Role of Public Libraries in Bridging the Digital Divide: Study of Kerala State Central Library

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ABSTRACT

The present study investigated the role of public libraries in bridging the digital divide in the Kerala State Central library (KSCL), Thiruvananthapuram. The study employed a descriptive survey method using a structured questionnaire distributed among library users. It discussed the use of ICT and internet services in the library, the purpose of using the internet, digital services, e-governance services, e-resources provided by the library and factors that cause the digital divide. The findings revealed that the majority of the users are not aware of ICT (47.0 %) and internet services (39.4%) provided by the library. The users preferred photocopy (43.2 %) and OPAC (31.8 %) services. The library users access the internet for education, reading news, and employment purposes, and mostly use computers to access e-journals and e-books provided by the library (52.2 %). M-governance (12.8 %) and E-district (12.0 %), were the most frequently used e-governance information services provided by the library. The users opined the primary factors that causes digital divide are lack of ICT skills and illiteracy. Non-parametric test showed the significant differences between the purpose of internet usage and the place of living, as well as the factors driving the digital divide. Public library services are essential for common people to overcome the digital gap and the library can bring new technologies to reduce the digital gap of public users and can assist them in getting education, employment, and government services. The respondents suggested that the library should conduct user awareness program about emerging technologies and orientation for users to familiarise the services provided by the library.

Keywords: Public library; Digital divide; e-governance; ICT; State Central Library; Thiruvananthapuram; Kerala

1. INTRODUCTION

In today's increasingly digitalised world, access to information and technology has become a crucial factor in determining one's social, educational, and economic well-being. Unfortunately, not everyone has equal access to these resources, leading to a digital divide that exacerbates existing societal inequalities. In this context, public libraries have emerged as vital institutions for bridging the digital divide and ensuring that individuals from all walks of life have the opportunity to participate fully in the digital age. The digital divide denotes the inequality between demographic and geographic regions with and without access to modern Information and Communication Technology (ICT), including telephone, television, personal computers, and internet connection.[1] The rural libraries are essential for economically disadvantaged people to educate and become aware of society.[2] Modern libraries play a far more prominent role in their communities by providing users with counselling, training, and access to ICT, and most crucially, library usage is free.[3]

The community has greatly benefited from the accessibility of computers and internet services provided by the library, as it effectively bridges the information and digital divide among people.[4] Over time, there has been a noticeable rise in the number of individuals visiting libraries for internet usage, indicating a growing reliance on library internet access that is tailored to their specific requirements.[5] The utilisation of digital devices fosters the adoption of digital reading among users, leading to enhanced access to information.[6] The contributions of libraries to the solution of reduce digital divide. The digital divide affects the socio-economic factors of society, and it is based to access to the internet and computer technology.[7] Many of the most marginalised communities are far behind by the digital transformation of government and private services. Due to the lack of digital skills and access, people cannot exercise their fundamental rights.[8] The library play a significant role in the national

drive with a special focus on lending internet access to users who do not have access to the internet at their homes.[9]

2. REVIEW OF LITERATURE

Barath and Sudhier[10] investigated how users perceive e-resources and information services in a public library. Their research emphasises the significance of improving the library's existing resources and services through the widespread implementation of Information and Communication Technology (ICT). Halder[11] evaluated library users reading habits, and electronic documents significantly improve readers' attitudes. The users feel comfortable with the digital environment while reading. Khanchandani[12] addressed the evolving landscape of public libraries in India and their role in supporting the nation's digital transformation. The article highlights the importance of public libraries as catalysts for social and economic progress, emphasising their ability to empower individuals and communities through access to digital resources and services.

Varghese and Thirunavukkarasu[13] concluded that public libraries have the potential and responsibility to stand for the sustainable development of society at large. Manzuch and Maceviciute[14] demonstrated the importance of digital inclusion in public libraries. It reveals that libraries struggle to redefine their social worth and acquire the resources and infrastructure required for digital inclusion initiatives.

