USE OF MOBILE APPS BY THE ENGINEERING COLLEGE FACULTY AND STUDENTS IN HYDERABAD: TELANGANA

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Abstract:

The study provides an insight on use of mobile apps by the Engineering College Faculty and Students in Hyderabad. The Purpose of the study was to investigate use and usage pattern of smart phones among Engineering College Faculty and Students. This study contributes to the body of knowledge by providing rich understanding of Technological Development of Mobile Generations smart phone usage which has been insufficiently described in the previous similar studies.

The study reveals that majority of the respondents74% (167) out of 225 respondent's access Mobile Apps for more than 2-4 hours in a day. 89% of Respondents are used Mobile Apps to search information and 33% of respondents are used Mobiles Apps to access e-books. 27.56 % of respondents used National Programme for Technology Enhanced Learning for their Academic Purpose and the most frequently used Mobile Apps was IEEE Mobile App and Science Direct Mobile App. 32% of Respondents cited Accessibility and Convenience was the main reasons for utilising Library Mobile Apps.

Key Words: Mobile Technology, Smart Phones, Mobile Generation, Mobile App Usage, Smart Phones usage Pattern.

Introduction:

Mobile Information Retrieval enables the user to access the desired information anywhere at any time. Mobile Communication First Generation (1G) started in the year 1980 using Wireless Analogue Cellular Technology. Second Generation (2G) Global System for Mobile Communication used Packet Switching instead of Analogue Signals for Time Division Multiple Access at Finland in 1991.It Supports SMS, MMS, and better-quality voice calls. 2.5G is an extension to GSM by using General Packet Radio Service technology, Code Division Multiple Access (CDMA), which supports mobile data to work more efficiently. 2.75G technology, which debuted in 2003,

increased the data rate for GSM evolution, supported camera phones, enabled e-mail transmission, and improved data transfer and voice quality.3G Mobile Technology is a Wireless Mobile Telecommunication Technology supports faster data transfer and better voice quality developed in Japan in 2001.It provides GPS (Global Positioning System), Video Conference calls, Surfing the Internet, and Mobile Television.4G Mobile Technology started in 2008 with Broadband Cellular Network Technology has drastically changed human life and allows users to use smart phones more efficiently. It supports resource sharing, gaming, mobile web access, IP telephone, high definition mobile TV, video conferencing and using resources dynamically.5G Mobile Technology started in 2019 with faster download speeds and unlimited data capacity. It is faster than other existing networks, it improves the quality of internet over mobile phones, it connects more devices, and it makes possible applications in the Internet of Things (IOT), Machine Learning, and Artificial Intelligence. Mobile information retrieval has gained momentum and exponential growth in terms of smart phones for users to retrieve information dynamically.

Review of Related Literature:

Rosario Vasantha Kumar (2022) in his study revealed that Mobile Computing has transformed libraries by providing users with stress-free access to "Information on the Go." Libraries need to implement mobile library technologies for maximum access to their e-resources to satisfy the users and the promotion of their services. He also discussed how libraries can leverage them to make their services fast and smart. **Chowdhury and Deb Nath(2022)**study proposed a proto type mobile application for the Bangladesh University Students. They facilitated search, retrieve documents, issue, return, and fine payment, reading room allocation, history of their library transactions, notification, track order, complaint, and request or donate a book. **Gunawan, and others (2021)** study found that use of an integrated mobile academic system can be located anywhere; the implementation of the system is carried out in stages through trials, outreach, and training in the use of the system. **Isebe, Marcus L. (2021)** study found that the most important effects of anxiety involving to the usage of mobile phones as indicated by the users are less attentiveness and lack of interest in their academics. It also reveals that the main effects of techno stress involving to the usage of a mobile phones. **Chen Xuan, (2020** studied the functions of the mobile

library service model in colleges are comparable, the performance is deficient, resource sharing degree is low, and user penetration is inferior. **Mwambakulu, (2020)** study reveals that students were motivated to use smartphones for internet access, social media and communication. **Sunitha Ravi (2020)** revealed that Mobile phone enables teachers and students to share their knowledge and experience at any time anywhere. Implementation of Mobile Applications in various Academic modes plays a significant role in changing the traditional teaching learning process.

