

A
SYNOPSIS OF THE PH.D THESIS
ON
“SIGNIFICANCE OF THE WEB 2.0 TECHNOLOGY IN THE SERVICES OF THE
ACADEMIC LIBRARIES: PROPOSED MODEL FOR THE UNIVERSITY
LIBRARIES OF THE GUJARAT STATE.”

SUBMITTED FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY IN
(LIBRARY & INFORMATION SCIENCE)

IN UNDER THE GUIDANCE OF

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SUBMITTED TO

MAHARAJA SAYAJIRAO UNIVERSITY OF BARODA
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DECLARATION

I hereby declare that the Thesis entitled “**SIGNIFICANCE OF THE WEB 2.0 TECHNOLOGY IN THE SERVICES OF THE ACADEMIC LIBRARIES: PROPOSED MODEL FOR THE UNIVERSITY LIBRARIES OF THE GUJARAT STATE.**” to be submitted for the Degree of Doctor of Philosophy is my original work and the Thesis has not formed the basis for the award of any degree, diploma, associate ship or fellowship of similar other titles. It has not been submitted to any other University or Institution for the award of any degree or diploma.

Place: Baroda

Signature of the Scholar

Date: 02/05/2022

Shivankumar B. Maheta

To,
The Registrar,
The Maharaja Sayajirao University of Baroda,
Fatehgunj, Baroda.

Through proper channel

Subject: Submission of Ph.D. Synopsis

Respected Sir,

As a part of the Ph.D. work the Synopsis of my work under the guidance of Dr. Mayank Trivedi in Department of Library and Information Science in the faculty of Arts is attached hear with.

Kindly do the needful,
Thanking you.

Yours faithfully,

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Chapter 1

Introduction

1. Introduction

New and emerging technologies such as Twitter, YouTube, Facebook, hand-held mobile devices and Personalised applications have had profound impacts on the library in the last decade. While libraries and librarians have always had a relationship with users, this relationship has been changing under the influence of emerging technologies (Hall,2011). Traditionally libraries were a temple of literature in which librarians were book keepers. Their typical roles and tasks included acquisition which consist of review, selection, and purchase of resources for the collection, cataloguing and to give description of resources and making them ready for use, and serving users for recommendation of books and materials, checking materials in and out, and answering users' questions. All of these tasks were often carried out by librarians without the involvement of users. In such libraries, the relationship between libraries and users was seen as a relationship between book providers and receivers, or libraries and readers. This meant libraries provided what they had or what they owned mostly books and other paper-based formats while users passively received what libraries offered.

As new and emerging technologies came into existence and were adopted, this relationship has changed and evolved. The introduction of newer technologies, e- books, e-journals, and various electronic information resources has enriched library collections and services, and upgraded the roles of both libraries and users. From book keepers, librarians have now become information editors, information advisors. Similarly, from readers or viewers, library users have also become browsers. The relationship between libraries and users has changed to a relationship between information services providers and clients, in which

The library users have become more independent in choosing and using library services. For instance, they can access library online databases at anytime and anywhere, register to receive notifications on a topic of interest via email, or comment and give feedback on the usability of the library website. These mean that they can flexibly use library services as well as partially contribute to the service improvement.

According to Wikipedia, “Social media are Primary internet based tools for sharing and discussing information among human beings. It is as a result of its concepts that have led to the development and evaluation of web based communication, hosted services and applications; such as SNS, Video sharing sites, Blogs, Wikis, Folksonomies, podcast, IM and RSS.”

The degree of user involvement has become clearer, especially with the recent emergence of Web 2.0, which has brought in new opportunities for library users to be more involved in the library activities. Librarians embraced them as a method of promoting themselves within their communities. This new method of Cubing Web 2.0 in library is known as Library 2.0

1.1 Rationale of Study

Just a few years ago Social media or WWW was seen by many librarians as having not much relevance in a professional context but to use as a form of entertainment. But in recent years the way it is used by the user community and libraries facing problems in user engagement has become an important factor. Web 2.0 is now widely used by librarians all over the world to accomplish various goals and objectives.

A literature reviews also give way to conclude that web 2.0 and Social web lead academic librarians towards effective methods of library services and student outreach programs. The management of Library 2.0 will be resulted in meaningful and substantive change in hybrid environment of today’s era. It is felt that if the final goal of library is to promoting its services and reach to the end user to fulfil their needs, Web 2.0 is helping to achieve this goal, It should be actively pursued. In the new era of change traditional user are more aware of possibilities of using Google or other technology then to use library. So the expectation of user form library are to deliver high quality, comprehensive, User Friendly new generation services that have grown tremendously in the recent years.

1.2 Explanation of Important terms in study

1.2.1 Gujarat State:

Gujarat is located from 20.6” longitude to 24.42” longitude in north whereas from 68.10” latitude to 74.28” latitude in west direction. It is occupied by Six and half crores of

population according to census projection of 2022. According to the Commissionerate of Higher Education, Education Department - Government of Gujarat, It has Total 27 State Universities (14 State Higher Education, 2 Technical and 11 Sectorial Universities), One Central University, Two Deemed University, 9 Institute of National Importance and 52 Private Universities.

1.2.2 University Library:

A library which is associated with a university and used by students, teachers, researchers and staff and extended members of the university as well as by the other research workers, alumni outside the university is known as university library. It is also known as the heart of university. It works like an axis of all educational and research activities in all disciplines.

According to Dr. Krishan Kumar (2009) *“a university library is a part of a university set up. Therefore, it exists to serve the objectives of its parent organization. Every library programme must support university’s total programme. In other words, a university library should aim to advance the functions of its university. It should reflect character of the university”*.

1.2.3. Web2.0 technology:

Oxford Dictionary defines Web 2.0 as, *“The second stage of development of the Internet, characterized especially by the change from static web pages to dynamic or user-generated content and the growth of social media.”*

According to O’Reilly Web 2.0 technologies provide rich and lightweight online tools that let users contribute new data that they can aggregate to harness a community’s *“collective intelligence”*

1.2.4. Library 2.0

Library 2.0 term was first coined by Michael Casey on his blog library crunch. Library 2.0 is the integration of Web 2.0 features in library web-based services. According to Maness, Library 2.0 is *“The application of interactive, collaborative, and multimedia web-based technologies to web-based library services and collections”* The application of concepts and technologies of Web 2.0 applied to the library services and collections is named as **“Library 2.0”**. (Arora, 2009).

1.3 Objectives of the Study

- To discover the library services that are cubing with 2.0 technologies
- To investigate the present situation of the university library of Gujarat state in adaptation of 2.0 or semantic technology in their operations.
- To define obstacles and problems in utilizing web 2.0 in university libraries of Gujarat State from uses perceptive.
- To investigate the relationship between library and user in the new era.
- To investigate the acceptance and use of web 2.0 technologies by users of university libraries of Gujarat state.

1.4 Hypothesis of Research

Semantic web and web 2.0 tools are useful in academic libraries to promote and provide effective services to faculties and students. This would increase ineffective user of library resources and hence librarians will fulfil third law of Ranganathan that **“Every book (resource) it’s Reader”**

- Web 2.0 can impact the operations of academic libraries.
- Users are demanding change in the present service of libraries.

With help of Technology Acceptance Model following Hypothesis was tested to check users use and acceptance of Web 2.0 tools and technologies in the library.

- Performance expectancy has an impact on students’ behavioural intention to use Web 2.0 technology for library use.
- Effort expectancy has an impact on student behavioural intention to use the Web 2.0 technology for library use.
- Social influence has an impact on student behavioural intention to use Web 2.0 technology for library use.
- There is no difference of opinion of Age, Gender & Designation of Library users on PE
- There is no difference of opinion of Age, Gender & Designation of Library users on EE
- There is no difference of opinion of Age, Gender & Designation of Library users on FC
- There is no difference of opinion of Age, Gender & Designation of Library users on SI
- There is no difference of opinion of Age, Gender & Designation of Library users on BI

- There is no association between usage web 2.0 tools for academic use and Age, Gender & Designation of Library users.

1.5 The Importance of the Study

The study explored the Significance of Web 2.0 tools used by Central libraries and its services in selected universities of Gujarat State. The study is expected to contribute towards better understanding of the field of librarianship with regard to the application of Web 2.0 tools to provide services to its users. The study proffers the diverse ways through which academic libraries can use Web 2.0 tools effectively. To Develop more private and deemed universities in Gujarat State is one the main objective of Vibrant Gujarat 2017 Summit organised by Gujarat Government to bring Academic integrity and . As a result of this summit more and more private and deemed universities are starting in Gujarat State. The study provides the foundation upon which relevant policy can be formulated to guide the implementation of Web 2.0 tools to newly formed universities of Gujarat State.

1.6 The Scope of the Study

The purpose of this study is to provide an overall picture of the use of Web 2.0 tools and technologies in the university libraries of the Gujarat State and Check its Significance on the services of university libraries. Furthermore web 2.0 is a user centric concept; Present study aims to check acceptance and use of Web 2.0 technologies from the point of view of library users.

The present study covers below mention university libraries of Gujarat State. The list of Universities has been derived from Govt. of Gujarat website. Below is a table for the list of universities in Gujarat State.

Table 1 List of Universities in Gujarat State.

No.	Name of the University	Type	Place
1	Gujarat University	State	Ahmedabad
2	Sardar Patel University	State	V.V. Nagar
3	Veer Narmad South Gujarat University	State	Surat
4	The Maharaja Sayajirao University (M.S.University) of Baroda	State	Baroda

5	Saurashtra University	State	Rajkot
6	Bhavnagar University	State	Bhavnagar
7	Hemchandracharya North Gujarat University	State	Patan
8	Krantiguru Shyamji Krishna Verma Kachchh University	State	Kachchh
9	Dr. Babasaheb Ambedkar Open University	State	Ahmedabad
10	Shree Somnath Sanskrit University	State	Veraval
11	Children's University Gujarat	State	Gandhinagar
12	Gujarat Forensic Sciences University (GFSU)	State	Gandhinagar
13	Raksha Shakti University	State	Ahmedabad
14	Kamdhenu University	State	Gandhinagar
15	The Indian Institute of Teacher Education	State	-
16	Gujarat Technological University	State	Ahmedabad
17	Gujarat Ayurved University	State	Jamnagar
18	Anand Agricultural University	State	Anand
19	Navsari Agricultural University	State	Navsari
20	Sardar krushinagar Dantiwada Agricultural University	State	Dantiwada
21	Junagadh Agricultural University	State	Junagadh
22	Gujarat Vidyapith	Central Govt.	Ahmedabad
23	Central University of Gujarat (CUG)	Central Govt.	Gandhinagar
24	Sumandeep Vidyapith (Deemed University)	Central Govt.	Vadodara
25	Dharamsinh Desai University (DDIT)	Private Aided	Nadiad
26	Centre for Environmental Planning and Technology (CEPT University)	Private Aided	Ahmedabad
27	Nirama University (NU)	Private	Ahmedabad
28	Ganpat University	Private	Mehsana
29	Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT)	Private	Gandhinagar
30	Pandit Deendayal Petroleum University (PDPU)	Private	Gandhinagar
31	Kadi Sarva Vishwavidyalaya	Private	Gandhinagar

32	Calorx Teachers' University	Private	Ahmedabad
33	Charotar University of Science & Technology	Private	Anand
34	Navrachana University	Private	Vadodara
35	Ahmedabad University	Private	Ahmedabad
36	Auro University of Hospitality and Management.	Private	Surat
37	Uka Tarsadia University	Private	Bardoli
38	R.K.University	Private	Rajkot
39	Institute of Advanced Research	Private	Gandhinagar
40	Lakulish Yoga University	Private	Ahmedabad
41	Teamlease Skills University	Private	Vadodara
42	C.U.Shah University Wadhwan City	Private	Surendranagar
43	ITM Vocational University-Waghodia	Private	Vadodara

Data retrieved on 19-1-16 from Department of Education, Government of Gujrat Website from <http://gujarat-education.gov.in/education/alluniversity.htm>

Before final analysis of present study few more new universities established in Gujarat. Researcher has undergone all of them and done content analysis of their Central library Website and included five of them for final data Collection.

1.7 Limitation of the Study

Social Science research is based on theoretical framework and primary and secondary data collected. Each social science theory is having further counter theories to question it so every Social Science research would have some limitations based on various variables beyond control. Present study having below mention limitations.

1.7.1. Topological Limitation

The present study only covers the topology of higher educational (Universities') academic Libraries. Other topologies of libraries like public library, Special Library, School Libraries are not covered.

1.7.2. Geographical limitation

The present study is limited to University Libraries of Gujarat State only. The study covers all State funded and private Universities of Gujarat State listed in the department of education, Government of Gujarat, but not covering Open Universities based out of Gujarat state which have distance education centres in Gujarat state like IGNOU, KSOU, Symbiosis University and others.

1.7.3. Subject related limitation

The popularity of various social networking sites and web 2.0 technology is rapidly changing. Hence few highly used web 2.0 technology and social networking sites and their use to the academic library will be covered. These tools have been selected based on Content analysis of listed University Library Website of Gujarat State. Moreover the Institutes of National importance are also not covered based on its specific nature.

1.8 Scheme of Cauterization

- Chapter -1-Introduction
- Chapter -2-Review of Related Literature
- Chapter -3-3Research Methodology
- Chapter-4-Web 2.0 & Library 2.0
- Chapter-5-Various types of Technology Acceptance Models
- Chapter-6-University Profile
- Chapter-7-Data analysis and Interpretation
- Chapter-8-Finding, Suggestions and Conclusion
- Bibliography
- Appendixes

Chapter 2

2. Review of Literature

Library 2.0 is a concept of a very different library service, geared towards the needs and expectations of today's library users. In this vision, the library makes information available wherever and whenever the user requires it, and seeks to ensure that barriers to use and reuse are removed. (Miller, p 2006)

Sites as diverse as Amazon, Flickr, My Space, Face book and Wikipedia which are termed as Web 2.0 tools and resources or semantic web resources, all depend on high levels of user participation to expand the value of product. Blogs and wikis are other ways to engage customers and push fresh content to users. (Jena, S 2012)

The heart of Library 2.0 is user-centered change. It is a model for library service that encourages constant and purposeful change, inviting the user participation in the creation of both the physical and virtual services. It also attempts to reach new users and better serve current ones through improved customer-driven offerings. Each component by itself is step towards better serving our users; however, it is though the combined implementation of allofthisLibrary2.0 can be reached. (Casey, M E & Savastinuk, L C. 2010)

The definitions of Web 2.0 terms are highly debatable, however they don't exclude each other because Web 2.0 refers to the social use of the Web which allow people to collaborate, to get actively involved in creating content, to generate knowledge and to share information online. Beneath all the hype, Web 2.0 platforms are seen to have an emerging role to transform teaching and learning (Alexander & Levine, 2008) The information environment within which the libraries find themselves is changing, probably faster than ever before. These changes offer great opportunities for progressive libraries to reach out far beyond the boundaries of their buildings and websites, and to engage with an increasingly literate body of information consumers. The library domain as repeatedly evolved to embrace new technologies and to adapt in line with changing expectations and it will doubtless continue to do so. However, it is our view that the current challenges are more subtle, more significant, and thus more disruptive than in the past. (Jena, S. 2012)

The scope and the depth of what library users are able to do with emerging information and communication technology is growing day by day, for instance – new tools and techniques have the potential to enable the user to search, identify, select, manipulate, use, communicate and share more information easily, directly and inexpensively (Ramana,2006). While there is clearly a need for evaluation on new web 2.0 applications, especially in an environment that is constantly upgrading technology. We need to understand that the methods by which library users' demands information are rapidly changing. Hvass and Myer (2008) report the result of the case study on implementing IM reference service. The study finds that it is possible to set up an IM service without the need of purchasing of hardware or software. Although usages of IM services are growing, there are concerns about the relatively small number of queries. The study concludes that exiting users are happy and satisfied with the services provided.

