

Table-5 Trends in Average Size of Operational Holdings According to Major Size Classes of Agricultural Censuses 1995-96 to 2010-11 (Area in hectares)

Sl. No	Size of Class	1995-96	2000-01	2005-06	2010-11	Changes over 1995-96
1	Marginal	0.59	0.58	0.57	0.60	- 1.69
2	Small	1.50	1.48	1.48	1.46	-2.67
3	Marginal & Small	1.17	1.11	1.08	1.08	-7.69
4	Semi Medium	2.79	2.77	2.77	2.73	-2.15
5	Medium	5.99	5.93	5.88	5.79	-3.34
6	Large	14.58	14.32	14.37	14.42	-1.09
	Total	**2.94**	**2.67**	**2.49**	**2.33**	-2.07

Source: Agricultural Censuses Reports of 1995-96 to 2010-11 published by DES Bangalore

As per the Agriculture Censuses, during 1995-96 to 2010-11 there was a decline in the average size of operational land holdings in MRB, reflecting the immense population pressure on the limited land resource available for cultivation. The trend of average size of operational land holdings dropped from 2.94 ha in 1995-96 to 2.33 ha in 2010-11 indicating shortfall of 52 percent (Table 5 and Fig.4). Consequently, during the same period, the number of landholdings in the marginal and small categories swelled by about 59666 and 40993, respectively. Landholding size determines investment in agriculture, productivity, farm mechanization and the sustainability of farm incomes itself. Landholdings in the marginal category (less than 1 ha) constitute 26.90 per cent of the operational holdings in the basin (2010-11). In terms of area operated, the share of marginal holdings has increased to 6.98 per cent (2010-11) from 3.69 per cent (1995-96). Similarly, the share of operated area under small farm holdings (1 ha to 2 ha) increased from 16.25 per cent to 21.15 per

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cent during the same period. Small and marginal holdings together constitute 60.76 per cent of the number of operational holdings and 28.13 per cent of the operated area in the river basin.

In 1995-96, holding till, say less than two hectares constituted 50.24 percent of the total holdings and shared 19.94 percent of the area operated in the study area, in 2010-11 these percentages increased further to 60.76 and 28.13 percent respectively. Over time the share of marginal, small and semi medium holdings is increasing in all the talukas, while those of medium and large holdings are declining (Table-3 to 5). In 2010-11 large holdings with more ten hectares accounted for about only 1.82 percent and controlled about 11.23 percent of operated area. Thus, farmers with 2 to 10 hectares accounted for about 37.42 percent and operated 60.64 percent of land in 2010-11. The change in operational land holding distribution was facilitated by among other factors, land reforms that emphasized tenancy law of land to the tiller and to an extent land distribution. Agriculture is small-scale and becoming smaller scale over time mainly due to population pressure and inadequate growth of off-farm employment and income opportunities.

Due to sub-division and fragmentation, landholdings are becoming in economical. Besides due to the lack of land consolidation, the holdings are scattered and are often unmanageable and are a limiting factor for crop production. Land lease and tenancy regulations do not allow farming on large scales. The trend in the pattern of distribution of operated area among different size of classes of operational holdings in the study area presents the estimated Gini-coefficient of concentration of operational area. For the basin area as a whole, the degree of inequality in the distribution of operated land has declined from 0.449 percent in 1995-96 to 0.446 percent in 2010-11. It appears that the concentration of operational land has declined in Bailhongal, Khanapur and Hunagund talukas. In Bailhongal and Khanapur talukas, the concentration ratio declined compare to previous censuses. Inequalities got emphasized particularly in Ramdurga, Hubli and Gadag followed by Dharwad and Navalgund taluka. The other talukas of the basin area the ratio remained almost the same with slight variation during the period.

Conclusions:

The present paper has analysed the spatio-temporal analysis of size of operational holdings in the environs of Malaprabha river basin across three periods. The variations in number and area of operational holdings falling in marginal, small and semi-medium classes have been increasing at the cost of medium and large holdings. But the average size of respective groups is in decreasing trend in the basin area during the study period i.e. 1995-95 to 2010-11. Thus, under optimum holdings are multiplying which still degrades the situation. For the basin area as a whole, the Gini-coefficient of

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concentration degree of inequality in the distribution of operated land has declined from 0.449 percent in 1995-96 to 0.446 percent in 2010-11. It appears that the concentration of operational land has declined in Bailhongal, Khanapur and Hunagund talukas. Inequalities got emphasized particularly in Ramdurga, Hubli and Gadag followed by Dharwad and Navalgund taluka. The other talukas of the basin area the ratio remained almost the same with slight variation during the period.

The present study has suggested the following possible policy initiatives that could be considered for the better management of land resources of the river basin. The agriculture being one of the most important sectors necessitates appropriate policy vision to redeem the agricultural sector from the stagnation and instability and put it on the stream of sustainable growth on the one hand and to assert the ongoing tendency of the large-scale commercialization of agriculture. The suggestions of the study are implementation of laws relating to land reforms, control on fragmentation of land, integrated land use planning and policy on diversion of land and land tenancy acts in the study area.

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NEW PERSPECTIVES IN HIGHER EDUCATION

INNOVATIVE AND BEST PRACTICES IN TEACHING, LEARNING AND EVALUATION

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Introduction

The demand for globalization of education system during nineties attracted the attention of government of India in this area. It thought of overhauling its conventional higher education system in India through the autonomous institution of UGC called "National Assessment and Accreditation Council (NAAC) established at Bangalore on September, 1994. NAAC was assigned the task of performance evaluation, assessment and accreditation of universities and colleges in the country. It has been entrusted with the job of defining and refining the norms of quality higher education and doing the continuous assessment and accreditation of the Higher Education Institutions (HEIs) in India on the basis of such norms.

Since quality enhancement is a continuous process, the IQAC has been entrusted with the most crucial task of evolving a system for conscious, consistent and catalytic improvement in the performance of educational institutions. It has to play the role of quality circle in the industries rather than becoming yet another hierarchical structure or record keeping exercise in the institution. It should serve as avehicle for ushering in quality through rational policy making and adoption of participative leadership style.

Objective Of The Study

1. To suggest Innovative and Best practices in Teaching.

2. To suggest Innovative and Best practices in Learning.

3. To suggest Innovative and Best practices in Evaluation.

Criteria

The NAAC has identified the following seven criteria to serve as the basis for assessment of affiliated colleges.

