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## How far does it go? Understanding Efficacy of Off-Campus Remote Access Services: Use Case of Knimbus and MyLOFT

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# **How far does it go? Understanding Efficacy of Off-Campus Remote Access Services: Use Case of Knimbus and MyLOFT**

## **Abstract**

E-resources are the backbone of the learner community in this information superfluous era. Digital technology has made remote access to the E-resources more easy, speedy, and comfortable. The advent of technology has made the libraries add new resources to their existing collection. For the academic community, remote access to the e-resources has become a very important part of their education and research, especially in this pandemic period. Library users are keen on searching and retrieving information stored/viewed from a distance or stored in remote locations. Remote login access to online library e-resources is the best practice that helps the users to access their desired information wherever they stay without wasting time which fills the gap between a library and its users being always remained connected. It allows the best easy access to the use of the e-resources of the library through its interface from anywhere. In this study, an attempt has been made to understand the perception of users based on their reviews of the remote access platforms mobile apps, Knimbus and MyLOFT. Sentiment analysis is conducted using Appbot software to derive insights from 73 user reviews of the Knimbus app and 253 reviews of the MyLOFT app from 10<sup>th</sup> July 2008 to 11<sup>th</sup> December 2021. The study has identified that the overall sentiment score of Knimbus and MyLOFT is 64% and 62% respectively. The data analytics shows that Knimbus is having a better satisfaction ratio than the MyLOFT and it is better serving the purpose of providing the e-resources and contributing to the teaching and learning process.

**Keywords:** Remote Access, off-Campus Access, e-resources, Knimbus, MyLOFT, Android, Google Play

## **1. Introduction**

The library is a center of knowledge wherein all the resources irrespective of print material, e-resources are also stored. E-resources are the mainstay of any modern library in this information redundant era, especially in this pandemic period. Since the outbreak of COVID-19, there is a huge demand from the users staying outside of the campus for the remote login access to library subscribed e-resources, which is an important aspect of library services. With exponential growth

in the ICT a set of several new terms like paperless society, e-library, universal virtual library and doorway/gateway indicating its impact on the various fields. There is a striking effect on the users' behaviour in information utilization because of changing dissemination of web environments with the development of IT and also due to the outbreak of the global pandemic of the CORONA virus. The library users request immediate and suitable usage of information across the time and space limit, which has changed the library environment.

The major developments taking place in libraries and information centers today are the widespread availability and use of various kinds of electronic learning resources. Electronic learning materials have increasingly become the focus of research and development of any institution in recent years. The commonly available electronic resources namely CD-ROMs, OPACs, web databases, Internet, remote access, and other networked information sources are competing with, and in some instances replacing the print-based information sources, which have been in place for centuries as the primary medium for storage and communication of recorded information (Gopal & Dixit, 2018). Remote access is just what it sounds like - the ability to access a user's computer from a remote location. A library can't hold a stock of the resources if it does not make it available to the users. Remote login access to e-resources is the best practice of any library. It allows the best use of the e-resources and offers easy access to various resources of the library through its interface from anywhere. Usually, in any library, access to subscribed e-resources is made available on user name and password or IP ranges/intranet environment which is limited to users staying inside the campus. COVID-19 has changed the usage of library resources and services in the current scenario. Now users do not need to come to the library, they can access the library at their own place and with their own pace. Providing remote or off-campus access to e-resources among user communities wherever they reside is the need of the hour and one of the objectives of any modern library (Rao & Bhat, 2018). There are various Platforms like Knimbus, MyLOFT, RemoteXs and INFED/Shibboleth etc. that allow the library users to access the online resources from any remote location. In this paper, two platforms Knimbus and MyLOFT have been tested based on a user perspective.

## **2. Off-Campus Access to Licensed Online Resources**

Library licensed scholarly resources comprise research databases, electronic journals, e-books, standards, and many more educational related materials. The library licenses these resources through publishers/vendors. These license agreements limit access to the resources to the

authorized users of an institute that include faculty members, enrolled students, current staff, contractual staff, and walk-in users of the library. Seamless access to the licensed resources from on-campus sites is predominantly IP-address authenticated, which is a simple and efficient model for users physically located on the institute campus. These users expect a similar experience while accessing licensed online resources from off-campus locations. Therefore, the challenge to the libraries is to ensure that such off-campus accesses are secure, seamless, and restricted to authorized users of an institute. Libraries have been using various technologies including proxy servers, VPN (Virtual Private Network) servers, or single sign-on to facilitate seamless off-campus access to licensed resources (Jayakanth et al., 2021).

### **3. Need for Remote access in libraries:**

Educational institutions around the globe have been forced to rethink the delivery of learning and research services due to the Covid-19 pandemic. With campuses closed, and libraries inaccessible to faculty and students for much of more than a year, providing remote access and support has been critical. Institution librarians, in particular, have been quick to adapt to this shifting landscape. In many institutions, libraries are seeing a major increase in interest in digital resources (for example in the United Kingdom), leading in some cases already to the re-prioritization of resources from physical to digital materials. The possibility to use online resources depends a lot on the terms under which they are accessed. Fortunately, a lot of publishers and vendors have taken helpful initiatives in the academic field, many have provided open access to materials related to COVID-19 networks. Moreover, providing Remote access to library's digital resources is both an expectation and need of today's user community.

