



RESEARCH ARTICLE

Usage Analytics of Digital Resources in Technology Institutes in the United Arab Emirates (UAE)

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Abstract

Digital libraries, emerging in the information age, represent an inevitable direction in the evolution of library services. They encompass vast collections of digital resources across multiple media formats and offer diverse information services through advanced digital and network technologies. A significant portion of contemporary knowledge creation is now stored in digital formats. The primary objective of preserving digital documents is to ensure long-term accessibility while optimizing space and cost efficiency.

For this study, primary data were collected using structured interview schedules and personal interview techniques. Among various data collection tools, the questionnaire was identified as the most appropriate instrument for gathering user responses. Accordingly, a survey was conducted in the digital libraries of selected technology institutes in the United Arab Emirates (UAE) using questionnaires. The objectives of this study are to assess users' awareness of electronic library services, identify the types of internet facilities used by users, examine the awareness and applications of digital libraries, and analyze their advantages and limitations.

Keywords: Digital Library, E-resources, Academic Usage, Access, Awareness Level, Barriers, Infrastructure Challenges, User Satisfaction.

Introduction

The rapid advancement of information and communication technologies (ICTs) is transforming everyday life by enabling seamless access to information. This transformation is clearly reflected in libraries and their routine operations. In academic institutions worldwide, librarianship has become increasingly challenging, requiring continuous training and the development of new skill sets aligned with evolving ICT environments.

In the context of digital libraries, academic librarians must possess the competencies needed to operate effectively in dynamic workplaces where technologies and user expectations are constantly changing. The fast pace of technological innovation demands the ongoing acquisition of new skills and approaches to manage information and related services efficiently. Shifting user perspectives and emerging technologies have compelled library and information science professionals to enhance their knowledge, develop new competencies, and adapt to modern environments, thereby avoiding obsolescence.

Today, the concept of the "library without walls" has become a reality due to the impact of ICT, which has significantly reduced the physical constraints of traditional libraries. Digitization has brought profound changes, with digital and electronic resources increasingly replacing paper-based collections. As a result, many traditional libraries are evolving into hybrid libraries, integrating both print and digital resources as they continue the process of digitization.

Need and Significance of the Study

The faculty members are needed for continuous development and research activities are required by the Digital Library. It is the learning and studying after use of the teaching of the students and self-development of new skills in the digital environment. The faculty members

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use the Information and Communication Technology development of the online resources of various electronic books, electronic journals, electronic magazines, Electronic Theses and others etc.

The Scope of the Study

The study explains to cover in Professor, Associate Professor and Assistant Professor of technology institutes in UAE. It focuses on Faculty members effective use of Digital Library. The scope and coverage of the present study are only to **23 institutes** faculty members, which are situated in UAE including all 7 emirates in the country.

Statement of the Problem

Today Faculty members require not only adequate technological ability and Teaching skills, but also skills like online resources using digital library, searching and using online research skills, ethics and interpersonal relationship. In which they take part. Technology Institute libraries have now a new responsibility to provide opportunities to every teaching and learning activity, use of the digital library to acquire these abilities of access and usage in addition to their technological knowledge. The faculty members are important components in imparting effective engineering education to them. The library professionals should arrange digital library access of information handling skills. The access usage and handling the Digital library have become an essential for the Faculty Members. Libraries are coming to use the new technology of ICT using the digital library. The library automation in the digital libraries, an attitude of the faculty members towards newly emerged concepts of different types of searching and access the effectiveness of the library.

Review of Literature

Amjid Khan, & Asad Khan, (2016) investigated a study on "E-books usage by agricultural, engineering, and social science students in selected universities of Pakistan: an empirical assessment." This empirical study of e-book usage in Pakistani universities was undertaken to: (i) compare the usage patterns of e-books among the students of social, agricultural, and engineering sciences; (ii) demonstrate how e-books are used by students for various purposes; (iii) explore the main reasons for using e-books; and (iv) uncover the major issues being encountered by students while using e-books

Shreedhar (2016) investigate a study on "Use of E-Journals by Bio-Science Students at Kuvempu University: A Study." The present study examined the use of e-journals by the Bio-Science students of Kuvempu University. A questionnaire was prepared to draw opinions from the users of e-journals. The responses were gathered from 100 users.

The survey results provided information about e-journals usage, purpose of use, benefits of using e-journals, influence

of e-journals on individual academic efficiency, views regarding the unique features of e-journals, and problems faced by the users while accessing e-journals.

