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ANALYSIS OF CLOUD COMPUTING IN TECHNICAL COLLEGE LIBRARIES WITH SPECIAL REFERENCE TO NAGPUR VIDARBHA REGION, MAHARASHTRA

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ABSTRACT:

A digital library is a storehouse for textual, printed, and other printed materials in addition to audio and video resources. An electronic library handles housekeeping duties and information retrieval systems. The term cloud computing describes the process of accessing, storing, and using data and apps over the internet as opposed to a hard drive or personal computer. All that constitutes a cloud is a group of networked computers, which may consist of personal computers or network servers. Users of libraries can benefit from cloud computing; if library data is stored in the cloud, users can easily access the required data from a number of sources. While cloud computing refers to accessing our data or applications through the Internet, local storage and computing relate to keeping our data or applications on the hard drives of our local computers. In this article, cloud computing in technical college libraries with special reference to Nagpur Vidarbha region, Maharashtra has been analyzed.

Keywords: Cloud, Computing, Technical, College, Libraries.

INTRODUCTION:

An institution's library serves as its vital core. Institutions need libraries to perform vital functions. The older books were tucked away, watched over by librarians who doubled as custodians. [1] Information was preserved in books before the creation of ink and paper, and these volumes eventually evolved into the main library storage area. [2] Metals and copper were used as information-storing media. The population growth and the explosion of information in sources like standards, serials, and patents, information is now freely available. [3] The library and information center gradually filled with CDs, DVDs, and other electronic storage devices. Libraries, a vital part of education and learning, foster economic development, especially in poor countries. Library users are becoming more tech-savvy as education uses increasingly advanced technology on a daily

basis. [4] The internet and virtualized resources are to blame for libraries and information centers adopting cloud computing. There is demand on educational institutions and libraries to use cloud computing and reduce resource usage while improving library services, even in the face of economic constraints. [5-6] The internet is used by a technology called cloud computing to share resources, including servers, storage, apps, and services. E-books have replaced printed books, online resources are preferred by library users over print ones, and librarians have become cyberarians. Virtualization is a crucial technology for cloud computing and has been present for more than 40 years, but other technologies have limited its use by making it impossible to employ virtualization solutions effectively. [7] Virtualization is used to replicate the execution environments of programs. The process of separating computer resources into many execution environments by utilizing principles such as partitioning, time-sharing, emulation, and machine simulation is known as virtualization. [8-9] Because virtualization mimics the expected interface for a visitor, it makes it possible to create a variety of virtual computer environments. There are many different types of virtualization, such as storage virtualization, network virtualization, desktop virtualization, server virtualization, management virtualization, and application virtualization. [10] The aim and rationale of the study was to analyze the cloud computing in technical college libraries with special reference to Nagpur Vidarbha region, Maharashtra.

RESEARCH METHODOLOGY:

A process of researching problems whose solutions are to be drawn entirely or partially from facts is known as research. When gathering, analyzing, and interpreting quantitative or qualitative data to address research questions or test hypotheses, research technique is a methodical, scientific approach. A research technique helps researchers stay on track by restricting the scope of the study, much like a plan for carrying out research. A research methodology outlines the methods and strategies for gathering, locating, and evaluating data. It's a method by which scientists plan their investigations to enable them to use the chosen research tools to accomplish their goals. It covers every crucial facet of research, such as the overarching framework for the study as well as the methodologies used for data collection, analysis, and research design.

Study Area: Nagpur Vidarbha Region, Maharashtra.

Research Design:

The general framework or plan that directs the course of research is known as a research design. It is an essential step in the research process and acts as a guide for the procedures and methods to be followed during the study, including data collection and analysis. Analyzing and collecting numerical data in order to find patterns, compute averages, assess correlations, and extract general conclusions are all part of quantitative research. It is applied in many disciplines, such as the social and scientific sciences. Statistical methods are used in quantitative data analysis to process and evaluate numerical data. In this research, quantitative research design has been used.

Primary Data:

Researchers can obtain primary data directly from primary sources by means of surveys, experiments, interviews, and other methods. Primary data are considered to be the greatest type of data in research because they are typically gathered directly from the source from which the data originated. Primary data sources are typically selected and customized, especially to satisfy the needs or specifications of a given study project. Prior to selecting a data collection source, it is also necessary to determine the target population and the purpose of the study. In this research, primary data has been used.