The need of providing remote or off-campus access to e-resources among user communities wherever they reside is felt since the inception of e-resources. Nowadays, providing a remote access service facility is one of the objectives of any modern library/educational institute and is the best way of maximizing the use of the library e-resources. Secondly, due to the COVID-19 pandemic, a complete worldwide lockdown was declared by the government as a precautionary measure to limit the spread of the CORONA virus. All public places including educational institutions were closed till the situation becomes normal. In these special situations when libraries were inaccessible to faculty and students, academic institutions should always be ready to provide e-resources to the user. So, there is a sudden surge in demand for seamless off-campus

access to licensed online resources as remote access allows users to use the information resources when all the educational institutions and libraries get closed. The remote access to e-resources is enhanced when there is a geographical barrier and time barrier that leads to a knowledge divide. This knowledge divide can only be avoided if there are provisions to provide e-resources to users. Moreover, providing remote access to the library's digital resources is both an expectation and need of today's user community. Two of the well-known remote access platforms implemented in several libraries in India that have been discussed below:

#### **4. Knimbus and MyLOFT:**

Knimbus is a cloud-based research platform that facilitates to discovery and sharing the scholarly content. Knimbus stands for Knowledge Cloud which is dedicated to knowledge discovery and collaborative space for researchers and scholars. It is currently used in over 600 academic institutions and R&D labs by scholars, researchers and scientists. It is a collaborative platform for researchers to discover and access millions of journal articles, patents and eBooks and share the knowledge with their peers (Sankar & Sarangapani, 2020). Knimbus mLibrary is a cloud-based platform that enables a complete digital transformation of any Academic, Corporate or Government Institutional Library. Remote access through Knimbus is available both as web and mobile applications (android and iOS).

MyLOFT (My Library on Finger Tips) is another effective platform for enabling users' remote access to library subscribed e-content including scholarly resources for teaching learning and research. MyLOFT is built around user workflow and help them to discover library subscribed resources whether they are searching via Google or Discovery services with an in-built proxy for seamless access. Users can easily tag, organize, share content and sync between their mobile device and Web based app. MyLOFT is designed specifically for Smartphone use (Google play and Apple), its intuitive design allows the users to easily access all of the content in one place (MyLOFT & RemoteXs, 2021). Some of the major features of Knimbus and MyLOFT are:

- Custom portal: Branded and customized interface designed as per the requirement of the institution.
- Modern Interface: User-friendly web Portal and mobile app for seamless access to the e-resources.
- Digital collections: It includes subscribed resources and databases, open access journals, e-books and videos.

- Universal search: It provides a single search box across all resources: databases, e-books, journals and IR.
- Comprehensive functionality: Integrated Web OPAC with A-Z listing of all digital collections and inbuilt off-campus access.
- Off-Campus access & mobile app: It provides access to all resources anywhere, anytime 24\*7 and on any device.
- Unified cloud platform: It facilitates in open architecture for integrations with online education tools and has strong security control to prevent unauthorized access.
- Librarian dashboard: Centrally controls and manages users and usage from a single place and monitors all resources and users and generates customized reports to meet the needs of the library department.
- Save content and access it offline: Users can save and share the content of their professional and personal interests from their library's e-resources; websites; blogs; RSS feeds (Really Simple Syndication).
- Access library subscribed e-resources: Users can directly access databases, e-books and the latest articles from journals subscribed by the library.
- Read/follow RSS feeds: Get daily news feeds & updates for favorite blogs, news sites and websites.
- Tag and organize content: Users can tag content for easy searching and offline reading, and organize content in folders for reference.
- Highlight & play content: Use a text highlighter to mark or highlight, summarize and share important notes from articles/content.
- Auto-play and listen: Users can listen to articles and saved the content to relax the eyes.

**Table: 1 Knimbus and MyLOFT m-app**

SN	m-app	App Size	Current Version	Developer of the App	Downloads	Release Date	Updated on
1	Knimbus	12.56 MB	7.6.0	Knimbus	50 K	1 <sup>st</sup> Mar 2019	6 <sup>th</sup> Dec 2021
2	MyLOFT	26.27 MB	1.3.14	Eclat Engineering private limited	100K+	14 <sup>th</sup> Sep 2017	1 <sup>st</sup> November 2021

## **5. Related Studies:**

Since the ages it is seen that people from a distance are keen in searching and retrieving the stored information and even in this modern era, people are more concerned about exploring new ways way to get access to digital data/information stored in remote locations. With the development in the information and technology and number of mobile based applications software it has become easy to approach and access the e-resources in more efficient way. A lot of research has been done in accessing the e-resources. A few important and related studies are here which throw light on the use and importance of remote access to e-resources.

Rogers (2001) conducted a study on electronic journal usage at Ohio state university and studied the faculty and graduate students who use electronic journals, printed journals and electronic databases was conducted at Ohio State University (OSU) during the years 1998-2000 which showed the increased use of e-journals and decreased use of printed journals by faculty and graduate students as the number of available e-journals increased from two hundred to more than three thousand. Covey (2003) suggested a more secure access mechanism to e-resources filling the gap between vendor restrictions and user practice called “Shibboleth” which is an architecture that enabled the organizations to build single sign-on environments that allow users to access web-based resources using a single login. Shibboleth is an Internet project developing and testing software to support inter-organizational web authentication and access control. It provides comprehensive and flexible structure to authenticate the users and to control access to Internet resources and services. The most important feature of this architecture is that it uses the institution’s local authentication system to verify the identity of the users. It eliminates the need to create different user IDs and passwords or to worry about the IP address of the computer. Lightweight Directory Application Protocol (LDAP) was used to provide attributes for controlling the access.