Murugan (2015) surveyed on "Application of E-Resources by Faculty and Students of Worldwide College of Engineering and Technology, Vallioor, Tamil Nadu: A Study." This article presents the study of e-resources users by Universal College of Engineering and Technology Faculty and Students in Vallioor, Tamil Nadu region. Survey method questionnaire tool were adopted together data for the study. Among the 80 respondents, 62.50 percent of students and 37.50 % of faculty members were assessing E-resources. It is concluded that 14(54.00%) respondents E-journals are using faculty, 16(50.00%) are using students.

Nazir (2015) carried out a study on "Usage and Acceptability of E-Resources by the Research Scholars and Students of the University of Kashmir in Science & Social Science Faculties: a Case Study". The study was an attempt to determine the use and satisfaction level with respect to the electronic resources provided by the University of Kashmir to its users. A total of 200 questionnaires were distributed to collect the primary data from full time Research Scholars (M.Phil/Ph.D) and post graduate Students of Science and Social Science Faculties, university of Kashmir. The findings reveal that Lack of awareness regarding different types of e-resources and Lack of library assistance are the major cause behind low usage of e-resources. The result shows that users of science faculty use e-resources adeptly than Users of social science faculty.

Ekta (2014) investigated a study on "Process of E-Resources by Faculty Members and Research Scholars in Indian Institute of Technology, Kanpur." The purpose of this paper is to what problems faced by the users, their level of satisfaction with the collection of library and trace out the characteristics for using the e-resources in the library of IIT, Kanpur. To fulfill the objectives of the study questionnaire and interview method was used to check users attitude for e-resources, data was collected directly from the users of the library both by the faculty members and research scholars. Study deduces that all the respondents are well aware about e-resources.

Research Methodology

Research design (or) methodology of research includes the need for study, objectives, methodology, study area, and data collection.

Research Design

Research design in purely and simply the frame working plan for a study that guides the collection and analysis of data. The function of a research design is to ensure that the required data is collected accurately and economically. Research design is the logical and systematic plan to carry out research. It is a flexible one, minor alterations may be made depending upon the need.

LIST OF ACADEMIC INSTITUTIONS

S. No.	Institution Name	Location	Key Engineering / Technology Areas
1	Khalifa University	Abu Dhabi	Aerospace, Mechanical, Electrical, AI, Petroleum
2	United Arab Emirates University	Al Ain	Civil, Chemical, Electrical, Computer
3	Abu Dhabi University	Abu Dhabi / Al Ain	Civil, Mechanical, IT, Software Engineering
4	New York University Abu Dhabi	Abu Dhabi	Engineering Science, Computer Science
5	Higher Colleges of Technology	Abu Dhabi	Applied Engineering, Industrial Technology
6	Al Ain University	Al Ain	Software, Computer Engineering
7	University of Wollongong in Dubai	Dubai	Electrical, Telecom, Computer Engineering
8	Heriot-Watt University Dubai	Dubai	Civil, Mechanical, Energy Engineering
9	BITS Pilani Dubai Campus	Dubai	Mechanical, Electrical, Computer Science
10	Amity University Dubai	Dubai	Civil, Aerospace, Robotics
11	Canadian University Dubai	Dubai	Mechatronics, IT, Software Engineering
12	University of Dubai	Dubai	Engineering, IT, Business Technology
13	Emirates Aviation University	Dubai	Aerospace, Aircraft Engineering
14	Middlesex University Dubai	Dubai	IT, Data Science, Engineering Mgmt
15	American University of Sharjah	Sharjah	Civil, Chemical, Electrical, Mechanical
16	University of Sharjah	Sharjah	Industrial, Sustainable, Civil Engineering
17	Skyline University College	Sharjah	IT, Computing
18	Westford University College	Sharjah	Engineering Management
19	Ajman University	Ajman	Civil, Electrical, IT, AI
20	American University of Ras Al Khaimah	RAK	Civil, Mechanical, Electrical
21	University of Bolton Ras Al Khaimah	RAK	Engineering Management
22	University of Fujairah	Fujairah	IT, Computer Science
23	Higher Colleges of Technology Fujairah	Fujairah	Applied Engineering Technology

Objectives

The objectives of the present task have been stated below:

- To examine the diverse sources utilized in digital libraries.
- To determine the objectives of digital libraries.
- To analyze the purpose of information acquisition through digital libraries.
- To assess users' awareness of electronic library services.
- To identify the types of internet facilities used by users.
- To evaluate the level of awareness and usage of digital library applications.
- To analyze the advantages and limitations of digital libraries.