Linh (2008) investigates the application of Web 2.0 in Australasian university libraries and concludes that at least two-thirds Australasian university libraries deployed one or more Web 2.0 technologies but the average of these indexes was still low. The mean application index was only 12 points while the highest was 37 points.

Secker (2008) provides a comprehensive literature review about Web 2.0 applications in libraries, which explores the different presence of the concept in different libraries. She concludes that social software and Web 2.0 technologies offer enormous potential for the library community, and the role of the librarian as the facilitator of collaboration and communication could become crucial in the Web 2.0 world.

Another study of 38 Chinese universities in Han and liu (2009) reported that interactive OPAC is most commonly applied and used tool. Other tools are IM, Facebook (SNS), RSS, Blogs are applied. According to the findings of the study the general status of web 2.0 application is still extremely underdeveloped even for those of most prestigious libraries of country. While two universities are using SNS as a tool for resource locating, Experience sharing and subject information reference.

According to Gollan and Linda (2011) the need to create school wide strategic and policies for social networking in higher education and the role of academic library

Chapter 3

Research Methodology

3. Research Methodology

3.1. Introduction

Research is common parlance refers to a search for knowledge. It is also known as scientific and systematic search for pertinent information on a specific topic. In fact research is an art of scientific investigation. According to Advance Learner's Dictionary of current English, research means "A careful investigation or inquiry especially through search for new facts in any form of knowledge." While American sociologist Earl Robert Babbie define it as "research is a systematic inquiry to describe, explain, predict, and control the observed phenomenon. It involves inductive and deductive methods." thus the search for knowledge through objective and systematic method of finding solution to a problem is research. Methodology in research is a way to solve the problem, to unfold the probable answer, and to test the hypothesis stated. As there are many roads leading to a city, likewise there are many methods to solve the problems of research.

3.2. Research Design

Webster's dictionary defines research as "A careful and critical enquiry or examination in seeking facts or principles, diligent investigation in order to ascertain something" while moody defines as " Research comprises defining problems, formulating hypothesis or suggested solutions , collecting, organizing and evaluating data, making deductions and building conclusions and at last carefully testing the determine whether they fit the formulated hypothesis." So from above definitions we can conclude that social research aims at adding to knowledge of human being about the problems they face.

It is a descriptive study. The purpose of descriptive surveys is to collect detailed and factual information that describes an existing Phenomenon. The present study had used Survey design through structured questionnaire which has been made in selected University Libraries.

3.3. Selection of Samples

The Samples have been selected from the Total 23 State, 3 Central, 2 Private Aided and 32 private universities of Gujarat State based on analysis of Central Library website of receptive university. Total 18 University Libraries of Gujarat State have been selected for final Sample survey. Total 490 Samples have been selected with a simple random sampling technique from below list of universities.

Table 2 List of Universities selected for final Survey

No.	University	Place
1	Gujarat University	Ahmedabad
2	The Maharaja Sayajirao University (M.S.University)	Baroda
3	Shree Somnath Sanskrit University	Veraval
4	Institute of Infrastructure Technology Research And Management	Ahmedabad
5	Central University of Gujarat (CUG)	Gandhinagar
6	Sumandeep Vidyapith (Deemed University)	Vadodara
7	Centre for Environmental Planning and Technology	Ahmedabad
8	Nirama University (NU)	Ahmedabad
9	Ganpat University	Mehsana
10	Dhirubhai Ambani Institute of Information and Communication Technology (DA-IICT)	Gandhinagar
11	Auro University of Hospitality and Management.	Surat
12	Uka Tarsadia University	Bardoli
13	R.K.University	Rajkot
14	C.U.Shah Unviersity Wadhwan City	Surendranagar
15	GSFC University	Vadodara
16	Parul University	Vadodara
17	Marwadi University	Rajkot
18	P.P.Savani University	Surat

3.4. Sources of Data

In order to achieve the objectives of present study, relevant of below data used for research.

3.5.1 Secondary Data

The researcher have used various kinds of secondary sources like peer reviewed research journals, magazines, research reports, full text articles of conference proceedings, published and unpublished work of the peers of the field of library and information science on the topic of web 2.0 and library 2.0 as well as Blogs of experts, websites of various academic libraries, search engines and various subject databases and consortium of eBooks and e journals.

3.5.2. Primary Data

Primary data have been collected with validated structured questioner. A descriptive survey was conducted which sought to ascertain the use of we2.0 in the academic library websites. A separate structured questioner was used for library users, which consist of faculties and students- to know user's expectation from libraries and perception of web 2.0 technologies for academic use.

The questions used in this study falls under the following categories:

- Close ended questions
- Rating and ranking question
- Multiple choice question

3.5. Data Analysis

The data generated through structured questionnaire were analysed with suitable statistical tools for the purpose of data analysis and interpretation. The collected data had been scrutinized, Edited and validated. The data is arranged, processed, classified and brought into the logical order. They are summarized and tabulated for the purpose of analysis, interpretation and producing meaningful findings and suggestions. The data analysis was carried out with the help of statistical software SPSS and Smart PLS.

Chapter 4

Web 2.0 & Library 2.0

4. Web 2.0 & Library 2.0

4.1. Web 2.0

The term “Web2.0” was coined by O’Reilly in 2004 to explain the way in which a new generation of web functions like file sharing, wikis and blogs are differed from earlier web tools. In this regard, the earlier web tools– now commonly described as Web 1.0– were based on the restrictive one- way communication models where experts presented their material to an audience perceived to be expectantly captive. The concept of Web2.0, on the other hand, is based on thing that knowledge originates from inter actions such as meetings, conversation, dialogue and mentorship; and that even experts have something to learn from their audiences (Alsbjer, 2008). To foster richer user participation, the World Wide Web (WWW) has undergone a transition and moved from being a mere collection of websites to a fully-fledged computing platform serving web applications to end users. This transition is what described as Web2.0 (O’Reilly,2005; Miller,2006). Ultimately Web 2.0 services are expected to replace desktop computing applications for many functions using newer tools such as social networking sites, wikis, pervasive communication tools, and folksonomies that emphasize online collaboration and sharing among users.

4.1.1. Characteristics of Web2.0

According to Musser and O’Reilly (2007), Web 2.0 platforms and tools exhibit the following core characteristics:

- A. It enables web users to do more than just retrieve information. This is the reason why it is also called the read-write web; it enables users to actively interact with the content as well as its creators. This is the foundation of user-generated content and citizen journalism.

- B. It enables users to execute applications straight from their browsers and they can own data on a Web 2.0 platform. They may also control the data.
- C. Web 2.0 enables users to add value to the content they are accessing. This facility leads to a seamless exchange of information building a robust body of knowledge that is sometimes called collective intelligence
- D. It utilizes simple, user friendly and “**lightweight**” interfaces that do not require specialist knowledge to apply.
- E. Web 2.0 systems are greatly decentralized with no centre of control or gates as we know it under conventional media systems.
- F. It is user-focused and invites their participation through seamless many-to-many communication mechanisms.
- G. Web 2.0 is transparent and uses open technology standards that rapidly grow into open ecosystems of loosely coupled applications built on open data and reusable components.
- H. It is emergent and does not rely on fully predefined application structures. Web 2.0 structures and behaviours are allowed to emerge over time. This flexible, adaptive strategy permits appropriate solutions to evolve in response to real world usage and needs. It recognizes the fact that real success comes from cooperation and not control.

Common Web 2.0 tools include social networking utilities like Whats app and Facebook, Twitter; electronic commerce solutions and sites facilitating complete real-time business transactions such as Amazon.com, eBay (online auctions) and online classified adverts on Craigslist

4.1.2. Meme map of web 2.0

In an effort to simplify Web2.0, O’Reilly (2005) proposed a meme map (See Fig.1) which graphically illustrates the concept of Web2.0.

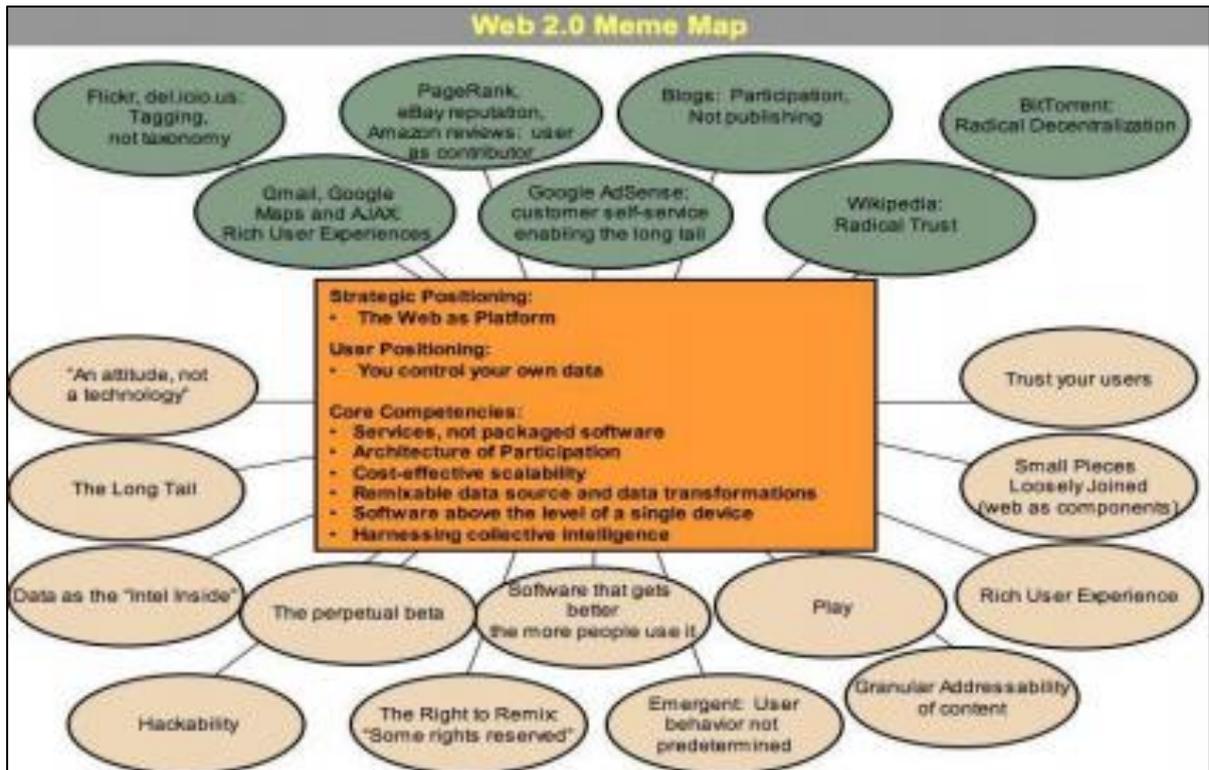


Figure 1 Web 2.0 Meme map.

The orange rectangular part at the centre denotes the primary principles of Web2.0. For instance, Web 2.0 really is a platform where users meet, discover information, consolidate and share knowledge. It is a platform where users create an experience using information from diverse sources.

The green oval shapes at the top give examples of Web2.0 tools. The brown oval shapes from the middle downwards highlight the characterization of Web2.0 use.

4.2. Library 2.0

The term Library 2.0 was coined by Michel Casey, He used the term on his blog library crunch. The concept of Library 2.0 has been borrowed that of Web 2.0. The basic idea of library 2.0 to transform library services by making them more personalized, more interactive and more web-based.

Library 2.0 facilitates and encourages a culture of participation, drawing upon the perspectives and contributions of library staff, technology partners and the wider

community. It is about encouraging and enabling a library's community of users to participate, contributing their own views

on resources they have used and new ones to which they might wish access.

4.2.1. Library 2.0 operational tools

Tools and techniques available in the web 2.0 environment cubing with library 2.0 concepts can be divided in below five categories.

A. Collaborative Publishing Tools

Collaborative publishing tools include Blogs and Wikies. Blog is personal website where users can enter their thoughts, Ideas, Suggestions and comments. According to Wikipedia **“A blog (an abridged form of term web log) is a website, usually maintained by an individual, with regular entries of commentary, descriptions of events, or other material such as graphics or video. Entries are commonly displayed in reverse chronological order”**.

Wikies are web page or set of Web page that can be easily edited by anyone who is allowed to access. Wikipedia defines wikies as **“A wiki is a collection of web pages designed to enable anyone who accesses it to contribute or modify content, using a simplified markup language. Wikis are often used to create collaborative websites and to power community websites”**.

B. Content Delivery Tools

Content delivery tools include RSS Feeds, HTML Feeds, Streaming Media, Podcasting, Vodcasting, SMS enquiry Services.

C. Synchronous communication Tools

Instant Messaging widely known as IM is famous Synchronous Communication tool

D. Collaborative service platforms

Famous Collaborative Service Platforms are Social Networking, social Bookmarking and Tagging.

E. Hybrid Application, Programs and tools

Mashups, Ajax, API and Library toolbar are applications that can be deployed effectively to implement Library 2.0 features into a traditional library.

4.2.2. Moving from Library 1.0 to Library 2.0

Table 3 Examples of the move from Library 1.0 to Library 2.0

Library 1.0 Services and Applications	Library 2.0 Services and Applications
Digital reference Service	Real time Reference Service using IMs
Selective Dissemination of Information service	Personalization (RSS Feeds, HTML Feeds, Atom Feeds)
Text-based tutorials	Multimedia tutorials (Streaming media)
Mailing lists, Listservs	Catalogue of Blogs, Wikies, Catalogue of reliable Subscribed print or electronic Collections as well as web pages, blogs, wikies etc.
OPAC	Personalized Social network infrastructure
Taxonomies (Classifications)	Folksonomy (Tagging)
Controlled Classification scheme	Tagging
Encyclopaedias	Wikipedia
Content management system	Wikis, Wikipedia
Information as commodity	Information as conversations
Integrated Library management System as core operation	User Service as core operation
Address Books, Content lists	Online Social network
Authenticated and validated print and E resources	Resource created by people through their collective intelligence on blogs and wikies
Delivery Mechanism : Library (physical) + Internet	Delivery through Internet using wikies, blogs, podcasting.