Sampling Plan and Sample Size:

Ten technical colleges were chosen as the population of research in this study. Cloud-based library services are being used by all of the chosen technical colleges' libraries. As 10 college libraries were implementing cloud-based services in their libraries, the research study's final sample included 10 technical colleges.

The process of sampling involves selecting samples at random (i.e., without prejudice or favouritism). The complete schedule of measurements to be made is called a sampling plan. A precise plan outlining which measurements will be made on which material, when, how, and by whom is known as a sample plan. A sample plan is a framework that guides the conduct of research. The people selected to represent the target group under investigation for research purposes are described in a sample plan. To get accurate results, it is imperative to confirm that the sampling plan is representative of all types of people. A sort of probability sampling known as "simple random sampling" involves the researcher choosing a selection of participants at random from a population. One way to ensure that every member has an equal chance of participating in a survey is to use simple random sampling.

In this research, simple random sampling has been used.

Sample Size:

The initial sample size was 562 (library professionals 62 and library users 500).

The final sample size was 512 (library professionals 47 and library users 465).

Methodology:

The sample was collected from the studied area. After that, the questionnaire sheet has been provided in favor of the respondents after clearing the objectives of the work. Sufficient time was given in favor of the respondents. Then the sheet has been collected for data analysis and interpretation.

Research Tools:

A structured questionnaire offers clear instructions on how to go to the next topic and has pre-coded questions. A questionnaire is a list of inquiries made to individuals regarding a particular subject in order to collect data that can be used statistically. Well-crafted and ethically distributed surveys are crucial for drawing conclusions about specific groups, individuals, or entire communities. A structured questionnaire is a form that is used to gather information from respondents. It is composed of a series of uniform questions with a predefined format that establishes the exact wording and order of the questions. In this research, structured questionnaire has been used.

Data Analysis and Interpretation:

The process of methodically using statistical and/or logical tools to explain and depict, summarize and analyze, and assess data is known as data analysis. The process of reviewing data and drawing pertinent conclusions by applying a variety of analytical techniques is known as data interpretation. For every dataset, the bar chart lets you specify a number of characteristics. With these, display attributes for a particular dataset can be set. A pie chart is a statistical visual that is circular and has been sliced into slices to show numerical proportion. In this study, bar and pie chart has been used.

DATA ANALYSIS, INTERPRETATION AND RESULTS:

Library Professionals:

Table 1. Opinion of the usefulness of Cloud Computing for Library

Usefulness of Cloud Computing	Response	%
Yes	42	89.36
No	5	10.64
Total	47	100.00

(Source: Primary Data, Survey)

