

A Comparative Study about Expansion of Digital Libraries in the Current Era and Existence of Traditional Library

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ABSTRACT

This study observes the Comparative Study about Expansion of Digital Libraries in the Current Era and Existence of Traditional Library. Library Management Software is used in schools, colleges, institutions, and universities to make libraries digital and to keep information up-to-date. The demand for digital libraries is increasing day-by-day which makes this software and related database more popular. The important purpose of the digital library is to expedite the systematic development of procedures to collect, store, and organize, information in digital form and to promote the efficient delivery of information across the region. Encourage co-operative efforts in research resources, computing, and communication networks. Strengthen communication and collaboration between and among educational institutions. Take a leadership role in the generation and dissemination of knowledge. There is slight changed happened but the concept of the digital library Software is quite old but it is getting popular with the latest technologies used in it. It is necessary to stay updated with the new technologies and which will enhance the learning of the students and upgrade their skills and confidence to face the challenges. The hypothesis was tested using chi-square test to analyses the data generated from 440 completed questionnaires out of selected 500 sample size of respondents. All of these respondents are library end users of traditional library and digital library based on their type of subscription. For analyzing the feedback received from respondents, we used a **chi-square test** is to see if there is a relationship between two categorical

variables. All the tests were done using Excel based formulae using Microsoft Excel support site. And Conclusion found through this research study is that the Digital libraries have reduced the burden of librarians as well as students. However, there is books are still very much alive. Traditional physical libraries are changing, and craze of digital libraries have increased too but the advantages of digital library still not completely taken place of traditional libraries as such. Finally, we compare our obtained statistic to the critical statistic found in the chi-square table. As we can see, for an alpha level of 0.05 and two degrees of freedom, the critical statistic is 5.991, which is less than our obtained statistic of 6.56. So study have rejected null hypothesis because the critical statistic is lesser than obtained statistic. This means we have sufficient evidence to say that there is an effect of expansion of digital library over traditional library.

Keywords: Digital Library, Acquisition, Computers, Internet, Selection, informational database.

I. INTRODUCTION

A digital library is a gathering of documents in prepared electronic form, accessible on the Internet or on computers. Depending on the specific library, organizers may be suitable to research journals, magazine, papers, books, articles, images, sound lines, and videos. On the Internet, the use of a digital library is enhanced by a Broadband connection similar as sequence modem or DSL. Telephone- up connections can be used to store and such documents in collective forms, but for complex lines and those of such store content changes in various form of its

accessibility and use has the way in which the laws are executed are likely to do as digital libraries expand and their use becomes wider. The top functions of the Digital Library Software are the collection of documents electronically organized in the library. Digital Library are the advanced concept of libraries as they based and formed on numerous Library Management System which is primarily reliant on upon multirole factors that are Selection, Optimization, Informational and Acquisition. This process includes the selection process of adding a document digitally with its utilization in form of creating informational database for multirole use of the same in research education corporate at the same time for creating the review of literature. Organizing it's important to organize the data totally in collective form with its data mining process. With all above the Indexing and Storage this includes indexing and storing of data for effective searching. And many more concept depository this is the digital library front- end used to browse, search, read and view the contents of the digital library. The digital library collection, and presents the collection to the store in the form of a website content and ready to use collective database through a network connection. Digital Library Software is grounded on two technologies BarCodeSystem and RFID Library Management System. The BarCodeSystem is grounded on the unique 14 number codes assigned to every item in the library and further is scrutinized with the help of the bar code scanner. While RFID library operation system is grounded on radio frequency technology for which RFID markers, compilation, scanner, RFID Gate, etc. tools are used for the employed of RFID Technology. Currently, the RFID System is getting further widespread due to the ultimate knowledge. Libraries are moving towards an information commons model of service, and getting lot community centres. They invite students and faculty socialization, literacy, exploration, education and instruction through the various seminars and workshop to spread the awareness of digital library use in research and innovation. They're most effective when programming, services, and spaces are developed in cooperation with others seeking corresponding educational issues. Many times the academic libraries will decreasingly give information and services to their end users at right time as per their demand. Whatever the changes, the traditional places of a library in an academic community, especially those communities that are not changing mainly themselves, will remain valid and important to a successful council or university if they avails the timely and right information sources and that can easily possible through the digital library. In traditional library and in digital library environments