1. Curricula Aspects

2. Teaching-Learning and Evaluation

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3. Research, Consultancy and Extension

4. Infrastructure and Learning Resources

5. Student Support and Progression

6. Governance Leadership and Management

7. Innovations and Best Practices

Among the seven criterions, criterion II- Teaching ,learning and Evaluation holds the highest score and is the most indispensable aspect in which lot of efforts are to put by the institution foe scoring good CGPA. This criterion deals with the efforts of an institution to serve students of different backgrounds and abilities, through effective teaching-learning experiences. It also probes into the adequacy, competence as well as the continuous professional development of the faculty who handle the programs of study. The efficiency of the techniques used to continuously evaluate the performance of teachers and students is also a major concern of this criterion. The focus of this criterion is captured in the following Key Aspects:

1. Student Enrolment and Profile

2. Catering to Diverse Needs of Students

3. Teaching-Learning Process

4. Teacher Quality

5. Evaluation Process and Reforms

Innovative and Best Practices in Teaching Learning and Evaluation

The first pre-requisite for the qualitative improvement of education in the colleges and its improved accreditation by NAAC is the establishment of a strong and empowered IQAC cell composed of dynamic academicians cum administrative leaders from institution with participative leadership style. The cell should establish and excellent communication with the principal & management, motivate and mould the attitudes of the staff, students rest of the stakeholders.

Innovative Teaching

An innovative effort of an institution helps in its academic excellence. An innovative practice could be a pathway created to further the interest of the student and the institution, for internal quality assurance, inclusive practices and stakeholder relationships. Nowadays there is democratization of knowledge and the role of the teacher is changing to that of facilitator. We need to have interactive teaching and this changing role of education is inevitable with the introduction of multimediatechnology and the spawning of a technologically-savvy generation of youths. The analysis reveals some of the suggestions that the teaching community can practice in the classrooms.

- Information and Communication Technology has made many innovations in the field of teaching and also made a drastic change from the old paradigm of teaching and learning. In the new example of learning, the role of student is more important than teachers. The concepts of paperless and pen less classroom are emerging as an alternative to the old teaching learning method.
- The teacher can use multimedia to modify the contents of the material. It helps him/her to represent in a more meaningful way, using different media elements. These media elements can be converted into digital form, modified and customized for the final presentation. By incorporating digital media elements into the project, the students are able to learn better since they use multiple sensory modalities, which would make them more motivated to pay more attention to the information presented and retain the information better.
- Students can receive the images as digital files, PCs, compact computers that allow the teacher to write notes directly on the screen with a special pen, replace the archaic projector. Technology allows teachers to make notes on charts and spreadsheets and send them directly to their students' PCs.
- Another innovative teaching method is mind maps, which is a simple technique for drawing information in diagrams, instead of writing it in sentences. These are also very quick to review, as it is easy to refresh information in student's mind just by glancing once. Mind maps can also be effective mnemonics and remembering their shape and structure can provide the cues necessary to remember the information within it. They engage much more of the brain in the process of assimilating and connecting facts than

conventional notes. The key notion behind mind mapping is that student learns and remembers more effectively by using the full range of visual and sensory tools at his/her disposal.

- The sense of humor can also be an innovative teaching method. Students always like lively and delightful personalities and that's natural. If one teaches whatever he/she wants in a humorous, delightful and entertaining way, he/she can easily achieve target. Humor strengthens the relationship between student and teacher, reduces stress, makes a course more interesting and if relevant to the subject, may even enhance recall of the material. Humor has the ability to relax people, reduce stress and tension, and thereby create an atmosphere conducive for learning and communication.
- There are many devices with the help of which one can teach effectively for e.g. the games like word-antakshari, Spin-a-yarn; Role-Playings etc. are very effective in developing their linguistic competence. If this method is used properly, language-learning becomes more interesting and easy.
- Another innovative teaching method is the mnemonics words. Here the teacher is not supposed to talk on a particular concept for a quite long time. But to make it clear to the students he/she can just go on saying mnemonics or its associated meaning in words. Here he/she goes on saying only words instead of sentence, and once they come to a basic understanding of the meaning of a particular concept, then the teacher will explain in sentences. For example, in teaching language courses this technique can be used as an effective medium by the teacher to develop word power.

Innovative Learning

If learners are actively engaged with a task which they accept is for learning they are not simply follow a prescription or set of rules, but contribute their own thinking to the task.

- The task should be constructed to allow significant elements of choice by the learners so that they can begin to own it and make it meaningful and worthwhile for them—it becomes a task which is not undertaken simply to satisfy the needs of the teacher.
- Learners' experience should be challenged or confronted in some way which allows them to reassess their experience and the assumptions on which they are operating.
- Learners must be obliged to intervene in some way in their own learning process; they have to make choices and follow the consequences of their choices.

- Learners are required to link what is new to them to their existing frameworks of understanding or confront the need to modify these frameworks.

INNOVATIVE EVALUATION

'Evaluating throughout is important; it allows adjustments and improvements to be made.'

The evaluation of teaching and learning, and particularly of teaching and learning innovation, has become a priority of present education. A successful evaluation procedures must begins with in the planning stages, or at least thinking about how one is going to evaluate. This is because it makes evaluation so much easier if one is aware of the need to collect, from the beginning, the type of information which is needed in order to be able to say whether the teaching- learning process 'worked' or not.

- Just as a carpenter has many tools in his toolbox, evaluators also must have numerous tools at their disposal. He has to select the method best suited for the job. There are no hard and fast rules about the methods of evaluating new teaching and learning initiatives but there are, of course, some general approaches which are useful in a range of circumstances. Here are some innovative methods of evaluating different from the each with some brief comments.
- Questionnaires can be used to explore more complex, and perhaps more relevant issues such as what students are learning, what aspects are most useful, what could be improved. Depending on the purpose, questionnaires can be used at almost any time, but they may be particularly useful at the beginning and end of an initiative.
- Asking students to keep a journal of their experiences and their comments about the initiative can often be useful. Journals can be analyzed for changes during the period, for example, increases in confidence and understanding. They can also reveal possible changes which need to be made along the way. In some circumstances, journals can be included as part of student assessment.
- Student interviews are often a valuable means of evaluation, so long as the focus is clear. As interviews are generally time consuming, interviews of a small sample of students may be used in conjunction with other methods of assessing the response of the whole group. Interviews can be done with focus groups of students and these meetings often can provide opportunities to explore group responses in some detail. They can be arranged at appropriate times during the course.