Hypotheses

- There is an association between digital library collection on the basis of their user opinion.
- There is an association between frequent digital library collection on the basis of their user opinion.
- There is an association between arrangement of reading material in the digital library on the basis of their user opinion.

- There is an association between satisfaction of the digital library environment on the basis of their user opinion.
- There is a significant difference regarding the user's awareness of digital library on the basis of age.
- There is a significant difference in the user's awareness digital library on the basis of educational qualification.
- There is a significant difference regarding the user's awareness digital library on the basis of place of residence.

Statement of the Problem

The main aim of the study is to know the users' awareness about digital libraries, and also to know the user's information gathering pattern by using various sources digital library. The result of the present study will be helpful to the librarians in updating their digital libraries related to the latest technology.

Method of Data Collection

A survey method was conducted in digital library through questionnaires, and 650 samples were collected from those users who have been attentively using the libraries.

Study Area

To analyze awareness of digital libraries of the users, the libraries situated in technology institutes in UAE have been taken as a study area. Only the users who are aware of digital libraries are taken into consideration for the present study.

Statistical Tools

After collecting the data from the respondents, the data were checked and analyzed according to the objectives and hypotheses stated already. Each data recorded on the data sheets was fed into the computer personally. The data had been tested with the statistical tool of simple statistics such as Percentage analysis, ONE-WAY ANOVA, Correlation, t-test and chi-square test for this study.

Analysis and Interpretation

The investigator as used survey method by distributing the questionnaire and collecting the filled questionnaire from the Respondents. The data collected through questionnaire is tabulated and represented in the form of tables and diagrams. The result is tested through Research tools like percentage Analysis, Chi-quire, and one way of ANOVA. These are processed scientifically and tabulated as to the variables of the study.

Table 1 shows the details about the distribution of the respondents based on gender. 43.1 percent of the respondents are male, and 56.9 percent of the respondents are female. So, most of them are female respondents.

The Table 2 reveals that the details about the distribution of the respondents based on age. 70 percent of the respondents are Up to 25 years of age group, 24.2 percent of them 26-35 years of age group and 5.8 percent of the respondents are 36-45 years of age group. So, the highest number up to 25 years of age group respondents.

Table 3 reveals that the details about the distribution of the respondents are based on academic status. 45.7 percent of the respondents are students and 54.3 percent of the respondents are faculty members. So, the majority of the respondents are faculty members.

Table 4 reveals that the details about the distribution of the respondents are based on experience. 54.5 percent of the respondents are below 5 years, 26.5 percent of them 5 to 10 years, 14.5percent of them 10 to 15 years and 4.6 percent of the respondents are above 15 years. So, the majority of the respondents are under 5 years' experience.

The Table 5 shows the details about the users visiting the digital library. It is inferred from the table that 61.5% of

Table 2: Distribution of the Respondents based on Age

Age	Number	Percentage
Up to 25	455	70.0
26 – 35	157	24.2
36 – 45	38	5.8
Total	650	100.0

Table 3: Distribution of the Respondents based on Academic status

Academic status	Number	Percentage
Students	297	45.7
Faculty member	353	54.3
Total	650	100.0

Table 4: Distribution of the Respondents based on Experience

Experience	Number	Percentage
Below 5	354	54.5
5 to 10	172	26.5
10 to 15	94	14.5
Above 15	30	4.6
Total	650	100.0

Table 5: Opinion about visiting the digital library

Visit the Digital Library	Number	Percentage
Daily	400	61.5
Twice a week	104	16.0
Once a week	90	13.8
Once in a fortnight	28	4.3
Once a month	21	3.2
Occasionally	7	1.1
Total	650	100.0

the users visit the digital library daily, 16.0% of them visit the digital library twice a week, 13.8% of them visit the digital library once in a week, 4.3% of them visit the digital library once in a fortnight, 3.2% of them visit the digital library once in a month and 1.1% of them visit the digital library occasionally. Therefore, majority of users visit the digital library daily.