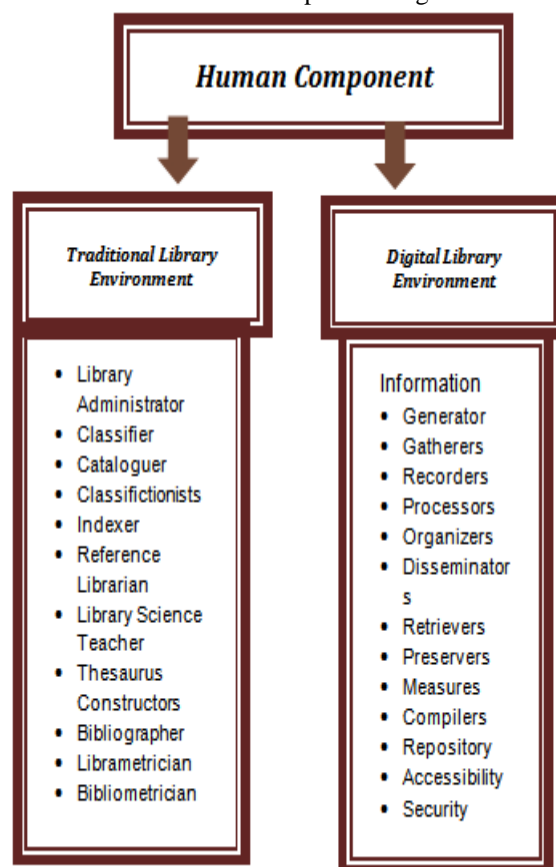
are moreover similar when it comes to human component interface to its structure only change with its different roles to deliver the services and functions of library environments:

Advantages of Digital Library

It's a type of library that a centralized collection of digital particulars like textbooks, plates, audio, and videotape accoutrements, lines in electronic media formats, along with the styles for organizing, storing, and reacquiring media. Digital libraries can range in size and compass, and they can be maintained by individualities, associations, or established physical library structures or institutions combined with approved or academic institutions. As we cleared this foundation which has following advantages of digital library

1. Wide Variety of Content flexibility

Traditional libraries are not much wider to cover the various types and in various numbers of content wise documents compares to digital libraries,



Traditional library are the inflexibility to include a different range of content due to physical space constraints. Digital libraries, on the other hand, store a wide variety of content in a virtual terrain,

including eBooks, magazines, papers, blogs, papers, vids, podcasts, and audiobooks..

2. On- Demand Access

Physical books always and remain popular than eBooks. The number of people reading books in digital format, on the other hand, has been steadily adding young collections prefer digital book performances because they can read them whenever and wherever they want. They can also eBooks through their mobile devices at any time and from any location. In discrepancy to traditional libraries, digital libraries allow users to access digital library via the internet using any device, similar as computers, tablets or smartphones.

3. Unlimited Access to Multiple users

In a traditional library, multiple collections cannot read the same book at the same time. They must stay for the other collection to return the book. Still, in a digital environment, multiple collections can have concurrent access to the same books, videos, and audiobooks. Numerous educational institutions are now establishing digital libraries to allow a large number of scholars from multiple resources to the same book at the same time.

4. Real- Time relations

The most recent library operation software includes features that make it easier for end users and librarian administrator to interact. Likewise, by establishing online communities, numerous software results encourage gathering resources. Users can easily gather fresh or specific information about a book or composition using these real- time access or exchange options.

5. Simplified Search

When visiting a traditional library, users must devote both time and trouble to changing the right book. Likewise, locating material information in a physical book takes time. Digital libraries, on the other hand, are designed with created in search capabilities. Numerous digital libraries indeed use popular search machines like Google, Bing, and Yahoo to speed up content search. As a result, users can find the information they need. By entering applicable key words and contents, user can also use the search point to find and sort digital libraries resources.