Dadzie (2005) investigated the use of electronic resources by students and faculty of Ashesi University, Ghana, the level of use, the type of information accessed and the effectiveness of the information communication tools for information research. PUNCHIHEWA (2008) conducted a study to identify user attitudes towards online resources at the library, University of Moratuwa. During the period of the study, it analyzed the obstacles of the users that had to face when accessing e-resources. Unavailability of remote access was the prominent obstacle highlighted by many users in that study.

Peg Lawrence (2009) highlighted off-campus access to subscribed e-resources of the library for users using EZproxy too and how libraries can provide remote access e-content subscribed by the library to the user community in an effective manner. This paper discussed the methodology of implementation of software and choice of EZproxy as Proxy Server including the troubleshooting mechanisms for remote users. Jagadish et al., (2018) conducted research to study remote access to Mysore university library's digital resources by using EZ Proxy through residential lines by faculty/ research scholars & students. It was observed that the usage of digital resources increased thus meeting the expectations and need of user community. Bhatt (2019) studied the comparison between Remote access facilities provided by AllamaIqbal Library using software EZproxy and RemoteXs and their impact on the user community. It was found that most of users expressed keen interest in RemoteXs facility on account of ease of access and 24x7 availability. Findings of the study revealed that RemoteXs had an edge over EZproxy, being offered as a fully cloud hosted solution with 99.95% up-time, very good speed and zero infra-cost for university.

Tripathi and Jeevan (2013) had mentioned in their study that "the use of licensed electronic information resources will continue to expand and, in some cases, become the sole or dominant means of access to scholarly content in future". The usage level of e-resources will be one of performance indicators for future libraries. It was suggested in the study, conducting user surveys is important to identify the user requirements, problems and solutions towards e-resources.

T. Prabakaran (2013) critically examined that the users were dependent to some extent on libraries with new technologies such as e-resources.

According to a study by Knimbus, 53% of users think that finding exact information from library collection and online databases were the biggest hurdles.

Examining the relevant literature revealed that neither qualitative nor quantitative studies exist focusing and highlighting user perspective, user feedback, and user experience regarding remote access platforms Knimbus and MyLOFT. The non-availability of relevant studies evaluating the efficacy of remote access m-apps from the user perspective constitutes research gap. Improvements in such platforms are possible only by knowing exact user feedback, sentiments and requirements of the users. It is important to study and analyses the users'

perceptive to resolve existing issues, bug removal, log in issues etc. while facilitating value-added services.

## **6. Scope of the Study:**

This study examines the Remote access/Off-campus service providers Knimbus and MyLOFT m-apps using sentiment analysis (SA) approach to highlight the user perception. The data analyzed in this study comprises of reviews provided by users of android m-apps users of Knimbus and MyLOFT platforms. The reviews were collected from the released date of the apps till 11<sup>th</sup> December, 2021. Out of 292 reviews of Knimbus m-app, Appbot extracted data of 73 reviews whereas out of 662 reviews of MyLOFT m-app, 253 reviews were analyzed.

## **7. Study Objectives:**

This study aims to achieve following research objectives:

- i. To assess the user perception level in context with remote access m-apps Knimbus and MyLOFT mobile app (Android).
- ii. To analyses and highlight the textual content originating from feedbacks, comments and ratings given by the users of these two remote access m-apps.
- iii. To analyses the sentiments of the users towards remote access Knimbus and MyLOFT m-app.

## **8. Research Design/Methodology**

The research design adopted in this study is MMR (Mixed Method Research). The data analytics is performed by using Appbot (<https://appbot.co/>) software which captures, monitors, measures and analyzes the reviews for a particular period. This software provides easy-to-understand insights into an app using Artificial Intelligence algorithm tools and also provides a large number of data-mining and sentiment analysis features in different categories such as reviews, ratings, sentiment, words, phrases, topics, and languages. To classify the sentiment for a given review, Appbot calculates and provides a sentiment score for each review (a value between 0-100%). All the trends, figures, and data statistics from the software have been taken since the launch of the respective apps till 11<sup>th</sup> December, 2021.

## 9. Results and Discussion:

### 9.1 Reviews and Star Ratings:

**Table 2: Star rating with response rate**

App	Rating Count	Average Review	Positive sentiment	Rating/Response	5-stars	4-stars	3-stars	2-stars	1-star
<b>mLibrary (Knimbus)</b>	295	3.7	51.40%	Rating	32 (44%)	9 (12%)	2 (3%)	3 (4%)	27 (37%)
				Reply/response Rate	11 (34%)	0 (<1%)	0 (<1%)	1 (33%)	13 (48%)
<b>MyLOFT</b>	665	3.3	47.80%	Rating	110 (43%)	20 (8%)	8 (3%)	9 (4%)	106 (42%)
				Reply/response Rate	88 (80%)	17 (85%)	6 (75%)	7 (78%)	84 (79%)

