

## Digital Archiving of Manuscripts: Freedom to Access the Glorious Indian Cultural Heritage Resources

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### ABSTRACT

Explore the accessibility of manuscripts, facilities and services provided in the Library, Kundakunda Jnanapitha, Indore, Madhya Pradesh, India. Discuss about the manuscripts containing the glorious ancient knowledge of Indian heritage and treasure. The main objective was to identify the satisfaction level of the users regarding collection, services, facilities, especially manuscripts resources provided by the library and find out the major problems encountered to access the digital manuscripts available in the Kundakunda Jnanapitha library. A well structured questionnaire was used to collect primary data. 150 questionnaires were distributed among the users and 122 were received and analysed. The maximum respondents (78.68 %) had high satisfaction with digital manuscripts and 80.32 per cent indicated less number of terminals as very high problem. Consequently suggests improvement strategies for better utilisation of the library resources.

**Keywords:** Digital archiving; Digital manuscripts; Indian heritage; Heritage resources; Kundakunda Jnanapitha.

### 1. INTRODUCTION

India has the largest collection of rare manuscripts possibly in the world. It has long historical background of ancient culture, knowledge, science, mathematics, literature, music, philosophy, law and almost every arena. These manuscripts are the glimpses of splendid Indian cultural heritage of couples of centuries written in various languages and scripts. The ancient manuscripts are the basic historical evidence of Indian culture and have great research value. It is estimated that India possesses more than five million manuscripts, making her the largest repository of manuscript wealth in the world<sup>1</sup>. These Indian treasures of wisdom are the richest collection of written documents that provide information on the existence of different civilisations and the cultural affluence of the nation<sup>2-3</sup>. In the past, manuscripts were preserved intellectual invisible knowledge on Palm leaves, Metal, Birch barks, Copperplates, Silk cloth, Wood, Tamra Patras, Handmade paper, Inscriptions on stone or any other material that had strong historical or scientific logic. According to Merriam Webster dictionary<sup>4</sup> "Manuscript is a written or typewritten composition or document as distinguished from a printed copy". It refers to old documents actually written by hand before books were made, but it can also refer to a writer's unpublished work whether it is handwritten or typed<sup>5</sup>. The importance of heritage as explained by UNESCO, "Our legacy from the past, what we live with today, and what we pass on to future generations". A heritage is something that is, or should be, passed from generation to generation because it is valued<sup>6</sup>. These valuable

manuscripts preserved all over the country in various libraries, temples, monasteries, mutts, museums and private institutions are sources of information on history and culture of our nation<sup>7</sup>.

With changing times ways of preservation also have changed. A systematic preservation, organisation and dissemination of these rich medieval manuscripts becomes a social responsibility so that they are available to the world at large<sup>8</sup>. Scientific and cultural information resources can be made available digitally accessible anywhere in the world with today's emerging digital technologies<sup>9</sup>. Digital Preservation Coalition (2002) has referred digital archiving as the process of creating backup for long-term digital preservation<sup>10</sup>. In this regard digital archiving becomes a mandatory responsibility for conservation of these manuscripts in due course. Looking to the significance of manuscripts and to access the golden hidden knowledge, the National Mission for Manuscripts (NMM) was founded by the Ministry of Tourism and Culture, Government of India, in February 2003, with the Indira Gandhi National Center for Arts as the national nodal center to save the India's most valuable heritage<sup>11</sup>.

### 2. KUNDAKUNDA JNANAPITHA: AN OVERVIEW

Kundakunda Jnanapitha, Indore, Madhya Pradesh started on 01.11.1987 under the guidance of Shri Devkumar Singh Kasliwal is running by the Board of Directors of Kundakunda Jnanapitha, mainly from the grants received by the Digamber Jain Neutral Ashram Trust, Indore. The Jnanapith was originally founded as a research institute; however its activities have

been kept multifaceted. A ten member research committee/board of directors conducts these regular activities. It is a recognised research centre by Devi Ahilya University, Indore (A Grade State University) for Faculty of Science (Ancient Indian Mathematics and Mathematics History, Environment and Ecology) and Faculty of Arts (Prakrit, Pali, Apabhraṅs and other oriental languages, Comparative Religious Studies, Ancient Indian History, Culture and Archeology) where many research students are pursuing Ph.D. It also has a separate Astrology Training Centre offering PG diploma and research projects in astrology.