Mobile Apps in Engineering College Libraries:

NewGenLib Library Mobile App:

The NGL Helium is a specialised mobile app developed and constructed for libraries which supports android operating system smart phones. This mobile application acts as a switch, retrieving information from an existing library database. The NGL app enables users to easily display vital information while looking for certain documents information, including the availability of documents, over dues, account status of the patrons, and catalogue search using title, author, accession number, and keyword etc...

Knimbus MLibrary:

A single point of access to all the digital resources more than 8,132 e-Books,

1,000+ e-Learning videos, and millions of articles, is provided by a customised e-library portal and mobile app from Knimbus e-Library.

British Council Digital Library (MyLOFT):

More than 15,000 e-journals from ProQuest Central and more than 2,000 e-journals from JSTOR. 1,20,000+ e-books and audio books with full texts (including academic and fiction). E-magazines from the UK, such as The Economist, Amateur Photographer, New Scientist, etc., are available online through Press Reader. Read more than 1,000 e-newspapers from more than 100 nations and different languages.

National Digital Library of India:

The National Digital Library of India (NDLI) is a virtual library featuring of search and browse functionality as well as a number of other services for the learning community. The NDLI designed to accommodate students of all academic levels, including researchers and lifelong learners, all academic specialties, all widely used access devices, and students with disabilities. It was created and maintained by Indian Institute of Technology Kharagpur.

Figure 1 Mobile Apps

Objectives of the Study:

The objectives of the present study are as follows:

1. To find out the Use Pattern of Mobile Apps of Engineering College Faculty and Students in Hyderabad.
2. To find out what purpose Mobile Apps of Engineering College Faculty and Students in Hyderabad.
3. To find out the most frequently used Mobile Apps of Engineering College Faculty and Students in Hyderabad.
4. To find out the reason for using Mobile Apps of Engineering College Faculty and Students in Hyderabad.

Need of the study:

The Review of Related Literature reveals that there are nosimilar studies on access of e-resources on Mobile apps usage in Telangana State. So far, no one has conducted research; however, there is a need to investigate for aware oflibrary mobile applications, as well as various digital resourcesusedby patron's thorough mobile applications among teachers and students in Hyderabad, Telangana.

Scope and Limitation of the Study:

The Scope of the study is limited to Engineering College Faculty and Students of CMR Group of Engineering Colleges in Hyderabad in Telangana.

Research Methodology:

Methodology adopted for the study was Survey Method well designed questionnaire is used to collect the responses from the various stake holders of CMR Group of Institutions library namely Faculty and students.

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Data Analysis and Interpretation:

Demographic Distribution:

Demographic distribution describes the characteristics of selected population in terms of age, gender, designation, education, income etc.

Table 1: Demographic Distribution of Respondents

Profile	Distribution	No. of respondents	Percentage (%)
Gender	**Female**	111	49.33
	Male	114	50.67
Age (In years)	**<22**	36	16.00
	22-25	51	22.67
	25-30	50	22.22
	30-35	48	21.33
	Above 35	40	17.78

Table 1 depicts the distribution of respondents based on the gender and the age shows 50.67% (114) respondents out of total 225 respondents are male and 49.33% (111) respondents are female. A majority of respondents i.e. 66% of respondents are in the age group of 22-35 years and considerable i.e. 17.18% respondent's age is more than the 35 years.

Mobile App Usage-General Purposes

All respondents i.e. 100% (225) respondents who participated in the current survey are using their mobile app for general purposes.

Figure 2- Usage of Mobile App-General Purpose

Figure 2 General purpose usage of mobile app by the respondents shows a large majority i.e. 41% of respondents are using various social media app followed by 30% of respondents are using the mobile app to access the e-mails. A considerable number of respondents i.e. 17% of respondents are using entertainment apps. Social media and e-mail apps are the most popular general purpose app used by the respondents.