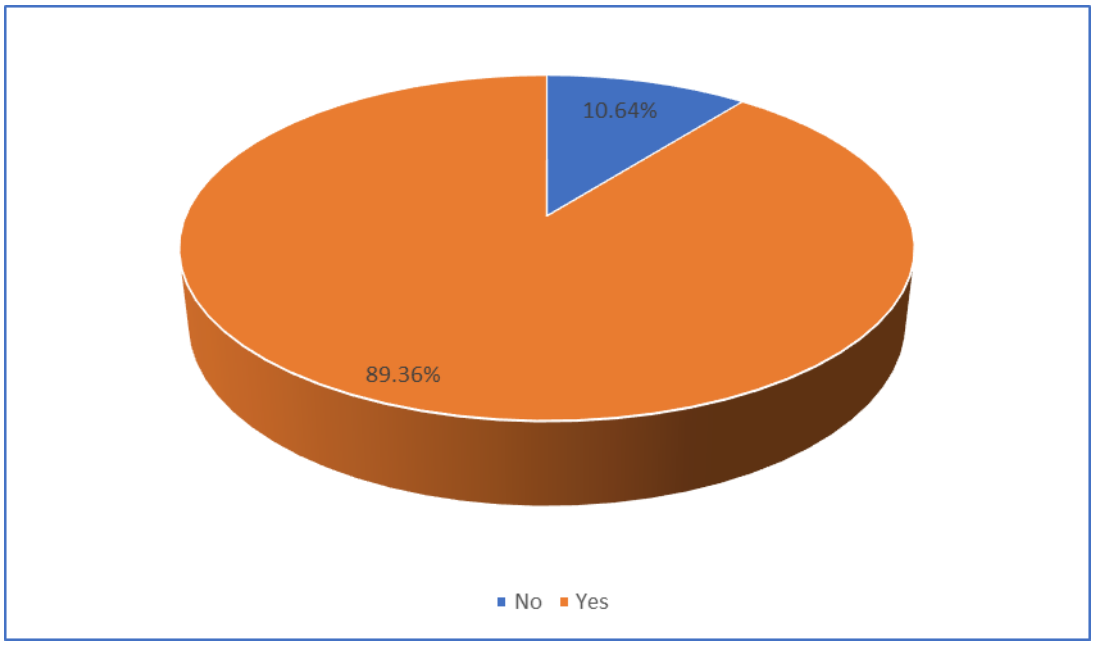

Figure 1. Opinion of the Usefulness of Cloud Computing for Library

Table 2. Cloud Computing Changed Pattern of Work

Cloud Computing Changed Pattern of Work	Response	%
Yes	31	65.96
No	16	34.04
Total	47	100.00

(Source: Primary Data, Survey)

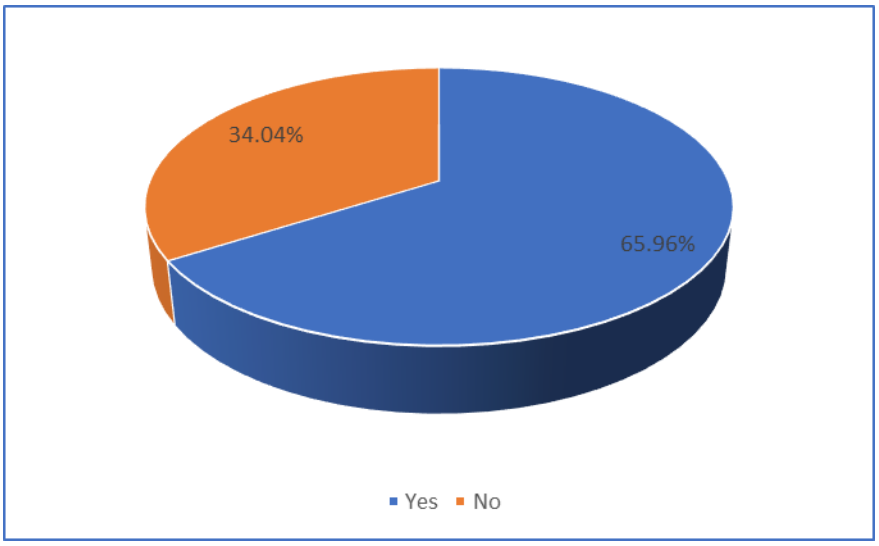

Figure 2. Cloud Computing Changed Pattern of Work

Table 3. Cloud Computing Improve Existing Library Services

Cloud Computing Improve Existing Library Services	Response	%
Yes	42	89.36
No	5	10.64
Total	47	100.00

(Source: Primary Data, Survey)