The Table 6 shows the details about the user's purpose visit the digital library. It is inferred from the table that 36.9% of the users visit the to use borrow book, 8.3% of them visit the reference material, 14.2% of them visit the consult periodicals, 10.2% of them visit the bibliographic information, 4.6% of them visit the current information, 23.1% of them visit the statistical information and 2.7% of them visit the recreation purpose. Therefore, majority of the users visit the digital library research-oriented work.

Table 1: Distribution of Respondents based on Gender

Gender	Number	Percentage
Male	280	43.1
Female	370	56.9
Total	650	100.0

Table 6: Opinion about purpose of visiting the digital library

<i>Purpose</i>	<i>Number</i>	<i>Percentage</i>
To use e-book	240	36.9
To consult reference material	54	8.3
To consult periodical	92	14.2
To get bibliographic information	66	10.2
To get current information	30	4.6
To get statistical information	150	23.1
To recreation purpose	18	2.7
Total	650	100.0

It is seen from the Table 7 that 8.1% of the users spend 30 minutes gathering information, 60.5% of them spend less than 1 hour, 19.7% of them spend two hours and 11.7% of them spend three hours. Therefore, majority of the users spend more than 1 hour gathering information.

The Table 8 reveals that the details about the distribution of the respondents based on purpose of gathering information. 20.5 percent of the respondents are for writing seminar/conference paper, 24.6% of them are for doing research, 8.2% of the respondents are for writing journals articles, 11.7 percent of them for taking classes, 3.4% of them for writing books, 29.2 percent of the respondents are examination and 2.4 percent of them general purpose.

The Table 9 shows the details about the user's certain time visit the digital library. It is inferred from the table that 57.5% of the users visit the morning time (before starting the classes), 12.3% of them visit the evening (after classes are

Table 7: Opinion about the Time to spend for digital library for gathering information

<i>Time</i>	<i>Number</i>	<i>Percentage</i>
30 Minutes	53	8.1
One hour	393	60.5
Two hours	128	19.7
Three hours	76	11.7
Total	650	100.0

Table 8: Opinion about purpose of gathering information

<i>Purpose</i>	<i>Number</i>	<i>Percentage</i>
For writing seminar/ conference papers	133	20.5
For doing research	160	24.6
For writing journals articles	53	8.2
For taking classes	76	11.7
For writing books	22	3.4
For examination	190	29.2
General purpose	16	2.4
Total	650	100.0

Table 9: Opinion about certain times visit the digital library

<i>Time</i>	<i>Number</i>	<i>Percentage</i>
Morning (Before starting the classes)	374	57.5
Evening (After classes are over)	80	12.3
Lunch hours	170	26.2
Class hours	26	4.0
Total	650	100.0

Table 10: Opinion about extent requirement the digital library

<i>Opinion</i>	<i>Number</i>	<i>Percentage</i>
Excellent	402	61.8
Adequate	113	17.4
Fair	80	12.3
Inadequate	40	6.2
Poor	15	2.3
Total	650	100.0

over), 26.2% of them visit the lunch hours and 4% of them visit the class hours. Therefore, majority of the users visit the digital library morning time before starting the classes.

It is seen from the Table 10 that 61.8% of the users say excellent, 17.4% of them say adequate, 12.3% of them say fair, 6.2% of them say inadequate and 2.3% of them say poor about extent requirement the digital library. Therefore, majority of the users are satisfied with the extent required by the digital library.

Table 11 shows the details about the distribution of the respondents based on search materials in digital libraries. 65.7 percent of the respondents are book number wise, 26 percent of them subject wise and 8.3 percent of the respondents are author wise. So, most of them are book number wise respondents.

Table 12: reveals that the details about the respondents satisfied with digital library services. 76.2 percent of the respondents are satisfied, and 23.8 percent of the respondents are not satisfied in the digital library services.

Table 11: Search materials in digital library

<i>Search</i>	<i>Number</i>	<i>Percentage</i>
Book number wise	427	65.7
Subject wise	169	26.0
Author wise	54	8.3
Total	650	100.0

Table 12: Respondents satisfied with digital library services

<i>Opinion</i>	<i>Number</i>	<i>Percentage</i>
Yes	495	76.2
No	155	23.8
Total	650	100.0

Table 13 reveals that the details about the user's opinion on digital library. 60.3 percent of the respondents are satisfied, 27.2 percent of them highly satisfied, 6.6 percent of them neutral, 4.3 percent of them dissatisfied and 1.5 percent of them highly dissatisfied.