4.2.3. Library 2.0 meme map

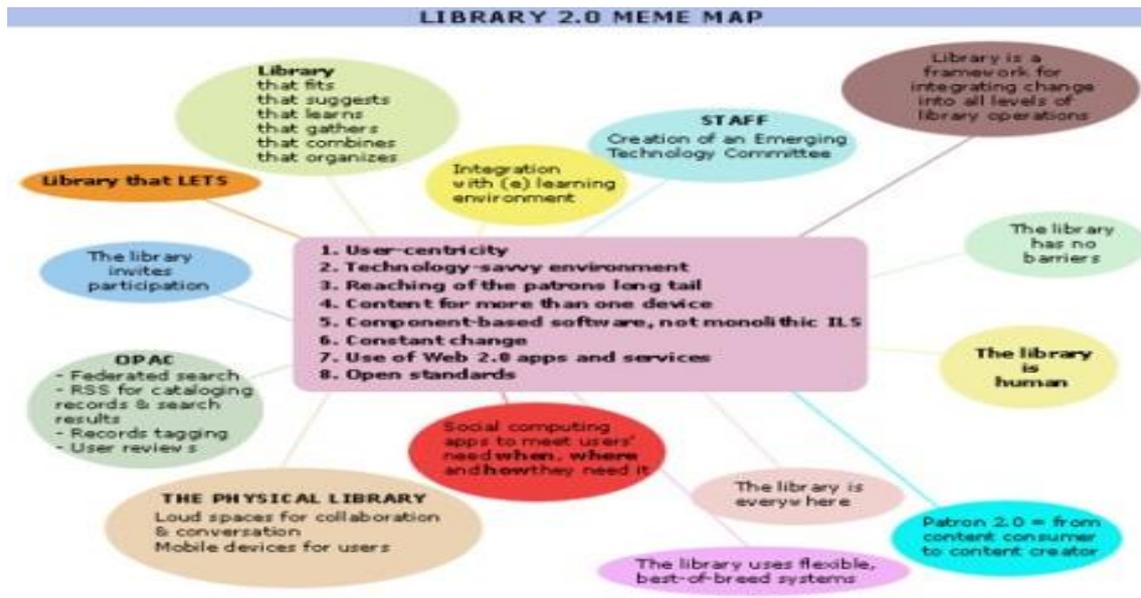


Figure 2 Library 2.0 Meme map

4.3. Benefits of Using Web 2.0 in Academic Library Services

Advantages and benefits for librarians and libraries when using web 2.0 technology are:

- Financially the costs of using social media are perceived to be low;
- It requires little training;
- It promotes library services and disseminates news quickly, delivering this information more directly to library users;
- It increases engagement and interactions with library users;
- It helps gather feedback to enhance user services;
- It enhances communication both within the library and with other departments;
- It can be used for outreach activities through onward sharing, well beyond the institution itself, helping build connections and reputation more broadly.
- The promotion of library holdings via social media can help increase usage of content.

Further these social media tools can be used to improved library functions like Customer Service, User Engagement, Collection development, Teaching and Learning and various Library Outreach programmes.

Chapter 5

Unified Theory of Acceptance and Use of Technology

Model

5.1 Introduction

Emergence of technology has changed the horizon of the world. There is no area of human intervention is untouched of technology. Quest for knowledge and development of human being resulted in technological revolutions. From ages human develop and accept new techniques to evolve as a superpower on earth. As Charles Darwin describes in his law “survival of the fittest” Human accepted new technique to survive and then make his life comfortable. In this race to survive so many techniques has been invented by humans but to accept right one and use it for sustain and survive and optimal utilization of oneself. This theory of evolution also describes natural selection of nature. So to be fittest human have to select right techniques and technology. To check impact of any technology various technology acceptance models have been invented by various researchers.

In present chapter we have evaluated Theory of Reasoned Action, Theory of Planned Behaviour theory of interpersonal behaviour, Technology Acceptance Model, extension of Technology Acceptance Model or TAM2, Igbaria’s Model, Social Cognitive Theory, Diffusion of innovations Theory, Perceived Characteristics of Innovating Theory, Motivational Model, Uses and Gratification Theory, The Model of PC Utilization, Unified Theory of Acceptance and Use of Technology. It is very significant that any new theory or technique’s success is dependent of acceptance of its end-users. Acceptance is define as *“an antagonism to the term refusal and means the positive decision to use an innovation”*

In Social Science Research where any research is based on theories and behavioural studies, it is very important to approach more than one theoretical framework to complete understanding of any issue. This will help to construct Social science Theory. During this development of theory each approach is treated as individual. Therefore, an overview on available general adoption model is necessary in this field. In this paper adoption theories and models are presented to give an overview for better understanding of these models and

theories. Below are the theories or approaches which help in development of Unified Theory of Acceptance and use of technology.

5.2 Unified Theory of Acceptance and Use of Technology (UTAUT)

Venkatesh and Morris and others (2003) compared the similarities and differences among the eight models which previously used in the context of information system, all of which had their origins in sociology, psychology and communications. UTAUT consists of four constructs: facilitation conditions, efforts expectancy, performance expectancy, and social influence. These constructs were derived from the eight well-known models and directly addresses the intention of behavior to use technology. These models are Technology Acceptance Model, Theory of Reasoned Action, combined TAM and TPB, Theory of Planned Behaviour, Model of PC Utilization, Diffusion of Innovation, Motivational Model and social Cognitive Theory. Below is the figure which can describe UTAUT in model.

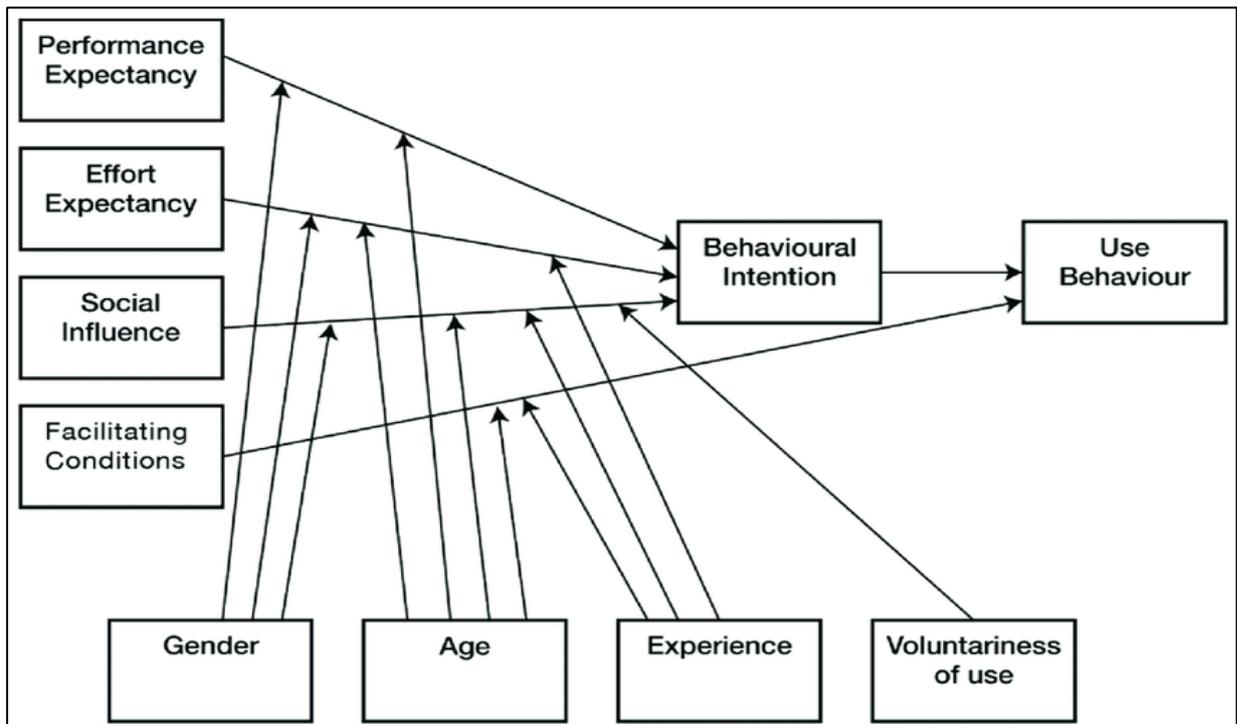


Figure 3 Unified Theory of Acceptance and use of technology

Venkatesh et al. have defined four constructs of UTAUT, They are:

- **Performance expectancy:**

Performance expectancy widely known as PE is the level a person considers that the use of a new technology would help to improve their work performance. This construct is included as perceived usefulness in TAM.

- **Effort expectancy:**

Effort Expectancy which is also known as EE is the degree to which the user perceives the system as easy to use. This construct includes scale items from TAM.

- **Social influence:**

Social Influence is the degree to which the user perceives that others who are important to the user believe that the user should use the system. Social Influence is known as SI. The construct includes scales from subjective norms in TAM.

- **Facilitating conditions:**

Facilitating Conditions is the degree to which the user believes that conditions are adequate for effective use of the system, including organizational readiness and infrastructure adequacy. This construct encompasses perceived behavior control, TAM and other variants of Cognitive Theory.

5.3 Conclusion

Libraries are the entity which is regularly updates their operations and management systems with development of new techniques and as per users demand. It is very necessary to use the model for the same. The Unified Theory of Acceptance and Use of Technology provides preface to validate any new technology before applying in policy of libraries. We have gone through varies characteristics and benefits of web 2.0 technologies and its importance in usage in library. It is necessary to check its significance with the help of tested model of UTAUT.

Chapter 6

Data Analysis

This chapter is based on primary data gathered by rigorous survey using structured questionnaire to obtain opinion from the users of the university libraries of state of the Gujarat. Data analysis is the most vital part of any research. The data collected is analysed, processed and represented in a meaningful manner to draw the desired conclusion to make sense to a researcher or the reader. This makes the understanding of the subject clearer. Analysis is conducted on the data collected from library staff working at various universities. It enables in drawing the desired final conclusion and brings about various changes in the existing systems. It helps in future decision making, strategy development and widens opportunity and direction for the future research.

6.1 Analysis of Demographic Data

6.1.1 Frequencies Demographic Variables

Table 4 Frequencies Demographic Variables

Sr. No	Variables	Sub Catagories	Frequency	Percentage
1	Age	20 & Below	24	4.9
		21 – 30	183	37.3
		31 – 40	167	34.1
		41 – 50	75	15.3
		51 – 60	36	7.3
		61 & Above	5	1
2	Gender	Male	262	53.5
		Female	228	46.5
3	Designation of Library Users	U.G./P.G. Student	113	23.1
		Research Scholar	99	20.2
		Assistant Professor	231	47.1
		Associate Professor	40	8.2
		Principal/ HOD/ Dean of Faculty	7	1.4

6.2 Findings from Inferential Statistics:

Inferential statistics allows you to make predictions (“inferences”) from that data. Non-Parametric Test are assumption Free test because they make fewer assumptions than the other test. In this study Non-parametric Test like Mann-Whitney Test and Kruskal Wallis Test & Chi- Square test have been used.

6.2.1 Findings from Mann-Whitney Test:

In this study, Mann-Whitney U Test is used to analyse difference in opinion about **Web 2.0 Technology on Service of Libraries** on the basis of gender. Five-point Likert scale i.e. Strongly Agree to Strongly Disagree has been used for that purpose.

6.2.1.1 Influence of Gender on PE

H0: There is no difference in opinion of Gender on PE

H1: There is difference in opinion of Gender on PE

Table 5 Test Statistics Influence of Gender on PE

Statements (Sub-factors/Parameters)	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
PE1 - Web 2.0 services are useful in my studies	29858.5	64311.5	-0.01	0.995
PE2 - I can accomplish my academic needs with use of web 2.0 services by library	29632	64085	-0.16	0.87
PE3 - My academic performance increases after using these services	27591.5	53697.5	-1.57	0.117
PE4 - The services make my academic activities easy to accomplish	29729.5	64182.5	-0.1	0.925
PE5 - I can get required information well in time by using these services	29569.5	64022.5	-0.21	0.837
PE6 - My productivity (output) increases in my studies by using these services	29012	55118	-0.59	0.559
PE7 - I can get accurate information by using these services	28597.5	54703.5	-0.87	0.387

As the *p*- value of all the sub factors is greater than 0.05 in **Table 5**, so null hypothesis has been accepted at 5% level of significance which means that there is no difference in opinion of gender on PE. Opinion of female and male are same about PE.

6.2.1.2 Influence of Gender on EE

H0: There is no difference in opinion of Gender on EE

H1: There is difference in opinion of Gender on EE

Table Table 6 Test Statistics: Influence of Gender on EE

Statements (Sub-factors/Parameters)	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
EE1 - It is easy to navigate the library website	28447	54553	-0.97	0.333
EE2 - I quickly find information from these services that I need	27728	53834	-1.47	0.143
EE3 - Learning to use these services is easy for me	28980.5	55086.5	-0.61	0.544
EE4 - It is easy to use this website even on a first visit	28380.5	54486.5	-1.01	0.312

As the *p*- value of all the sub factors is greater than 0.05 in **Table 7**, so null hypothesis has been accepted at 5% level of significance which means that there is no difference in opinion of gender on EE. Opinion of female and male are same about EE.

6.2.1.3 Influence of Gender on SI

H0: There is no difference in opinion of Gender on SI

H1: There is difference in opinion of Gender on SI

Table 7 Test Statistics: Influence of Gender on SI

Statements (Sub-factors/Parameters)	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
SI1 - My tutors/teachers influence my behaviour to use these services	26482	52588	-2.28	0.023
SI2 - Regional/main campus staff influences my behaviour to use these services	27480	53586	-1.61	0.108
SI3 - My friends, family members, class fellows, etc. influence my behaviour to use these services	25697	51803	-2.8	0.005

The (*P-value*) as shown in Table 7 for the Statement “**My tutors/teachers influence my behaviour to use these services**” and for statement “**My friends, family members, class fellows, etc. influence my behaviour to use these services**” are less than 0.05, so the null hypothesis has been rejected at 5% level of significance which means there is a significant influence of gender on SI. Male and Female have significant influence of their tutors/teacher, friend and family members etc. on use of library services.

6.2.1.4 Influence of Gender on FC

H0: There is no difference in opinion of Gender on FC

H1: There is difference in opinion of Gender on FC

Table 8 Test Statistics: Influence of Gender on FC

Statements (Sub-factors/Parameters)	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
FC1 - I have resources (computer, Internet etc.) to use these services	29693	64146	-0.12	0.904
FC2 - I have knowledge to use these services	29185.5	55291.5	-0.47	0.64
FC3 - I have skills to use these services	28327	54433	-1.06	0.291
FC4 - Online help is available to use these services	29310	55416	-0.38	0.703
FC5 - These services are compatible (download file format, operating system, etc.) with my computer	28435.5	54541.5	-0.98	0.326

As the *p-value* of all the sub factors is greater than 0.05 in **Table 8**, so null hypothesis has been accepted at 5% level of significance which means that there is no difference in opinion of gender on FC. Opinion of female and male are same about FC.

