

# Identify the Impact of Library Management System to Have Efficient Functional Process in Library

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## ABSTRACT

This study observes the expansion of high-tech library structures. The study unwrapped with a framework of the foremost selections for structure expansion fronting library administrators. Where realistic, the importance is on a process based top to down structure, which initiates as its first point the processing on data and library based information and not just based of hi-technology but its ease of access and user friendly experience. The study introduces the traditional approach and as analyzes the three dimensions of student management as management object, management theory and management experience based on six variables and its study with statistical analysis. The study based on the empirical analysis by expending exploratory factor, the question substantially asks about experience in using factors' accessible libraries and highlights features available in libraries and advancements that could be done on the system. Study measures through Cronbach's alpha,  $\alpha$  or coefficient alpha, to measures reliability, or internal consistency. "Other styles used are direct observation to libraries on rotation process, procurement, and internal conditioning happened in a library Information Management system to write the descriptive part of paper. This research paper approach of building exact library information management systems which reflect and shows the how important is the positive relationship between LMS to have efficient automation process in the digital library. And purpose of the study to developing and designing and executing frontier and functionality to front-end collaborating and informatively in directive to request users to this web-based integrated library circulation and management system.

**Keywords:** Accessibility and Information System, Digital Library, Process Evaluation.

## I. INTRODUCTION

The word Library derives the Latin liber, means the "book," Latinized Greek word for library is bibliotheca, is the origin word for library in the Russian and German language. Traditionally, Library defines as used for reading or study place, or collection of books in which such a collection is kept in one room or in one building. Since the middle of the 20th century, concept of digital libraries have developed and now became the far-reaching source of information resources and services that has virtual setup and need not require a place or room to keep physical copies of books. Extreme change and developments in digital and technological system and telecommunications sources have arranged and made it easily accessible storage center and retrieval information systems in various forms with a computer and an ISP connection. [1] And it has emerged with two new concept i.e. digital library and virtual library. This refer to the huge sources of collections of information where end numbers of users gain access over the one simple net connection and configuration of some other type of remote based application and connections. Our study will explain the Library management systems (LMS) supports libraries to keep track of the types of books, book catalogues and book checking checkouts, as well as users' registration and members subscriptions, profiles and usages. Such library management systems give library administrator to easy track record of asset collections as well as relationships with their users.

## II. OVERVIEW

Over the course of history, libraries have changed significantly but their cultural role has still persist. They are the perfect home where a youngster can receive his leading stories and researchers can cart out their study of research. [3] Libraries remain accountable for acquiring or providing access to books, journals and periodicals, and other media that meet the educational, recreational, and informational needs of their users where all above section demonstrates while having digital library information sources, their role to consistently provide the accent as well as modern educational, legal, scientific, business oriented, historical, spiritual and religious records of a society. This study focused on the following set of requirements which requires in designing the efficient Library Management System:

- The system should generate a unique identification number for each book and should provide details like a row wise rack number which will guide toward physically identify the book easily.
- The system should allocate a unique barcode to each book and member card. And at the same time that barcode will be able to read through system from books and members' library cards.
- The library member should be able to search books or journals by their title, author, publishers, editions and subject category as well by the publication date.
- The system should be able to retrieve information like what are the books checked-out by a specific library member and a particular book allotted to which member.
- There should be a maximum limit (6) on how many books a member can check-out.
- There should be a maximum limit (15) on how many days a member can keep a book.
- The system should provide caption to reserve books that are not currently available and should be able to send notifications whenever the reserved books become available,
- The system should be able to collect fines for books returned after the due date.

Now a days Libraries are became the huge resources of storehouses of knowledge management and information system. Libraries involves with various functional tasks like procuring the reading materials, collecting books and journals, assembling them methodically with

specific order, management and maintenance of those books and journals, broadcasting of available information sources, etc. To avail the informational sources to a reader as per his or her requirement is a the important aspect of library management system, and LMS make everything easy for administrator as well as to end user or members of library as because libraries offer very reliable and hard to find material with just physical maintain of stocks of huge resources.