Table 14 reveals that the details about the Users satisfied about a greater number of journals, articles and periodicals available in the digital library. 96 percent of the respondents are satisfied, and 4 percent of the respondents are not satisfied.

Table 15 reveals that the details about the user's opinion on providing the high-speed internet facility. 61.7 percent of the respondents are satisfied, 27.5 percent of them highly satisfied, 7.2 percent of them neutral, 2.3 percent of them dissatisfied and 1.3 percent of them highly dissatisfied.

The Table 16 shows the details about the Problem in Using the Digital Library. It is inferred from the table that 60% of the users visit the inadequate knowledge, 13.5% of them visit the proper attitude of digital library, 21.4% of them visit the inadequate operate the computer skills and 5.1% of them visit the insufficient of the time.

Table 17 shows the details about the distribution of the respondents based on staff helpfulness. 59.1 percent of the respondents are opening hours, 19.8 percent of the

Table 13: Users' opinion about the digital library

<i>Opinion</i>	<i>Number</i>	<i>Percentage</i>
Satisfied	392	60.3
Highly Satisfied	177	27.2
Neutral	43	6.6
Dissatisfied	28	4.3
Highly Dissatisfied	10	1.5
Total	650	100.0

Table 14: Users satisfied with a greater number of journals, articles and periodicals available in the digital library

<i>Opinion</i>	<i>Number</i>	<i>Percentage</i>
Yes	624	96.0
No	26	4.0
Total	650	100.0

Table 15: Users opinion about providing the high-Speed Internet facility

<i>Opinion</i>	<i>Number</i>	<i>Percentage</i>
Satisfied	401	61.7
Highly Satisfied	179	27.5
Neutral	47	7.2
Dissatisfied	15	2.3
Highly Dissatisfied	8	1.3
Total	650	100.0

Table 16: Mention the Problem in Using the Digital Library

<i>Time</i>	<i>Number</i>	<i>Percentage</i>
Inadequate Knowledge	390	60.0
Proper Attitude of Digital Library	88	13.5
Inadequate operate the computer skills	139	21.4
Insufficient of the time	33	5.1
Total	650	100.0

Table 17: Distribution of the respondents based on Staff helpfulness

<i>Opinion</i>	<i>Number</i>	<i>Percentage</i>
Opening hours	384	59.1
Day time	129	19.8
Evening	74	11.4
Weekend	63	9.7
Total	650	100.0

respondents are daytime, 11.4 percent of them evening and 9.7 percent of the respondents are at the weekend.

Table 18 shows the details about the distribution of the respondents based on arrangement of reading material in the digital library. 56.9 percent of the respondents are textbook in CD, 13.5 percent of them periodical/journal CD, 10.9 percent of them general book CD and 18.6 percent of the respondents are reference books CD.

The Table 19 shows that the calculated t-value (8.15) which is significant proves that there is a significant difference regarding the user's awareness of digital library on the basis of gender. So, the stated hypothesis is accepted.

The Table 20 shows that the calculated F-value (4.96), which is significant proves that there is a significant difference regarding the user's awareness of digital library on the basis of age. So, the stated hypothesis is accepted. Therefore, young age groups are highly awareness of digital libraries.

Table 18: Arrangement of reading material in the digital library

<i>Arrangement</i>	<i>Number</i>	<i>Percentage</i>
Textbook in CD	370	56.9
Periodical/Journals CD	88	13.5
General books CD	71	10.9
Reference books CD	121	18.6
Total	650	100.0

Table 19: showing the t-test for user's attitude of digital library on the basis of gender

<i>Gender</i>	<i>Number</i>	<i>Mean</i>	<i>SD</i>	<i>t-value</i>	<i>LS</i>
Male	280	18.9	5.63	8.15	0.001 S
Female	370	24.7	6.87		

Table 20: Showing One-way ANOVA for users' attitude of digital library on the basis of Age

Age	Number	Mean	SD	F-value	LS
Up to 25	455	78.55	7.96	4.96	0.01
26 – 35	157	72.39	4.69		
36 – 45	38	72.14	5.96		

Table 21: Showing One-way ANOVA users attitude digital library on the basis of experience

Experience	Number	Mean	SD	F-value	LS
Below 5	354	77.45	7.31	3.24	0.01
5 to 10	172	72.46	4.65		
10 to 15	94	74.21	6.41		
Above 15	30	75.55	7.22		

