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A Study of Faculty and Students Perception to Using the Library Properties: Different References to Degree Academies of Mumbai City

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A B S T R A C T

As libraries are the prerequisites for proper planning and development of resources and services of libraries and understanding the user's information behavior is the need of the hour to provide improved services to the users.

We describe the methods used to organize various informational resources and services as well as the students staff, physical space, and technological infrastructure that are currently available. We also describe the state of library automation in degree college libraries at university of Mumbai (city).In this calculating the faculty and student perception about library facilities provide to organizations.

Keywords: Perception, Services, facility, Resources.

1. Introduction

The higher education system in India has developed remarkably, especially in the post-independence period, becoming one of the largest systems in the world. The problems facing the higher education system at now are the quality of education through financing, access, values and ethics and the assessment and accreditation of organizations. These problems are vital for the nation, as it is now engaged in using higher education as a impactful tool for building the knowledge-based information society of the 21st century. In this backdrop, an appropriate initiative has to be taken to answer to the knowledge generation in a dedicated manner by establishing National Knowledge Commission (NKC) in India is a very significant turning point to bring a paradigm shift in the outlook towards education system and education has to be transformed in the context of knowledge society. The National Knowledge Commission (2005) insists all libraries must have the facilities — "motivated, courteous and adequate staff, easy access and user friendly retrieval system, effective signage's and computers with internet access and photocopiers", serving as a major vehicle to facilitate creation of knowledge, facilitating optimal use of knowledge by all sectors, and easy access to knowledge relevant to their needs. as libraries are the prerequisites for proper planning and development of resources and services of libraries and understanding the user's information behavior is the need of the hour to provide improved services to the users.

In this changing scenario, efforts were made to study the collection development of resources, organization methods, infrastructural facilities, information services and user perceptions towards library resources and services of Degree College Libraries, affiliated to the University of Mumbai, Mumbai. Libraries form the integral part of the university system to support for teaching, learning, and scholarship and the library must become "virtually present" as an information resource at all points on campus "library without walls" that is accessible in classrooms, laboratories, dorm rooms, and beyond. Thus, Libraries must provide the facilities for teaching both students and faculty how to effectively use and manage information resources, both in print and electronic format, from the mechanics of using them, to the information literacy needed to use them wisely, to the techniques and creativity required to create them and render information services to the users.
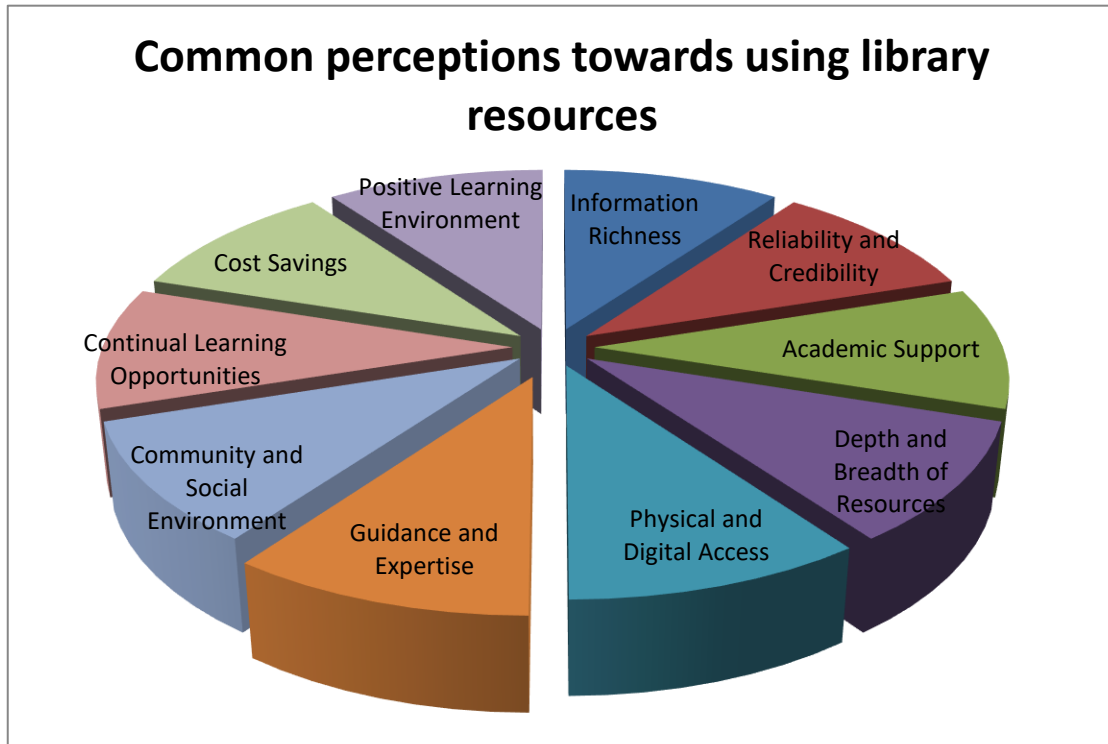
Figure 1: Common Perception of library resources