- Informal observation of behavior is useful in some circumstances, as long as your hunches about what it 'means' are followed up in some systematic way. Don't forget that much formative evaluation also occurs simply through informal discussion with students and with staff involved in the program.
- Straight mapping or counting of the number of students who turn up to voluntary sessions can provide some indication of whether students find them useful, although again, this needs to be followed up in more detail. Who comes along? Why? Who doesn't turn up? Why not? What do the sessions provide or not provide?
- Quite sophisticated data on student patterns of usage can be collected during computer based instruction. Software can chart the time spent on various tasks, the areas where help is sought, and so on. An analysis of these files can often provide pointers to further questions about what works and what doesn't, and most importantly, why it works or not, questions which can be followed up through formal interviews or informal discussions with students. Feedback sheets or opportunities to comment can also be built into computer assisted learning units.
- The Socratic Wheel is a deceptively simple and powerfully visual rating tool with multiple applications. It can be used to set priorities or learning goals in light of baseline conditions, monitor progress or evaluate final results using multiple criteria, or compare projects, activities or individual profiles using single criteria.

Best Practices

The departments should be advised to shortlist the scholar students in various subjects and design mechanism to shape their careers through the activities such as extra books through departmental library, career counseling workshops, special coaching, training in competitive examinations, deputation to the events organized by other renounced colleges and management institutions etc.

The admission process of the college should made student friendly and it should be given in the college prospectus and the college website. The college should develop student enrolment profile annually either though the modification in the software used or manually. The profile report should indicate the socio economic and geographic status of the students enrolled for its various academic, professional, certification, add on and other courses. This cumulative record will be very useful for the teachers in proving educational guidance and counseling.

Introduce courses that will fill up the gaps and deficiencies in the university curricula and enrich the employment potential and develop the personality of students. Few examples of such courses are certification course in MS Office, Commercial Correspondence, Manual and Computerized Accounting in Tally ERP, Soft Skills, Communication in English, Health care and fitness, Hindi Speaking, Personality Development, Value Education, Music and Art, Marketing and Salesmanship, Entrepreneurial Skills, pathology etc

Some courses may be designed especially for Girls such as beautician, dress designing, cookery, art of mehndi&rangoli, nursing etc. Proper planning and execution of these courses will not only add to the skills, knowledge and personality development of students and make them employable but bring an academic flexibility in our education system. It will enable our students to accomplish many such courses simultaneously while pursuing their graduation.

Providing Remedial Coaching, NET / SET Coaching, Coaching for entry in services and Career counseling cell. These cells enable the colleges in catering the diverse educational needs of our students coming from different strata of our society and ensuring them a better career and a bright future. Teachers anchoring these courses should work with missionary zeal and they should bedynamic in approach. If feasible, they should sign MOUs with the professional organizations training the students for competitive examinations. But they should come out with tangible results by placing the students on jobs.

The institution should adopt ICT and modern methods of teaching, develop e-learning resources such as LCD, internet, e books, video clips, films, educational CDs, e-notes etc. It should arrange orientation and training camps and workshops for its teachers, students and administrative staff to upgrade their technological skills. It should encourage its staff to prepare their presentations and notes in soft form and keep on their personal and college websites. If their notes are available to the students in soft form the teachers will have adequate time to take up other developmental activities for the college and students such as preparatory and revisionary assignments, students' subject QUIZ, Seminars, PPT presentations, group discussion, mock interviews, Unit tests etc.

Designing own continuous internal evaluation system at the college level. It should contain announced and unannounced test, unit tests, individual and group assignments, PPT competitions, online tests etc.

Quality of teachers is a decisive factor in the qualitative improvement in the education system. In fact the teachers are the spear head if the quality improvement movement in a college. Hence teachers from the various departments should deputed for research fellowships, orientations and refresher courses, international, national and regional seminars and conferences, and such other programs meant for their academic development. College should also encourage the department to organize workshops, seminars and conferences in the college for upgrading the knowledge of the teachers. They must be encouraged to participate in refresher courses.

Organization of workshops, seminar, conferences at college level, national level and international level on themes relevant to the courses offered. Child centered teaching styles like Group discussions, role playing, projects, brain storming, and case study can be followed.

The college should evolve a strong feedback system from all its stakeholders in order to evaluate and improve the operating efficiency of all the activities, functions and sections. Then it should take corrective measures to improve the efficiency of its segments. It should develop the practice of maintaining the proper record of all sorts of activities carried on so as to enable the assessment by NAAC.

Conclusion

Thus, it can be concluded that by following child centered method of teaching –learning based on the innovations the institution and cater to the diverse needs of the students, improve its teaching- learning process. It will also help the institution to improve the student enrollment and their profile. Evaluation process will give the direction in which required changes are to be made. Following all these methods and best practices institution will surely attain better grades.

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WORLD WIDE ENVIRONMENTAL PROBLEMS AND SOCIAL ISSUES

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Introduction:

Whatever you got that is from earth and whatever you gave that is also to earth only- Bhagavadgita The force behind the development of mankind is environment of the earth. Man harvests everything from nature for his livelihood. The relation between man and environment has been changed from time interval as, Civilization advances, human needs are increase along with this he became so greedy that the resources of the earth are stressed heavily. This disturbance makes the environment degradation and it becomes unhealthy not only to mankind, but even other biomes. This is the major concern of the today's progressive world.

Environmental problems have become a global issue; some of the worldwide issues are described below:

1) Climate changes/ Green house effect: Many of the recent studies clearly shows that the atmospheric pollution is on a global scale. The entire atmosphere of our planet earth is now afflicted to same degree.

Carbon dioxide (CO2) build-up in the atmosphere leads to climate change. It is mainly due to burning of fossil fuels, 40% of the gases that to the contribute GHE are caused by burning the fossil fuels and cause, the Green house effect trend leading to climate change. The Green house effect may therefore be defined as "the progressive warming up of the earth's surface due to blanketing effect of manmade CO2 in the atmosphere.

The four Major Green house gases are Carbon Dioxide (CO2), Methane(CH4) Nitrus Oxide (N2o) and chloroflurocarbons (CFC's). However developed countries are currently responsible for over 2/3 of the total world emission of CO2, another peculiar issue is use of more harmful chemicals. Every year there are more than 1000 new chemicals enter into the market. Now more than 80000 chemicals on the commercial market and used with little or no knowledge of their potential long term effect

2) Ozone layer deflation: Ozone is a diflevent from of life sustaining oxygen has 3 atoms instead of the useful two. But this third atom instead have found is very unstable and can be eliminated by clorineons.

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When chemical pollutions as CFCS emission form refrigeration and other industrial operations, nitrous oxide and other noxious gases containing halogens pollute the atmosphere and same amount of ozone is broken down result to ozone layer deflection.

Ozone hole was first noticed in 1979 in Antarctica (South Pole) In 1985-86 the US scientists confirmed the cause of CFCs in the deflection of ozone layer.