Table 21: Respondents satisfied with digital library services

Opinion	Number	Mean	SD	t-value	LS
Yes	495	23.6	2.64	8.47	0.01
No	155	18.4	2.75		

Table 22: Users' opinion about the digital library

Opinion	N	Mean	SD	F-value	LS
Satisfied	392	36.9	12.7	34.1	0.01
Highly Satisfied	177	27.5	8.96		
Neutral	43	5.78	1.54		
Dissatisfied	28	4.15	1.88		
Highly Dissatisfied	10	3.16	1.31		

The Table 21 shows that the calculated F-value (3.24) which is significant proves that there is a significant difference regarding the user's awareness digital library on the basis of experience. So it is concluded that under 5 years' experience

Table 23: Users are satisfied with the greater number of journals, articles and periodicals available in the digital library.

Opinion	Number	Mean	SD	t-value	LS
Yes	624	39.8	14.5	24.6	0.01
No	26	12.7	5.30		

Table 24: Users' opinion about providing the high-Speed Internet facility

Opinion	Number	Mean	SD	F-value	LS
Satisfied	401	27.8	12.6	36.1	0.01
Highly Satisfied	179	10.3	4.10		
Neutral	47	5.17	2.03		
Dissatisfied	15	3.60	1.07		
Highly Dissatisfied	8	1.24	0.64		

Table 25: Opinion about extent requirement the digital library

Opinion	Number	Mean	SD	F-value	LS
Excellent	402	28.2	8.15	20.9	0.01
Adequate	113	13.4	4.11		
Fair	80	8.19	3.16		
Inadequate	40	5.60	2.19		
Poor	15	3.16	1.42		

Table 26: Opinion about the Time to spend on digital library for gathering information

Time	Number	Mean	SD	F-value	LS
30 Minutes	53	7.43	2.20	22.6	0.01
One hour	393	16.7	4.14		
Two hours	128	12.3	3.25		
Three hours	76	8.74	2.10		

group have high level of awareness digital library than the other groups.

The Table 21 shows that the calculated t-value (8.47) which is significant proves that there is a significant

Table 27: Showing the Chi-square for digital library services on the basis of user's opinion.

Services	Very Satisfied	Satisfied	Un satisfied	Very un-satisfied	No opinion	Total
Circulation service	348	169	76	37	20	650
Reference service	369	212	42	12	15	650
Periodical section	280	228	78	44	20	650
Library instruction/ guidance	436	133	61	8	12	650
Loan periods	370	172	60	26	22	650
Reservation facility	338	169	75	34	34	650
Inter library loan service	346	136	87	35	46	650
Current attitude service	382	116	69	47	36	650
Induction course	333	179	57	40	41	650
Calculated Chi-square Value		Degrees of freedom		Level of Significance		
59.12		32		0.01		

Table 28: Showing the Chi-square for staff helpfulness on the basis of user's opinion.

<i>Staff helpfulness</i>	<i>Very Satisfied</i>	<i>Helpful</i>	<i>Neutral</i>	<i>Unhelpful</i>	<i>Very Unhelpful</i>	<i>Total</i>
Opening hours	366	176	68	25	15	650
Day time	435	134	47	22	12	650
Evening	352	188	84	21	5	650
Weekend	322	179	71	59	19	650
Calculated Chi-square Value			Degrees of freedom		Level of Significance	
29.89			12		0.01	

Table 29: Showing the Chi-square for digital library collection on the basis of user's opinion.

<i>Sources</i>	<i>Very Satisfied</i>	<i>Satisfied</i>	<i>Un satisfied</i>	<i>Very un-satisfied</i>	<i>No opinion</i>	<i>Total</i>
CDs collection	394	135	62	51	8	650
Periodical	287	236	89	20	18	650
Reference books	402	176	50	17	5	650
Stock coverage	412	200	17	11	10	650
Bound journals	352	218	36	19	25	650
Newspapers CD	387	173	41	39	10	650
Stock currently	355	170	77	35	13	650
Archives and special collection	340	140	111	35	24	650
Video/Tape/Slides	399	160	58	26	7	650
Maps	297	243	53	45	12	650
Calculated Chi-square Value			Degrees of freedom		Level of Significance	
91.26			36		0.01	

Table 30: Showing the Chi-square for frequent digital library collection on the basis of user's opinion

<i>Services</i>	<i>Daily</i>	<i>Twice a week</i>	<i>Weekly</i>	<i>Occasionally</i>	<i>Total</i>
E-Books	351	118	163	18	650
Newspapers	298	122	205	25	650
Reference books	379	130	110	31	650
Periodicals	331	199	86	34	650
Journals	302	192	127	29	650
Video/Tape/slides	329	174	119	28	650
Map	335	160	138	17	650
Calculated Chi-square Value		Degrees of freedom		Level of Significance	
75.16		18		0.01	

difference regarding the respondents satisfied with digital library services. So, it is concluded that satisfied groups have high level digital library services.