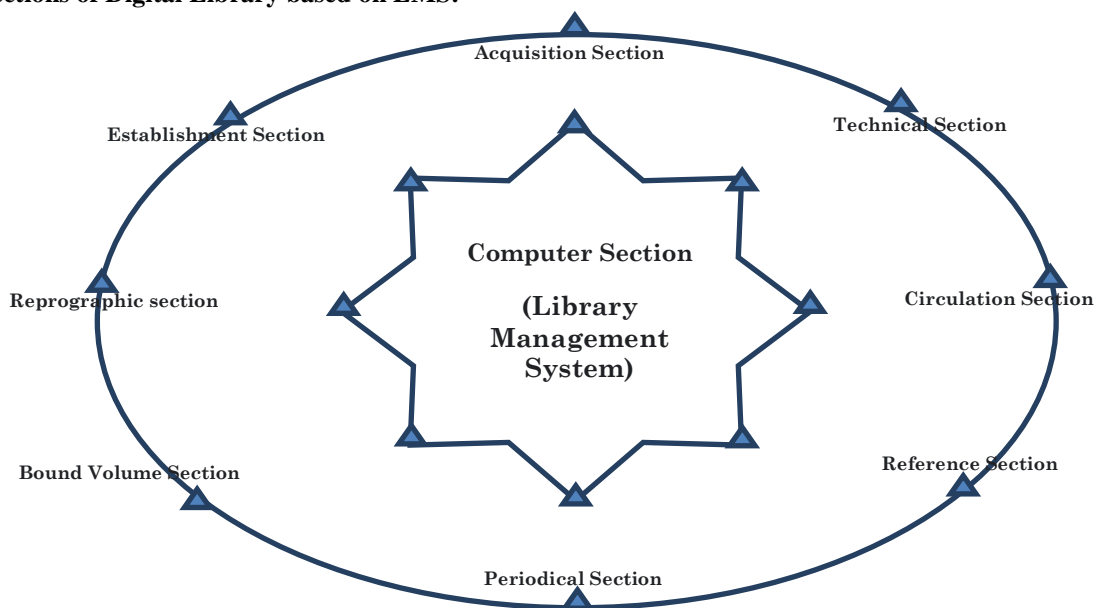
### There are three important Stakeholders in Library Management System:

- **Librarian:** Is the key role player in the library system and mainly responsible for adding and transforming and processing on records, book articles, and users. The Librarian can also issue, reserve, and return book items and update the relative database in Library Information System.
- **Member:** All participants can search the catalog series, as well as check-out, reserve, renew, and return a book. Member subscription facility is also the provision based on registration and renewal process of it.
- **System:** Primarily accountable for sending notifications for overdue books, canceled reservations, etc. and automation process of maintaining record can give ready MIS about above said details and its related activity within library system.

### List of activities in Library Management System:

- Register new user account / cancel membership: To add a new member or cancel the membership of a present member based on requisition or.
- Check-out book: To borrow a book from the library.
- Add / Remove / Edit book: To add, remove or modify a book or book item.
- Search catalog: To search books by title, author, subject or publication date.
- Reserve book: To reserve a book this is not currently available.
- Renew a book: To borrow an already checked-out book.
- Return a book: To return a book to the library this was issued to a member.

**Sections of Digital Library based on LMS:**



**1. Acquisition Section:** Acquisition segment is accountable for the selection and procurement of resources or reserves. It is the segment which succeeds the economical application for procurement of resources. Suggested order in line are acquiesced by respective branches which sustain identical check in contradiction of Library successes; which are then situated in the gathering of Vertical Panel for reserve High-quality resources.

**2. Technical Section:** Technical section retains all the methodological mechanism classified the library. This section is assigned with the undertakings such as classification, cataloguing and project of substance directions where they are administered for recording and barcode and then are released for circulation.

**3. Circulation Section:** Circulation section is one of the most significant segments in the library as it is the entryway between users and resourceful documents. This segment handles determined facilities spaced out from the facility of providing and renewal of books, service functionality such as registration of library users, distributing of consent / no dues credential and remain numerical evidence relating to the library use.

**4. Reference Section:** This section stays the reference information for the managers in the collection. [5] They contain of resources that are intended to assistance exploration by providing rapid and reachable evidence. The reference a base

encompasses of glossaries catalogues, directories, graphics etc. However, reproduction and Xerox of these propositions are severely prohibited however the other situations bases can be completed replicate with the preceding authorization of the operate.