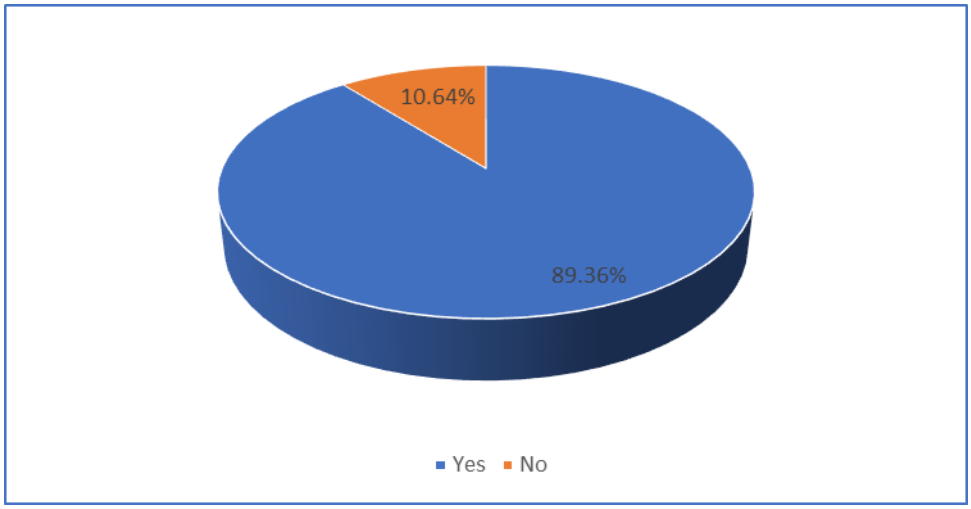

Figure 3. Cloud Computing Improve Existing Library Services

Table 4. Users are increased through Cloud-based Library Services

Users are Increased through Cloud-based Library Services	Response	%
Yes	37	78.72
No	10	21.28
Total	47	100.00

(Source: Primary Data, Survey)

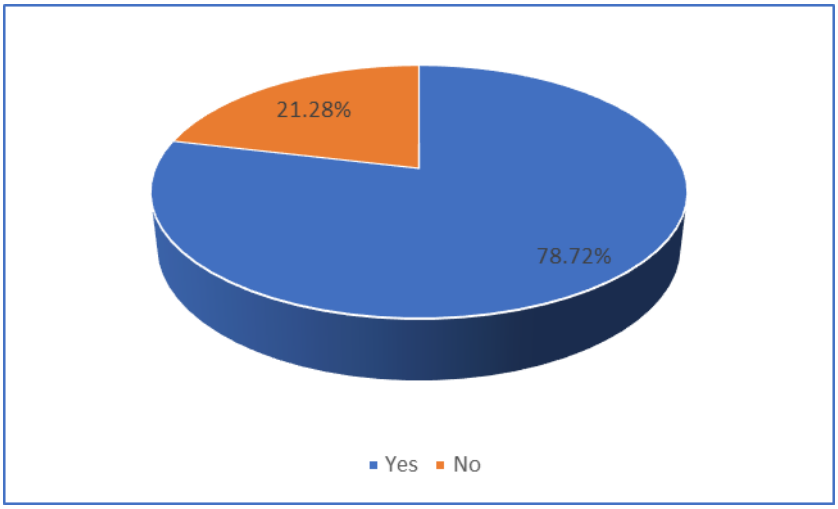

Figure 4. Users are increased through Cloud based Library Services

Table 5. Cloud Computing Creates any Complication in Library Services

Cloud Computing Creates any Complication in Library Services	Response	%
Yes	14	29.79
No	33	70.21
Total	47	100.00

(Source: Primary Data, Survey)