Arindam[15] explored the relationship between community information services and libraries. Public library act as community information centres and also serve the information need of inexperienced citizens. Prabhakaran and Periyasamy[16] highlighted the main objective of public libraries is to offer a wide range of resources and services in various formats to cater to the educational, informational, personal development, recreational, and leisure needs of individuals and groups.

Strover[9] investigated the role of libraries in promoting internet access and digital literacy. It reveals that libraries had diversified their services for bridging digital gaps in an environment by providing internet and computer services. Lediga and Fombad[17] examined information and communication technologies used in libraries for bridging the digital divide. It is essential to standardise the digital services in the library, and it's an effective way to reduce the digital divide. Joselin and Panneerselvam[18] investigated the library's diverse community information services. It is regarded as a problem-solving force that enables individuals to make the best decisions possible at the appropriate times.

Ajithakumari and Francis[19] conducted a study that specifically investigated the impact of the Kerala State Central Library (KSCL) on societal development. However, their research primarily concentrated on assessing the status of document collections, human resources, and services provided by the KSCL. The significance of public libraries in closing the digital gap within library remains largely unexplored. Therefore, this study aims to investigate and shed light on the role of KSCL in bridging the digital divide.

3. OBJECTIVES

The following are the objectives of the study:
- To understand the purpose of using internet in the Kerala State Central Library (KSCL).
- To identify usage of e-resources provided in the library.
- To know the e-governance information provided in the library.
- To find the digital devices used in the library.
- To determine digital services provided in the library.
- To identify the factors affecting the digital divide.

4. METHODOLOGY

A descriptive survey method and a simple random sampling were adopted for the study. The data were collected from the library users by distributing a structured questionnaire. The investigator collected 132 questionnaires out of 180 respondents, and the response rate was 73.33 %. The questionnaire was carefully designed to

Table 1. Demographic details

Variables	Values	Response	%
Gender	Male	104	78.8
	Female	27	20.5
	Others	1	.8
Age	Below 20	7	5.3
	20-30	61	46.2
	30-40	25	18.9
	40-50	12	9.1
	Above 50	27	20.5
Residence	Rural	63	47.7
	Urban	69	52.3
Employment	Govt. employment	12	9.1
	Private employment	27	20.5
	Self-employment	23	17.4
	Retired	13	9.8
	Unemployment	14	10.6
	Student	43	32.6
Qualification	Primary education	3	2.3
	High school	6	4.5
	Matriculation	10	7.6
	Under graduate	63	47.7
	Post graduate & above	44	33.3
	Diploma	6	4.5

cover all necessary components without compromising objectivity. The gathered data was analysed using the current versions of MS Excel and SPSS software.

5. DATA ANALYSIS

5.1 Demographic Details

Table 1 represents the demographic details of respondents. In gender-wise distribution, out of 132 respondents, 104 (78.8 %) are male, 27 (20.5 %) are female, and 1 (0.8 %) belong to the category of others, which shows that male users are high compared to female users. The age-wise distribution shows that 61 (46.2 %) respondents belong to the age group of 20-30 years, followed by 27 (20.5 %) above 50 years. This depicts that nearly half of respondents are in the age group of 20-30 years. While analysing the respondents' residence status, 69 (52.3 %) and 63 (47.7 %) respondents reside in urban and rural areas respectively, clearly stating that most live in urban areas. The analysis of the employment status of respondents revealed that 43 (32.6 %) are students, which is nearly half of the population, and 27 (20.5 %) respondents are private employees, followed by 23 (17.4 %) are self-employed. The qualification details of respondents depict that nearly half of the respondents are undergraduates.