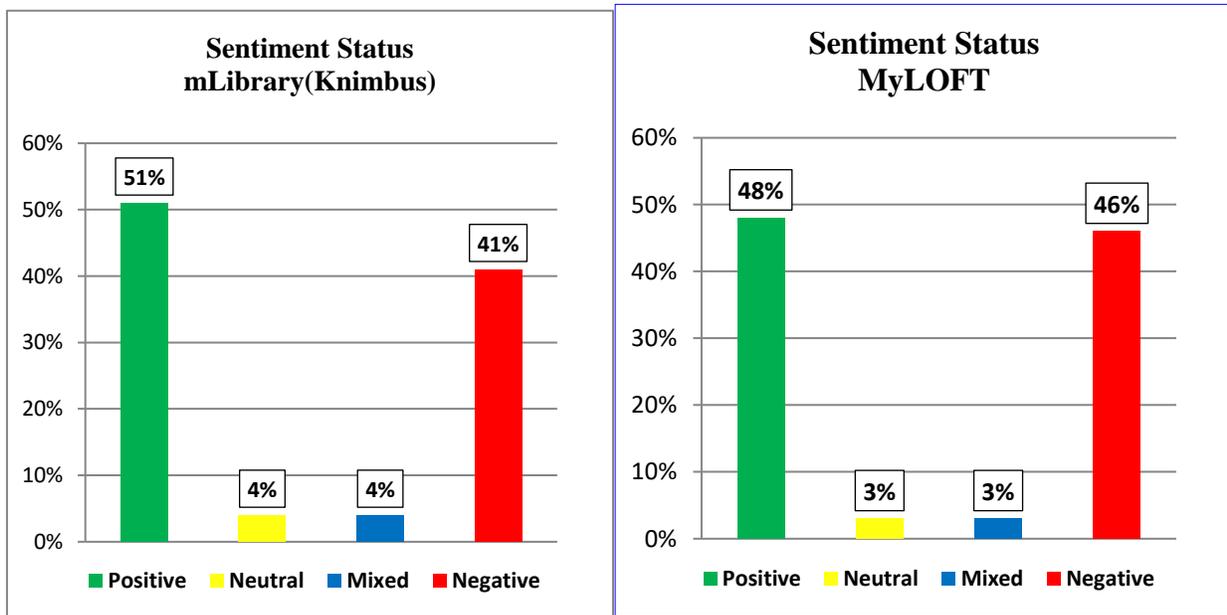
Star Ratings of the apps are based on user-feedback extracted from the Google Play App Store. The above table provides information about star ratings from 1 to 5 with the number of reviews provided by the users. For mLibrary (Knimbus), 44% reviews are associated with 5-star ratings out of which 34% were responded by vendors of app developers. Similarly, 12% and 3% reviews are associated with 4-star ratings and 3-star ratings respectively for which the vendor has not given any response to the users' reviews. 4% reviews are associated with 2-star ratings out of which 33% got reply from the vendor of app developer and 37% reviews are associated with 1-star ratings out of which 48% were responded by the vendor. The analysis reveals 51.4% positive sentiments and the average review rating was observed to be 3.7 stars for mLibrary (Knimbus). For MyLOFT, 43% reviews are associated with 5-star ratings out of which 80% were responded by vendors of app developers. Similarly, 8% reviews are associated with 4-star ratings out of which 85% were got reply from the vendor. Likewise, 3% reviews are associated with 3-star

ratings, the vendor have replied to 75% of these users' reviews, 4% reviews are associated with 2-star ratings to which vendors have replied to 78% reviews of the users and 42% reviews are associated with 1-star ratings to which 79% reviews were taken up by the vendor to address their problems and provide the solution. For MyLOFT, users have reflected 47.8% positive sentiment and it received the average review rating 3.3 stars. The statistics show that the number of reviews replied to reviewers of MyLOFT is much higher than mLibrary (Knimbus)

**9.2 Sentiments Analysis:**

**Table 3: Sentiment Breakdown**

Sentiments	mLibrary(Knimbus)	Percentage	MyLOFT	Percentage
<b>Positive</b>	37	51.4%	121	47.8%
<b>Neutral</b>	3	4.2%	8	3.2%
<b>Mixed</b>	3	4.2%	7	3%
<b>Negative</b>	30	40.2%	117	46%
<b>Total</b>	<b>73</b>	<b>100</b>	<b>253</b>	<b>100</b>

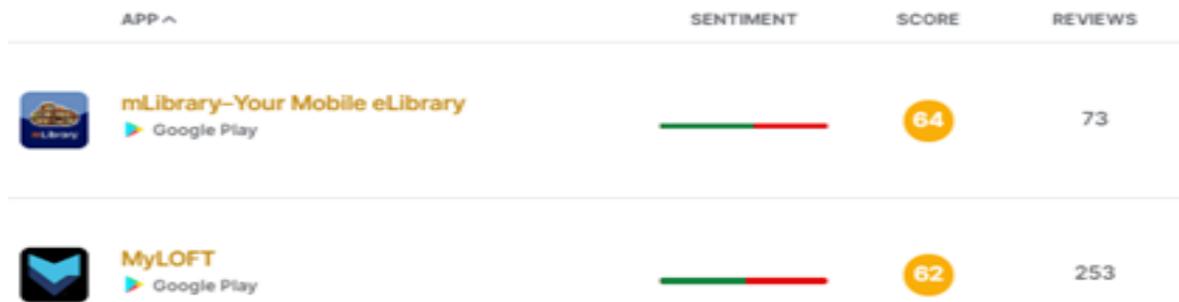


**Fig. 1. (Total Reviews mLibrary (Knimbus) =73, MyLOFT=253)**

The above figure depicts the comparison of the sentiment breakdown of total count of Positive, Negative, Neutral, and Mixed Reviews of mLibrary (Knimbus) app and MyLOFT app.