6.2.1.5 Influence of Gender on BI

H0: There is no difference in opinion of Gender on BI

H1: There is difference in opinion of Gender on BI

Table 9 Test Statistics: Influence of Gender on BI

Statements (Sub-factors/Parameters)	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)
BI1 - I like using these services for getting information	29511.5	63964.5	-0.25	0.806
BI2 - I intend to continue using these Web-based services in my studies	28723	54829	-0.78	0.433
BI3 - I feel I will keep on using these services even after my studies	29333	63786	-0.37	0.713
BI4 - I will recommend the use of these services to other students	29607.5	55713.5	-0.18	0.857

As the *p*-value of all the sub factors is greater than 0.05 in **Table 9**, so null hypothesis has been accepted at 5% level of significance which means that there is no difference in opinion of gender on BI. Opinion of female and male are same about BI.

6.2.2 Findings from Kruskal Wallis Test on the basis of Age of Respondents:

The Kruskal Wallis test is the non-parametric alternative to the One-Way ANOVA. In this study Kruskal Wallis Test is used to analyse difference in opinion about Web 2.0 Technology on Service of Libraries on the basis of age group, designation etc. Five-point Likert scale i.e. Strongly Agree to Strongly Disagree has been used for that purpose.

6.2.2.1 Influence of Age of Respondents on PE

H0: There is no difference in opinion of Age of Respondents on PE

H1: There is difference in opinion of Age of Respondents on PE

Table 10 Test Statistics: Influence of Age of the Respondents on PE

Statements (Sub-factors/Parameters)	Chi-Square	Df	Asymp. Sig.
PE1 - Web 2.0 services are useful in my studies	3.967	5	0.554
PE2 - I can accomplish my academic needs with use of web 2.0 services by library	6.416	5	0.268
PE3 - My academic performance increases after using these services	4.886	5	0.43

PE4 - The services make my academic activities easy to accomplish	5.936	5	0.312
PE5 - I can get required information well in time by using these services	2.634	5	0.756
PE6 - My productivity (output) increases in my studies by using these services	7.747	5	0.171
PE7- I can get Accurate information by using these services	9.99	5	0.076

As The *P-value* of the all the sub factors in **Table 10** is greater than 0.05, so the null hypothesis has been accepted at 5% level of significance which means there is a not difference of opinion of age of respondents on PE. Respondents of different class of age group have same opinion about Performance Acceptancy.

6.2.2.2 Influence of Age of Respondents on EE

H0: There is no difference in opinion of Age of Respondents on EE

H1: There is difference in opinion of Age of Respondents on EE

Table 11 Test Statistics: Influence of Age of Respondents on EE

Statements (Sub-factors/Parameters)	Chi-Square	df	Asymp. Sig.
EE1 - It is easy to navigate the library website	4.46	5	0.485
EE2 - I quickly find information from these services that I need	3.808	5	0.577
EE3 - Learning to use these services is easy for me	7.054	5	0.217
EE4 - It is easy to use this website even on a first visit	13.611	5	0.018

The (P-value) as shown in Table 11 for this statement “**It is easy to use this website even on a first visit**” is less than 0.05, so the null hypothesis has been rejected at 5% level of significance which means there is a significant influence of age of respondents on PE. Respondents of different class of age group have difference in opinion about using the website even at first visit.

6.2.2.3 Influence of Age of Respondents on SI

H0: There is no difference in opinion of Age of Respondents on SI

H1: There is difference in opinion of Age of Respondents on SI

Table 12 Test Statistics: Influence of Age of Respondents on SI

Statements (Sub-factors/Parameters)	Chi-Square	Df	Asymp. Sig.
SI1 - My tutors/teachers influence my behaviour to use these services	3.788	5	0.58
SI2 - Regional/main campus staff influences my behaviour to use these services	5.786	5	0.328
SI3 - My friends, family members, class fellows, etc. influence my behaviour to use these services	5.954	5	0.311

As the *p*-value of all the sub factors is greater than 0.05 in **Table 12**, so null hypothesis has been accepted at 5% level of significance which means that there is no difference in opinion of Age of Respondents on SI. Opinions of Respondents of difference class of age group are same.

6.2.2.4 Influence of Age of Respondents on FC

H0: There is no difference in opinion of Age of Respondents on FC

H1: There is difference in opinion of Age of Respondents on FC

Table 13 Test Statistics: Influence of Age of Respondents on FC

Statements (Sub-factors/Parameters)	Chi-Square	df	Asymp. Sig.
FC1 - I have resources (computer, Internet etc.) to use these services	8.489	5	0.131
FC2 - I have knowledge to use these services	8.407	5	0.135
FC3 - I have skills to use these services	11.455	5	0.043
FC4 - Online help is available to use these services	6.34	5	0.274
FC5 - These services are compatible (download file format, operating system, etc.) with my computer	12.845	5	0.025

The (*P-value*) as shown in **Table 13** for this statement “**I have skills to use these services**” is less than 0.05, so the null hypothesis has been rejected at 5% level of significance which means there is a significant influence of age of respondents on FC. Respondents of different class of age group have difference in opinion about skills to use these services.

The (*P-value*) as shown in **Table 13** for this statement “**These services are compatible (download file format, operating system, etc.) with my computer**” is less than 0.05, so the null hypothesis has been rejected at 5% level of significance which means there is a significant influence of age of respondents on FC. Respondents of different class of age group have difference in opinion about services’ compatibility with the computer.

6.2.2.5 Influence of Age of Respondents on BI

H0: There is no difference in opinion of Age of Respondents on BI

H1: There is difference in opinion of Age of Respondents on BI

Table 14 Test Statistics: Influence of Age of Respondents on BI

Statements (Sub-factors/Parameters)	Chi-Square	df	Asymp. Sig.
BI1 - I like using these services for getting information	8.583	5	0.127
BI2 - I intend to continue using these Web-based services in my studies	10.447	5	0.064
BI3 - I feel I will keep on using these services even after my studies	10.101	5	0.072
BI4 - I will recommend the use of these services to other students	6.236	5	0.284

As the *p- value* of all the sub factors is greater than 0.05 in **Table14**, so null hypothesis has been accepted at 5% level of significance which means that there is no difference in opinion of Age of Respondents on BI. Opinion of Respondents of difference class of age group is same about BI.

6.2.3 Findings from Kruskal Wallis Test on the basis of designation of respondents

The Kruskal Wallis test is the non-parametric alternative to the One-Way ANOVA. In this study Kruskal Wallis Test is used to analyse difference in opinion about **Web 2.0 Technology on Service of Libraries** on the basis of designation etc. Five-point Likert scale i.e. Strongly Agree to Strongly Disagree has been used for that purpose.

6.2.3.1 Influence of Designation on PE

H0: There is no difference in opinion of Respondents' Designation on PE

H1: There is difference in opinion of Respondents' Designation on PE

Table 15 Test Statistics: Influence of Designation on PE

	Chi-Square	df	Asymp. Sig.
PE1 - Web 2.0 services are useful in my studies	4.585	4	.333
PE2 - I can accomplish my academic needs with use of web 2.0 services by library	7.602	4	.107
PE3 - My academic performance increases after using these services	5.204	4	.267
PE4 - The services make my academic activities easy to accomplish	6.493	4	.165
PE5 - I can get required information well in time by using these services	5.094	4	.278
PE6 - My productivity (output) increases in my studies by using these services	1.804	4	.772
PE7 - I can get accurate information by using these services	6.235	4	.182

As the *p*-value of all the sub factors is greater than 0.05 in **Table 15**, so null hypothesis has been accepted at 5% level of significance which means that there is no difference in opinion of designation of Respondents on PE. Opinions of all the designated persons are same for PE.

6.2.3.2 Influence of Designation on EE

H0: There is no difference in opinion of Respondents' Designation on EE

H1: There is difference in opinion of Respondents' Designation on EE

Table 16 Test Statistics: Influence of Designation on EE

	Chi-Square	df	Asymp. Sig.
EE1 - It is easy to navigate the library website	2.795	4	0.593
EE2 - I quickly find information from these services that I need	6.394	4	0.172
EE3 - Learning to use these services is easy for me	2.53	4	0.639
EE4 - It is easy to use this website even on a first visit	8.514	4	0.074

As the *p*-value of all the sub factors is greater than 0.05 in **Table 16**, so null hypothesis has been accepted at 5% level of significance which means that there is no difference in opinion of Designation of Respondents on EE. Opinion of all the designated persons is same for EE.

6.2.3.3 Influence of Designation on SI

H0: There is no difference in opinion of Respondents' Designation on SI

H1: There is difference in opinion of Respondents' Designation on SI

Table 17 Test Statistics: Influence of Designation on SI

	Chi-Square	df	Asymp. Sig.
SI1 - My tutors/teachers influence my behaviour to use these services	2.993	4	.559
SI2 - Regional/main campus staff influences my behaviour to use these services	7.411	4	.116
SI3 - My friends, family members, class fellows, etc. influence my behaviour to use these services	5.148	4	.272

As the *p*-value of all the sub factors is greater than 0.05 in **Table 17**, so null hypothesis has been accepted at 5% level of significance which means that there is no difference in opinion of Designation of Respondents on SI. Opinion of all the designated persons is same for SI.

6.2.3.4 Influence of Designation on FC

H0: There is no difference in opinion of Respondents' Designation on FC

H1: There is difference in opinion of Respondents' Designation on FC

Table 18 Test Statistics: Influence of Designation on FC

	Chi-Square	df	Asymp. Sig.
FC1 - I have resources (computer, Internet etc.) to use these services	9.920	4	.042
FC2 - I have knowledge to use these services	4.018	4	.404
FC3 - I have skills to use these services	5.174	4	.270
FC4 - Online help is available to use these services	4.083	4	.395
FC5 - These services are compatible (download file format, operating system, etc.) with my computer	11.047	4	.026

The (*P-value*) as shown in **Table 18** for the statement “**I have resources (computer, Internet etc.) to use these services**” is less than 0.05, so the null hypothesis has been rejected at 5% level of significance which means there is a significant influence of respondents' designation on FC. Designated respondents have difference in opinion about recourses to use these services

The (*P-value*) as shown in **Table 18** for the statement “**These services are compatible (download file format, operating system, etc.) with my computer**” is less than 0.05, so the null hypothesis has been rejected at 5% level of significance which means there is a significant influence of respondents' designation on FC. Designated respondents have difference in opinion about services are compatible with the computer.

6.2.3.5 Influence of Designation on BI

H0: There is no difference in opinion of Respondents' Designation on FC

H1: There is difference in opinion of Respondents' Designation on FC

Table 19 Test Statistics: Influence of Designation on BI

	Chi-Square	df	Asymp. Sig.
BI1 - I like using these services for getting information	8.624	4	.071
BI2 - I intend to continue using these Web-based services in my studies	13.086	4	.011
BI3 - I feel I will keep on using these services even after my studies	10.756	4	.029
BI4 - I will recommend the use of these services to other students	15.286	4	.004

The (*P-value*) as shown in **Table 19** for the statement for the statement “**I intend to continue using these Web-based services in my studies**” is less than 0.05, so the null hypothesis has been rejected at 5% level of significance which means there is a significant influence of respondents’ designation on BI2. Designated respondents have difference in opinion about continues using these Web-based services in their studies.

The (*P-value*) as shown in **Table 19** for the statement for the statement “**I feel I will keep on using these services even after my studies**” is less than 0.05, so the null hypothesis has been rejected at 5% level of significance which means there is a significant influence of respondents’ designation on INT3. Designated respondents have difference in opinion about keep on using these Web-based services after their studies.

The (*P-value*) as shown in **Table 19** for the statement for the statement “**I will recommend the use of these services to other students**” is less than 0.05, so the null hypothesis has been rejected at 5% level of significance which means there is a significant influence of respondents’ designation on BI4. Designated respondents have difference in opinion about recommending the use of these services to other students.

6.2.4 Findings from Chi-Square Test:

6.2.4.1 Age, Gender and Designation of Respondents and Web 2.0 Tools

Table 20 Test Statistics: Chi- Square Test Age and Web 2.0 tools

	Web 2.0 tools Pearson Chi-Square	Value	Asymp. Sig. (2-sided)	Results
Age	Blogs (Blogger, Wordpress)	32.527 ^a	0.038	Rejected
	Wikis (Wikipedia)	42.813 ^a	0.002	Rejected
	Instant Messaging (whatsapp, F. Messenger, Hike)	27.105 ^a	0.132	Accepted
	RSS feeds (Feedly etc)	21.213 ^a	0.385	Accepted
	Social Networking (FB, Instagram, Twitter)	21.037 ^a	0.395	Accepted
	Podcasts (Youtube, Swayam)	49.392 ^a	0	Rejected
	Tagging (Academia, Google Scholar, Research Gate)	21.656 ^a	0.359	Accepted
	Mash up (Mapping and location)	25.839 ^a	0.171	Accepted
	Federated search (Discovery Search)	23.163 ^a	0.281	Accepted
	Personalized applications (Android Apps/ IOS apps)	22.137 ^a	0.333	Accepted
	Gender	Blogs (Blogger, Wordpress)	9.120 ^a	0.058
Wikis (Wikipedia)		8.293 ^a	0.081	Accepted
Instant Messaging (whatsapp, F. Messenger, Hike)		.973 ^a	0.914	Accepted
RSS feeds (Feedly etc)		6.406 ^a	0.171	Accepted
Social Networking (FB, Instagram, Twitter)		4.156 ^a	0.385	Accepted
Podcasts (Youtube, Swayam)		3.051 ^a	0.549	Accepted
Tagging (Academia, Google Scholar, Research Gate)		7.630 ^a	0.106	Accepted
Mash up (Mapping and location)		3.361 ^a	0.499	Accepted
Federated search (Discovery Search)		3.973 ^a	0.41	Accepted
Personalized applications (Android Apps/ IOS apps)		2.747 ^a	0.601	Accepted
Designation of Library Users	Blogs (Blogger, Wordpress)	28.056a	0.031	Rejected
	Wikis (Wikipedia)	24.931a	0.071	Accepted
	Instant Messaging (whatsapp, F. Messenger, Hike)	13.122a	0.664	Accepted

	RSS feeds (Feedly etc)	24.542a	0.078	Accepted
	Social Networking (FB, Instagram, Twitter)	37.646a	0.002	Rejected
	Podcasts (Youtube, Swayam)	26.496a	0.047	Rejected
	Tagging (Academia, Google Scholar, Research Gate)	19.064a	0.265	Accepted
	Mash up (Mapping and location)	25.875a	0.056	Accepted
	Federated search (Discovery Search)	10.403a	0.845	Accepted
	Personalized applications (Android Apps/ IOS apps)	27.297a	0.038	Rejected

P Value in the above table 20 for Age and Blogs (Blogger, Wordpress), Wikis (Wikipedia) and Podcasts (Youtube, Swayam) is less than 0.05 so null hypothesis cannot be accepted which means that there is an association between Age of library users and Web 2.0 tools regards to above tools.