The north European conference which was held in November 1980 warned to the mankind that non-melanoma skin cancer in light skinned people would aquatic organism including shrimps, fish eggs could be damaged by UV-B infiltration. This could even affect the reproductive process of plants as well as animals.

The worlds scientists much concerned with outer limits of the life zone i.e. biosphere felt they are not yet technically equipped to measure accurately the rate of ozone deflection already deflected by one percent. Even though the alarming danger is known, science has not yet developed a perfect model of measuring the rate of deflect of the ozone layer.

3) Acid Rain: Normal rain water is always slightly acidic because the fact that CO2 present in the atmosphere get dissolved in it formic carbonic acid, H2CO3. Because of SO2 and NO2 gases as pollutions in the atmosphere, the pH (The PH is equal to log 10c where C is the hydrogen ion concentration in moles per liter) of the rain water is further lowered, often to as low as 2.4 and this type of precipitation of lower pH is known as acid rain.

The term acid rain was first used by Robert Angus in 1982 " Literally it means the presence of excessive acids in rain water".

Acid rain is recognized as an international problem. A special conference on acidification of the environment was held in Stockhome in 1982. It reviewed and assessed a large amount of scientific information not previously available. This problem is mainly confined to the industrial areas of northern hemisphere. Acid rain can play havoc with the environment for example for the last 15 years a large number of moose are dying in the south west Sweden, because of the acid rain. The acid rain led to the destruction of blue berry bushes, staple diet of moose and animals change, their feeding habits. The lime in the acid rain lead to an imbalance in the concentration of copper and molybdenum in the lives of animals and these trends to the animal to suffer from osteoporosis ulcers, diarrhea, con vulsions, blindness and heart failure. Even though lighting increases the acidity in the rain the acidification of environment is mainly a manmade phenomenon.

4) Marine Pollution: Oceans cover more than 2/3 of the earth's surface and they play a crucial and important role in the chemical and biological balance of life on the planet. They are vital to our food security commerce and transportation. But human activity has troubled the health of oceans. Thus the marine pollution may defined as the discharge of waste substances in to the sea resulting in harm to living resources, hazards to human health hindrance to fishery and

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impairment of quality for use of sea water. The well known "Minamata Disease in Japan is due to discharge of methyl mercury in to sea water by chemical factories, sewage, agricultural chemicals, oil and metal are major concern of ocean pollution.

5 Desertification: Desertification is now perceived an intensifying worldwide threat. More than 100 countries of world affected at different degrees. More than 20% of the world pollution lives in 35% of the earth's area which consist of the arid, semi arid and sub-humid zones, which are at high risk of desertification. Three quarters of this area is already moderate desertified. Desertification is a so fast phenomenon in the world that every year 21 million hectares of agricultural land deteriorated through desertification and will become no longer productive economically. The lost production has been valued at 26 billion dollars annually. Over population in agriculture, local rural poverty etc. lead to over exploitation of land and forests for food, fuel, cash crops and meat for export. As these and other pressures increase to unattainable levels agricultural productive and soil fertily decline. The severe impacts of desertification are loss of agricultural land and increased food demand leads to prize hike, pressure on food exporting and importing countries. Other impacts includes – impacts on international trade, loss of valuable genetic resources, disruption of hydrological cycles and increase of atmospheric dust.

6) Vanishing Tropical Forests: Tropical forests occupies 7% of the land surface area and have a bewildering biological diversity. Tropical forests are considered as the lungs of the earth and hence have aptly been called as the life support system.

Tropical forests are under a virtual death sentence owing to burgeoning population density, rapid industrialization and dam building etc. It is estimated that merciless clearing of forests is at the rate of 6 to 8 million hectares per year.

The significance of tropical forests is that these are the world's richest biological zones and are estimated to contain as much as 40percent of all terrestrial species on the earth. These are economic boost to both developed and developing countries. Undisturbed tropical forests are also habitat of millions of the world's tribal peoples. The causes of deforestation, differ by region. Serious degradation of loss of watershed forests in particular has a wide range of major ecological and economic effects through increased erosion, floods, landslides and silting of hydroelectric facilities irrigation systems, reservoirs and harbor. The lives and livelihood of half the world's population directly depend on the wise management of watershed forests and ecosystems.

Deforestation influence in many dimensions, i.e. locally, regionally and even global climatic conditions disturbed. The economic, social and political implications of possible regional and global climatic changes have to be assessed.

7) Loss of Soil: Soil is one of the most significant ecological factors, which is derived from the transformation of surface rocks soil on which plants defend for their nutrients, water and mineral supply and anchorage.

The broad range of natural and manmade stress that causes the two types of soil damage: physical displacement and alterations in solid structure and composition.

Over shifting cultivation, salinization and water logging, flooding and plant cover destruction are same. Use of chemicals weapons testing and deployment in warfare etc. are causes soil degradation.

The damage of soil is also caused by patterns of dry land mountainside cultivation that are carried out without arrangements for bunding and terracing to protect the top soil.

The soil pollution sources mainly 1) Industrial wastes 2) Urban wastes 3) Radio active pollutions 4) Agricultural practices 5) Chemical and metallic pollution 6) Biological agents 7) Mining 8) Resistant objects 9) soil sediments are soil erosiam by different means are serious concern in the modern world.

Working in Collaboration with the relevant UN bodies UNEP has proposed the world soils policy programme which endeavors to enhance international awareness assist countries in the formulation of national soil policies, help develop technical and scientific knowledge and collect compiles and disseminate date on the use and management of the world's soil resources.

8) Depletion of Genetic resources: The important of wild life to mankind may be described in many ways a) cultural b) Economic c) Food d) Shooting and Fishing e) collection of animals f) wildlife sanctuary tourism g) maintenance of natural balance.

Now it is estimated that 25000 species and more than 1000 vertebrate species and sub special are threatened with extinction some estimates says that in the next to decade up to million species would be extinguished.

As much as two thirds of all terrestrial species and majority of a endangered species are located in developing countries. A significal loss of species in developing countries would have world wide effect on future agriculture, industry and science and human health and welfare generally. The most serious threat to many species is the disruption and destruction of their habitat by man especially in the tropical forests which alone harbors as much as 40% at all terrestrial species.

Major medicines and other pharmaceutical products, biomedical research depend on plant and animal species. It is clear that there is a common incentive for developed and developing countries to present a potentially catastrophic loss of species the mutual advantage of comprehensive joint effort could result in new medicines and other useful products that would contribute to improved levels of human health and welfare in all nations.