2. Related Work

Collect the information of Degree College affiliated to the University of Mumbai and then study resources and services provided by libraries to faculties and students like e-library, Digital library. Generating question bank and distribute it into faculties and students of Degree College affiliated to the University of Mumbai, Mumbai who use library on daily basis. After that collect the perception of different faculties and students on provided questionnaires.
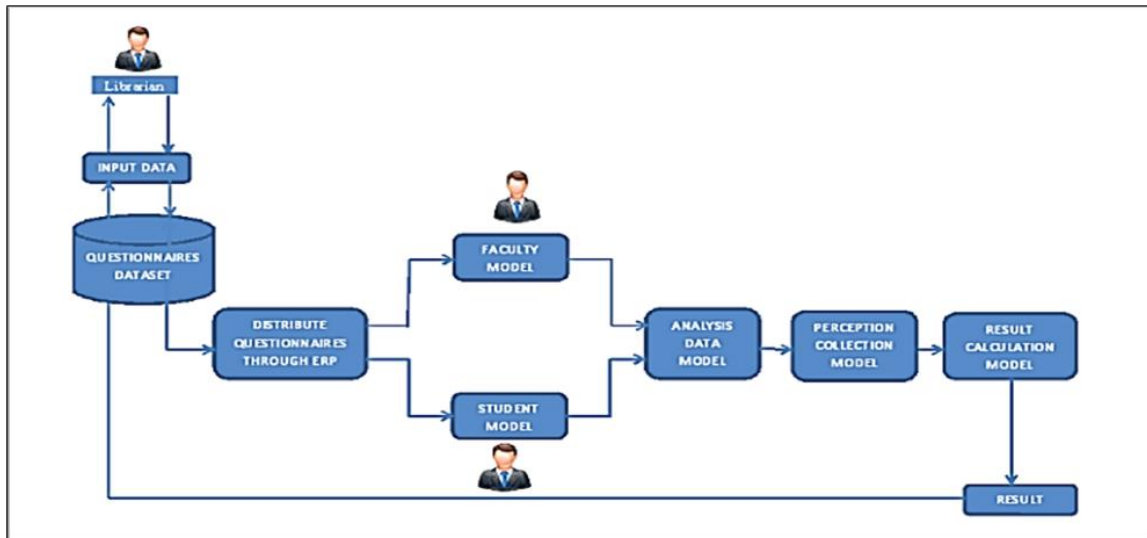

Figure 2: System Architecture

3. Methodology

Machine learning is focuses on the development of models that enable computers to learn and make predictions or decisions without being explicitly programmed. It involves the use of computational algorithms to give computer systems the ability to automatically learn and improve from experience or data. In this project Convolutional Neural Networks (CNNs) machine learning algorithm is used to develop perception model.

3.1 Clustering algorithms

Clustering algorithms are a type of unsupervised machine learning technique that groups similar data points together based on their characteristics.

Here are the general steps involved in performing a clustering algorithm:

- **Data Preparation:** Collect and preprocess the data you want to cluster.

- **Choose the Clustering Algorithm:** Select a suitable clustering algorithm based on your problem and data characteristics

- **Initialize the Algorithm:** Initialize the chosen clustering algorithm. For example, in K-means, you need to specify the number of clusters (K) that you want the algorithm to identify.