6. Keeping Knowledge for Next Generations

Due to the vulnerability of physical storehouse options, traditional libraries have constantly failed to save precious exploration, studies, and content. So, the benefits of a digital library store resources which easily accessible as and

when require to the end users. Likewise, sophisticated security measures are used to insure that only authentic users have access to the content.

7. Reduce Resource Redundancy

Traditional libraries must make reserves in the safeguarding and management of their collection resources. Because users continuously access and use physical library and librarians face challenges in fall of books. Whereas numerous associations digitize their libraries in order to make digital access available to a large number of users on an agreeable base, with little regard for physical material preservation which avoid duplications.

8. Library Management Automation

By mechanizing routine library services similar as indexing, issuing, tracking, and preservation, librarians are slowly getting out-dated. The library operation software has structures that automate library operation from beginning to end. As a result of computerization, frequent associations and constructions are encouraged to categorically create digital libraries.

9. Smoothly restructured

Small libraries, in discrepancy to large universities and libraries constantly change and constantly adding to buy new books, magazines, and other content materials. And, on the other hand, can keep the digital library up to date on a regular base just with the storing the information resources and sometimes with single click subscription process. Numerous publishers now allow digital libraries to make current editions and magazines available to collections on a pay- per- read base.

10. 24/7 Available

Traditional libraries have their working hours, limiting users to use library access at their rest. Digital libraries, on the other hand, allow users to read eBooks, hear to audiobooks, and watch videos 24*7 without changing their position. All it takes is an Internet connected device to access and read digital library accoutrements at our mind's content. This is the main reason why future users demand more than traditional libraries in this era and phase would turn in to use of digitization world.

A digital library is a library where we can find digital depositories, or digital collections, online databases of digital objects that may include textbook, still images, audio, videotape, digital documents, or other digital media formats. Objects can contain digitized content similar as prints or

photos, as well as primarily produced digital content similar as word processor lines or social media posts. In addition to storing content, digital libraries give a way to organize, search, and reopen the contents of a collection. Whereas traditional libraries emphasize the library and preservation of physical particulars especially books and journals that were the administrators of the librarian library. There are several differences between traditional and digital library citable some are given below:

II. HYPOTHESIS

Hypothesis testing is a practice for construing and representation interpretations about a populace based on sample data. It supports in decisive which sample records best sustenance jointly narrow shared statements.

H0: There is no significant effect on traditional libraries due to expansion of digital libraries in current era. [r = 0]

H 1: There is significant effect on traditional libraries due to expansion of digital libraries in current era. [r ≠ 0]

III. METHODOLOGY

Categorical variables belong to a subsection of variables that can be divided into discrete categories. Labels or names are the most regular categories. Such variables are also called as qualitative variables because they represent the variable's attributes and quality or characteristics. These categorical variables further divided into two categories: first is a nominal variable's categories have no natural ordering. Example: Gender, Age groups. And second variable that allows the categories to be sorted is ordinal variables. User satisfaction- Excellent, Very Good, Good, Average, Bad, and so on. The following main parameters were evaluated Infrastructure & Connectivity, Accessibility Policy, Information and Database, Quality Support and Services through the overall feedback from 440 users. This feedback survey for the understanding the quality of function and structured followed by library information department within the six month of duration. A Likert-type scale was prepared and used to capture the feedback using the feedback survey with main responses ranging from (1) Excellent, (2) Very Good (3) Good (4) Average (5) Bad. Also we have collected information of monthly, quarterly and yearly subscription details of these 440 respondents.

All 442 users asked to complete this survey email used to share an online survey tool link. This

tool was used to capture and record and archive all the feedback responses. As questionnaire distributed among the 442 user's 221 from each entity but the responses collected from 220 users each of traditional library and digital libraries on university and post graduate levels. So feedback count 440 has validated sample collected and used for this study.

Sample and Sampling Procedure:

The overall feedbacks from respondents are the sample study to test the hypothesis through statistical method. The total population includes all the digital library users. This survey was accomplished by different respondents for a variety of library services provided to them. All the responses received from the past six months were analysed for the purpose of this research. A total of 440 responses were collected in the last six month of this paper submission.