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Findings:

Essential Questions for Man's Future

The most different and essential problems for man's future lies in the brood ecological and social issues 'what is carrying capacity of the earth for man? In other words what are the limits of the life support capalitres of the earth in terms of human population? On the behaviorists concern.

What are the tolerance levels of man to the pressure generated by his own societies? In other words if man is his own worst enemy does this lead to his self destruction?

Conclusion:

The attitude of man should be changed for present one towards environment in order to solve the environment problems which are associate with many social issues for example in order maintain the supply of oxygen. Air quality we must look upon the oceans, forest and grassland as the world oxygen tank and we must insure their continued healthy ecologic function similarly water quality, food quality and quantity and space on the earth are associated with many environmental problems.

In a new approach to environment and development it is clear that Environment and development are not separate challenges: they are inexorable linked. First environmental stresses are linked one to another. Second environment stresses and patterns of economic development are linked one to another. Third environment and economic problems are linked to many social and political factors finally the systemic features operate not mearly within but also between natures.

The Debate of hour regarding ecology and development between ecologist and other scientist gets controversy, Ecologist concern about total degradation of environment which leads to imbalance in nature and life existence on the earth surface but other scientist consider this attitude. As overly emotional, fear producing and scientifically unjustified They say about good old days had no electricity, good transport system, medical facilities, for this ecologists replies "Dose progress requires polluted river & lakes, chokay air, birds dying for pecticies, intolerable crowding, ulcers in children heart attacks in young men etc, These controversy and argument can continue almost indefinity. But without harmonious relation between human being & natural environment life on the earth can't be happy one this situation already arrived and alarmed also.

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Skill Development In India And Higher Eduaction

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Abstract:

Today all economies need skilled workforce so as to meet global standards of quality, to increase their foreign trade, to bring advanced technologies to their domestic industries and to boost their industrial and economic development. Thus, skills and knowledge become the major driving force of socio-economic growth and development for any country.

The Planning Commission (12th plan) aims at raising the Gross Enrollment Ratio in Higher Education to 20% by 2017 and 25% by 2022.The XII Plans aims an additional enrollment of 10 million in higher education equivalent to 3 million additional seats for each age cohort entering higher system.

The study also found that both the Government and its partner agencies have under taken various measures for the effective implementation of the skill development system in the economy.

Introduction:

The Prime Minister's National Council delineates the policy advice and aims to create nearly 50 core skilled people by 2022 through skill systems that demand a high degree of inclusivity. Higher education reforms under the 11th Five Year Plan saw a nine-fold growth in Government spend on higher education in India, based on recommendations of the National Knowledge Commission (NKC) report (2009). However, improvements in terms of quality of higher education delivery have been in significant. The issues of skills shortages, and unemployable graduates still prevails at large. Education is the key to human resource development and a vehicle for economic growth of a country. But without a support skill for employment or vocational work, the appropriate utility of education cannot be done. Employers are increasingly finding it difficult to find employable youths, even though there are enough educated unemployed. Hence, skill development initiatives of the government should focus on these obstacles and develop the programs accordingly to resolve these hurdles for the complete success of the skill development initiatives.

Objectives

1. To study the Education Scenario in India.
2. To study the skill development in India.
3. To suggest possible solutions.

Methodology:

The proposed study mainly is descriptive in nature. It is based on secondary data and information which is collected from the concerned sources as per need of the research.

The Indian economy is highly dependent on the availability of jobs and the quality of the labour force. This has resulted in an increased demand for skilled labor over the past few years. India is the world's fastest growing economy, expected to grow at 7.2 percent in 2017-18, and at 7.7 percent by 2019-20. The government of India has ambitious plans to transform India into a competitive, high-growth, high productivity middle-income country.

More than 12 million youth between 15 and 29 years of age are expected to enter India's labour force every year for the next two decades. The government's recent skill gap analysis concludes that by 2022, another 109 million or so skilled workers will be needed in the 24 keys sectors of the economy. At present, however, school leavers have few opportunities to acquire job specific skills; only 2.3 percent of India's workforce has received some formal skills training. To address the issue, skill development has

emerged as a priority sector, and the recently-launched National Skill Development Mission aims to train approximately 400 million people across the country by 2022.

To support the country's vision, the World Bank has approved a US$250 million Skill India Mission Operation (SIMO) to help India's growing young workforce acquire the market-relevant skills needed in today's highly competitive job market. The operation will support the Government of India's Skill India Initiative and attempt to address the dual challenge of ensuring greater access to training as well as providing quality training leading to employment.

It is estimated that by 2023, when the project ends, about 8.8 million youth will have received some market-relevant training that will in turn open up better job opportunities for them in a changing job market. Skill development plays a major role.

Skill is required

- To improve employment
- Reduce poverty
- Provide livelihood opportunities
- Enhance productivity
- Promote environmentally sustainable development

The 2001 census shows that over 72.2% of the total population is distributed in over 6, 38, 000 villages, while the remaining 27.8% is spread over 5100 towns and cities. Census 2011 from the national sample survey office indicates that 105 million fresh entrants to workforce will require skill training by 2022 (i.e. around 15 million every year). Some 300 million of the current working population will need additional training over the next 7 years. According to the 12th plan document of the Planning Commission, India's labour force has increased from over 478 million in 2011 to over 502 million in 2017 and over 85% of this labour force has an educational qualification only till the secondary level of which over 55% only have an educational qualification till the primary level and only 2% have had vocational training. A World Bank report states that India is one of the few countries where working population continues to grow till 2050.

Most of the skill training institutes are struggling with the following challenges:

a) Mobilizing the target youth: It is imperative to have the right batch of candidates enrolled in the training institutes who are aspirational and have the right attitude towards career building.

b) Enabling industry linkages for job placements: Fostering connects with the industry for placements are a tricky business especially since India has more number of job ready candidates than the actual job opportunities.

c) Post-placement tracking: For employers hiring blue collar workforce hailing from rural and semi urban areas, retention is a critical concern. From sudden change of work environments (from informal to formal set up), workload, change of lifestyle, and migration from home district are some of the critical reasons behind poor retention. These challenges need to be addressed swiftly by the government.

Third, unfortunately the skilling process in India has given shape to a revenue generation model for training providers. It is a flourishing business opportunity for the training institutes who are being paid by the government for every enrollment. Needless to say, the urge to increase enrollments has a double facet meaning for the institutes. The fee is paid to the institute in 3 tranches - 30% on commencement of the training batch against validated candidates50% on successful certification of trainees 20% on outcome based on placements.