**5. Periodical Section:** Periodical section delivers the present evidence in the public library. The foremost mechanisms comprises introduction of subscriptions direction for the reproduction periodicals and acceptance and proceedings the concerns of journals/broadsheets and regeneration of payment and the preservation of existing periodicals.

**6. Bound Volume Section:** Bound Volume Section is the segment which continues the bound volume of vertebral matters from the periodical section. Formerly a capacity is no longer current; the public library collects up the subject in that capacity and predicaments they composed. These are bound periodicals and are specified a single compliance and also cataloging numbers.

**7. Reprographic section:** This segment provides the facilities of Photo-copying, Printing, Passport size photograph, Lamination and Spiral binding. Reprographic provision is the performance of constructing a renewed copy of a document, and it is currently compelling the center period in collection facilities by construction an original document accessible to the user.

**8. Computer Section:** This section is the furthest vital segment in the library as it delivers the main support to the library computerization programme and continues provision facilities for the preservation of library software.

**9. Establishment Section:** This segment is accountable for the supervision of the routine organizational administrative works such as communication of proceeds and reports the whole thing as functionality of library management, bill processing, keeping registers of various executive undertakings etc.

**Here is the main schema of Library Management System:**

- **Library:** The central part of the organization for which this software has been designed. It has attributes like 'Name' to distinguish it from any other libraries and 'Address' to describe its location.
- **Book:** The basic building block of the system. Every book will have ISBN, Title, Subject, Publishers, etc.
- **Book Item:** Any book can have multiple copies; each copy will be considered a book item in system. Each book item will have a unique barcode.
- **Account:** will have two types of accounts in the system, one will be a general member, and the other will be a librarian.
- **Library Card:** Each library user will be issued a library card, which will be used to identify users while issuing or returning books.
- **Book Reservation:** Responsible for managing reservations against book items.
- **Book Lending:** Manage the checking-out of book items.
- **Catalog:** <sup>[2]</sup>Catalogs contain list of books sorted on certain criteria. System will support searching through four catalogs: Title, Author, Subject, and Publish-date.
- **Fine:** This class will be responsible for calculating and collecting fines from library members.
- **Author:** This class will encapsulate a book author.
- **Rack:** Books will be placed on racks. Each rack will be identified by a rack number and

will have a location identifier to describe the physical location of the rack in the library.

- **Notification:** This class will take care of sending notifications to library members.

### III. OBJECTIVES

To identify the impact of library management system to have smooth functional automated process in digital Library.

### IV. HYPOTHESIS

**H<sub>0</sub>:** There is no positive relationship between LMS to have efficient automation process in the digital library.

**H<sub>a</sub>:** There is positive relationship between LMS to have efficient automation process in the digital library.

### V. METHODOLOGY

**Problem:** How to implement easy to practice the membership subscription process and recognize online book resources procurement flow with integrated payment system of e-wallet feature.

**Purpose:** Designing and executing frontier and functionality to front-end collaborating and informatively in directive to request users to this web-based integrated library circulation and management system.

#### Research Design and sampling

In this study, analyzes the three dimensions of student management as management object, management theory and management experience based on six variables. Then, the makes empirical analysis by using exploratory factor method, the data were collected by means of a questionnaire containing unrestricted-concluded questions and provides 'Other' option when the handed answers don't satisfactory. The data was collected from 7 universities from Rajasthan. We issued total of 340 questionnaires to college counselor. The questionnaire was sent by mail survey and email, recycling 320 copies and generating 315 valid returned questionnaires, the basic information of the questionnaires was shown in Table 1. Each question was stately measures using a 5 points Likert scale item from "strongly disagree" to "strongly agree". In order to know whether the questions in this questionnaire were exclusive reliable, a Cronbach's alpha will be run to resolve the question of reliability of questionnaire.