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Average Time Spent on Accessing Mobile App:

Table II: Responses On Average Time Spent In Day On Accessing Mobile App

Time Spent	No. of respondents	Percentage (%)
< 30 Min	15	6.67
1-2 Hours	25	11.11
2-3 Hours	121	53.78
3-4 Hours	46	20.44
> 4 Hours	18	8.00
Total	**225**	**100**

Table II responses on average time spent on browsing the mobile app by the respondent's shows that a large majority of respondents i.e. 54% respondents are spending at least 2-3 hours in a day. About 20% of respondents said they spend almost 3-4 hours in day for browsing various mobile apps.A large majority of respondents i.e. 74% respondents are spending at least 2-4 hours on mobile to browse through the various mobile app.

Frequency of Usage of Mobile App

Table III- Frequency of Usage of Mobile App for Information Search

Frequency of Usage	No. of Respondents	Percentage (%)
Most Frequently	65	28.89
Frequently	135	60.00
Less Frequently	15	6.67
Rarely	10	4.44
Total	**225**	**100**

Table III usage pattern of mobile app by respondents for information search shows a large majority of respondents i.e. 60% respondents said they use mobile app frequently to seek the information. Followed by a considerable number of respondents said they use mobile app most frequently to get the information. Based on the responses it is eminent that a large majority of respondents are using mobile app most frequently to frequently for information search.

Type of Information Access on Mobile App

Table IV- Type of Information Sources Explored On Mobile App

Information Source	No. of Respondents	Percentage (%)
e-books	74	32.89
e-Journals	55	24.44
e-magazines	21	9.33
e-news papers	19	8.44
Audio/video Books	12	5.33
YouTube	35	15.56
Others	9	4.00
Total	**225**	**100**

Table IV responses on type of information sources explored by the user on mobile app shows a majority of respondents i.e. 33% respondents express their opinion that they access e-books and 24% respondents said they access e-journals. About 15% respondents are accessing the information through YouTube mostly in video format. A large majority of users are using mobile app to access e-books and e-journals.

Most Popular Mobile App

Table V- Responses on Frequently Used Mobile App for Information

Mobile App Name	No. Respondents	Percentage (%)
NGL Library Mobile App	14	6.22
SPRINGER Nature	15	6.67
NPTEL	62	27.56
EBSCO host App	11	4.89
IEEE Xplore Mobile App	35	15.56
Knimbus M Library	12	5.33
JSTOR on mobile devices	8	3.56
Khan Academy	15	6.67
British Council Online Library	4	1.78
KnimbusMLibrary	16	7.11
Science Direct	21	9.33
Taylor & Francis	2	0.89
Library of Congress App	3	1.33
NDLI	5	2.22
Others	2	0.89
Total	**225**	**100**

Table V responses on frequently used mobile app for information by the respondents shows that a majority of respondents i.e. 28% respondents said they use NPTEL Swayam app for improving their skills and also academic credits. Followed by 16% of respondents said IEEE Xplore Mobile App is the mostly used app for their project work, to write seminar papers, research work and for their academic presentations. Based on the responses following below are top 5 mobile app used by the respondents

1. NPTEL
2. IEEE Xplore Mobile App
3. Science Direct
4. KnimbusMLibrary
5. SPRINGER Nature

Top Reason for Opting Mobile App

Table VI - Responses On Reason To Use Mobile App Over Other Information Sources

Reason	No. Respondents	Percentage (%)
Convenience &Availability	72	32%
Structured data retrieval	61	27.11
User friendliness	42	18.66
Reusability	50	22.22
Total	**225**	**100**