- **Feature Selection (optional):** If you have a high-dimensional dataset, you may want to perform feature selection or dimensionality reduction techniques, such as Principal Component Analysis (PCA), to reduce the dimensionality of the data before clustering.

- **Cluster Assignment:** Assign each data point to an initial cluster based on the algorithm's initialization. In K-means, this involves randomly selecting K centroids as the initial cluster centers.

- **Iterative Optimization:** Iterate through the following steps until convergence:

  Centroid Update:

  Update the centroids of each cluster based on the current assignment of data points.

  Data Point Reassignment:

  Reassign each data point to the nearest centroid, updating the cluster assignments based on the updated centroids.

  Convergence Check:

  Check if the algorithm has converged. This can be done by comparing the new cluster assignments with the previous assignments or by checking if the centroids have moved significantly.

- **Evaluate and Interpret:** Assess the quality of the clustering results. There are various evaluation metrics depending on the algorithm and problem, such as silhouette score, inertia, or purity.

- **Parameter Tuning (optional):** If necessary, adjust the algorithm's parameters and repeat the steps above to achieve better clustering results.

- **Finalize and Use Clusters:** Once you are satisfied with the clustering results, you can finalize the clusters and use them for further analysis or downstream tasks, such as classification.

4. Objective

The broad objectives of the study are to determine the use of information resources and services of Mumbai city Degree Colleges:

- To study the perception of users of existing manpower, building and technological infrastructural facilities.

- To understand the users knowledge the various information services including IT based services.

- To identify users perception the methods adopted for preservation and conservation.

- To understand the tools adopted for users in organizing various information resources.

- To examine the knowledge of library users.

5. Results and Discussion

Following methodology apply for perception towards the students & faculty for library resources & services.

• **Data Acquisition:** The library acquires data from various sources such as catalog records, digital resources, user feedback, and surveys. This data may include information about books, journals, multimedia, user preferences, borrowing history, and user inquiries.

• **Data Preprocessing:** The acquired data is preprocessed to clean and organize it for further analysis. it involve tasks like data cleaning, confiscating duplicates, standardizing data formats, and normalizing data.

• **Feature Extraction:** Applicable structures or characteristics are extracted from the preprocessed data. These features could comprise book labels, authors, journal dates, genres, keywords, user scores, or any other information that helps describe the library resources and services.

• **Data Representation:** The extracted features are transformed into a suitable representation that can be processed by perception algorithms. For example, text data might be converted into numerical vectors using techniques like bag-of-words or word embeddings.

• **Perception Algorithms:** Perception algorithms are applied to the represented data to extract meaningful information and patterns. These algorithms can include techniques such as NLP, computer vision, depending on the type of library resources and services being analyzed. For example, text classification algorithms can be used to categorize books into genres, sentiment analysis algorithms can assess user feedback, or image recognition algorithms can identify book covers.

• **Output Generation:** The perception algorithms generate outputs based on the processed data. These outputs could be in the form of predictions, lassifications, recommendations, summaries, or visualizations that provide insights into the library resources and services.

• **Evaluation and Validation:** The generated outputs are evaluated and validated to assess their accuracy, effectiveness, and relevance. This can involve comparing the results against ground truth or user feedback to measure the performance of the perception algorithms.

• **Feedback Loop:** The evaluation results and user feedback are used to refine and improve the input process. This may include revisiting the data acquisition process, modifying feature extraction techniques, or updating the perception algorithms.

Activity of Library Resources

Users' frequent and infrequent activities reveal that the most common tasks they perform in the library include reading individual readers (83.9%), newspapers (67.1%), conducting research (65.8%), and completing class assignments (65.3%). More than half of the respondents (53.8%) had referred library pattern books, used print and online periodicals, and gotten advice from librarians. 45.4 percent of all people have checked out books from the library. Online databases (14.9%) and library catalogues (27.5%) are not frequently used.