Findings / Results

1. Indian higher education is organized into two streams, i.e. General and Professional. We know that general education gives us an excellent foundation for successful knowledge-based careers, but fails to equip graduates with necessary work skills due to its poor quality. So, graduates require the skills of 3R's and 4 C's. Qualified youths are now requiring the skill beyond the basics of reading, writing and

arithmetic (the '3Rs'). Skills such as critical thinking, communication, collaboration and creativity (the '4Cs') are now important in jobs.

2. India will need to empower its workers with the right type of skills. The average age in the country is 29 and half our population is under 25 years of age. The urgent need of the hour is investing in skill training to create sustainable, inclusive development for all Indians. The problem lies in the fact that we have the lowest proportion of trained youth in the world.
3. The urban rural divide means that many aspiring youths from rural towns do not have access to the same resources and educational unable to complete for employability. The problem of literacy is one spanning all of India, but rural area is most affected and thus often left behind. 'Rural Skill India' is a program has been created to standardize training methods across urban and rural youth.

Conclusions:

While the Government of India is hugely investing in skill development initiatives for the future, there is widespread concern among the industry and academia that the efforts may not be sufficient to avoid a skill scarcity in the future. The opportunity for India largely lies with skilling the youth in the country. Hence there is a need to align the efforts of the Government with the Industry that will pave way to successful implementation of the programs, thereby enabling the skilled manpower for the nation by 2020.

The PM has approved the country's first integrated national policy for skill development and entrepreneurship. In his own words, skill development in India should envision the "Creation of an ecosystem of empowerment by skilling on a large scale at speed with high standards and promote a culture of innovation basedentrepreneurship generating wealth and employment and ensuring sustainable livelihoods for all."

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AN INTERACTION EFFECT OF ENVIRONMENTAL AWARENESS OF URBAN B.ED. TEACHER TRAINEES IN RELATION TO THEIR DEMOGRAPHIC VARIABLES, PERSONALITY FACTORS, SELF –CONCEPT AND STUDY HABITS

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Abstract

The purpose of the study was to analyze independent and combined effects of variables viz., Personality (high and low), Self concept (high and low) and Study habits (favorable and unfavorable). The sample of the present study includes 400 teacher trainees were drawn using stratified random sampling technique. Among the other things, the study revealed that; i)Urban school teacher trainees with introversion personality factor are more prone to the environmental awareness than those urban school teacher trainees with extroversion personality factor; ii) Urban school teacher trainees with higher self concept are more prone to the environmental awareness than those urban school teacher trainees with lower self concept : iii) Urban school teacher trainees with higher study habits are more prone to the environmental awareness than those urban school teacher trainees with lower study habits; iv) Urban school teacher trainees with extroversion/introversion personality factor and lower/higher self concept differ significantly in respect to their proneness to environmental awareness.

Introduction

Awareness about Environmental Protection

In the past two decades, environmental degradation / deterioration has attracted the attention of decision makers, scientists and even laymen in many parts of the world. They are becoming increasingly conscious of issues such as famines, droughts, floods, scarcity of fuel, firewood and fodder, pollution of air and water, problems of hazardous chemicals and radiation, depletion of natural resources, extinction of wildlife and dangers to flora and fauna. People are now aware of the need to protect the natural resources like air, water, soil and plant life that constitute the natural capital on which man depends.

Environmental issues are perennial because of the absence of their solutions to them. Unless environmental issues are solved or not taken care of, the coming generations may find earth not worth living. The need of the planet and the needs of the person have become one.

There is no denying the fact that environment has to be protected and conserved to make future life possible. Man's needs are increasing and accordingly the environment is also being altered, indeed, nature's capacity is too accommodating and regenerative yet there is a limit to nature's capacity, especially when pressure of exploding population and technology keep mounting. What is required is the sustenance, conservation and improvement of the changing and fragile environment.

Operational Definitions of the Terms

A few technical terms are used in this study to convey specific meaning. They are as follows :

i. Environmental Awareness

Environmental awareness is defined as factual information (for knowledge) possessed by a student about environmental issues, facts and events in the content areas of ecological concepts, pollution, wildlife, natural resources population and persons organization involved in the environmental movement. The environmental awareness test (EAT) which assesses the students awareness (knowledge) in area of ecology concepts, pollution, wild life, natural resources, population and persons organizations involved in the environmental movement.

ii. Personality Factors

All trait theories operate from the assumption that one's personality is a compendium of traits or characteristic ways of behaving, thinking, feeling, reacting, etc. The early trait the Ories were actually little more than lists of adjectives and personality was defined by enumeration. More recent approaches have used techniques of factor analysis in an attempt to isolate underlying dimensions of personality. Probably the most influential theory here is that of Cattell, which is based on a set of source traits that are assumed to exists in relative amounts in each individual and are the "real structural influences underlying personality". According to Cattell, the goal of personality theory is to have the individual trait matrix formulated so that behavioural predictions can be made.

Note that the type and trait approaches complement each other and, indeed, one could argue that they are two sides of the same coin. Type theories are primarily concerned with that which is common among individuals, trait theories focus on that which differentiates them. However, they certainly entail very different connotations of the base term personality.

iii. Self-concepts

One's concept of oneself in as complete and thorough a description as is possible for one to give. Contrast with self-esteem where the emphasis is on the evaluative judgments.

iv. Study Habits

"Effective method of study consists basically in applying those fundamental principles, which underline efficiency".

"Habit is an accomplished form of behavior in which things are done quickly, accurately and automatically with little voluntary attention".

"Study Habit as basic application of the mind to a problem or subject. The study habit is characteristic pattern, which an individual follows in learning about things and people".

Objectives

Urban Teacher Trainees

a) To study the effect of personality factors of urban teacher trainees on their environmental awareness.
b) To study the effect of self-concept of urban teacher trainees on their environmental awareness.
c) To study the effect of study habits of urban teacher trainees on their environmental awareness.
d) To study the interaction effect of personality factor and self-concept of urban teacher trainees on their environmental awareness.
e) To study the interaction effect of self-concept and study habits of urban teacher trainees on their environmental awareness.
f) To study the interaction effect of personality factor and study habits of urban teacher trainees on their environmental awareness.

Results

The data were analyzed using 3 –way ANOVA technique with a view to identify independent and combined effect of selected variables on Academic Achievement. The results of the analysis are given in Tables 1 to 2.