Beside the 3755 manuscripts, its library has collection of 44,275 books, more than 350 journals/magazines and self-published institutional research journals. Its library which received the Best Library Award in 2007 by Yong Librarian Association, Madhya Pradesh, Bhopal provides computerised information of manuscripts and books. Since 1999 it has catalogued 58,766 of Jain manuscripts in 479 Jain Bhandaras under the “Register of Jain Manuscripts” project. This data has been integrated with the National Mission on Manuscripts (NMM) database. It is a recognised Manuscript Resource Center (MRC) and Manuscript Conservation Center (MCC) by NMM, Government of India, under the Indira Gandhi National Center for Arts<sup>12-13</sup>.

**3. OBJECTIVES OF THE STUDY**

The major objectives are:

- To identify users’ satisfaction level with library collection, services and facilities in Kundakunda Jnanapitha, Indore
- To investigate the category of users and their main purpose to visit the library
- To find out the major problems encountered to access the digital manuscripts available in the library
- To examine the significance of digitised manuscripts in the library
- To suggest ways to improve the library functionalities that maximises access of digitised manuscripts.

**4. HYPOTHESIS**

Following hypotheses are taken to verify the study.

- H<sub>01</sub>: There is no significant difference in satisfaction of different age group with library services.
- H<sub>02</sub>: There is no relation between age and satisfaction with library collection in the library.
- H<sub>03</sub>: There is no significant difference in satisfaction of male and female with library services/facilities.

**5. METHODOLOGY**

The survey research method has been adopted to know the user perception and significance of digitised manuscripts of Kundakunda Jnanapitha, Indore, Madhya Pradesh, India. A well designed questionnaire has been used for data collection. 150 questionnaires were distributed among the users in the month of February of this year and 122 duly filled questionnaires were received. Thus the percentage of response is 81.33 per cent. For analysis statistic techniques like tables of frequency counts and percentages were used. Appropriate statistical softwares

SPSS and MS-Excel were used for further data analysis and interpretation.

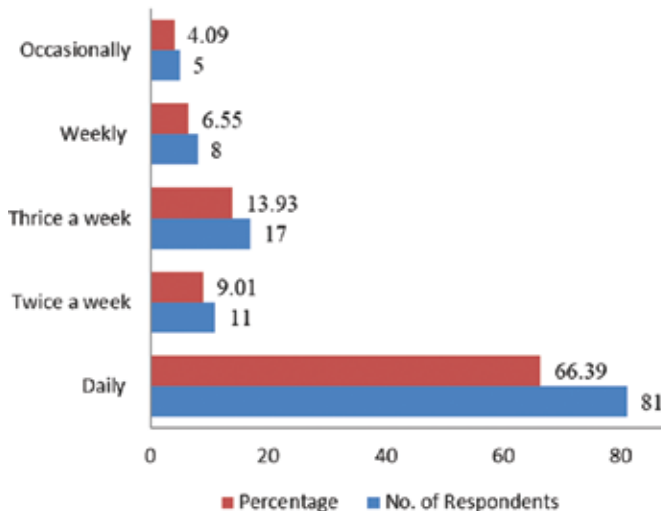
**6. ANALYSIS AND INTERPRETATION OF DATA**

**6.1 General Information**

Table 1 shows that 54.91 per cent are male respondents and 45.08 per cent are female respondents. The majority of 42.62 per cent users are between 26-30 years and 25.40 per cent are of 20-25 years. The majority of 43.44 per cent users are the post graduate students, 31.14 per cent are graduates, 13.93 per cent are research scholars and 11.47 per cent are common users of Kundakunda Jnanapitha.