Table 1. Activity of Library Resources

Activities in the Library	Regularly	Percentage	Occasional	Percentage
Read Text Books	183	62%	64	21.70%
Read news paper	103	34.90%	95	32.20%
Do personal work	79	26.70%	114	38.60%
Consult Library print books	77	26.10%	95	32.20%
Research work	69	23.40%	125	42.40%
Using Journals	52	17.60%	102	34.60%
Ask Librarian for assistance	45	15.20%	114	38.60%
Library books barrow	50	16.90%	84	28.50%
For using library catalogue	21	7.50%	59	20%
Use of online data base	18	6.10%	26	8.80%

Perception of Library Resource & services

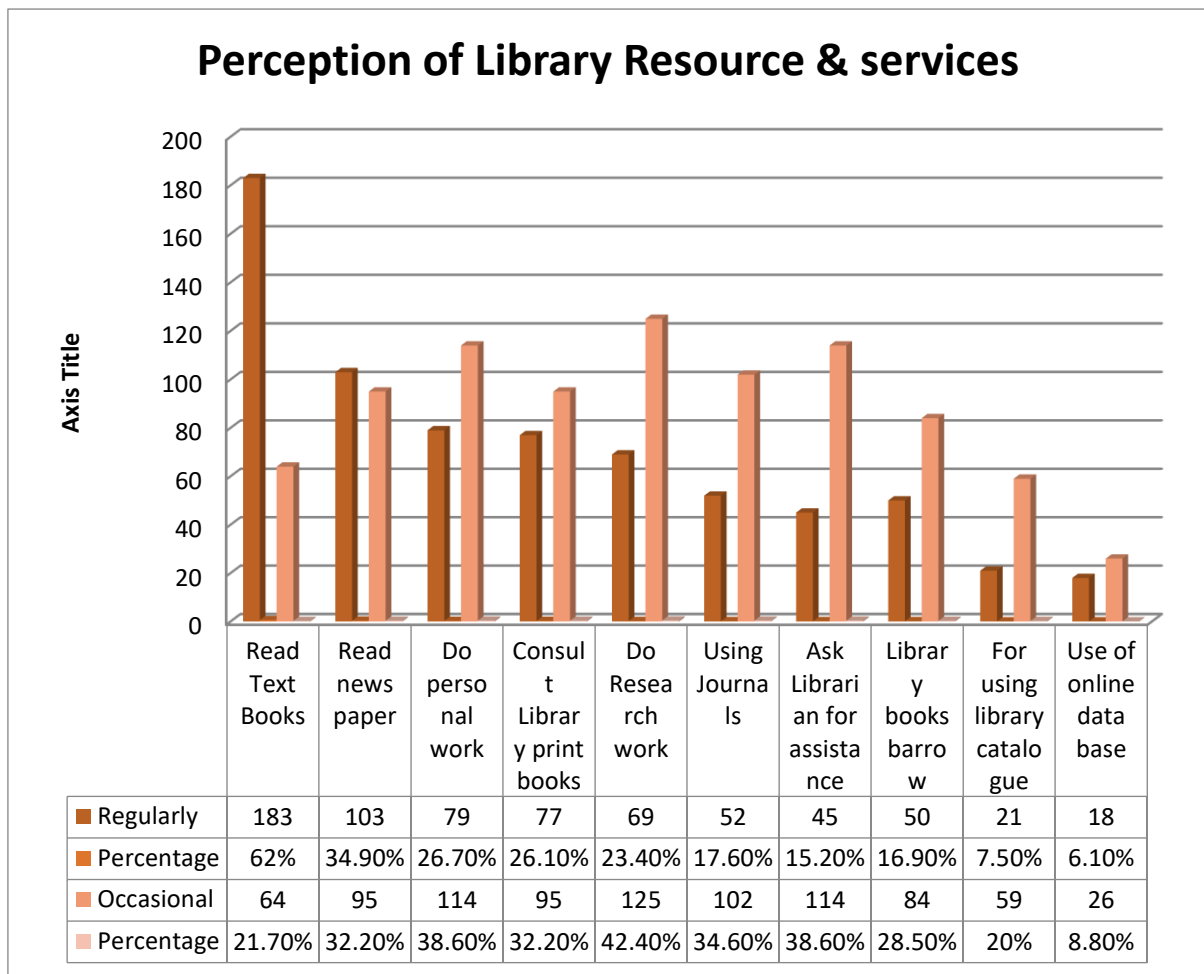|	Read Text Books	Read news paper	Do personal work	Consult Library print books	Do Research work	Using Journals	Ask Librarian for assistance	Library books barrow	For using library catalogue	Use of online data base
■ Regularly	183	103	79	77	69	52	45	50	21	18
■ Percentage	62%	34.90%	26.70%	26.10%	23.40%	17.60%	15.20%	16.90%	7.50%	6.10%
■ Occasional	64	95	114	95	125	102	114	84	59	26
■ Percentage	21.70%	32.20%	38.60%	32.20%	42.40%	34.60%	38.60%	28.50%	20%	8.80%