Table 2. Usage of ICT in the library

Values	Response	%
Not applicable	62	47.0
1-2 year	38	28.8
3-4 year	14	10.6
4-6 year	10	7.6
Above 6 year	8	6.1

5.2 Usage of ICT

Table 2 shows the frequency of using ICT facilities by library users in the library. Out of 132 respondents, 62 (47.0 %), that is, nearly half of the population, marked the responses as not applicable, which means that they are not using any kind of ICT facilities in the library, followed by 38 (28.8 %) respondents using ICT facilities for 1-2 years. These findings shows the varying levels of ICT integration in libraries.
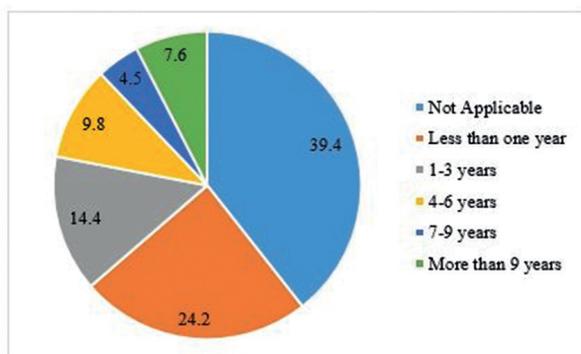

Figure 1. Use of internet in the library.

5.3 Internet Usage

Figure 1 shows the frequency of internet usage by respondents. While 52 (39.4 %) are not using the internet in the library, 32 (24.2 %) respondents were using the internet for less than one year, which shows that nearly half of the respondents are not using the internet in the library or who have limited experience with it.

5.4 Purposes of Using Internet

Table 3 depicts the purposes for using the internet by respondents in a library. The most common reason for using the internet in the library is education, with an mean score of 2.17. Reading online news (1.76) and employment (1.74) are the next popular purposes. On the other hand, online bill payments (0.83), online banking (0.86), and online ticket reservation (0.91) are the least common reasons for using the internet in the library. The mean value is less than 2.5, and it is clear that the library users are not using internet services as effectively. The non-parametric test was used to reveal the significance of the purpose of using the internet in the library and the user's residence. The p-value of the purpose of internet usage and the place of the users is 0.004, which is less than 0.05. Hence, there is a significant difference between the purpose of internet usage and respondents' residence.

5.5 E-Resources

Figure 2 shows the use of e-resources provided by the library. A total of 29 (22 %) used e-journals and e-books, which is less than a quarter of the total respondents. Few of the respondents, 18 (13.6 %), used e-magazines, followed by 17 (12.9 %) used e-newspapers. The utilisation of electronic theses and dissertations, e-reports, and audio books are relatively less, ranging from 3.8 % to 7.6 %.

5.6 E-Governance Services

Figure 3 depicts the analysis of the association between the information provided by the public libraries about e-governance in Kerala. The highest number of 16 (12.8 %) responded that public libraries provided information about M-governance, followed by 15 (12.0 %) about E-district and Aadhar and FRIENDS by 11 (8.8 %) each. According to the figure, most respondents obtain information on M-governance, followed by E-district, with a significantly lower number receiving information on E-MIST and TERMS.

5.7 Usage of Digital Devices

Figure 4 displays the analysis of the digital devices used by the users in the public library. Out of 132 respondents, 69 (52.2 %) used computers in the library. Few respondents, that is, 10 (7.6 %) and 9 (6.8 %), used scanners and printers, respectively. The majority of respondents use computers at the library rather than any other digital devices, as shown by the figure. It is clear