P Value in the above table 20 for Gender and all web 2.0 tools is Greater than 0.05 so null hypothesis is accepted which means that there is no association between Gender of library users and Web 2.0 tools regards to above tools.

P Value in the above table 20 for Designation of library users and Blogs (Blogger, Wordpress), Social Networking (FB, Instagram, Twitter), Podcasts (Youtube, Swayam) and Personalized applications (Android Apps/ IOS apps is less than 0.05 so null hypothesis cannot be accepted which means that there is an association between Designation of library users and Web 2.0 tools regards to above tools.

6.3 Factor Analysis

Factor Analysis was carried out on eight variables, namely:

- Lack of awareness
- Lack of skill
- Lack of Connectivity
- Lack of technical knowledge
- Lack of technical support
- Privacy concerns
- Not Interested
- Reluctant to Change

Table 21 Test Statistics: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.870
Bartlett's Test of Sphericity	Approx. Chi-Square	2484.936
	df	28
	Sig.	.000

Kaiser-Meyer-Olkin Measure of Sampling Adequacy should be greater than .70 indicating sufficient items for each factor. Here, the result of the KMO is 0.87 is which greater than 0.7. Bartlett’s Test of Sphericity should be significant (less than .05), indicating that the correlation matrix is significantly different from an identity matrix, in which correlations between variables are all zero. Here, Bartlett’s test of Sphericity (Significance – 0.000) indicates that factor analysis done with 8 variables is significant.

Table 22 Test Statistics: Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	4.755	59.440	59.440	4.755	59.440	59.440	3.835	47.934	47.934
2	1.017	12.711	72.150	1.017	12.711	72.150	1.937	24.217	72.150
3	.692	8.644	80.794						
4	.484	6.056	86.850						
5	.355	4.435	91.285						
6	.331	4.134	95.419						
7	.229	2.861	98.280						
8	.138	1.720	100.000						

Extraction Method: Principal Component Analysis.

The Total Variance Explained table shows how the variance is divided among the 8 possible factors. Note that three factors have **Eigen values** (a measure of explained variance) greater than 1.0, which is a common criterion for a factor to be useful. When the Eigen value is less than 1.0, this means that the factor explains less information than a single item would have explained. Most researchers would not consider the information gained from such a factor to be sufficient to justify keeping that factor. Thus, if you had not specified otherwise, the computer would have looked for the best four-factor solution by "rotating" four factors. It can be concluded that these two factors extracted from the 8 variables explain about 72.150 % variance of total variance.

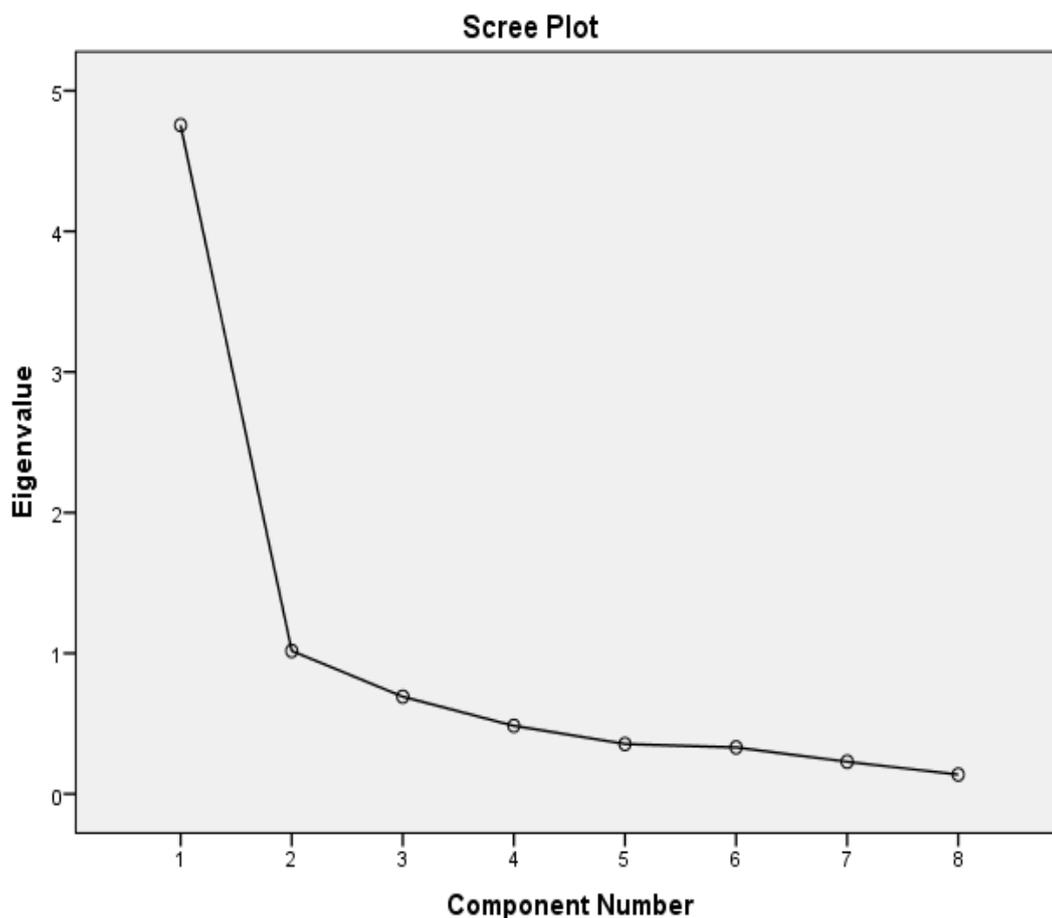


Figure 4 Scree Plot of Factor Analysis

Eigen values and Scree Plot suggest that there should be three factors to be considered. In the above chart Factors lying on the X-axis are of no use but factors lying on the Y-axis are useful. **It can be seen that there are two factors lying with Y -axis.**

Table 23 Text Statistics Table Rotated Component Matrixa

	Component	
	1	2
Lack of technical knowledge	.890	
Lack of technical support	.863	
Lack of Connectivity	.822	
Lack of skill	.795	
Lack of awareness	.710	
Privacy concerns	.590	
Not Interested		.899
Reluctant to Change		.831

The Rotated Factor Matrix table, which contains these loadings, is the key for understanding the results of the analysis. Note that the computer has sorted the performance of 8 obstacles will be faced in implementing Web 2.0 tools in your university library into two overlapping groups of items, each which has a loading of $|\geq .50|$ or higher $|\geq .50|$ means the absolute value, or value without considering the sign, is greater than $.50$). Actually, every item has some loading from every factor, but there are blanks in the matrix where weights were less than $|\geq .50|$. Within each factor (to the extent possible), the items are sorted from the one with the highest factor weight or loading for that factor to the one with the lowest loading on that first factor.

Obstacles have been faced in implementing Web 2.0 tools in your university library

- **Lack of Familiarity, Competence and Assistance**
- **Unwillingness to change the mind-set**

6.4 SEM Analysis and Measurement Model

Structural equation modelling (SEM) technique was used for evaluating the relationships in the UTAUT model and also for testing the hypotheses among the variables. The reason for selecting SEM is because this statistical methodology allows a hypothesis testing approach to structural analysis of data that represent in a selected model. Partial Least Squares (PLS) was the statistical tool used for measuring the research model.

Table 24 Mean score and standard deviation of each item in the questionnaire related to the research model constructs

Variable	Mean	Std. Deviation	Construct Defination / Items in Questionarie
PE : The Degree to which an individual Library User belived that Web 2.0 service tools will improve his/her Performance			
PE1	4.37	0.807	Web 2.0 services are useful in my studies
PE2	4.23	0.858	I can accomplish my academic needs with use of web 2.0 services by library
PE3	4.16	0.854	My academic performance increases after using these services
PE4	4.12	0.892	The services make my academic activities easy to accomplish
PE5	4.15	0.909	I can get required information well in time by using these services
PE6	4.12	0.921	My productivity (output) increases in my studies by using these services
PE7	4.08	0.92	I can get accurate information by using these services
EE : The Degree to which an individual Library User belived that ease is associated with use of Web 2.0 service tools			
EE1	4.04	0.948	It is easy to navigate the library website
EE2	4.13	0.934	I quickly find information from these services that I need
EE3	4.09	0.909	Learning to use these services is easy for me
EE4	4	0.931	It is easy to use this website even on a first visit
SI : The Degree to which an individual Library User perceived that others also use of Web 2.0 service tools			
SI1	3.9	1.011	My tutors/teachers influence my behaviour to use these services
SI2	3.86	0.997	Regional/main campus staff influences my behaviour to use these services
SI3	3.88	1.018	My friends, family members, class fellows, etc. influence my behaviour to use these services
FC : The Degree to which an individual Library User belived that organisational and technical infrastructure exist to suport him/her			
FC1	4.17	0.898	I have resources (computer, Internet etc.) to use these services
FC2	4.13	0.923	I have knowledge to use these services
FC3	4.14	0.909	I have skills to use these services
FC4	4.12	0.911	Online help is available to use these services
FC5	4.14	0.892	These services are compatible (download file format, operating system, etc.) with my computer
EE : The Degree to which an individual Library User intent to use of services with Web 2.0 tools provided			
BI1	4.17	0.874	I like using these services for getting information
BI2	4.14	0.87	I intend to continue using these Web based services in my studies
BI3	4.17	0.865	I feel I will keep on using these services even after my studies
BI4	4.21	0.869	I will recommend the use of these services to other students

Table 24 describes all variables used in the research, the item description, and descriptive statistics (mean and standard deviation (SD)) of the measured item. The mean values of all the items ranged from 3.86 to 4.37 on five point Likert scale while the SD has a range of 0.807 to 1.018 of the survey questions, UTAUT questionnaire was composed of 23 questions and 5 constructs.

Table 25 : The Measurement model: Reliability and validity results

Construct	Items	Item Loadings	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
BI	BI1	0.892	0.917	0.92	0.941	0.8
	BI2	0.916				
	BI3	0.894				
	BI4	0.876				

EE	EE1	0.862	0.906	0.91	0.934	0.78
	EE2	0.877				
	EE3	0.894				
	EE4	0.898				
FC	FC1	0.842	0.921	0.92	0.941	0.76
	FC2	0.896				
	FC3	0.896				
	FC4	0.856				
	FC5	0.869				
PE	PE1	0.77	0.94	0.94	0.95	0.705
	PE2	0.822				
	PE3	0.863				
	PE4	0.878				
	PE5	0.86				
	PE6	0.847				
	PE7	0.872				
	PE8	0.801				
SI	SI1	0.922	0.9	0.9	0.938	0.834
	SI2	0.909				
	SI3	0.908				

BI: Behavioral Intention; EE : Effort Expectancy ;FC : Facilitating Condition;
PE: Performance Expectancy; SI : Social Influence

Internal reliability, convergent validity, and discriminant validity are the ways to examine a model's robustness. Our measurement model's internal reliability was tested through Cronbach's Alpha and construct composite reliability where 0.70 remains the benchmark as an acceptable internal consistency. Average variance extracted (AVE) is calculated to measure the convergent validity where a value of 0.50 should be available to have convergent validity. Above table 25 presents the calculated the results of Cronbach's alpha and construct composite reliability. Cronbach's alpha values ranged from 0.9 to 0.94. In case of construct composite reliability, values ranged in 0.934–0.95 which is an indicator of strong internal reliability. The estimated construct loadings and the AVE are all in the satisfactory level. Thus, the convergent validity conditions are adequately satisfied in the study's measurement model.

Table 26 the Measurement Model: Inter construct correlation matrix

	Behavioral Intention	Effort Expectancy	Facilitating Condition	Performance Expectancy	Social Influence
BI	0.895				
EE	0.769	0.883			
FC	0.849	0.776	0.872		
PE	0.822	0.839	0.785	0.84	
SI	0.672	0.762	0.697	0.706	0.913

BI: Behavioral Intention; EE : Effort Expectancy ;FC : Facilitating Condition;
PE: Performance Expectancy; SI : Social Influence

The discriminant validity of the measurement model was examined by the cross-loading matrix and square root of all the AVEs. To achieve satisfactory level of discriminant validity, the square root of AVE of a construct needs to be higher than its correlation with other constructs. Therefore, the diagonal values in the constructs' correlation matrix must be greater than the entries in corresponding rows and columns to avail discriminant validity of the model. The result at Table 26 confirms that all the constructs have sufficient discriminant validity in the data.

Chapter 7

Findings, Suggestions & Conclusion

Findings Suggestions are based on details of data analysis with respect to theoretical concept based on the primary data collected from selected University libraries. Information and communication technology use in academic field such as automation process, Internet facility, E-resources, Online tools such as Facebook, twitter, YouTube, Pinterest, Mobile applications like whatsapp, customized app of institutions had profound impact on day to day operations of libraries in last few years. Users always have a special bond with libraries or library staff. ICT and these tools tighten this bond.

7.1 Findings

- Website is a mirror to any institution. Out of 54 total universities only 18 University libraries have dynamic website of library having integration of Web 2.0 tools.
- The MS University of Baroda, Vadodara has maximum usage of web 2.0 tool amongst all universities of Gujarat State.
- Under Demographic Profile analysis,
 1. Total of 490 respondents, 262 (53.5%) were male and 228 (46.5%) were Female.
 2. If we can see Age wise respondents, they are – 24 (4.9%) were below 20, 183 (37.3%) were age group of 21 to 30, 167 (34.1%) were age group of 31 to 40, 75 (15.3%) were age group of 41-50, 36 (7.3%) were age group of 51-60 and 5 (1%) were above 60 age group.
 3. If we can analyze Designation wise respondents, The are -113 (23.1%) were UG or PG Students, 99 (20.2%) were Research Scholars, 231 (47.1%) were Assistant Professor grade, 40 (8.2%) were Associate Professor Grade and 7 (1.4 %) are Principal/ HOD or Dean of any Faculty.
- Majority of respondents 25.1 % are using library on daily basis while 116 % and 19.2 % using University library on every alternate day or twice a week. Only 16.7 % and 6.3 are using fortnightly and once a month. Overall mean rank for frequency of library visit by users is 3.22, which indicate positive usage of library.

- 71.2 % users have stated that they have visited library website while 28.8 have not visited library website during their tenure of usage of library.
- Majority of Respondents are using internet on daily basis for academic purpose. Only 1.6% users have admitted that they are not using internet for academic purpose.
- Majority of respondents 52.4 % have admitted that they are spending 1-3 hours daily on internet and 13.7 % and 8.6 % users have admitted that they are using internet for 3-5 hours and more than 5 hours daily. Only 25.3% users have stated that they are spending less than one hour on internet.
- Majority of respondents have admitted they are dependent on internet or helpless without internet. Which indicates higher usage of web for day to day work?
- 83.1 % uses have reported that their university library is providing internet facility.
- Majority of respondents are frequently using social Media tools. Only Blogs like Blogger and Wordpress (Mean rank 2.67), and RSS feeds (Mean Rank 2.63) are least used tools.
- Majority of respondents have reported their main purpose of using web 2.0 tools are Academic (Mean Rank 4.26) and connect with friends and family (Mean rank 4.02).
- 93.5 % Respondents have opinion that Library should provide its facilities through web 2.0 tools.
- Majority of respondents (Average Mean Rank 2.47 on Likert scale of 3) demanded that library should provide various services with help of web 2.0 technology.
- **Findings from Mann-Whitney Test:**

Influence of Gender on PE: It was found that there is no difference in opinion of gender on PE. Opinion of female and male are same about Performance Expectancy.