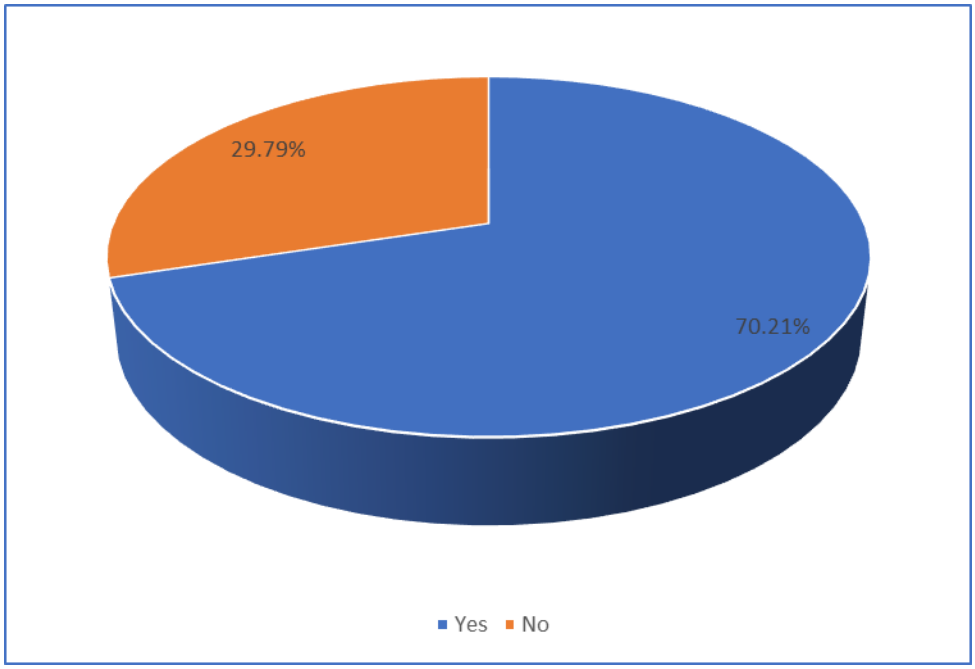

Figure 5. Cloud Computing Creates any Complication in Library Services

Library Users:

Table 6. Frequency of Usage Library:

Usage of Library	Response	%
Everyday	211	45.38
Alternate day	97	20.86
Two or Three days in a week	114	24.52
Several times per week	43	9.25
Total	465	100.00

(Source: Primary Data, Survey)

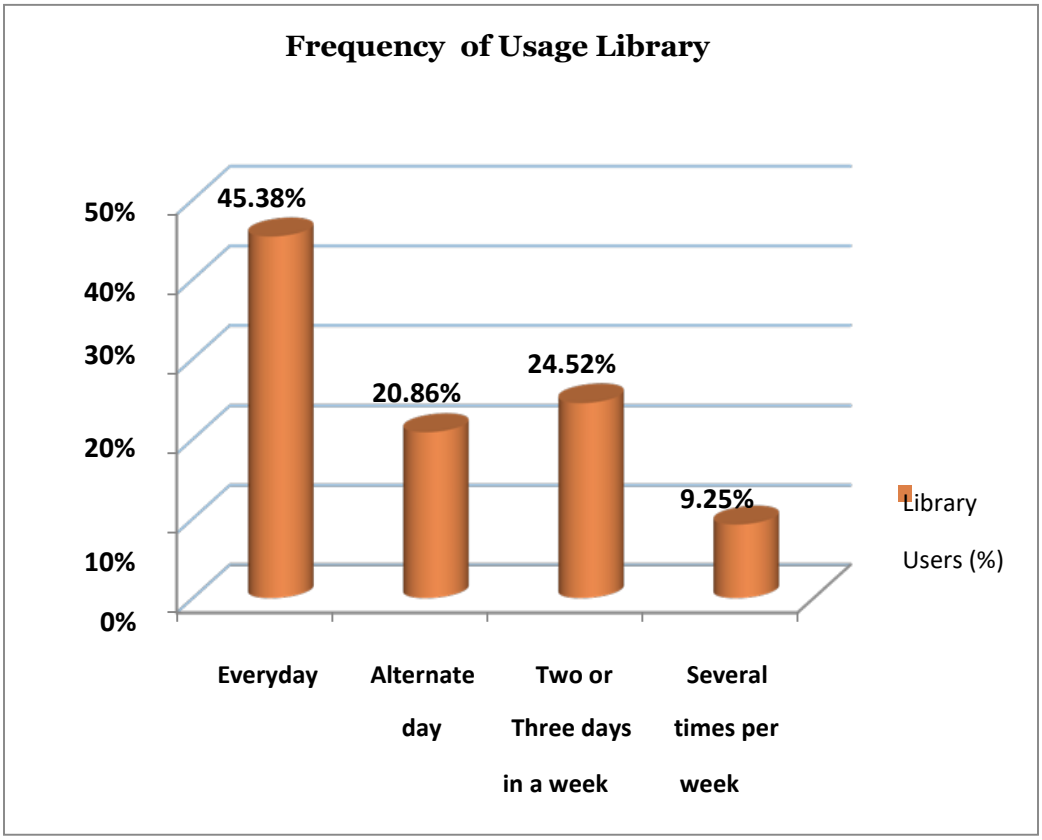

Figure 6. Frequency of Usage Library

Table 7. Visit to the Library Website:

Visit to Library Website	Response	%
Regularly	138	29.68
Occasionally	208	44.73
Rarely	91	19.57
Never	28	6.02
Total	465	100.00

(Source: Primary Data, Survey)