The above table depicts the number and percentage of sentiments (Positive, Mixed, Neutral, and Negative) of remote access platforms Knimbus and MyLOFT. Positive comments represent the satisfaction level and happy feelings of the users. Neutral comments lack strong sentiments, mixed comments have conflicting sentiments and negative comments contain dissatisfaction and annoyance of the users with the service provided by the software developers. Though MyLOFT app has received more reviews than the Knimbus app but mLibrary (Knimbus) has received the 51.4% positive sentiment in compare to MyLOFT 47.8% which shows that the users are more satisfied with mLibrary (Knimbus) m-app.

### 9.3 Comparison with App Stats



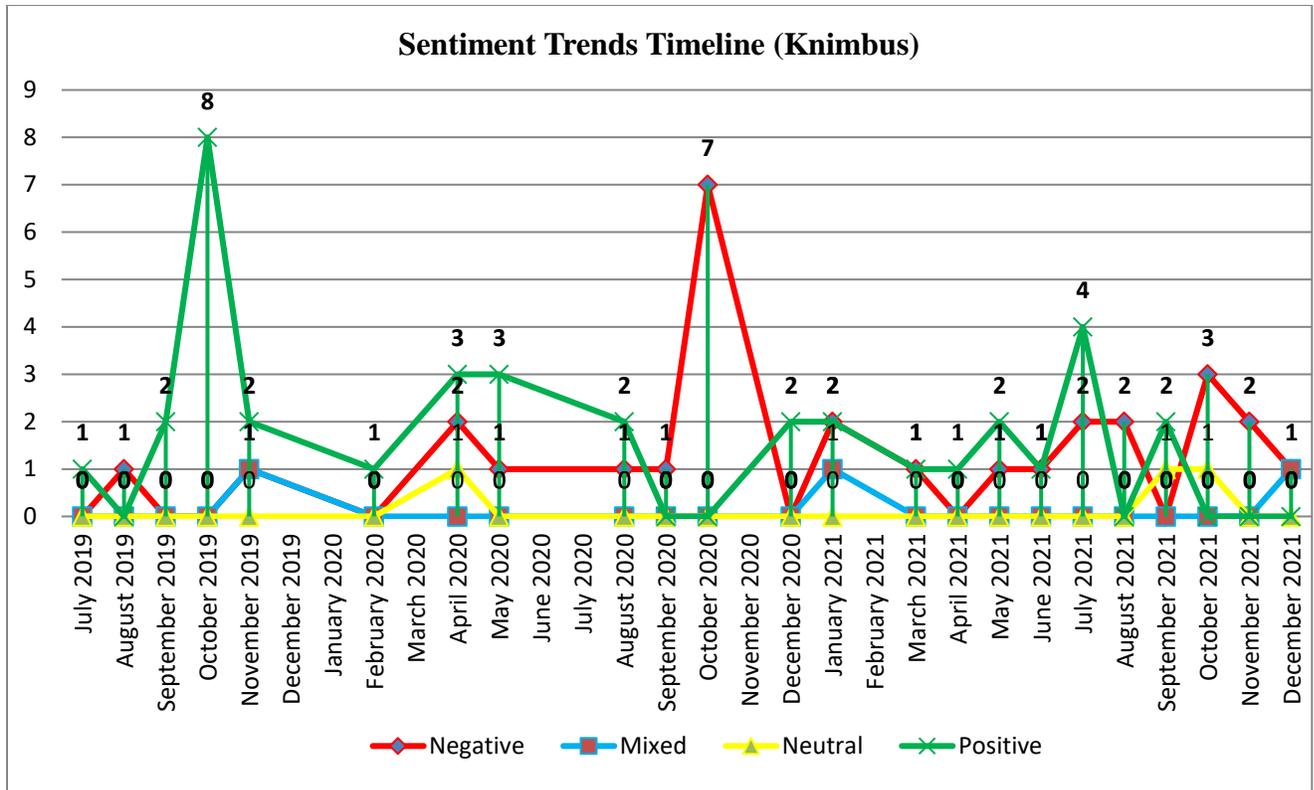
**Fig. 2. Comparison of the mLibrary (Knimbus) and MyLOFT**

The above figure depicts the comparison of the mLibrary (Knimbus) and MyLOFT apps in terms of the sentiment (Positive, Negative, Neutral, and Mixed), score and total number of reviews. The mLibrary and MyLOFT received the sentiment scores of 64 and 62 as calculated from 73 and 253 reviews they have received.

### 9.4 Sentiment Analysis

The basic task in sentiment analysis is classifying the polarity of a given text at the document, sentence, or feature/aspect level- whether the opinion in a document, a sentence or an entity feature/aspect is positive, negative or neutral. The section below highlights the various parameters of SA:

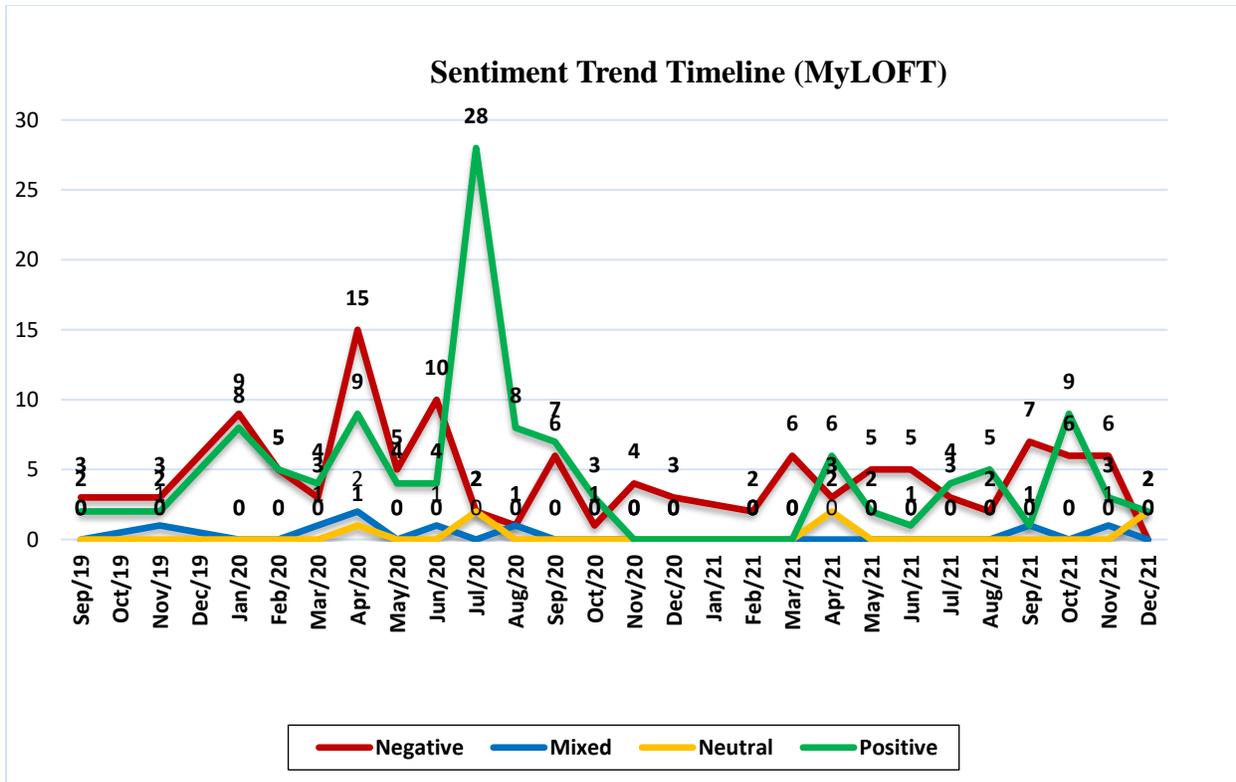
#### 9.4.1 Knimbus Sentiment Timeline



**Fig. 3. mLibrary (Knimbus) Sentiment Trends Timeline**

Sentiment analysis primarily refers to the text content of the review. The Sentiment timeline helps to understand the trends varying from the negative, mixed, neutral and positive over a particular time period. In above figure no. 2, ‘Positive’ sentiment is marked with green, ‘Neutral’ with orange, ‘Mixed’ with blue and ‘Negative’ with red. As per above figure there were 73 reviews and the maximum positive reviews were 8 in October, 2019 and negative reviews were 7 in October, 2020. However, it remains to be understood the reasons account for 40% of negative sentiments (Table 3 Sentiment Analysis).