Influence of Gender on EE: It was found that Opinion of female and male are same about Effort Expectancy.

Influence of Gender on SI: It was found that Male and Female have significant influence of their tutors/teacher, friend and family members etc. on use of library services but Main campus staff does not have any influence over Gender.

Influence of Gender on FC: It was found that there is no difference in opinion of gender on FC. Opinion of female and male are same about FC.

Influence of Gender on BI: It was found that there is no difference in opinion of gender on BI so Opinion of female and male are same about BI.

- **Findings from Kruskal Wallis Test on the basis of Age of Respondents:**

1. Influence of Age of Respondents on PE: It was found that Respondents of different class of age group have difference in opinion about construct statement - they can get accurate information by using these services.
2. Influence of Age of Respondents on EE: Respondents of different class of age group have difference in opinion about using the website even at first visit.
3. Influence of Age of Respondents on SI: It is found that opinions of Respondents of difference class of age group are same.
4. Influence of Age of Respondents on FC: It is found that Respondents of different class of age group have difference in opinion about skills to use these services.
5. Influence of Age of Respondents on FC: It is found that opinions of Respondents of difference class of age group are same about BI.
6. Influence of Designation on PE: IT is found that Opinions of all the designated persons are same for PE.
7. Influence of Designation on EE: It was found that opinion of all the designated persons is same for EE.
8. Influence of Designation on SI: It was found that opinion of all the designated persons is same for SI.
9. Influence of Designation on FC: It was found that designated respondents have difference in opinion about recourses to use Web 2.0 services as well as services are compatible with the computer.
10. Influence of Designation on BI : It was found that designated respondents have difference in opinion about continues using these Web-based services in their studies, recommend web 2.0 library services and using library services after completion of their study/ Job tenure for academic Purpose.

- Findings from Exploratory Factor Analysis of Obstacles to using Web 2.0 Library services: Respondents have shown their opinions regarding various obstacles which will be faced by users in implementation of Web 2.0 Library services. It is found in factor Analysis that all obstacles can be grouped in to two main variables. There are

mainly two factors which defines all obstacles they are: **Lack of Familiarity, Competence and Assistance** and **Unwillingness to change the mind-set of users and library staff.**

7.2 Recommendations:

- It is found that out of 54 total university library listed for present study only 18 have Library website with integration of Web 2.0 tools. Other University Libraries should develop their library website with integration of Web 2.0 tools in this competent and ICT environment.
- Some of University library have developed their website but it is not being updated from time to time. They should update content of website more user friendly.
- Some of University libraries having integration of Web 2.0 tools like Facebook, Instagram, Personalised messaging services, RSS, YouTube, Blog, Live OPAC but they are not being updating regularly. Therefore they should update their social media platform at least once in a week to stay connected with users.
- It is observed in literature review and during survey visit to university libraries that Instant Messaging Services, Wikies, Podcast like services are very much loved by users. Majority of Users of library are students hence libraries have to reach where they are and disseminate information what they want.
- It is recommended that Commissionerate of higher education, Govt. of Gujarat frame policy / Guidelines for state as well as private university libraries to have live website and integration of Web 2.0 tools in services of it.
- It is observed that Majority of state university libraries are using SOUL 2.0 as their library management system and their Web-OPAC ware not live. They should update their system with SOUL 3.0 and live their OPAC as SOUL 3.0 Live Web OPAC have integration of Web 2.0 tools.
- It is found that Smt. Hansa Mehta library of The Maharaja Sayajirao University of Baroda, Vadodara have Started Daily Information Dose service, Open Knowledge Gateway 2.0 with help of Web 2.0 tools like instant messaging and other social media and RSS to stay connected with user's community. Other University Libraries also should come up with such type of innovative Ideas to connect with User community.

- University library should include the services they are provided to users with integration of web 2.0 tools through library orientation programme, Library week or day celebration, user awareness workshops and online tutorials to its maximum reach.
- University library should continually evaluate web 2.0 services for effective management of these tools as world of Information technology and online web is continually changing in rapid way.

7.3 Conclusion:

The methodology and the outcomes of the presented research is of useful not only to the research community but also to the Library managers, Administrators, policy makers and LIS students and policy makers. It is providing reason to improve efficiency and workflow for library management. Since technology continues to evolve, the evaluation and implementation of new technologies become significant. It is perceived that users are in favour of something new and demand for a simplest most direct path to information irrespective of the methods that are increasingly important for end-users. In order to provide enhanced patron access and services, libraries need to manage self effectively to the optimum utilization by overcoming the issues and challenges. The model of checking Acceptance and use of web 2.0 technology in services of University Library is also showing that users are accepting change very easily, now it is library professional who have to adopt the change.

Bibliography: (Alphabetic)

- A Survey of the Application of Web 2.0 in State University Libraries of Western India | Sandip S. Patel | updates | Research Project. (n.d.). Retrieved November 7, 2019, from <https://www.researchgate.net/project/A-Survey-of-the-Application-of-Web-20-in-State-University-Libraries-of-Western-India>
- Abrahão, R. de S., Moriguchi, S. N., & Andrade, D. F. (2016). Intention of adoption of mobile payment: An analysis in the light of the Unified Theory of Acceptance and Use of Technology (UTAUT). *RAI Revista de Administração e Inovação*, 13(3), 221–230. <https://doi.org/10.1016/j.rai.2016.06.003>

- Academic libraries on social medi... preview & related info | Mendeley. (n.d.). Retrieved December 29, 2019, from <https://www.mendeley.com/catalogue/academic-libraries-social-media-finding-students-information-want/>
- Adeyinka Tella Oyegunle John Oladapo, Tella, A., & Oladapo, O. J. (2014). A comparative analysis of available features and Web 2.0 tools on selected Nigerian and South African university library websites Introduction. *The Electronic Library*, 34(3), 504–521. <https://doi.org/http://dx.doi.org/10.1108/MRR-09-2015-0216>
- Adoption of Social Networking Tools in Public University Libraries in Ghana. (2016). *INTERNATIONAL JOURNAL OF INNOVATIVE RESEARCH & DEVELOPMENT*. Retrieved from https://www.academia.edu/24935755/Adoption_of_Social_Networking_Tools_in_Public_University_Libraries_in_Ghana
- aharr10@g.emporia.edu, A. H., rburress@g.emporia.edu, R. B., svelasqu@g.emporia.edu, S. V., & lschrein@g.emporia.edu, L. S. (2017). Social Media Use in Academic Libraries: A Phenomenological Study., 43(3), 248–256.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Alajmi, M. A., & Alotaibi, J. H. (2020). Reconceptualization of system use in the context of the digital library: what are the roles of UTAUT and IS success models? *Journal of Electronic Resources Librarianship*, 32(3), 151–181. <https://doi.org/10.1080/1941126X.2020.1790943>
- AlAwadhi, S., & Al-Daihani, S. M. (2019). Marketing academic library information services using social media. *Library Management*, 40(3–4). <https://doi.org/10.1108/LM-12-2017-0132>
- Al-Daihani, S. M., & Abrahams, A. (2016). A Text Mining Analysis of Academic Libraries' Tweets. *Journal of Academic Librarianship*, 42(2), 135–143. <https://doi.org/10.1016/j.acalib.2015.12.014>
- Al-Daihani, S. M., & Abrahams, A. (2018). Analysis of Academic Libraries' Facebook Posts: Text and Data Analytics. *Journal of Academic Librarianship*, 44(2), 216–225. <https://doi.org/10.1016/j.acalib.2018.02.004>
- Al-Qallaf, C. L., & Ridha, A. (2019). A Comprehensive Analysis of Academic Library Websites: Design, Navigation, Content, Services, and Web 2.0 Tools. *International*

Information and Library Review, 51(2), 93–106. <https://doi.org/10.1080/10572317.2018.1467166>

- Asiedu, N. K. (2017). Influence of social networking sites on students' academic and social lives: The Ghanaian perspective. *Library Philosophy and Practice*, 2017(1).
- Ayu, A. R. R., & Abrizah, A. (2011). Do you Facebook? Usage and applications of Facebook page among academic libraries in Malaysia. *The International Information & Library Review*, 43(4), 239–249. <https://doi.org/10.1016/J.IILR.2011.10.005>
- Bache, R. (2011). Patent retrieval - A question of access. *World Patent Information*, 33(4), 345–351. <https://doi.org/10.1016/j.wpi.2011.06.001>
- Bagozzi, R. P. (2007). *Journal of the Association for Information Systems*.
- Bakbak, D. (2019). Investigation into information literacy and the use of web 2.0 technologies in a faculty of architecture. *International Journal of Education and Practice*, 7(4), 418–429. <https://doi.org/10.18488/journal.61.2019.74.418.429>
- Bandura, A. (1989). Human Agency in Social Cognitive Theory The Nature and Locus of Human Agency.
- Bandura, A. (1989). Human Agency in Social Cognitive Theory. *American Psychologist*, 44(9), 1175–1184. <https://doi.org/10.1146/annurev.psych.52.1.1>
- Baro, E. E., Edewor, N., & Sunday, G. (2014). Web 2.0 tools: a survey of awareness and use by librarians in university libraries in Africa. *The Electronic Library*, 32(6), 864–883. <https://doi.org/10.1108/EL-11-2012-0151>
- Barua, Z., & Barua, A. (2020). Acceptance and usage of mHealth technologies amid COVID-19 pandemic in a developing country: the UTAUT combined with situational constraint and health consciousness. *Journal of Enabling Technologies*, 15(1), 1–22. <https://doi.org/10.1108/JET-08-2020-0030>
- Behavioral Intention to Adopt Digital Library by the Undergraduates: *International Information & Library Review*: Vol 51, No 2. (n.d.). Retrieved December 29, 2019, from <https://www.tandfonline.com/doi/abs/10.1080/10572317.2018.1463049>
- Besterman, T., Association of Special Libraries and Information Bureaux (Great Britain), I., Kronqvist-Berg, M., & Widén-Wulff, G. (n.d.). The Journal of documentation. *Journal of Documentation* (Vol. 65). Aslib. Retrieved from https://www.academia.edu/20079575/What_is_Library_2.0

- Bower, M. (2015). A Typology of Web 2.0 Learning Technologies. Retrieved from <http://plurk.com>
- Brookbank, E. (2015). So Much Social Media, So Little Time: Using Student Feedback to Guide Academic Library Social Media Strategy. *Journal of Electronic Resources Librarianship*, 27(4), 232–247. <https://doi.org/10.1080/1941126X.2015.1092344>
- Butler, K., & Byrd, J. (2016). Research Consultation Assessment: Perceptions of Students and Librarians. *Journal of Academic Librarianship*, 42(1), 83–86. <https://doi.org/10.1016/j.acalib.2015.10.011>
- by Wright, K. D. (2019). Instructors' Perceptions of Their Roles Teaching in a Web 2.0 Environment. Northcentral University. Retrieved from <https://pqdtopen.proquest.com/doc/2344736304.html?FMT=ABS>
- Casey, M. E. (n.d.). LibraryCrunch: Working Towards a Definition of Library 2.0. Retrieved December 2, 2018, from http://www.librarycrunch.com/2005/10/working_towards_a_definition_o.html
- Chatten, Z. (2017). Making social media work: Finding a library voice. *Insights: The UKSG Journal*, 30(3), 51–61. <https://doi.org/10.1629/uksg.374>
- Chatten, Z., & Roughley, S. (2016). Developing Social Media to Engage and Connect at the University of Liverpool Library. *New Review of Academic Librarianship*, 22(2–3). <https://doi.org/10.1080/13614533.2016.1152985>
- Chen, Q. L., & Zhou, Z. H. (2016). Unusual formations of superoxo heptaaxomolybdates from peroxo molybdates. *Inorganic Chemistry Communications*, 67(3), 95–98. <https://doi.org/10.1016/j.inoche.2016.03.015>
- Chizwina, S., Rabatseta, B., Bangani, S., & Moyo, M. (2017). A university library's use of social media during a time of crisis. *Library Review*, 66(6–7), 456–467. <https://doi.org/10.1108/LR-12-2016-0105>
- Choi, N., & Joo, S. (2018, June 22). Understanding public libraries' challenges, motivators, and perceptions toward the use of social media for marketing. *Library Hi Tech*. <https://doi.org/10.1108/LHT-11-2017-0237>
- Conkling, T. W., Harwell, K. R., McCallips, C., Nyana, S. A., & Osif, B. A. (2010). Research Material Selection in the pre-web and post-web Environments: An Interdisciplinary Study of Bibliographic Citations in Doctoral Dissertations. *Journal of Academic Librarianship*, 36(1), 20–31. <https://doi.org/10.1016/j.acalib.2009.11.003>

- Contents of University Library websites of Central Universities of India: An analysis | Dr Mayank Trivedi - Academia.edu. (n.d.). Retrieved October 2, 2020, from https://www.academia.edu/16774615/Contents_of_University_Library_websites_of_Central_Universities_of_India_An_analysis
- Coyle, K. (n.d.). Journal of academic librarianship. *The Journal of Academic Librarianship* (Vol. 33). [Elsevier Inc., etc.]. Retrieved from https://www.academia.edu/9891028/The_Library_Catalog_in_a_2.0_World
- Czerwinska, M. (2020). Analysis of the use of the UTAUT model for modeling the information technology acceptance process. *Journal of Computer Sciences Institute*, 17, 417–420. <https://doi.org/10.35784/JCSI.2412>
- Danny, M., & Danny, M. (2020). EasyChair Preprint Analysis of the Acceptance and Use of e-Campus Based on the Unified Theory of Acceptance and Use of Technology (UTAUT) Approach at Pelita Bangsa University.
- Darries, F. (2010). Web 2.0 and Library 2.0 An introduction TUT Library Workshop. Retrieved from <http://www.cdinucci.com/Darcy2/articles/Print/Printarticle7.html>
- Darries: Web 2.0 and Libraries 2.0: an introduction - Google Scholar. (n.d.). Retrieved December 30, 2020, from https://scholar.google.co.in/scholar?hl=en&as_sdt=0%2C5&q=http%3A%2F%2Fpreprints.rclis.org%2F14645%2F2%2Fweb_2_and_library2_an_introduction.pdf&btnG=
- Darwin in letters,1866: Survival of the fittest | Darwin Correspondence Project. (n.d.). Retrieved October 5, 2020, from <https://www.darwinproject.ac.uk/letters/darwins-life-letters/darwin-letters1866-survival-fittest>
- Das, K., & Mahapatra, R. K. (2018). Collaboration and knowledge sharing via facebook groups: Analysis of postings of library and information science community. *DESIDOC Journal of Library and Information Technology*, 38(2). <https://doi.org/10.14429/djlit.38.2.10949>
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
- Deepthi, Tadasad, P. G., & Patil, S. (2017). Use of online social networking services in university libraries: A Study of university libraries of Karnataka, India. *DESIDOC*