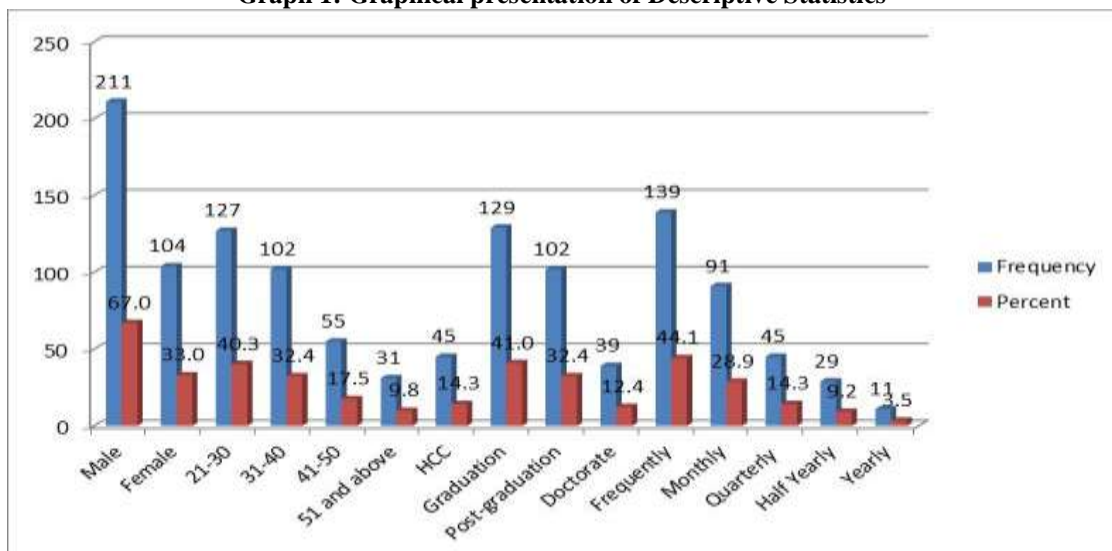
**Table 1: Basic Information of the Questionnaires**

Questionnaires	Count	Remark
Issued	340	to college counselor
Recycle	319	sent by mail survey and email
Valid	<b>315</b>	valid returned questionnaires

**Table 2: Descriptive Statistics**

	Description	Frequency	Percent
<b>Gender</b>	Male	211	67.0
	Female	104	33.0
<b>Age</b>	21-30	127	40.3
	31-40	102	32.4
	41-50	55	17.5
	51 and above	31	9.8
<b>Education</b>	HCC	45	14.3
	Graduation	129	41.0
	Post-graduation	102	32.4
	Doctorate	39	12.4
<b>Subscription Type</b>	Frequently	139	44.1
	Monthly	91	28.9
	Quarterly	45	14.3
	Half Yearly	29	9.2
	Yearly	11	3.5

**Graph 1: Graphical presentation of Descriptive Statistics**



**Table 3: Correlation Matrix**

	Q1	Q2	Q3	Q4	Q5	Q6
Q1	0.378	-	-	-	-	-
Q2	0.251	0.689	-	-	-	-
Q3	0.26	0.375	0.433	-	-	-
Q4	0.336	0.471	0.446	0.593	-	-

Q5	0.312	0.421	0.466	0.58	0.622	-
Q6	0.311	0.409	0.489	0.561	0.607	0.799

Cell Contents: Pearson correlation

Table 4: Item and total statistics

	Variables	Count	Mean	StDev
Q1	Experience on accessibility	315	3.924	1.297
Q2	Availability of Information	315	3.267	1.210
Q3	Acquiring New Collections	315	3.162	1.182
Q4	Interlibrary System Workflow	315	3.584	1.257
Q5	Improvements & Development	315	3.302	1.126
Q6	Other / Suggestions	315	3.562	1.194

Cronbach's Alpha = 0.8230

**Omitted Item Statistics** :Outreached Cronbach's alpha of three dimensions are 0.8376, 0.7858 and 0.7893, and all the correlation is greater than 0.5. The result proves that the initial scale has good

internal consistency and reliability. In addition, the Cronbach's Alpha will decrease when any item has been deleted, so that all variables should be retained.