#### 9.4.2 Sentiment Timeline (MyLOFT)

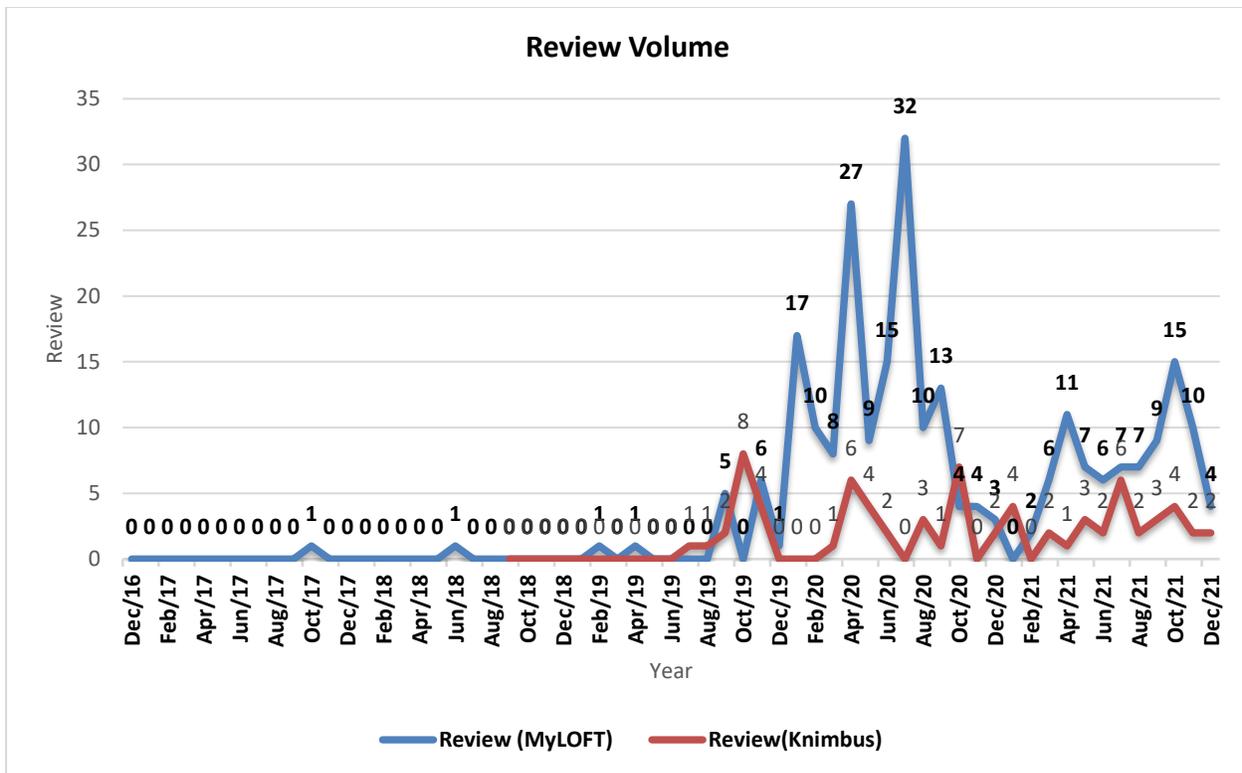


**Fig. 4. MyLOFT Sentiment Trends Timeline**

The above figure shows the sentiment timeline of MyLOFT (253 reviews; Table 3: Sentiment Analysis). The maximum number of positive reviews were recorded as 28 in July, 2020 followed by 9 in April, 2020 and October, 2021. The highest negative reviews can be seen as 15 in April, 2020 followed by 10 in June, 2020. The Figure shows that the number of Mixed and neutral reviews were either 1 or 2 in a few months and zero reviews in maximum months.

### 9.6 Review Volume

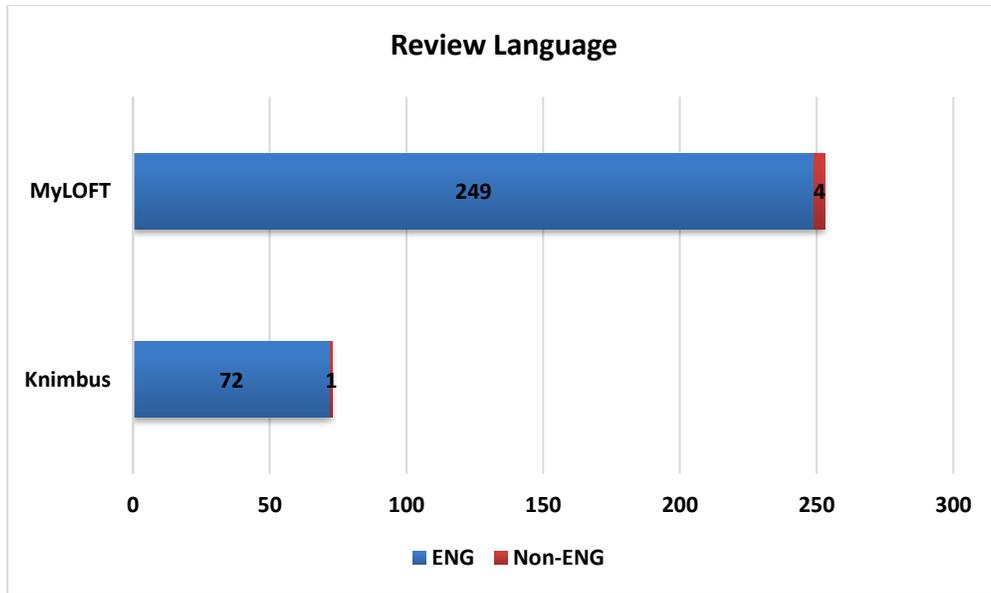
Review Volume in the study refers to the quantity of reviews. At this point, review volume can also be reviewed as the amount of information users are exposed to. Review volume of Knimbus and MyLOFT is discussed below:



**Fig. 5. Comparison of Review Volume**

The above figure highlights the review volume of android based mobile app of mLibrary (Knimbus) and MyLOFT which have color codes: red and blue respectively. Since there was no data from September, 2018 to May, 2019 has no reviews were given by the app users, therefore this chart has been plotted considering the time varying review volume was not zero. Above figure shows the highest reviews of MyLOFT is recorded as 32 in July, 2020 and the lowest review volume was recorded in Feb., 2021. MyLOFT shows the continuous fluctuation in the review volume from August 2019 to November 2021. On the other side the highest review volume of mLibrary is recorded as 8 in October, 2019 after which a continuous downfall in positive reviews can be seen clearly in the figure. The overall trend is declining for both the apps which shows the app developers needs to make improvement in their service providing and to increase its consistency rate.

**9.7 Comparison of Reviews Language:**



**Fig. 6. Review Language of MyLOFT and Knimbus**

The above fig. 6 highlights that among the 73 reviews of Knimbus, 72 (98.6%) reviews were in the English language and 1(1.4%) review was in the Hindi Language. For MyLOFT among 273 reviews, 249 (98.4%) reviews were in the English language, 2 (0.8%) reviews were in the Spanish language, review in the French language and Thai language were, 1 (0.4%) each. It is noted that English is the preferred language for communicating the experience with its service providers by the users.

### **9.8 Word Cloud**

The Word Cloud is a feature in Appbot which are graphical representations of word frequency that give greater prominence to words that appear more frequently in a source text to analyses the sentiments of reviews containing specific words. The colors represent the sentiment of reviews containing each word, green for positive, red for negative, grey for neutral and orange for mixed. Reviews related to a specific term can be listed by clicking on a particular word appearing in the word cloud which provides a lot of insight including word sentiments. Words bigger in size has a greater number of reviews.





In the case of the Knimbus app, ‘design & UX’ is widely discussed in negative sentiments by the users. A valuable feature of Appbot is that it groups the topics having common features, topics such as ‘bugs’ and design & UX occur in both the topic models.