Analysis of Data Pertaining to 'Urban students'

Table No.1: Summary Table of ANOVA with respect to Environmental Awareness of Urban Samples

Source variation	DF	SS	MSS	Fvalue	Pvalue	Signi.
Main effects						
A	1	59.0875	59.0875	5.6604	<0.05	S
B	1	53.0108	53.0108	5.0783	<0.05	S
C	1	82.2964	82.2964	7.8838	<0.05	S
2way interactions						
A x B	1	53.1832	53.1832	5.0948	<0.05	S
A x C	1	25.0613	25.0613	2.4008	>0.05	NS
B x C	1	21.2149	21.2149	2.0323	>0.05	NS
3way interactions						
A x B x C	1	48.9330	48.9330	4.6876	<0.05	S
Error	192	2004.2362	10.4387			
Total	**199**	**2347.0233**				

Findings-Urban school teacher trainees

1. The urban secondary school teacher trainees with extroversion and introversion personality factor differ significantly in respect of their proneness to environmental awareness. However, the means of urban school teacher trainees with extroversion and introversion personality factor are 48.9327 and 50.1354 respectively. Two mean clearly reveal that urban school teacher trainees with introversion personality factor have a greater mean that of the teacher trainees with extroversion personality factor. Therefore, it can be interpreted that urban school teacher trainees with introversion personality factor are more prone to the environmental awareness than those urban school teacher trainees with extroversion personality factor.
2. The urban secondary school teacher trainees with higher and lower self concept differ significantly in respect of their proneness to environmental awareness. However, the means of urban school teacher trainees with higher and lower self concept are 49.9222 and 49.1727 respectively. Two mean clearly reveal that urban school teacher trainees with higher self concept have a greater mean that of the teacher trainees with lower self concept. Therefore, it can be interpreted that urban school teacher trainees with higher self concept are more prone to the environmental awareness than those urban school teacher trainees with lower self concept.
3. The urban secondary school trainees with higher and lower study habits differ significantly in respect of their proneness to environmental awareness. However, the means of urban school teacher trainees with higher and lower study habits are 49.5172 and 49.5044 respectively. Two mean clearly reveal that urban school teacher trainees with higher study habits have a greater mean that of the teacher trainees with lower study habits. Therefore, it can be interpreted that urban school teacher trainees with higher study habits are more prone to the environmental awareness than those urban school teacher trainees with lower study habits.

g) To study the interaction effect of personality factor, self-concept and study habits of urban teacher trainees on their environmental awareness.

Hypotheses

1. Effects of extroversion and introversion personality of urban teacher trainees differ significantly in terms of their influence on environmental awareness.
2. Effects of high and low self-concept of urban teacher trainees differ significantly in terms of their influence on environmental awareness.
3. Effects of high and low study habits of urban teacher trainees differ significantly in terms of their influence on environmental awareness.
4. Interaction effect of personality factors X self-concept of urban teacher trainees differ significantly in terms of their influence on environmental awareness.
5. Interaction effect of self-concept X study habits of urban teacher trainees differ significantly in terms of their influence on environmental awareness.
6. Interaction effect of personality factors X study habits of urban teacher trainees differ significantly in terms of their influence on environmental awareness.
7. Interaction effect of personality factors X self-concept X study habits of urban teacher trainees differ significantly in terms of their influence on environmental awareness.

Research Design

Ex Post Facto research design is used in the proposed study (Kerlinger, 1964). Ex Post Facto research is systematic empirical inquiry in which the investigator does not have direct control of independent variables because their manifestations have already occurred or because they are inherently not manipulable. Inferences about relations among variables are made, without direct intervention, from concomitant variation of independent and dependent variables.

Sample

Using random sampling technique about 400 secondary teacher trainees in the jurisdiction of Karnatak University, Dharwad and Rani Chennamma University, Belgavi were selected. While selecting the sample due representation was given to male and female teacher trainees; urban and rural teacher trainees.

Tools

For present study investigator used the following tools.

1. Environmental Awareness Test – Constructed and Standardized by investigator.
2. Personality Factor – Cattell's 16 Personality Factor Scale.
3. Self-concept Scale – Constructed and standardized by investigator
4. Study Habits - Constructed by M. Mukhopadhaya and D.N. Sansanwal

Data Collection

Data relating to environmental awareness among secondary teacher trainees were obtained by administering environmental awareness test. The demographic data pertaining to personality factor, self-concept and study habits of teacher trainees were collected through administering different tools. The investigator personally visited the selected secondary teacher training colleges in the jurisdiction of Karnatak University to collect the essential data. The collected data are tabulated and analyzed in accordance with the objectives of the study.

observation of two means clearly indicated that, the mean of the treatment group a_2b_1 is greater than the mean of the treatment group a_1b_2. This further implies that the urban school teacher trainees with introversion personality group and higher self concept are more prone to the environmental awareness than the urban school teacher trainees with extroversion personality factor group and lower self concept.

- As the simultaneous confidence intervals values of serial number 3 are in the same direction that is -3.7537 and -1.3171, the difference is significant. Hence, the means of the treatment groups a_1b_2 (47.5405) and a_2b_2 (50.0854) differ significantly in respect of their proneness to the environmental awareness. However, the observation of two means clearly indicated that, the mean of the treatment group a_2b_2 is greater than the mean of the treatment group a_1b_2. This further implies that the urban school teacher trainees with introversion personality group and lower self concept are more prone to the environmental awareness than the urban school teacher trainees with extroversion personality factor group and lower self concept.
- As the simultaneous confidence intervals values of serial number 4 are in the same direction that is 1.7998 and 5.1419, the difference is significant. Hence, the means of the treatment groups $a_1b_1c_1$ (50.3939) and $a_1b_2c_2$ (46.9231) differ significantly in respect of their proneness to the environmental awareness. However, the observation of two means clearly indicated that, the mean of the treatment group $a_1b_1c_1$ is greater than the mean of the treatment group $a_1b_2c_2$. This further implies that the urban school teacher trainees with extroversion personality group, higher self concept and higher study habits are more prone to the environmental awareness than the urban school teacher trainees with extroversion personality factor group, lower self concept and lower study habits.
- As the simultaneous confidence intervals values of serial number 5 are in the same direction that is 0.9634 and 4.4981, the difference is significant. Hence, the means of the treatment groups $a_1b_1c_2$ (49.6539) and $a_1b_2c_2$ (46.9231) differ significantly in respect of their proneness to the environmental awareness. However, the observation of two means clearly indicated that, the mean of the treatment group $a_1b_1c_2$ is greater than the mean of the treatment group $a_1b_2c_2$. This further implies that the urban school teacher trainees with extroversion personality group, higher self concept and lower study habits are more prone to the environmental awareness than the urban school teacher trainees with extroversion personality factor group, lower self concept and lower study habits.
- As the simultaneous confidence intervals values of serial number 6 are in the same direction that is -4.7813 and -1.2443, the difference is significant. Hence, the means of the treatment groups $a_1b_2c_1$ (48.1579) and $a_2b_2c_2$ (51.1707) differ significantly in respect of their proneness to the environmental awareness. However, the observation of two means clearly indicated that, the mean of the treatment group $a_2b_2c_2$ is greater than the mean of the treatment group $a_1b_2c_1$. This further implies that the urban school teacher trainees with introversion personality group, lower self concept and lower study habits are more prone to the environmental awareness than the urban school teacher trainees with extroversion personality factor group, lower self concept and higher study habits.
- As the simultaneous confidence intervals values of serial number 7 are in the same direction that is -5.7326 and -1.1486, the difference is significant. Hence, the means of the treatment groups $a_1b_2c_2$ (46.9231) and $a_2b_1c_1$ (50.3636) differ significantly in respect of their proneness to the environmental awareness. However, the observation of two means clearly indicated that, the mean of the treatment group $a_2b_1c_1$ is greater than the mean of the treatment group $a_1b_2c_2$. This further implies