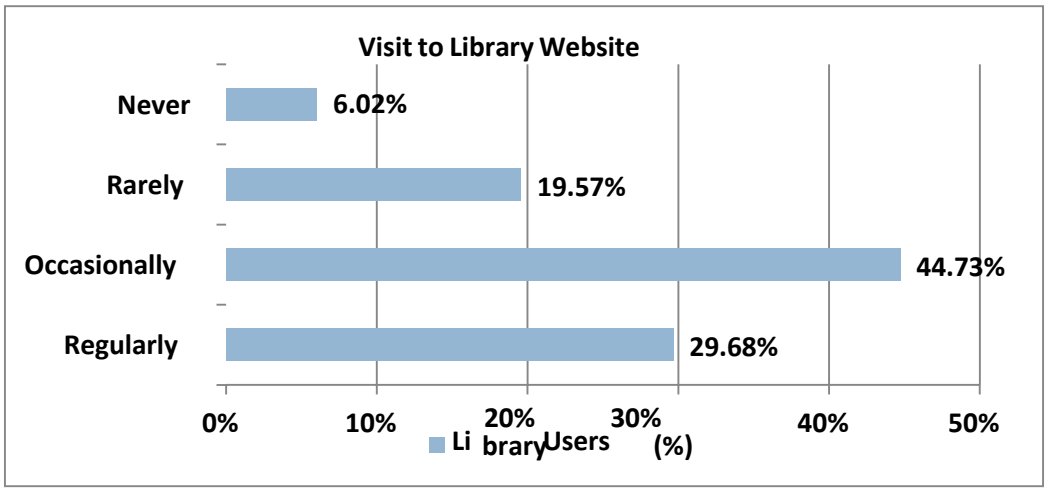

Figure 7. Visit to Library Website

Table 8. RFID Technology in Library:

RFID Technology in Library	Response	%
Yes	195	41.94
No	270	58.06
Total	465	100.00

(Source: Primary Data, Survey)

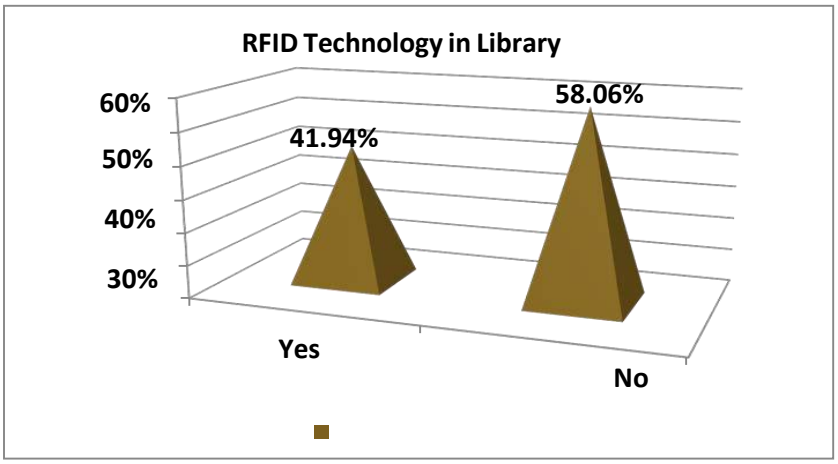

Figure 8. RFID Technology in Library

Table 9. Awareness of Cloud Computing among the Library Users

Awareness of Cloud Computing	Response	%
Yes	381	81.94
No	84	18.06
Total	465	100.00

(Source: Primary Data, Survey)