Figure 3: Graph of Activity of Library Resource & services

Major Issues of Library Resource & services

The lack of computers and/or Internet (75.6%), a lack of present resources (60.7%), a warm situation (46.1%), a lack of reading space and chairs (38.3%), and poor lighting (36.6%) are the main issues that students have with using the College Library effectively. The least significant deterrent to using the library was noise (18.3%).

Table 2. Major issues in Library Resources

Major problem of the Library	Frequency	Percentage
Lack of Internet/computer	223	75.6
Lack of current materials	179	60.7
Reading environment	136	46.1
Inconvenient space and seats	113	38.3

Major issues in Library Resources

	Lack of Internet/computer	Lack of current materials	Reading environment	Inconvenient space and seats
■ Frequency	223	179	136	113
■ Percentage	75.6	60.7	46.1	38.3

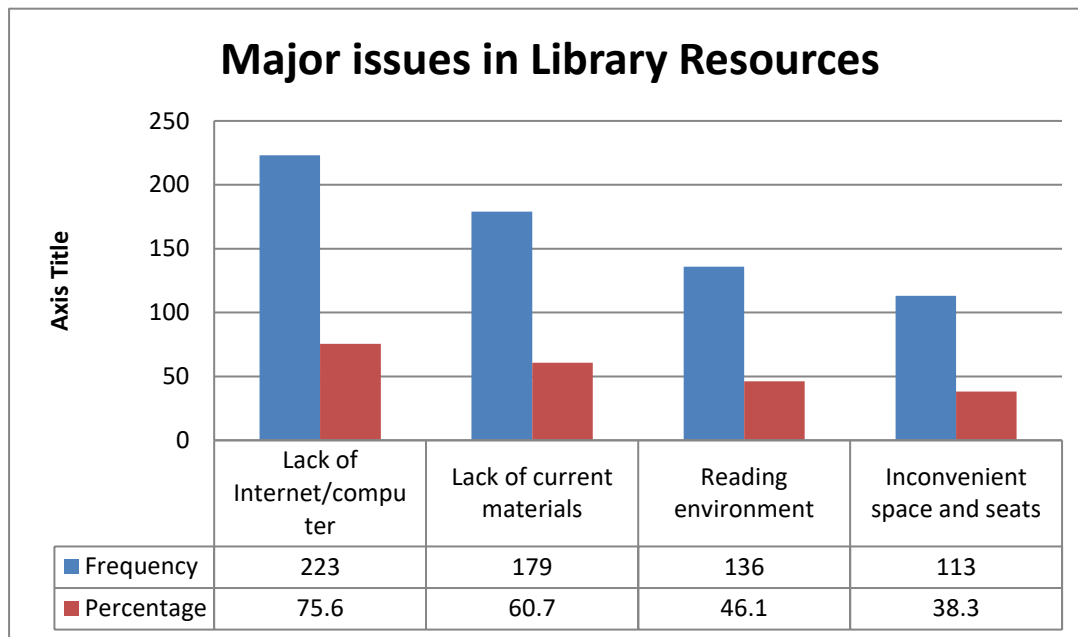(Y-axis: Axis Title; gridlines 0, 50, 100, 150, 200, 250)

Figure 4: Major issues in Library Resource

6. Conclusion

In this project we identify the perception towards using library resources is generally positive due to their importance in education and research. Libraries that prioritize convenience, accessibility, user preferences, awareness, and continuous improvement can enhance the positive perception among students and strengthen their role as valuable knowledge hubs. People's perceptions towards using library resources can differ based on their individual needs, preferences, and experiences. Some may have a strong appreciation for the physical aspects of libraries, such as the atmosphere, browsing shelves, and the ability to interact with students & teaching staff.

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