Table 3. Purposes of using internet in the library

S. No.	Purposes	Always	Often	Sometimes	Rarely	Never	Mean
1	Educational (e.g., admissions, exam, results, assignments, projects, etc.)	39 (29.5%)	13 (9.8 %)	8 (6.1 %)	5 (3.8 %)	5 (3.8 %)	2.17
2	Employment (job, career, PSC exams)	26 (19.7 %)	11 (8.3 %)	10 (7.6 %)	8 (6.1 %)	10 (7.6 %)	1.74
3	e-governance services	14 (10.6 %)	9 (6.8 %)	7 (5.3 %)	9 (6.8 %)	15 (11.4 %)	1.21
4	Read online news	28 (21.2 %)	11 (8.3 %)	10 (7.6 %)	4 (3.0 %)	10 (7.6 %)	1.76
5	Health information	18 (13.6 %)	7 (5.3 %)	8 (6.1 %)	9 (6.8 %)	15 (11.4 %)	1.33
6	Political information	18 (13.6 %)	8 (6.1 %)	8 (6.1 %)	11 (8.3 %)	14 (10.6 %)	1.38
7	Recreation/ entertainment (music, games, etc.)	13 (9.8 %)	7 (5.3 %)	12 (9.1 %)	12 (9.1 %)	15 (11.4 %)	1.27
8	Online shopping	7 (5.3 %)	3 (2.3 %)	8 (6.1 %)	13 (9.8 %)	22 (16.7 %)	.90
9	Online ticket reservation	8 (6.1 %)	6 (4.5 %)	3 (2.3 %)	12 (9.1 %)	23 (17.4 %)	.91
10	Communication (E-mail/chat)	11 (8.3 %)	7 (5.3 %)	15 (11.4 %)	8 (6.1 %)	12 (9.1 %)	1.18
11	Online banking	6 (4.5 %)	7 (5.3 %)	5 (3.8 %)	8 (6.1 %)	24 (18.2 %)	.86
12	Online bill payments	6 (4.5 %)	8 (6.1 %)	4 (3.0 %)	6 (4.5 %)	24 (18.2 %)	.83
13	Use social networking sites Facebook, WhatsApp, Instagram, etc.	11 (8.3 %)	10 (7.6 %)	8 (6.1 %)	11 (8.3 %)	24 (18.2 %)	1.25
14	Access blogs	6 (4.5 %)	10 (7.6 %)	13 (9.8 %)	8 (6.1 %)	25 (18.9 %)	1.14
15	Access wikis	15 (11.4 %)	9 (6.8 %)	9 (6.8 %)	8 (6.1 %)	22 (16.7 %)	1.33
16	Downloading study materials	12 (9.1 %)	10 (7.6 %)	12 (9.1 %)	5 (3.8 %)	25 (18.9 %)	1.30
17	Sharing course materials/ lecture notes	13 (9.8 %)	10 (7.6 %)	12 (9.1 %)	4 (3.0 %)	22 (16.7 %)	1.30
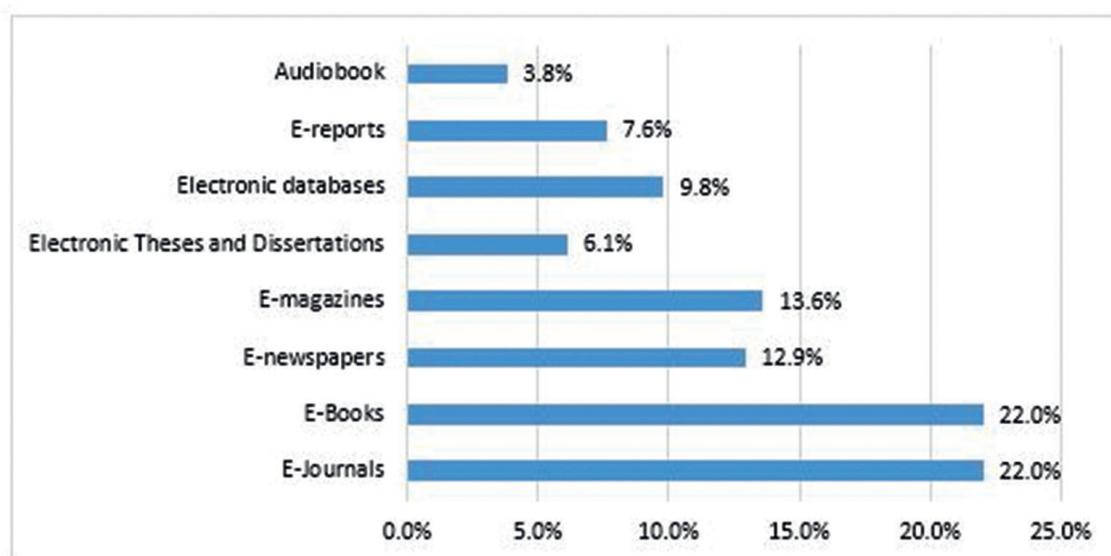
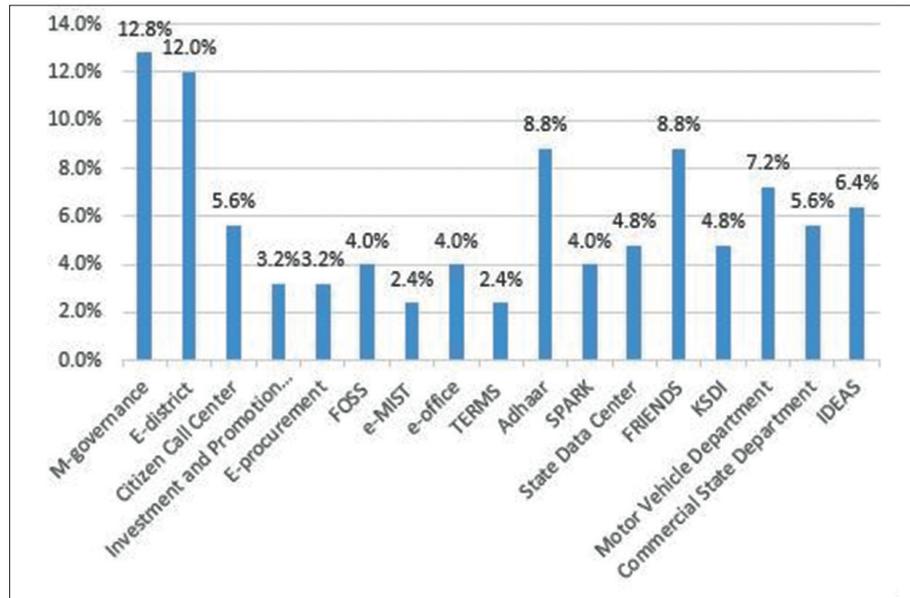**Figure 2. E-resources provided in the library.**