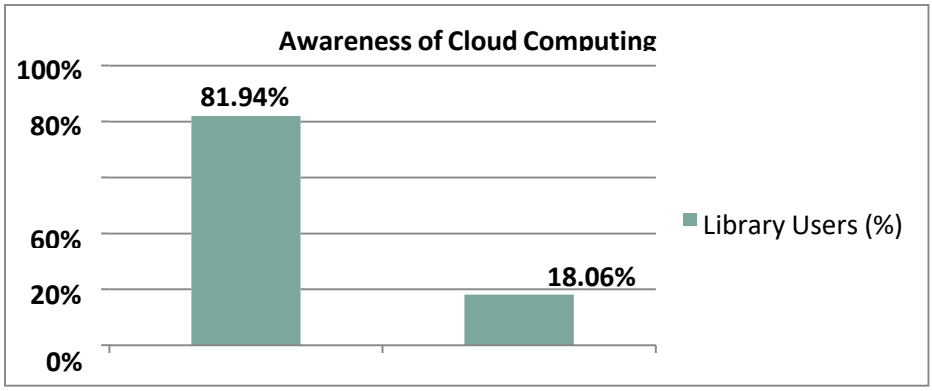

Figure 9. Awareness of Cloud Computing – Library Users

Table 10. Experience with Cloud Computing Service Models of Library Users

Experience with Cloud Service Models	Response	%
No experience	193	41.51
Only heard	162	34.84
I know about it	73	15.70
Already using it	37	7.96
Total	465	100.00

(Source: Primary Data, Survey)

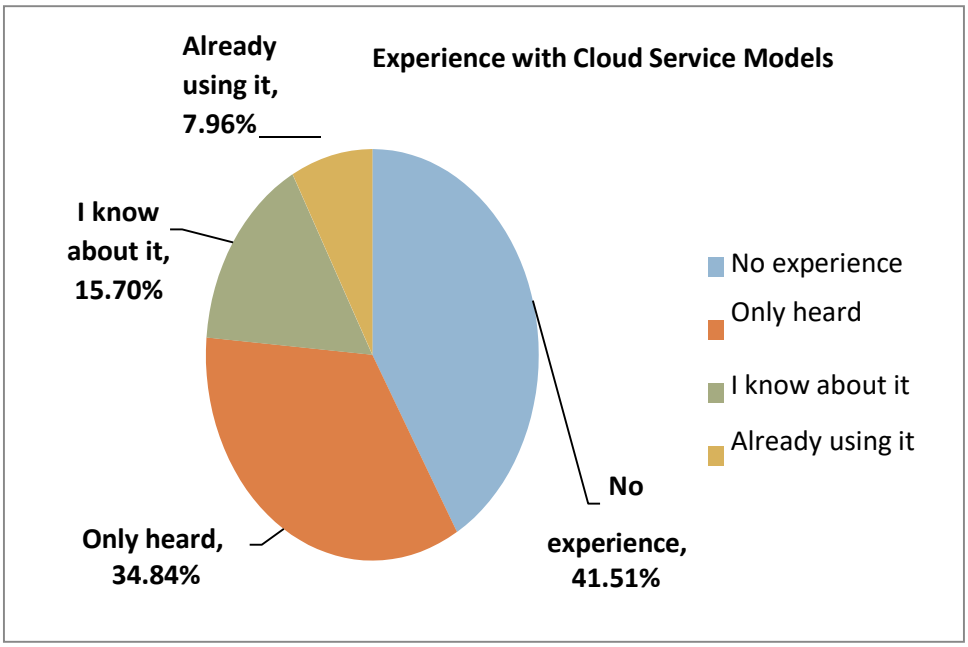

Figure 10. Experience with Cloud Service Models

CONCLUSION:

All libraries and information centres must implement cloud computing technologies in order to provide users with the newest technology. According to the current report, every significant educational institution has embraced cloud computing technology, with the exception of research institutes that prefer data security. As a result, research centres also attempt to integrate cloud computing technologies into their library offerings. Some academic libraries are utilizing cloud computing technology at a very basic level; in order to provide customers with higher value, these libraries must acquire advanced cloud technology. Libraries and information centres must establish cooperative work groups and cloud computing consortia and create guidelines, protocols, and policies related to the technology. It is the responsibility of librarians and information specialists to tell users about their cloud-based library services and motivate them to make the most use of cloud resources. In order to prepare future professionals to take on new issues, schools of librarianship must update their curricula and incorporate the newest technologies, such as cloud computing, the Internet of Things (IoT), big data, deep learning, and other related technologies. For schools, institutes, companies, and universities to successfully adopt cloud-based library services, the government should offer grants or subsidies. By implementing cloud computing in a top technical college in Nagpur, Vidarbha Region,

Maharashtra, a public-private partnership program should raise awareness of cloud computing adoption in libraries and information centres.

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