Journal of Library and Information Technology, 37(4), 249–258.
<https://doi.org/10.14429/djlit.37.4.10498>

- Dillon, A., & Morris, M. G. (1996). User Acceptance of Information Technology: Theories and Models. *Annual Review of Information Science and Technology*, 31, 3–32.
- Egmond, C., & Bruel, R. (2007). *Theory of Interpersonal Behaviour. Analysis of Theories and a Tool for Developing Interventions to Influence Energy-Related Behaviour.*
- Eldeeb, H. (2018). South Pecan Island freshwater introduction restoration project, Louisiana, USA. *Procedia Manufacturing*, 22, 952–959.
<https://doi.org/10.1016/j.promfg.2018.03.136>
- Esmael, R. I., Zakuan, N., Jamal, N. M., & Taherdoost, H. (2018). Fit manufacturing; Integrated model of manufacturing strategies. *Procedia Manufacturing*, 22, 975–981.
<https://doi.org/10.1016/j.promfg.2018.03.139>
- Fernández-Ramos, A. (2019). Online information literacy instruction in Mexican university libraries: The librarians' point of view. *Journal of Academic Librarianship*, 45(3), 242–251. <https://doi.org/10.1016/j.acalib.2019.03.008>
- Fiander, D. J. (2012). Social media for academic libraries. In *Social Media for Academics: A Practical Guide* (pp. 193–210). Chandos Publishing.
<https://doi.org/10.1016/B978-1-84334-681-4.50011-6>
- Foster, R., & Neal, D. R. (2012). Learning social media: Student and instructor perspectives. In *Social Media for Academics: A Practical Guide* (pp. 211–226). Chandos Publishing. <https://doi.org/10.1016/B978-1-84334-681-4.50012-8>
- Freeman, R. B. (1977). *The Works of Charles Darwin: An Annotated Bibliographical Handlist* (2nd ed.). Cannon House, Folkestone, Kent, England: Wm Dawson & Sons Ltd. Retrieved from http://darwin-online.org.uk/EditorialIntroductions/Freeman_OntheOriginofSpecies.html
- Garofalo, D. A. (2013). Case studies of academic libraries and social media networking. In *Building Communities* (pp. 51–80). Chandos Publishing.
<https://doi.org/10.1016/B978-1-84334-735-4.50003-8>

- Garofalo, D. A. (2013). How to approach the implementation of social media technologies. In *Building Communities* (pp. 27–50). Chandos Publishing. <https://doi.org/10.1016/B978-1-84334-735-4.50002-6>
- Garofalo, D. A., & Garofalo, D. A. (2013). 5 – Make the connection: posting on social media. In *Building Communities* (pp. 107–159). Chandos Publishing. <https://doi.org/10.1016/B978-1-84334-735-4.50005-1>
- Hamid, A. A., Razak, F. Z. A., Bakar, A. A., & Abdullah, W. S. W. (2016). The Effects of Perceived Usefulness and Perceived Ease of Use on Continuance Intention to Use E-Government. *Procedia Economics and Finance*, 35(October 2015), 644–649. [https://doi.org/10.1016/s2212-5671\(16\)00079-4](https://doi.org/10.1016/s2212-5671(16)00079-4)
- Harrison, A., Burrell, R., Velasquez, S., & Schreiner, L. (2017). Social Media Use in Academic Libraries: A Phenomenological Study. *Journal of Academic Librarianship*, 43(3), 248–256. <https://doi.org/10.1016/j.acalib.2017.02.014>
- Hashim, S., Ibrahim, S. A., Che Omar, S. S., Alajerami, Y. S. M., Saripan, M. I., Noor, N. M., ... Alzimami, K. (2014). Photon irradiation response of photonic crystal fibres and flat fibres at radiation therapy doses. *Applied Radiation and Isotopes*, 90, 258–260. <https://doi.org/10.1016/j.apradiso.2014.04.016>
- Holmberg, K., Huvila, I., Kronqvist-Berg, M., & Widén-Wulff, G. (2009). What is Library 2.0? *Journal of Documentation*, 65(4), 668–681. <https://doi.org/10.1108/00220410910970294>
- Hong, W., Thong, J. Y. L., Wong, W. M., & Tam, K. Y. (2001). Determinants of user acceptance of digital libraries: An empirical examination of individual differences and system characteristics. *Journal of Management Information Systems*, 18(3), 97–124. <https://doi.org/10.1080/07421222.2002.11045692>
- Howard, H., Huber, S., Carter, L., & Moore, E. (2018). Academic libraries on social media: Finding the students and the information they want. *Information Technology and Libraries*, 37(1), 8–18. <https://doi.org/10.6017/ital.v37i1.10160>
- Islam, A., & al-Modabber, A. (n.d.). Library 2.0: The New Generation Library. Retrieved from https://www.academia.edu/13412542/Library_2.0_The_New_Generation_Library
- Izuagbe, R., Ifijeh, G., Izuagbe-Roland, E. I., Olawoyin, O. R., & Ogiemien, L. O. (2019). Determinants of perceived usefulness of social media in university libraries:

Subjective norm, image and voluntariness as indicators. *Journal of Academic Librarianship*, 45(4), 394–405. <https://doi.org/10.1016/j.acalib.2019.03.006>

- Joo, S., Choi, N., & Baek, T. H. (2018). Library marketing via social media: The relationships between Facebook content and user engagement in public libraries. *Online Information Review*, 42(6), 940–955. <https://doi.org/10.1108/OIR-10-2017-0288>
- Junadi, & Sfenrianto. (2015). A Model of Factors Influencing Consumer's Intention to Use E-payment System in Indonesia. *Procedia Computer Science*, 59(Iccsci), 214–220. <https://doi.org/10.1016/j.procs.2015.07.557>
- Khan, A., & Du, J. T. (2017). Professional development through social media applications: a study of female librarians in Pakistan. *Information and Learning Science*, 118(7–8). <https://doi.org/10.1108/ILS-04-2017-0028>
- Khatun, F., Palas, M. J. U., & Ray, P. K. (2017). Using the Unified Theory of Acceptance and Use of Technology model to analyze cloud-based mHealth service for primary care. *Digital Medicine*, 3(2), 69. https://doi.org/10.4103/DIGM.DIGM_21_17
- Khechine, H., Raymond, B., & Augier, M. (2020). The adoption of a social learning system: Intrinsic value in the UTAUT model. *British Journal of Educational Technology*, 0(0), 1–20. <https://doi.org/10.1111/bjet.12905>
- Kim, K. S., & Sin, S. C. J. (2016). Use and Evaluation of Information From Social Media in the Academic Context: Analysis of Gap Between Students and Librarians. *Journal of Academic Librarianship*, 42(1), 74–82. <https://doi.org/10.1016/j.acalib.2015.11.001>
- Kjellberg, S., Haider, J., & Sundin, O. (2016). Researchers' use of social network sites: A scoping review. *Library and Information Science Research*, 38(3), 224–234. <https://doi.org/10.1016/j.lisr.2016.08.008>
- Krause, J. (2012). Tracking references with social media tools: organizing what you've read or want to read. *Social Media for Academics*, 85–104. <https://doi.org/10.1016/B978-1-84334-681-4.50005-0>
- Krejcie, R. V; Morgan, D. W. (1970). DETERMINING SAMPLE SIZE FOR RESEARCH ACTIVITIES. *EDUCATIONAL AND PSYCHOLOGICAL MEASUREMENT*, 17(8), 1566–1577. <https://doi.org/10.1261/rna.2763111>

- Kumar, A. (2014). Students opinion about the success of mobile technology in libraries: A case study of jawaharlal nehru university (jnu), New delhi. *New Library World*, 115(9–10), 471–479. <https://doi.org/10.1108/NLW-10-2013-0075>
- Kumara, B. (2018). Impact of ICT on Reading Habits of Students : A Survey. *Asian Journal of Information Science and Technology*, 8(1), 75–79. Retrieved from www.trp.org.in
- Lai, Y. H. (2020). The social network analysis on the behavioral intention to use cloud sphygmomanometer. *Health and Technology*, 10(3), 787–794. <https://doi.org/10.1007/S12553-019-00339-Y>
- Lam, E. T. H., Au, C. H., & Chiu, D. K. W. (2019). Analyzing the use of Facebook among university libraries in Hong Kong. *Journal of Academic Librarianship*, 45(3), 175–183. <https://doi.org/10.1016/j.acalib.2019.02.007>
- Lancaster, F. W. (1993). Five laws of library science. In *If you want to evaluate your library* (pp. 11–19). Retrieved from https://en.wikipedia.org/wiki/Five_laws_of_library_science
- Lawson-Body, A., Willoughby, L., Lawson-Body, L., & Tamandja, E. M. (2018, April 21). Students' acceptance of E-books: An application of UTAUT. *Journal of Computer Information Systems*, pp. 1–12. <https://doi.org/10.1080/08874417.2018.1463577>
- Letter 5145 – Darwin, C. R. to Wallace, A. R., 5 July (1866). (n.d.). Darwin Correspondence Project. Retrieved from <http://www.darwinproject.ac.uk/entry-5145#mark-5145.f3>
- Levesque, L. (2016, January 2). *Social Media in Academic Libraries: Engaging in 140 Characters or Less*. Public Services Quarterly. Routledge. <https://doi.org/10.1080/15228959.2016.1145092>
- Library marketing via social medi... preview & related info | Mendeley. (n.d.). Retrieved December 29, 2019, from <https://www.mendeley.com/catalogue/library-marketing-via-social-media-relationships-between-facebook-content-user-engagement-public-lib/>
- Luo, L. (2010). Web 2.0 Integration in Information Literacy Instruction: An Overview. *Journal of Academic Librarianship*, 36(1), 32–40. <https://doi.org/10.1016/j.acalib.2009.11.004>

- Lwoga, E. T. (1983). The electronic library : the international journal for minicomputer, microcomputer, and software applications in libraries. *Electronic Library, The* (Vol. 32). Learned Information. Retrieved from https://www.academia.edu/11110888/Integrating_Web_2.0_into_an_academic_library_in_Tanzania
- Mahmood, K. (2011). Impact of Web 2 . 0 Technologies on US Academic Libraries. Retrieved from https://www.academia.edu/1191162/Impact_of_Web_2.0_technologies_on_US_academic_libraries_A_study_of_ARL_libraries
- Mahmood, K., Jr., J. V. R., & Richardson Jr, J. V. (2011). Adoption of Web 2.0 in US academic libraries: a survey of ARL library websites. *Program: Electronic Library and Information Systems*, 45(4), 365–375. <https://doi.org/10.1108/00330331111182085>
- Mathiasson, M. H., & Jochumsen, H. (2019). Researching public library programs through Facebook events: a new research approach. *Journal of Documentation*, 75(4), 857–875. <https://doi.org/10.1108/JD-08-2018-0137>
- Moorthy, K., Chun T'ing, L., Ming, K. S., Ping, C. C., Ping, L. Y., Joe, L. Q., & Jie, W. Y. (2019). Behavioral Intention to Adopt Digital Library by the Undergraduates. *International Information and Library Review*, 51(2), 128–144. <https://doi.org/10.1080/10572317.2018.1463049>
- Moradi, S., Tayefeh Bagher, D., & Mirhosseini, Z. (2017). Designing a model for Web 2.0 technologies application in academic library websites. *Information and Learning Science*, 118(11–12), 596–617. <https://doi.org/10.1108/ILS-03-2017-0013>
- Muneja, P., Abungu, A., & Makori, E. (2012). Application of web 2.0 tools in delivering library services: a case of selected libraries in Tanzania. ... from 4-8th June 2012 Nairobi ..., (May). Retrieved from http://www.scecsal.viel.co.ke/images/e/e3/Application_of_Web_2.0_tools_in_Delivering_Library_Services-_A_Case_of_selected_Libraries_in_Tanzania.pdf
- Munshi, S. A., Mostafa, M. G., & Alam, M. M. (2018). Uses of social networking sites among postgraduate students at university of Rajshahi, Bangladesh: A study. *DESIDOC Journal of Library and Information Technology*, 38(1). <https://doi.org/10.14429/djlit.38.1.11466>

- Mwiinga, T. M., & Hamooya, C. (2016). An investigation on the usage of web 2.0 application for educational purposes among undergraduate students at the University of Zambia. In 22nd Standing Conference of Eastern, Central and Southern Africa Library and Information Associations (SCECSAL XXII) Held at Convention Centre, eZulwini, Swaziland from 25th to 29th April 2016 (pp. 185–192).
- Neal, D. R. (2012). *Social media for academics : a practical guide*. Chandos Publishing. Retrieved from <http://libgen.io/book/index.php?md5=BFC0F0238C791D8237F248DF1E6809A1>
- Negi, D. S. (2014). Using mobile technologies in libraries and information centers. *Library Hi Tech News*, 31(5), 14–16. <https://doi.org/10.1108/LHTN-05-2014-0034>
- New Veneer of Libraries: Library 2.0-Indian Journals. (n.d.). Retrieved October 2, 2020, from <https://www.indianjournals.com/ijor.aspx?target=ijor:pjolis&volume=11&issue=1&article=006>
- Nicholas, D., Watkinson, A., Rowlands, I., & Jubb, M. (2011). Social Media, Academic Research and the Role of University Libraries. *The Journal of Academic Librarianship*, 37(5), 373–375. <https://doi.org/10.1016/J.ACALIB.2011.06.023>
- Noh, Y. (2010). A Study on Developing Evaluation Criteria for Electronic Resources in Evaluation Indicators of Libraries. *Journal of Academic Librarianship*, 36(1), 41–52. <https://doi.org/10.1016/j.acalib.2009.11.005>
- Ogheneghatowho Oyovwe-Tinuoye, G., Ejemeh Krubu, D., Patrick Ijiekhuamhen, O., Oyovwe-Tinuoye, B., Ogheneghatowho, G., & Dorcas Krubu, K. (2017). Usage of Web 2.0 Tools by Academic Librarians: A case study of University Libraries in South-South Nigeria.
- Oyieke, L. I., & Dick, A. L. (2017, April 3). Empowering academic librarians for effective e-services: An assessment of Web 2.0 competency levels. *Electronic Library*. Emerald Publishing Limited. <https://doi.org/10.1108/EL-10-2015-0200>
- Pagaling, G. T., Espiritu, A. I., Dellosa, M. A. A., Leochico, C. F. D., & Pasco, P. M. D. (2022). The practice of teleneurology in the Philippines during the COVID-19 pandemic. *Neurological Sciences*, 43(2), 811–819. <https://doi.org/10.1007/S10072-021-05705-1>