4. Urban school teacher trainees with extroversion/introversion personality factor and lower/higher self concept differ significantly in respect to their proneness to environmental awareness.
5. Urban school teacher trainees with extroversion/introversion personality factor and lower/higher study habits do not differ significantly in respect to their proneness to environmental awareness.
6. Urban school teacher trainees with lower/higher self concept and lower/higher study habits do not differ significantly in respect to their proneness to environmental awareness.
7. Urban school teacher trainees with extroversion/introversion personality factor, lower/higher self concept and lower/higher study habits differ significantly in respect to their proneness to environmental awareness.

To know the pair wise comparisons of treatment groups with respect to environmental awareness the two were compared by using Scheffe's multiple post-hoc procedures and corresponding simultaneous confidence intervals are presented in the following table.

Table No.-2:Comparison of Means of Treatment Groups on Environmental Awareness Scheffe's 95% Confidence Intervals- Urban Samples

No	Comparison of treatment groups	Corresponding means		95% Confidence Intervals		p-value	Significance
1	a_1b_1-a_1b_2	50.0239	47.5405	1.2300	3.7368	<0.05	S
2	a_1b_2-a_2b_1	47.5405	49.8068	-3.7537	-0.7790	<0.05	S
3	a_1b_2-a_2b_2	47.5405	50.0854	-3.7727	-1.3171	<0.05	S
4	$a_1b_1c_1$-$a_1b_2c_2$	50.3939	46.9231	1.7998	5.1419	<0.05	S
5	$a_1b_1c_2$-$a_1b_2c_2$	49.6539	46.9231	0.9634	4.4981	<0.05	S
6	$a_1b_2c_1$-$a_2b_2c_2$	48.1579	51.1707	-4.7813	-1.2443	<0.05	S
7	$a_1b_2c_2$-$a_2b_1c_1$	46.9231	50.3636	-5.7326	-1.1486	<0.05	S
8	$a_1b_2c_2$-$a_2b_2c_2$	46.9231	51.1707	-5.8452	-2.6501	<0.05	S

The Table No.-2 reveals the following results :

- As the simultaneous confidence intervals values of serial number 1 are in the same direction that is 1.2300 and 3.7368, the difference is significant. Hence, the means of the treatment groups a_1b_1 (50.0239) and a_1b_2 (47.5405) differ significantly in respect of their proneness to the environmental awareness. However, the observation of two means clearly indicated that, the mean of the treatment group a_1b_1 is greater than the mean of the treatment group a_1b_2. This further implies that the urban school teacher trainees with extroversion personality group and higher self concept are more prone to the environmental awareness than the urban school teacher trainees with extroversion personality factor group and lower self concept.
- As the simultaneous confidence intervals values of serial number 2 are in the same direction that is -3.7537 and -0.7790, the difference is significant. Hence, the means of the treatment groups a_1b_2 (47.5405) and a_2b_1 (49.8068) differ significantly in respect of their proneness to the environmental awareness. However, the

that the urban school teacher trainees with introversion personality group, higher self concept and higher study habits are more prone to the environmental awareness than the urban school teacher trainees with extroversion personality factor group, lower self concept and lower study habits.

As the simultaneous confidence intervals values of serial number 7 are in the same direction that is -5.7326 and -1.1486, the difference is significant. Hence, the means of the treatment groups $a_1b_2c_2$ (46.9231) and $a_2b_2c_2$ (51.1707) differ significantly in respect of their proneness to the environmental awareness. However, the observation of two means clearly indicated that, the mean of the treatment group $a_2b_2c_2$ is greater than the mean of the treatment group $a_1b_2c_2$. This further implies that the urban school teacher trainees with introversion personality group, lower self concept and lower study habits are more prone to the environmental awareness than the urban school teacher trainees with extroversion personality factor group, lower self concept and lower study habits.

Conclusion

In the present study the researcher hypothesized that student

i) Urban school teacher trainees with introversion personality factor are more prone to the environmental awareness than those urban school teacher trainees with extroversion personality factor.
ii) Urban school teacher trainees with higher self concept are more prone to the environmental awareness than those urban school teacher trainees with lower self concept.
iii) Urban school teacher trainees with higher study habits are more prone to the environmental awareness than those urban school teacher trainees with lower study habits.
iv) Urban school teacher trainees with extroversion/introversion personality factor and lower/higher self concept differ significantly in respect to their proneness to environmental awareness.
v) Urban school teacher trainees with extroversion/introversion personality factor and lower/higher study habits do not differ significantly in respect to their proneness to environmental awareness.
vi) Urban school teacher trainees with lower/higher self concept and lower/higher study habits do not differ significantly in respect to their proneness to environmental awareness.
vii) Urban school teacher trainees with extroversion/introversion personality factor, lower/higher self concept and lower/higher study habits differ significantly in respect to their proneness to environmental awareness.

Educational Implications

i) Environmental education aims at creating on awareness and developed rational attitude and practice the same in the future. In order to inculcate these ideas, the appropriate situation is the school. The school can help the child to gain correct knowledge by the teacher in the classroom. It is not only deals with a particular topic but is also related to the objectives of environmental education and at the same time it can achieve the objectives of teaching environmental education.
ii) The future generation should be made aware of environmental problems during their formative years which will give a positive edge and direction to bring about change. This will require change in the present educational system and asset student / people perception and value so as to bring about

changes in life style and turn to use appropriate technology and compatible environment.

iii) Thus, the related studies reviewed in fact show that there is variation in the Environmental awareness, attitude and practices among the individuals with different variables. The present study is an agreement with the previous studies done by different researchers.

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