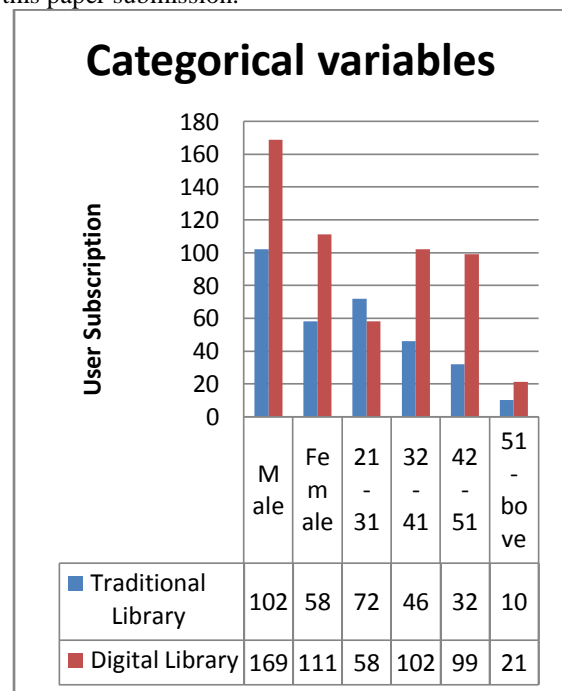


Table 1: Categorical variables

Statistical Techniques:

For the purpose of this study, to compare the score of the respondents, the common standard statistical techniques were applied, and tables and graphs are used for summarizing the data. To explore the service quality and challenges faced by digital library users. Such variables correlation coefficient was used in this study. The surveys responses were compiled together and classified gender-wise, age-wise, city wise and mainly functional service category wise etc. The survey responses were further classified as per category of the survey respondent.

Tools for Analysis:

The hypothesis was tested using **chi-square test** to analyse the data generated from 440 completed questionnaires. For analysing the feedback received from different states of India, we used A **chi-square test** is used when we want to see if there is a relationship between two categorical variables. All the tests were done using Excel based formulae using Microsoft Excel support site. The Chi-Square test is a statistical procedure for determining the difference between observed and expected data. **Formula for Chi-Square Test**

$$x_c^2 = \frac{\sum (O_i - E_i)^2}{E_i}$$

Formula 1: Chi-Square Test

Where: c = Degrees of freedom

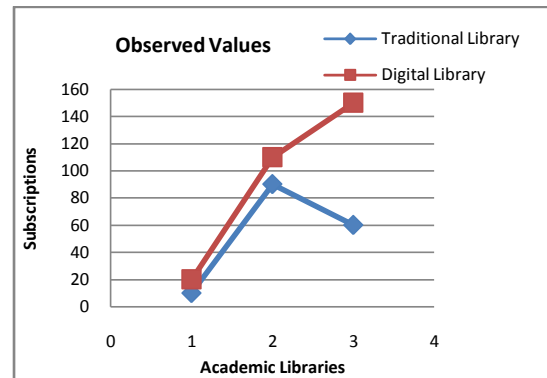
O = Observed Value

E = Expected Value

The Chi-Square Test used, Chi-square is a statistical test that examines the differences between categorical variables from a random sample in order to determine whether the expected and observed results are well-fitting. We want to know if there is any significant effect on traditional libraries due to expansion of digital libraries in current era. The following table shows the results of the survey as below:

Library / Subscription	Yearly Subscription	Quarterly Subscription	Monthly Subscription	Total Subscription
Traditional Library	10	90	60	160
Digital Library	20	110	150	280
Total	30	200	210	440

Table 2: Observed Value



Graph 2: Observed Value

We received the 440 responses in a simple random sample to find out the significant effect on traditional libraries due to expansion of digital libraries in current era has linked to perform a Chi-Square test of independence using the steps below.