The Table 22 shows that the calculated F-value (34.1) which is significant proves that there is a significant difference in user's opinion about the digital library.

The Table 23 shows that the calculated t-value (24.6) which is significant proves that there is a significant difference in users satisfied with a greater number of journals, articles and periodicals available in the digital library.

Result shows Table 24 that the calculated F-value (36.1), which is significant proves that there is a significant difference in Users opinion about providing the high-speed Internet facility.

Result shows Table 25 that the calculated F-value (20.9) which is significant proves that there is a significant difference in Opinion about extent requirement the digital library.

The above reveals exhibits that that the calculated F-value (22.6) which is significant proves that there is a significant difference in opinion about the Time to spend for digital library for gathering information.

Table 31: Showing Chi-square for arrangement of reading material in the digital library on the basis of user's opinion

<i>Services</i>	<i>Fully satisfied</i>	<i>Partially Satisfied</i>	<i>Not Satisfied</i>	<i>Total</i>
E-Books	352	228	70	650
Newspapers	367	223	60	650
Reference books	343	237	70	650
Periodicals	371	214	65	650
Journals	337	241	72	650
Video/Tape/slides	359	231	60	650
Map	332	248	70	650
Calculated Chi-square Value	Degrees of freedom		Level of Significance	
45.12	12		0.01	

Table 32: Reading materials in the digital library

<i>Arrangement</i>	<i>Fully Satisfied</i>	<i>Partially satisfied</i>	<i>Not satisfied</i>	<i>Total</i>
Textbook in CD	378	169	103	650
Periodical/Journals CD	386	186	78	650
General books CD	451	167	32	650
Reference books CD	427	170	53	650
Calculated Chi-square Value	Degrees of freedom		Level of Significance	
64.3	8		0.01	

Table 33: Showing the Chi-square for satisfaction of the digital library environment on the basis of user's opinion

<i>Services</i>	<i>Fully satisfied</i>	<i>Partially Satisfied</i>	<i>Not Satisfied</i>	<i>Total</i>
High speed Internet	309	269	72	650
Cleanliness	321	249	80	650
Lighting	370	220	60	650
Noise level	333	241	76	650
Temperature	329	247	74	650
Furniture & Equipment	371	221	58	650
Hours of operation	347	223	80	650
Availability of seating	321	244	85	650
Copy machines	356	234	60	650
Availability of PC workstations	349	244	57	650
Computer printers	358	232	60	650
Drinking water	385	210	55	650
CDs facilities	307	253	90	650
Calculated Chi-square Value	Degrees of freedom		Level of Significance	
212.45	24		0.01	

The result indicates that the calculated chi-square value (59.12), which is significant at 0.01 level. Hence the stated hypothesis is accepted. So, it is concluded that there is an association between opinion digital library services on the basis of their user opinion.

The result indicates that the calculated chi-square value (29.89), which is significant at 0.01 level. Hence the stated

hypothesis is accepted. So, it is concluded that there is an association between staff helpfulness on the basis of their user opinion.

The result inferred that the calculated chi-square value (91.26), which is significant at 0.01 level. Hence the stated hypothesis is accepted. So, it is concluded that there is an association between digital library collections on the basis of their user opinion.

The result inferred that the calculated chi-square value (75.16), which is significant at 0.01 level. Hence the stated hypothesis is accepted. So, it is concluded that there is an association between frequent digital library collections on the basis of their user opinion.

The result inferred that the calculated chi-square value (45.12), which is significant at 0.01 level. Hence the stated hypothesis is accepted. So, it is concluded that there is an association between arrangements of reading material in the digital library on the basis of their user opinion.

The result inferred that the calculated chi-square value (64.3), which is significant at 0.01 level. Hence the stated hypothesis is accepted. So, it is concluded that there is an association between Reading materials in the digital library.