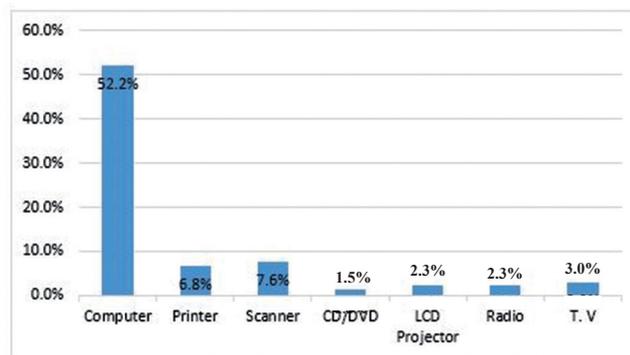**Figure 3. E-resources services provided by the library.**

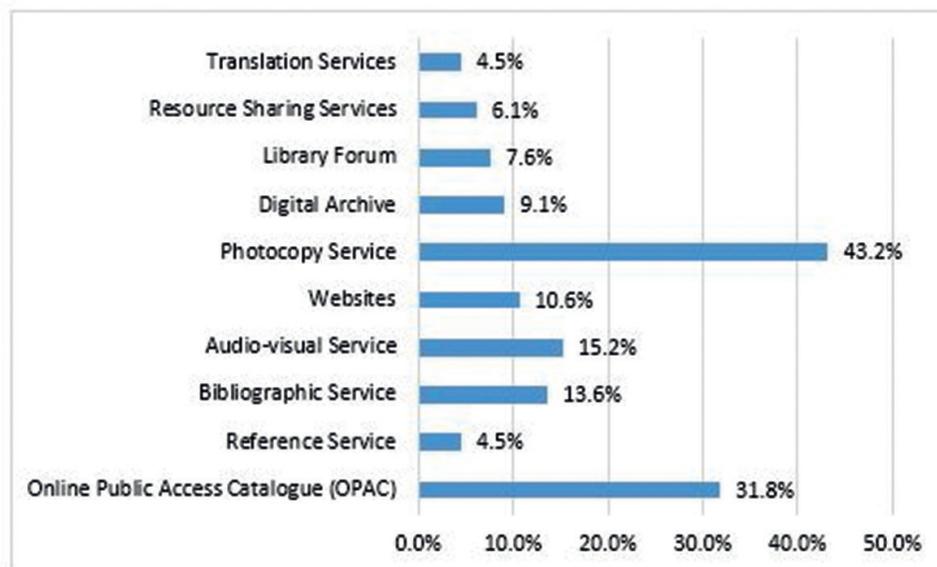**Figure 4. Usage of digital devices in the library.**

Figure 5. Digital services provided by the library.

that decline in physical media usage, such as CDs/DVDs, LCD projector, radio and TV are possibly due to the availability of online resources and streaming services.