**Table 4: Topic modelling Knimbus (Review Analytics)**

<b>Topic</b>	<b>Reviews</b>	<b>Positive Sentiment</b>	<b>Negative Sentiment</b>	<b>Overall reviews</b>	<b>Average Stars</b>
<b>Satisfied Users</b>	20	100%	0%	27.0%	4.9
<b>Design &amp; UX</b>	15	67%	27%	20.3%	3.8
<b>Dissatisfied users</b>	13	0%	100%	17.6%	1
<b>Bugs</b>	9	0%	89%	12.2%	1.4
<b>Sign up &amp; Login</b>	8	0%	88%	10.8%	1.5
<b>Security &amp; Accounts</b>	4	100%	0%	5.4%	1
<b>Use Cases</b>	4	50%	50%	5.4%	2.8
<b>Performance</b>	3	0%	100%	4.1%	2
<b>Crash</b>	73	51%	41%	98.6%	3.2

This table 4 revealed that 100% of the users 20 (100%) are satisfied by Knimbus and 13 (100%) dissatisfied, 15 (67%) faced Design and UX problem, 9 (89%) faced bugs problem, 8 (88%) faced problem in Sign up & Login, 4 (100%) faced problem of security & accounts. 73 mentions about App Crash. User perception as reflected in the table above calls for improvement and update of the system by the app developer.

**Table 5: MyLOFT Topic modelling (Review Analytics)**

<b>Topic</b>	<b>Reviews</b>	<b>Positive Sentiment</b>	<b>Negative Sentiment</b>	<b>Overall reviews</b>	<b>Average Stars</b>
<b>Satisfied Users</b>	74	98%	0%	29.1%	4.9
<b>Dissatisfied users</b>	45	0%	100%	17.7%	1
<b>Design &amp; UX</b>	37	43%	51%	14.6%	2.9
<b>Bugs</b>	26	100	88%	10.2%	1.7
<b>Connectivity</b>	18	72%	28%	7.1%	3.8
<b>Sign up &amp; Login</b>	17	0%	94%	6.7%	1.5
<b>Use Cases</b>	11	71%	24%	6.7%	4.1
<b>Performance</b>	9	22%	67%	3.5%	2.3
<b>Crash</b>	250	48%	114%	98.4%	3.1

Table 5 reveals that majority of the users reviews 73 (98%) are satisfied with MyLOFT and 45 (100%) of 74 users are dissatisfied, 37 users faced Design and UX problem, 26 faced bugs problem, 18 faced problem of connectivity, and 17 user reviews indicates that they have problem in Sign up & Login and 250 mentions are about App Crash. Based upon the above data it is required on the part of the app developer to pay attention to the users reviews and update the app from time to time.

#### **Major Findings:**

- i. Appbot uses Artificial Intelligence (AI) models for automatic sentiment analysis (SA) of the reviews. A total 253 users' reviews were retrieved from MyLOFT which included 121 positive reviews, 8 neutral, 7 mixed and 117 negative reviews respectively.
- ii. In case of Knimbus a total of 73 reviews were reported containing 37 positive, 3 neutral, 3 mixed and 30 negative reviews respectively.
- iii. The analysis of star ratings of the m-apps selected for the study revealed that Knimbus earned 44% 5-star ratings and 37% 1-star ratings. MyLOFT received 43% of the ratings

were 5-star ratings and 42% were 1-star ratings. The average rating of Knimbus and MyLOFT apps were found to be 3.7 and 3.3 respectively.

- iv. The response rate given by the app developers was found to be higher in case of MyLOFT than mLibrary (Knimbus).
- v. The sentiment score of Knimbus (64%) was higher as compared to MyLOFT (62%).
- vi. English emerged as the most preferred language used for communicating the reviews. However, few more languages are used including Spanish, French and Thai language has attributed to the fact that MyLOFT users are scattered throughout the globe.
- vii. The Statistics show that the MyLOFT Review volume was 73 and the average number of reviews is 2 per day whereas the Knimbus Review volume was 253 and the average number of reviews were 4 per day.
- viii. It was also found during the study that the remote/Off-Campus access platforms not only help in extending the access to e-resources and optimizing their usage, but they also facilitate the content organization for effective navigation and retrieval of the study material.

### **Conclusion:**

Remote access to e-resources can help in providing education even at the time of crisis. Implementation of remote access to e-resources is obtaining popularity among the users, especially researchers who are geographically distant from the physical library especially keeping in mind the COVID-19 scenario. The Five Laws of Library Science, as enunciated by Dr. S.R. Ranganathan, the Father of Library Science in India, also relates well to the digital technology allowing remote access to e-resources for off-campus users. Furthermore, natural disasters and crises also necessitate the adoption of highly innovative communication technology and e-learning tools and applications (Tull et al, 2017). To make the best use of e-resources more effectively in such difficult times, we need to focus on the best use of technology for the remote access to it more efficiently, that is, which has minimum procurement and maintenance costs but can effectively facilitate educational processes. App developers should pay attention to user feedback and reviews regarding the problem they face and respond swiftly to significant flaws reflected through user's reviews. Overall, it has observed that more libraries should actually take such initiatives in this direction to provide remote access platforms to the students, researchers and faculties/educators to strengthen the teaching and learning process.

The authors believe that Remote access platforms are definitely going to become the necessity in the coming years. This study throws light helping us understand the user experience and demand regarding remote access platforms Knimbus and MyLOFT.

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