**Table 1. General information**

Gender	Frequency	Percentage
Male	67	54.91
Female	55	45.08
Total	122	100.00
Age		
20-25	31	25.40
26-30	52	42.62
31-35	20	16.39
36-40	11	9.01
Above 41	08	6.55
Total	122	100.00
Category of Users		
Graduate	38	31.14
Post-Graduate	53	43.44
Scholars	17	13.93
Common users	14	11.47
Total	122	100.00



**Figure 1. Frequency of visiting the library.**

### 6.2 Frequency of Visiting the Library

Figure 1 depicts the frequency of visiting the library by the respondents. It can be seen that 66.39 per cent respondents visit daily. 13.93 per cent respondents visit thrice a week, 9.01 per cent twice a week and 6.55 per cent visit weekly. Only few respondents i.e. 4.09 per cent visit the Kundakunda Jnanapitha library occasionally.

### 6.3 Main Purpose to Visit Library

Table 2 reveals the main purpose of visiting the Kundakunda Jnanapitha library. It is clearly depicted from the study that maximum numbers of respondents 43.44 per cent visit for consult reference material. 23.77 per cent to refer theses and dissertations. The equal number of respondents i.e. 12.29 per cent visit library for issue of books and read newspapers and magazines respectively. And 8.19 per cent for Internet browsing.

**Table 2. Main purpose to visit library**

Activities	No. of Respondents	Percentage
Issue of books	15	12.29
Consult reference material	53	43.44
Internet browsing	10	8.19
Read newspapers and magazines	15	12.29
Theses and dissertations	29	23.77
Total	122	100.00

### 6.4 Users Perception towards Library Services/ Facilities

Table 3 shows the users' perception towards library services and facilities offered by the Kundakunda Jnanapitha library. 78.68 per cent respondents are highly satisfied with digital manuscripts, 66.39 per cent with circulation service and 63.11 per cent with photocopying facility. The calculated mean value of these 3.70, 3.50 and 3.47 respectively indicates maximum satisfaction level of respondents. 37.70 per cent respondents are satisfied with Internet connectivity but 34.42 per cent respondents are dissatisfied with printing facility.

### 6.5 Satisfaction level towards Library Collection

Table 4 depicts the level of satisfaction towards library collection available in the library. 79.50 per cent respondents are highly satisfied with the availability of manuscripts collection, 67.21 per cent with book collection. An equal number of respondents i.e. 60.65 per cent are highly satisfied with theses and dissertation and reference collection respectively. Further more than half of the respondents i.e. 50.81 per cent are highly satisfied with newspaper service. While 15.57 per cent are dissatisfied with the periodical service. The mean value 3.71, 3.50, 3.36, 3.24, 2.92 and 2.82 also depict the same result.

### 6.6 Problems Encountered to Access the Digital Manuscripts

Table 5 reveals that 80.32 per cent of the respondents indicate less number of terminals as very high problem in access of digitised manuscripts, for 70.49 per cent poor internet

**Table 3. Users perception towards library services / facilities**

Frequency	Library Facilities					
	Photocopying	Computers	Internet connectivity	Printers	Digital manuscripts	Circulation
Highly satisfied	77 (63.11)	44 (36.06)	25 (20.49)	28 (22.95)	96 (78.68)	81 (66.39)
Partially satisfied	30 (24.59)	22 (18.03)	18 (14.75)	20 (16.39)	16 (13.11)	21 (17.21)
Satisfied	11 (9.01)	38 (31.14)	46 (37.70)	32 (26.22)	10 (8.19)	20 (16.39)
Dissatisfied	04 (3.27)	18 (14.75)	33 (27.04)	42 (34.42)	00 (00)	00 (00)
Mean	3.47	2.75	2.28	2.27	3.70	3.50
SD	0.79	1.10	1.07	1.16	0.61	0.76