5.8 Digital Services

Figure 5 represents digital services provided by the library. Out of 132 respondents, less than half of the respondents, 57 (43.2 %), are aware of the availability of photocopy services in the library, and 42 (31.8 %) respondents were aware of the online public access catalogue (OPAC). Few of the respondents, 20 (15.2 %), were aware of audio-visual services, followed by 18 (13.6 %) with bibliographic services and 14 (1.6 %) with websites. It shows the photocopy service and OPAC as the most widely used digital services, followed by the audio-visual service, bibliographic service, and websites. The library can leverage these services to allocate resources effectively and cater to the diverse needs of its users.

library users are not aware of ICT and internet services provided by the library and use photocopy and OPAC services. The users use the internet in the library for education, reading news, and employment. They use the computer from the library to access e-journals and e-books provided by the library. The motive of the user to use the internet in the library is it gives a pleasant environment to work. The main factor of the digital divide is lack of ICT skill, illiteracy and lack of ICT access. The library activities are essential to the sustainability of the people by encouraging them to participate in educational, cultural and social activities. The digital divide is an increasing societal issue that exacerbates the disparity between those with and without access to information. The public library can effectively contribute in bridging the digital divide through ICT services. The library can organise several awareness programs for users, which helps to overcome various issues faced by the users from society.

Table 4. Factors causes of digital divide

S. No	Factors	Strongly agree	Agree	Neutral	Disagree	Strongly disagree	Mean
1	Gender	5 (3.8%)	14 (10.6%)	11 (8.3%)	10 (7.6%)	13 (9.8%)	1.11
2	Physical disability	5 (3.8%)	20 (15.2%)	12 (9.1%)	7 (5.3%)	4 (3.0%)	1.20
3	Lack of physical access	14 (10.6%)	23 (17.4%)	9 (6.8%)	5 (3.8%)	2 (1.5%)	1.52
4	Lack of ICT skills	21 (15.9%)	27 (20.5%)	8 (6.1%)	1 (.8%)	2 (1.5%)	1.83
5	Attitudinal factors	12 (9.1%)	21 (15.9%)	10 (7.6%)	4 (3.0%)	2 (1.5%)	1.39
6	Relevant content	7 (5.3%)	17 (12.9%)	14 (10.6%)	3 (2.3%)	4 (3.0%)	1.17
7	Age	13 (9.8%)	17 (12.9%)	11 (8.3%)	8 (6.1%)	5 (3.8%)	1.42
8	Illiteracy	16 (12.1%)	25 (18.9%)	8 (6.1%)	2 (1.5%)	4 (3.0%)	1.61

5.9 Factors of Digital Divide

Table 4 analyses respondents' views on factors that cause the digital divide in society. The higher mean value of the causing factor of the digital divide is lack of ICT skills (1.83), followed by illiteracy rate (1.61), lack of physical access (1.52), age (1.42) and attitudinal factors (1.39). It is revealed that the most critical factor for the digital divide is the lack of ICT skills and the illiteracy rate. The non-parametric test is used to find the significance of factors causing the digital divide and the users' residences. The p-value of the factors driving the digital divide and the place of the users is 0.030, which is less than 0.05. Therefore, there is a significant difference between the factors that contribute to the digital divide and the residences of the people.

6.   CONCLUSION

The public libraries in Kerala actively participate in society's development by offering ICT and internet facilities to library users. The ICT services are reaching people, and they benefit from it. The study revealed that

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His contribution to the paper are: Conceptualised the study and its framework, designed the research methodology and the final proof correction.