The result inferred that the calculated chi-square value (212.45), which is significant at 0.01 level. Hence the stated hypothesis is accepted. So, it is concluded that there is an association between satisfactions of the digital library environment on the basis of their user opinion.

Conclusion

The Analysis is based on the objectives of the study identified and the hypotheses were tested by applying various statistical tools and interpretation is provided accordingly the summary, findings, and conclusion of the study it's also present the suggestion and recommendation and avenues for further Research.

Findings, Suggestions And Conclusion

In the previous chapter the data were presented in tabular forms and results were interpreted with the help of statistical techniques. This chapter provides an overall summary of discussion of the findings and conclusions. The limitations of the present study and some suggestions for further research are also furnished.

Findings

- Result shows the details about the distribution of the respondents based on gender. 43.1 percent of the respondents are male, and 56.9 percent of the respondents are female. So, most of them are female respondents.
- Majority of the respondents have under 5 years' experience.
- Result shows that the details about the Users satisfied about a greater number of journals, articles and periodicals available in the digital library. 96 percent of the respondents are satisfied, and 4 percent of the respondents are not satisfied.
- Analysis proved that 61.8% of the users say excellent, 17.4% of them say adequate, 12.3% of them say fair, 6.2% of them say inadequate and 2.3% of them say poor about extent requirement the digital library.
- It is observed that 8.1% of the users spend 30 minutes gathering information, 60.5% of them spend less than

1 hour, 19.7% of them spend two hours and 11.7% of them spend three hours.

- The result inferred that 57.5% of the users visit the morning time (before starting the classes), 12.3% of them visit the evening (after classes are over), 26.2% of them visit the lunch hours and 4% of them visit the class hours.
- Survey exhibits that 60% of the users visit the inadequate knowledge, 13.5% of them visit the proper attitude of digital library, 21.4% of them visit the inadequate operate the computer skills and 5.1% of them visit the insufficient of the time.
- The statistical result shows that 61.5% of the users visit the digital library daily, 16.0% of them visit the digital library twice a week, 13.8% of them visit the digital library once in a week, 4.3% of them visit the digital library once in a fortnight, 3.2% of them visit the digital library once in a month and 1.1% of them visit the digital library occasionally.
- It is inferred that 36.9% of the users visit the library to borrow books, 8.3% of them visit the reference material, 14.2% of them visit the consulting periodicals, 10.2% of them visit the bibliographic information, 4.6% of them visit the current information, 23.1% of them visit the statistical information and 2.7% of them visit the recreation purpose.
- Results inferred that there is an association between digital library services on the basis of their user opinion.
- Results show that there is an association between staff helpfulness on the basis of their user opinion.
- Result inferred that there is an association between digital library collections on the basis of their user opinion.
- Result exhibits that there is an association between frequent digital library collection on the basis of their user opinion.
- Result shows that there is an association between arrangements of reading material in the digital library on the basis of their user opinion.
- Result shows that there is an association between satisfactions of the digital library environment on the basis of their user opinion.
- Result shows that there is a significant difference regarding the user's awareness of digital library on the basis of gender.
- Result shows that there is a significant difference regarding the user's awareness of digital library on the basis of age.
- Result shows that there is a significant difference regarding the user's awareness digital library on the basis of experience.

Suggestions

Suggestions, opinions and recommendations expressed by the respondents are listed below.

- Digital Library is a great source for the students and teachers to enrich their knowledge.

- To increase the availability of international journal CDs and Foreign periodicals CDs subscription.
- The digital library should procure new edition of current documents.
- Most of the students have demanded video display on recent development.
- Inter digital library loan facilities should be improved wisely.
- Internet facilities should be provided to user community to enrich their knowledge.
- The college should introduce user education programs for digital libraries to all the students.
- Separate digital library hours should be allotted in timetables for students.
- Library Staff members create awareness of Digital libraries for the student.

Conclusion

The research aimed to know the Access usage and design of digital libraries in UAE technology institutes. The sample selected for the study is 650. They are selected randomly. After selecting the sample, the questionnaires were distributed. The data were collected through questionnaire method. Further, they were coded framed. To test the hypothesis, statistical tools such as Percentage analysis, Chi-square test, One-way ANOVA and Independent sample t-test were used. After analyzing the data, the result found that, majority of them were aware of digital library. The result found majority of the faculties utilized digital libraries effectively. They spend at least one hour per day in digital library. They are also satisfied with the overall performance of the digital library. But they need to extend the digital library working hours.

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