Step 1: Define the Hypothesis

H0: There is no significant effect on traditional libraries due to expansion of digital libraries in current era. [r = 0]

H 1: There is significant effect on traditional libraries due to expansion of digital libraries in current era. [r ≠ 0]

Step 2: Calculate the Expected Values

$$\text{Expected Value} = \frac{(\text{Row Total}) * (\text{Column Total})}{\text{Total Number Of Observations}}$$

Formula 2: Expected Value

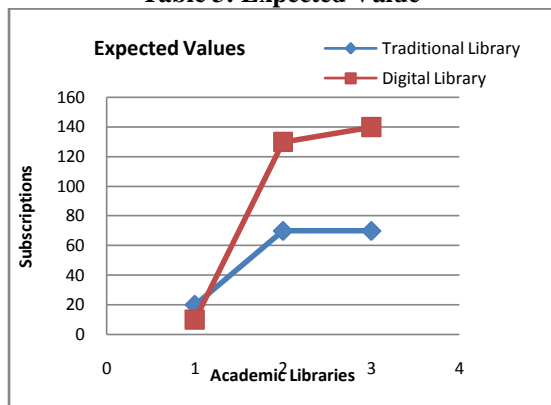
$$= \frac{(160) * (280)}{440} = 102$$

Equation 1: Calculate the Expected Values

Similarly, we can calculate the expected value for each of the cells. **Expected Values Table**

Library / Subscription	Yearly Subscription	Quarterly Subscription	Monthly Subscription	Total Subscription
Traditional Library	20	70	70	160
Digital Library	10	130	140	280
Total	30	200	210	440

Table 3: Expected Value



Graph 3: Expected Value

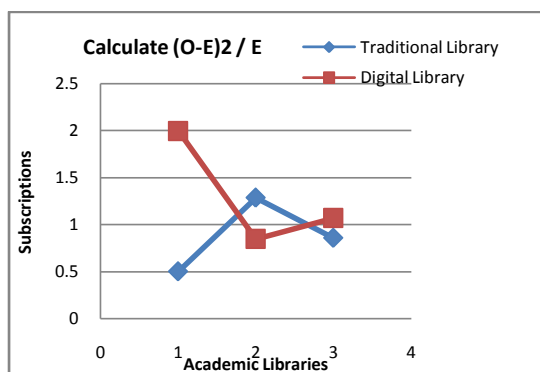
2) **Step 3: Calculate $(O-E)^2 / E$ for Each Cell in the Table, Where**

O = Observed Value

E = Expected Value

Library / Subscription	Yearly Subscription	Quarterly Subscription	Monthly Subscription	Total Subscription
Traditional Library	0.5	1.285714	0.857143	160
Digital Library	2	0.846154	1.071429	280
Total	30	200	210	440

Table 4 Calculate $(O-E)^2 / E$



Graph 4 Calculate $(O-E)^2 / E$

3) **Step 4: Calculate the Test Statistic X^2**

X^2 is the sum of all the values in the last table

$$= 0.5 + 1.29 + 0.86 + 2 + 0.85 + 1.07$$

$$= 0.743 + 2.05 + 2.33 + 3.33 + 0.384 + 1$$

$$= 6.56$$

Equation 2: Calculate the Test Statistic X^2

Before conclude, we must first determine the critical statistic, which requires determining our degrees of freedom. The calculation of degrees of freedom in this study are equal to the table's number of columns minus 1 and multiplied by the table's number of rows minus 1 which is $(r-1)(c-1)$. And we have $(3-1)(2-1) = 2$.

In conclusion, we compare our obtained statistic value to the critical statistic value and found in the chi-square table is 5.991. For an alpha level of 0.05 and 2 degrees of freedom, the critical statistic is 5.991, which is less than our obtained statistic of 6.56. So we have rejected our null hypothesis because the critical statistic is lesser than our obtained statistic. This means we have sufficient evidence to say that there is an effect of expansion of digital library over traditional library.