Table 5: Omitted Item Statistics

Omitted Variable	Adj. Total Mean	Adj. Total St Dev	Item Adj.Total Corr	Squared Multiple Corr	Cronbach's Alpha
Q1.1	16.876	4.651	0.3939	0.1877	0.8376
Q2.1	17.533	4.45	0.6313	0.5376	0.7858
Q3.1	17.638	4.487	0.6157	0.5264	0.7893
Q4.1	17.216	4.448	0.5985	0.4394	0.7928
Q5.1	17.498	4.471	0.6758	0.5071	0.7779
Q6.1	17.238	4.442	0.6515	0.4847	0.7816

## VI. RESULTS & DISSCUSSION

The subsequent are the outreached results for the study and interpretations done. Each question was stately measures using a 5 points Likert scale item from "strongly disagree" to "strongly agree". In order to know whether the questions in this questionnaire were exclusive reliable, a Cronbach's alpha was run. The Minitab output delivers selected beneficial descriptive figures, including the sample size for each item in the "Total Count" column, as well as the mean and standard deviation the "Mean" and " StDev" columns). Also provided with the Cronbach's alpha ( $\alpha$ ) score, which is **0.8230** indicating a high level of internal reliability for obtained variables in scale. Higher values of Cronbach's alpha are enhanced. What constitutes anuprightand correct level of internal consistency fluctuatessubjectto what source refers to, but all existing values are 0.7 or higher. Another valuable segment is the final slab, which expressions the 'contribution' or 'fit' of each

item to the measure, given thatvaluable statistics such as the mean and standard deviation the "Adj. Total Mean" and "Adj. Total StDev" columns, adjusted Pearson correlations and squared multiple correlation the "Item-Adj. Total Corr" and "Squared Multiple Corr" columns, and Cronbach's alpha score the "Cronbach's Alpha" column if an item was unconcerned from the scale.Going through statistical analysis and result off interpretation found the decision on creating a simple application that supports only essential features are based on the need of masses and kind of responses received on variables through questionnaire. <sup>[4]</sup>Most of the sustenance library detailed that either the current book journal collection or library application are too rigid to understand and acquire or difficult to manage or maintain because of the complexity of the application. Keeping all these things in mind, the library administration must ensure easiness and efficient process management in development,

maintenance and scaling the process of centralized application as simple as possible and easy in use. Suppose where in the online booking features “Booking book online and book delivery to preferred library” are the most popular useful feature requested. [6] Often users are forced to come to library and fill booking form so that the librarian could contact other library to borrow the book. But due to “Booking book online and book delivery to preferred library” features, eliminates the need of going to library, making busy user able to borrow books not available on their accessible library despite their activity. Such kind of service and easiness will enhance the process of library information management in efficient and effective operational functions. Library Information can develop the strong user friendly platform with provision by adding following features of the system like Online Public Access Catalogue, Review and rating system, popular books, Member management, Book management, Collection management, Borrowing and returning, Booking book online and book delivery to preferred library, E-Wallet.

## VII. CONCLUSION

In this paper, as analyzes the three dimensions of student management as management object, management theory and management experience based on six variables and its study with statistical analysis. Then, the study empirical analysis by expending exploratory factor technique, the result shows that the cumulative variance impact rate is 68.7% and demonstrate that these three features has strong explanation ability in student management. From the reliability test, the result shows that outreached Cronbach's alpha ( $\alpha$ ) score which is **0.8230** and cronbach's alpha of these three dimensions are 0.8376, 0.7858 and 0.7893, and all the correlation of omitted variables is greater than 0.5. It proves that the initial scale has good internal consistency and reliability. Finally, we would like to give out specific strategic policy suggestions as; First, reinforce the rational level for students administration, confirm every college counselor knows the students' quintessence and distinctive characteristics and attributes; second, avail more requisite information and knowledge and skills training for the college counselor; finally, offer and deliver maximum opportunities for exchange of relative details for counselor to constantly reflect about the previous work or record for further use of library database and information management. Hence there is positive relationship between LMS to have efficient automation process in the digital library. The only issue that

continues is the agreement and association between various libraries and the technical substructure of the library itself. Without a proper and good internet or network linkage connection communication will always challenge. If that has been taken care and improve the restructuring will maximize the advantage gained by implementing and utilizing the library information management system effectively and efficiently by all connected libraries for their users.

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