**Table 4. Satisfaction level towards library collection**

Frequency	Library services					
	Books collection	Periodicals	Manuscript collection	Theses and dissertations	Newspapers	Reference collection
Highly satisfied	82 (67.21)	55 (45.08)	97 (79.50)	74 (60.65)	62 (50.81)	74 (60.65)
Partially Satisfied	22 (18.03)	10 (8.19)	15 (12.29)	23 (18.85)	11 (9.01)	15 (12.29)
Satisfied	16 (13.11)	38 (31.14)	10 (8.19)	20 (16.39)	27 (22.13)	22 (18.03)
Dissatisfied	2 (1.63)	19 (15.57)	00 (00)	5 (4.09)	22 (18.03)	11 (9.01)
Mean	3.50	2.82	3.71	3.36	2.92	3.24
SD	0.78	1.16	0.60	0.90	1.20	1.04

**Table 5. Problems encountered to access the digital manuscripts**

Problems	Problems countered in access the manuscripts					
	Lowest	Low	High	Very High	Mean	SD
Less numbers of terminals	00 (00)	04 (3.27)	20 (16.39)	98 (80.32)	3.77	0.49
Power failures	16 (13.11)	16 (13.11)	40 (32.78)	50 (40.98)	3.01	1.03
Poor Internet connectivity	00 (00)	12 (9.83)	24 (19.67)	86 (70.49)	3.60	0.66
Slow downloading	00 (00)	16 (13.11)	32 (26.22)	74 (60.65)	3.47	0.71
Technical problems	00 (00)	20 (16.39)	32 (26.22)	70 (57.37)	3.40	0.75
Printing	15 (12.29)	15 (12.29)	28 (22.95)	64 (52.45)	3.15	1.06
Inadequate training and support	24 (19.67)	10 (8.19)	48 (39.34)	40 (32.78)	2.85	1.08

**Table 6. Significance of digitized manuscripts**

Significance	Significance of digitisation of manuscripts						
	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean	SD
Enhance research activities	96 (78.68)	24 (19.67)	02 (1.63)	00 (00)	00 (00)	4.77	0.45
Preserve the knowledge for future	66 (54.09)	27 (22.13)	16 (13.11)	13 (10.65)	00 (00)	4.19	1.03
Wide access of heritage materials	88 (72.13)	24 (19.67)	10 (8.19)	00 (00)	00 (00)	4.63	0.63
Save the time of user and staff	47 (38.52)	27 (22.13)	33 (27.04)	8 (6.55)	07 (5.73)	3.81	1.18
Increase the image of institution	81 (66.39)	18 (14.75)	14 (11.47)	09 (7.37)	00 (00)	4.40	0.95
Easy to handle	55 (45.08)	30 (24.59)	30 (24.59)	5 (4.09)	02 (1.63)	4.07	1.00

**Table 7. ANOVA**

	Sum of squares	df	Mean square	F	Sig.
Between Groups	20.387	4	5.097	0.953	0.436
Within Groups	625.613	117	5.347		
Total	646.000	121			

**Table 8. Correlations**

		SS2	Age
SS2	Pearson Correlation	1	0.033
	Sig. (2-tailed)		0.717
	N	122	122
Age	Pearson Correlation	0.033	1
	Sig. (2-tailed)	0.717	
	N	122	122

connectivity and for 60.65 per cent slow downloading is considered to be very high problem. 16.39 per cent respondents encountered technical problems as low. The mean calculation also reflect that the less numbers of terminals is a very high problem with 3.77 mean value and poor Internet connectivity with 3.60. Further is seen in the Table 5.

**6.7 Significance of Digitised Manuscripts**

The analysis of response to the question asked about the significance of digitised manuscripts is given in Table 6. The collected data depicts that 78.68 per cent of the respondents strongly agree that digitised manuscripts enhance research activities. 72.13 per cent strongly agree to wide access of heritage materials, 66.39 per cent with increase the image of institution and 45.08 per cent with easy to handle. The equal numbers of respondents i.e. 22.13 per cent agree that digitised manuscripts preserve the knowledge for future and save the time of user and staff respectively. The mean value also resembles the same conclusion.

**7. TESTING OF HYPOTHESIS**

H<sub>01</sub>: There is no significant difference in satisfaction of different age group with library services

As per the Table 7 calculated significant value is 0.436 at 95 per cent of confidence level which is higher than p-value i.e. 0.05 which is strong evidence to accept the null hypothesis.