Table VI responses on reasons for using mobile app over other mediums for information access shows a 32% of respondents said Convenience &Availability is the reason to choose mobile app over other mediums. 27% respondents said structured data retrieval features are largely motivates the users to choose mobile app based information retrieval over the other mediums. 22% of respondents said reusability as mobile app has facility to save and reuse the data that motivates user to use mobile app over the other mediums. 19% respondents said user friendliness in terms of operating and adoptability that motivate users to use mobile app over other mediums.
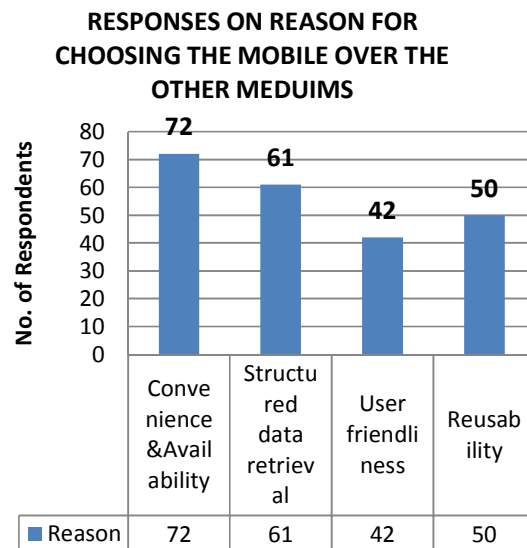

RESPONSES ON REASON FOR CHOOSING THE MOBILE OVER THE OTHER MEDUIMS

	Convenience &Availability	Structured data retrieval	User friendliness	Reusability
■ Reason	72	61	42	50

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Table VII - Chi-Squire Test results Gender VS Reason for using Mobile app over the other mediums

Between Variable	Chi-Squire Value	Table Value	DF	Significance
Gender VS Reason for using Mobile app over the other mediums	8.7092	7.81	3	Sig. at 0.05 level

Null Hypothesis (H0): There is no significant difference among the respondents based on the gender [Female & Male] with respect to reason for using Mobile app over the other mediums.

Alternative Hypothesis (H0): There is a significant difference among the respondents based on the gender [Female & Male] with respect to reason for using Mobile app over the other mediums.

Chi-square test results of gender VS reason for using Mobile app over the other mediums. Calculated Chi-square value is 8.7092 is higher than the table value (7.81) at 3 degrees of freedom at 0.05 level of significance. So reject the Null Hypothesis (H0) and accept the alternative hypothesis (H1). Hence there is significance different among the users based on the gender VS reason for using Mobile app over the other mediums.

Findings of the study:

The core findings of the study reveals that majority of stake holders do use their smart phone to access various e-resources because of following reasons like mobility, accessibility and availability. Study also revealed that there is a high demand for the dedicated mobile app for the library which help the users to access the desired information with minimal effort.

Majority of the respondents 74% (167) out of 225 respondents, spending at least 2-4 hours on mobile phones to access various mobile apps. The Majority of the respondents 89% (200) out of 225 respondents used mobile apps for access information search. The total 33% (74) out of 225 respondents used mobile apps for access e-books. The majority of respondents 28% (62) out of 225 respondents used NPTEL app for their academic purpose. The total 32% (72) out of 225 respondents were using their mobile apps for convenience and availability. NPTEL, IEEEXplore Mobile App, Science Direct, Knimbus MLibrary and SPRINGER Nature are the most popular mobile apps was used. The top reasons for choosing the mobile apps was

convenience and availability, structured data retrieval, user friendliness and reusability are the top reason for choosing the mobile app over the other information mediums.

Conclusion:

Smart phone has become integral part of human life due to of its impact and usability. In the digital age Mobile Apps are extensively used not only for fulfilling the various general needs but also to fulfil their academic needs. Mobile App users can obtain information faster and more accurately. In terms of spend time on mobile app by the users has exponentially increased in the recent past due to social media and majority of institutions are offerings their digital resources and services on mobile to create one stop on the fly experience for their patrons. Mobile Apps are Excellent Communication channels between Organization's and Library Patrons. Mobile App provides the Library Patrons all the e-resources at fingertips.

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