Critical values of the Chi-square distribution with d degrees of freedom

Probability of exceeding the critical value							
d	0.05	0.01	0.001	d	0.05	0.01	0.001
1	3.841	6.635	10.828	11	19.675	24.725	31.264
2	5.991	9.210	13.816	12	21.026	26.217	32.910
3	7.815	11.345	16.266	13	22.362	27.688	34.528
4	9.488	13.277	18.467	14	23.685	29.141	36.123
5	11.070	15.086	20.515	15	24.996	30.578	37.697
6	12.592	16.812	22.458	16	26.296	32.000	39.252
7	14.067	18.475	24.322	17	27.587	33.409	40.790
8	15.507	20.090	26.125	18	28.869	34.805	42.312
9	16.919	21.666	27.877	19	30.144	36.191	43.820
10	18.307	23.209	29.588	20	31.410	37.566	45.315

IV. LIMITATIONS

The chi-square can simply define whether two variables are correlated. It does not essentially track that one variable has a contributing relationship with the other. It would require a more detailed study to create interconnection.

V. RESULT & DISCUSSION

Indeed though the study on this matter is still ongoing, one cannot overlook the benefits that digital libraries bring to the world. Digital libraries give unlimited access to a wide range of content, with a plethora of multilayer resources. The main limitation of traditional libraries is physical space

there's a determinate limited significant of resources they can offer, and users frequently need to visit further than one library in search of a specific material. With regard to digital library, there are multitudinous advantages over traditional libraries, similar as the capability to represent information in multimedia form, and the creation of equal educational openings for all nations. When mixing the benefits of library for scholars, we must emphasize the significance of digital library during Covid- 19. Since the outbreak, they allowed for continued access to reading and study accoutrements to millions of people worldwide. Due to the adding demand for secure-resources, digital libraries established themselves as crucial access points to high- quality educational contented-books, journals and much further.

As our world is decreasingly getting digitized, digital libraries crop as the smarter and further profitable result for global use. Digital libraries won't fully replace the physical actuality of documents, but to meet current demand and to satisfy on-local users digitization must be introduced so that libraries come available resource in nature. It's critical to stay current with new technologies that will enhance scholars' learning and boost their confidence in the face of challenges. "Google Book Search" don't work", digitization Does not mean destruction, In fact, digitization means survival. Digitization is going to take a while. A long while, libraries and librarians improve student test scores, physical libraries are conforming to artistic change, barring libraries would cut short an important process of artistic elaboration, libraries' collections employ a well- formulated system of citation, libraries can save the book experience, libraries are stable while digital libraries can be unexpectedly helpful for news collections and libraries, libraries are inconvenient to anti-intellectualism, libraries are not just books. Not everyone can go books, Wisdom of crowds is untrustworthy, because of the oriented point, mobile uses are not the end of books, or libraries, the excitement might really just be hype.

VI. CONCLUSIONS

On par with our fast- paced way of living, the demand for access to nearly any type of information at our fingertips is rising. The way we want to stab information and read content is changing, according with a decline in traditional library visits. Numerous large libraries, universities, and seminaries worldwide joined the trend by slowly but steadily digitizing their reading collections. As libraries close and computers come more protean, more traditional members of the global reading community come concerned that traditional

paperback books will come outdated. Still, there's no need to be concerned because, thanks to the wonders of the internet, books are still veritably important alive.

The virtual library land provides both an occasion and a demand for librarians to develop lesser familiarity with IT- type servers. Moment, further than ever, libraries and librarians are extremely important for the preservation and enhancement of our culture. Para-professional staff needed practical 'hands on' experience and training. Librarians are moving into database development, courseware, open literacy and academic staff development and need a combination of knowledge, aptitudes, and particular rates in order to fill their multi-faceted places. Eventually, it may be state that mortal element is principally an necessary part of the Library as 'Librarian' and in the electronic ground as 'Cybrarian'. The part of a Digital Library is to collect, manage, save and make accessible digital objects. Study found that the digital libraries give a friendly interface to users, need only structured network installations to support library functions, which enhance advanced search, access of information and operations to enable one to perform quests, secure the information, save unique collections through digitization. Hence these comparative studies explain that the expansion of digital libraries in the current era has certain effect on existence of traditional library. Libraries can adapt to social and technological changes, but they cannot be replaced. Though libraries are separate from the Internet and librarians, undeniably, a lot of information is online. But a good share is still on papers. Books have a long history. Library crowd is not dropping- it's just added virtual now.

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