H<sub>02</sub>: There is no relation between age and satisfaction with library collection in the library.

As per pearson correlation there is a highly negative correlation between age and satisfaction with library collection. Calculated significant value is 0.717 at 95 per cent of confidence level which is higher than p-value i.e. 0.05 which is strong evidence to accept null hypothesis. Table 8 concludes that there is no correlation between age

and satisfaction with library collection in the library.

$H_{03}$ : There is no significant difference in satisfaction of male and female with library services/facilities.

As per the **Table 9** calculated significant value is 0.673 at 95 per cent of confidence level which is higher than p-value i.e. 0.05 which is strong evidence to accept the null hypothesis. **Table 9** concludes that there is no significant difference in satisfaction of male and female for library services/facilities.

**Table 9. Chi-Square tests**

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.445 <sup>a</sup>	11	0.673
Likelihood Ratio	8.906	11	0.631
Linear-by-Linear Association	1.588	1	0.208
N of Valid Cases	122		

a. 12 cells (50.0%) have expected count less than 5. The minimum expected count is 0.45.

## 8. RESULTS AND CONCLUSIONS

The findings of the study have revealed that more than half of the respondents (54.91 %) are male, majority (42.62 %) fall between ages 26-30 years, (43.44 %) are post graduates and 66.39 per cent respondents visit the library daily which is a considerable frequency. It means the respondents are quite regular and access the available resources. This result shows similarity with study conducted by Gunasekera<sup>14</sup> where 59.5 per cent visit the library daily. In response to the purpose of visiting library it was found that majority of 43.44 per cent respondents visit to consult reference material. Therefore, it makes it obvious that the available resources are considerably accountable in their studies. Similarly 78.68 per cent respondents are highly satisfied with digital manuscripts which show the interest and curiosity of respondents to access the manuscripts for their academic and personal enhancement. On the other hand the dissatisfaction of 34.42 per cent respondents with printing facility demands the attention of management to do the needful arrangements. The findings of Chandrasekar & Murugathas<sup>15</sup> are also somewhat same. As far as the library services are concerned 79.50 per cent respondents are found highly satisfied with manuscripts collection and 67.21 per cent with book collection which reflects that the library is endowed with a wide range of manuscripts and has a substantial book collection. This attribute of Kundakunda Jnanapitha library makes it recognizable in society and at nation level as well.

As there is always a scope of improvement therefore the study aimed to identify the difficulties faced by the users in access of digital manuscripts so as to improvise the library services. The main concern here was the less numbers of terminals and poor Internet connectivity. In the study conducted by Kalusopa, and Zulu<sup>16</sup> also these were found almost to be similar findings. The current survey study collected many positive responses regarding the significance of digitised manuscripts. Among these the majority of 78.68 per cent strongly agree that it enhances research activities, and there

are no negative responses received. 72.13 per cent respondents strongly agree that it provides wide access of heritage materials and 66.39 per cent strongly agree that digitised manuscripts increase the value of institution.

The Government of India has already taken initiatives to preserve and archive manuscript and valuable cultural heritage which is available in various institutions, libraries and religious organisations nationwide. In this context Kundakunda Jnanapitha has digitised its manuscripts and merged them into national databases. This survey study overall concludes that the users of Kundakunda Jnanapitha library have great satisfaction with the library services, facilities and manuscripts.

## 9. SUGGESTIONS

The below given suggestions are based on respondents' comments and personal observation to improve library services:

- More number of updated computers should be installed for quick access of manuscripts, e-learning and other useful services
- A considerable number of printers should be placed to promote printing facilities
- Library can organise short-term training program/workshops to educate users how to access available resources specifically digital manuscripts
- As some of the users were lacking in basic searching skills therefore they strongly recommended for personal assistance by library staff
- Some research scholars suggested that they should be asked about their specific required resources before acquisition of library collection
- Library must have well designed infrastructure and must be accommodated with latest emerging Information and Communication Technologies
- Skilled and trained technical personnel should be appointed for smooth functioning of library activities
- To resolve the slow download and Internet connectivity issues, high speed connection with maximum band widths can be acquired.

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