- Palmer, S. (2014). Characterizing University Library Use of Social Media: A Case Study of Twitter and Facebook from Australia. *Journal of Academic Librarianship*, 40(6), 611–619. <https://doi.org/10.1016/j.acalib.2014.08.007>
- Paramjeet K. Walia, and M. G., & Gupta, M. (2004). Webology. *Webology* (Vol. 9). [publisher not identified]. Retrieved from <http://www.webology.org/2012/v9n2/a99.html>
- Patel, S. S., & Bhatt, A. (2019). The application of Web 2.0 tools in University Libraries of India. *Library Philosophy and Practice*, 2019. Retrieved from https://www.researchgate.net/publication/335856957_The_Application_of_Web_20_To_ols_in_University_Libraries_of_India
- Patil, Y. (2014). Web 2.0, Library 2.0 & Librarian 2.0. Retrieved from https://www.academia.edu/16858506/Web_2.0_Library_2.0_and_Librarian_2.0
- Peacemaker, B., Robinson, S., & Hurst, E. J. (2016). Connecting best practices in public relations to social media strategies for academic libraries. *College and Undergraduate Libraries*, 23(1). <https://doi.org/10.1080/10691316.2016.1134244>
- Peñaflores, J. (2018). Beyond “Likes”: An assessment of user engagement in Facebook among Philippine academic libraries. *Library Management*, 39(1–2), 59–65. <https://doi.org/10.1108/LM-12-2016-0100>
- Peruta, A., & Shields, A. B. (2018). Marketing your university on social media: a content analysis of Facebook post types and formats. *Journal of Marketing for Higher Education*, 28(2), 175–191. <https://doi.org/10.1080/08841241.2018.1442896>
- Phillips, M., Fosmire, M., Turner, L., Petersheim, K., & Lu, J. (2019). Comparing the Information Needs and Experiences of Undergraduate Students and Practicing Engineers. *Journal of Academic Librarianship*, 45(1), 39–49. <https://doi.org/10.1016/j.acalib.2018.12.004>
- Phillips, N. K. (2011). Academic Library Use of Facebook: Building Relationships with Students. *Journal of Academic Librarianship*, 37(6), 512–522. <https://doi.org/10.1016/j.acalib.2011.07.008>
- Polger, M. A., & Sich, D. (2019). Are they even following us?: Using market research data to understand students’ social media preferences. *Library Management*, 40(8–9), 503–517. <https://doi.org/10.1108/LM-06-2019-0031>

- Quadri, G. O., & Adebayo Idowu, O. (2016, April 2). Social Media Use by Librarians for Information Dissemination in Three Federal University Libraries in Southwest Nigeria. *Journal of Library and Information Services in Distance Learning*. Routledge. <https://doi.org/10.1080/1533290X.2016.1156597>
- Rahimi, B., Nadri, H., Afshar, H. L., & Timpka, T. (2018, July 1). A systematic review of the technology acceptance model in health informatics. *Applied Clinical Informatics*. Georg Thieme Verlag. <https://doi.org/10.1055/s-0038-1668091>
- Rama, R. K. (2017). A study of web 2 technology adoption by librarians working in academic colleges in maharashtra. University. Jhunjhunu. Retrieved from <http://shodhganga.inflibnet.ac.in/handle/10603/149642>
- Rana, R. (2017). New Veneer of Libraries: Library 2.0. *Pearl : A Journal of Library and Information Science*, 11(1), 38. <https://doi.org/10.5958/0975-6922.2017.00006.7>
- Retnani, W. E. Y., Prasetyo, B., Prayogi, Y. P., Nizar, M. A., & Abdul, R. M. (2018). Usability testing to evaluate the library's academic web site. In *Proceedings of the 2017 4th International Conference on Computer Applications and Information Processing Technology, CAIPT 2017 (Vol. 2018-January, pp. 1–4)*. Institute of Electrical and Electronics Engineers Inc. <https://doi.org/10.1109/CAIPT.2017.8320714>
- Rossmann, D., & Young, S. W. H. (2015). Social media optimization: making library content shareable and engaging. *Library Hi Tech*, 33(4). <https://doi.org/10.1108/LHT-05-2015-0053>
- Sahney, S., Benton, M. J., & Ferry, P. A. (2010). Links between global taxonomic diversity, ecological diversity and the expansion of vertebrates on land. *Biology Letters*, 6(4), 544–547. <https://doi.org/10.1098/rsbl.2009.1024>
- Sahu, M. K. (2016). Best practices of social media in academic libraries: A case study of selected engineering college libraries of Odisha. *DESIDOC Journal of Library and Information Technology*, 36(5), 302–308. <https://doi.org/10.14429/djlit.36.5.10445>
- Samadbeik, M., Garavand, A., Kordi, M., Abtin, A., & Asadi, H. (2020). Factors affecting the acceptance of mobile health by medical sciences students: A cross-sectional study. *Iranian Journal of Nursing and Midwifery Research*, 25(6), 476–481. https://doi.org/10.4103/IJNMR.IJNMR_49_19

- Santosh, S. (2017). Awareness, use and attitude of library professionals towards web 2.0 applications in central university libraries in India. *Annals of Library and Information Studies*, 64(3).
- Saunders, L., Severyn, J., & Caron, J. (2017). Don't they teach that in high school? Examining the high school to college information literacy gap. *Library and Information Science Research*, 39(4), 276–283. <https://doi.org/10.1016/j.lisr.2017.11.006>
- Sharp, J. H. (2006). Development, extension, and application: A review of the technology acceptance model. *Proceedings of the Information Systems Education Conference, ISECON*, 23(January 2007).
- Sriram, V. (2016). Social media and library marketing: Experiences of KN Raj library. *DESIDOC Journal of Library and Information Technology*, 36(3). <https://doi.org/10.14429/djlit.36.3.9810>
- Students opinion about the success of mobile technology in libraries: A case study of Jawaharlal Nehru University (JNU), New Delhi. (n.d.). Retrieved October 1, 2020, from https://www.researchgate.net/publication/280159724_Students_opinion_about_the_success_of_mobile_technology_in_libraries_A_case_study_of_Jawaharlal_Nehru_University_JNU_New_Delhi
- Stvilia, B., & Gibradze, L. (2014). What do academic libraries tweet about, and what makes a library tweet useful? *Library and Information Science Research*, 36(3–4), 136–141. <https://doi.org/10.1016/j.lisr.2014.07.001>
- Stvilia, B., & Gibradze, L. (2017). Examining Undergraduate Students' Priorities for Academic Library Services and Social Media Communication. *Journal of Academic Librarianship*, 43(3), 257–262. <https://doi.org/10.1016/j.acalib.2017.02.013>
- Taherdoost, H. (2018). A review of technology acceptance and adoption models and theories. *Procedia Manufacturing*, 22, 960–967. <https://doi.org/10.1016/j.promfg.2018.03.137>
- Talukder, M. (2012). Factors affecting the adoption of technological innovation by individual employees: An Australian study. *Procedia - Social and Behavioral Sciences*, 40, 52–57. <https://doi.org/10.1016/j.sbspro.2012.03.160>
- Tella, A., Oladapo, O. J., & Adeyinka Tella Oyegunle John Oladapo. (2014). A comparative analysis of available features and Web 2.0 tools on selected Nigerian and

South African university library websites Introduction. *The Electronic Library*, 34(3), 504–521. <https://doi.org/http://dx.doi.org/10.1108/MRR-09-2015-0216>

- The electronic library : the international journal for minicomputer, microcomputer, and software applications in libraries. (1983). *Learned Information*. <https://doi.org/10.1002/fld>
- The theory of planned behavior - ScienceDirect. (n.d.). Retrieved October 5, 2020, from <https://www.sciencedirect.com/science/article/abs/pii/074959789190020T?via%3Dihub>
- Thompson, T. (2014). Theory of Reasoned Action. In *Encyclopedia of Health Communication*. <https://doi.org/10.4135/9781483346427.n552>
- Ting, H., Yacob, Y., Liew, L., & Lau, W. M. (2016). Intention to Use Mobile Payment System: A Case of Developing Market by Ethnicity. *Procedia - Social and Behavioral Sciences*, 224(August 2015), 368–375. <https://doi.org/10.1016/j.sbspro.2016.05.390>
- Trivedi, D. M. (n.d.). Adoption of Social Networking Tools in Public University Libraries in Ghana. Retrieved from https://www.academia.edu/24935755/Adoption_of_Social_Networking_Tools_in_Public_University_Libraries_in_Ghana
- Trivedi, D. M. (n.d.). Contents of University Library websites of Central Universities of India: An analysis. Retrieved from https://www.academia.edu/16774615/Contents_of_University_Library_websites_of_Central_Universities_of_India_An_analysis
- Turan, A., Tunç, A. Ö., & Zehir, C. (2015). A Theoretical Model Proposal: Personal Innovativeness and User Involvement as Antecedents of Unified Theory of Acceptance and Use of Technology. *Procedia - Social and Behavioral Sciences*, 210, 43–51. <https://doi.org/10.1016/j.sbspro.2015.11.327>
- Tyagi, S. (2012). Adoption of Web 2.0 technology in higher education: A case study of universities in National Capital Region, India. *International Journal of Education and Development using Information and Communication Technology (IJEDICT)* (Vol. 8).
- Unified theory of acceptance and use of technology [Personality & TKMS series] | RealKM. (n.d.). Retrieved October 5, 2020, from <https://realkm.com/2016/08/30/unified-theory-of-acceptance-and-use-of-technology-personality-tkms-series/>

- Using the Unified Theory of Acceptance and Use of Technology model to analyze cloud-based mHealth service for primary care Khatun F, Palas MU, Ray PK - Digit Med. (n.d.). Retrieved May 1, 2022, from <https://www.digitmedicine.com/article.asp?issn=2226-8561;year=2017;volume=3;issue=2;spage=69;epage=75;aulast=Khatun>
- Vassilakaki, E., & Garoufallou, E. (2015). The impact of Twitter on libraries: a critical review of the literature. *Electronic Library*, 33(4). <https://doi.org/10.1108/EL-03-2014-0051>
- Venkatesh, V., & Davis, F. D. (2000). Theoretical extension of the Technology Acceptance Model: Four longitudinal field studies. *Management Science*, 46(2), 186–204. <https://doi.org/10.1287/mnsc.46.2.186.11926>
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*, 27(3), 425–478.
- Venkatesh, V., Thong, J. Y. L., & Xu, X. (2016). Unified theory of acceptance and use of technology: A synthesis and the road ahead. *Journal of the Association for Information Systems*, 17(5), 328–376. <https://doi.org/10.17705/1jais.00428>
- Venketesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). *arterly*, 27(3), 425–478.
- Villa-Lever, L. (2014). Reseña del libro El primer año universitario entre jóvenes provenientes de sectores de pobreza: un asunto de equidad, de Marisol Silva Laya y Adriana Rodríguez11Marisol Silva Laya y Adriana Rodríguez (2012), El primer año universitario entre jóvenes provenientes de sectores de pobreza: un asunto de equidad, México, anuies [Colección Biblioteca de la Educación Superior. Serie Investigaciones]. *Revista Iberoamericana de Educación Superior*, 5(13), 163–167. [https://doi.org/10.1016/s2007-2872\(14\)71960-2](https://doi.org/10.1016/s2007-2872(14)71960-2)
- Vinney, C. (2019). Social Cognitive Theory: Definition and Examples. Retrieved October 5, 2020, from <https://www.thoughtco.com/social-cognitive-theory-4174567>
- Vongjaturapat, S., Chaveesuk, S., Chotikakamthorn, N., & Tongkhambanchong, S. (2015). Analysis of Factor Influencing the Tablet Acceptance for Library Information Services: A Combination of UTAUT and TTF Model. *Journal of Information and Knowledge Management*, 14(3). <https://doi.org/10.1142/S0219649215500239>

- Wallace, A. R. (1866). Letter 5140 - Wallace, A. R. to Darwin, C. R., 2 July 1866 (Darwin Correspondence Project). Darwin Correspondence Project. Retrieved from <http://www.darwinproject.ac.uk/entry-5140#back-mark-5140.f5>
- Web 2.0 Integration in Information Literacy Instruction: An Overview - ScienceDirect. (n.d.). Retrieved October 1, 2020, from <https://www.sciencedirect.com/science/article/abs/pii/S009913330900202X>
- Web 2.0: Una mirada a la revolución de las redes sociales – Fernando Gutiérrez. (n.d.). Retrieved October 3, 2020, from <https://www.fergut.com/web-20-una-mirada-a-la-revolucion-de-las-redes-sociales/>
- Winn, D., Rivosecchi, M., Bjerke, J., & Groenendyk, M. (2017). MTL 2.0: A Report on the Social Media Usage and User Engagement of the “Big Four” Academic Libraries in Montréal. *Journal of Academic Librarianship*, 43(4), 297–304. <https://doi.org/10.1016/j.acalib.2017.04.006>
- Xu, C., Ouyang, F., & Chu, H. (2009). The Academic Library Meets Web 2.0: Applications and Implications. *The Journal of Academic Librarianship*, 35(4), 324–331. <https://doi.org/10.1016/J.ACALIB.2009.04.003>
- Xu, J., Kang, Q., Song, Z., & Clarke, C. P. (2015). Applications of Mobile Social Media: WeChat Among Academic Libraries in China. *Journal of Academic Librarianship*, 41(1), 21–30. <https://doi.org/10.1016/j.acalib.2014.10.012>
- Yoon, H. Y. (2016). User Acceptance of Mobile Library Applications in Academic Libraries: An Application of the Technology Acceptance Model. *Journal of Academic Librarianship*, 42(6), 687–693. <https://doi.org/10.1016/j.acalib.2016.08.003>
- Yoon, H.-Y. (2016). User Acceptance of Mobile Library Applications in Academic Libraries: An Application of the Technology Acceptance Model. *The Journal of Academic Librarianship*, 42(6), 687–693. <https://doi.org/https://doi.org/10.1016/j.acalib.2016.08.003>
- Yoon, H.-Y. Y. (2016). User Acceptance of Mobile Library Applications in Academic Libraries: An Application of the Technology Acceptance Model. *The Journal of Academic Librarianship*, 42(6), 687–693. <https://doi.org/https://doi.org/10.1016/j.acalib.2016.08.003>

- Young, S. W. H., & Rossmann, D. (2015). Building library community through social media. *Information Technology and Libraries*, 34(1), 20–37. <https://doi.org/10.6017/ital.v34i1.5625>
- Zahid, M., Rahman, H. U., Ullah, Z., & Muhammad, A. (2021). Sustainability and branchless banking: The development and validation of a distinct measurement scale. *Technology in Society*, 67. <https://doi.org/10.1016/J.TECHSOC.2021.101764>
- Zhang, M., Sheu, F. R., & Zhang, Y. (2018). Understanding Twitter use by major LIS professional organisations in the United States. *Journal of Information Science*, 44(2), 165–183. <https://doi.org/10.1177/0165551516687701>
- Zohoorian-Fooladi, N., & Abrizah, A. (2014). Academic librarians and their social media presence: A story of motivations and deterrents. *Information Development*, 30(2), 159–171. <https://doi.org/10.1177/0266666913481689>