



# Application of Facebook and Twitter Media Communication Channels in University Libraries in Kenya

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## Abstract

The purpose of this research was to investigate the application of Facebook and Twitter social media handles as communication channels by University Libraries in Kenya. The objectives of the research were to examine the application of Facebook and Twitter as communication channels and their usage trends within academic libraries and to develop a strategy for the application of social media by university libraries. This research has highlighted how Social Media handles, specifically Facebook and Twitter are utilized within the University Libraries in Kenya as compared to what has been recommended globally by other researchers. The research has also developed a strategy that may be adopted in order to enhance utilization of the same handles within University Libraries. The target population was 30 public and private universities in Kenya with social media accounts for their library. This research applied Social Media Analytics tools to mine accurate data from the Kenyan Universities Libraries that have functional Facebook and Twitter Handles. A survey of Social Media (Facebook and Twitter) activities metrics were taken. Data was gathered using Fanpage Karma and online questionnaire. Descriptive analytics was used to process the data to derive insights. The results revealed that, on average, universities had more followers on Facebook than Twitter, yet a significant percentage of universities had no engagement on both platforms, with a majority recording zero comments, reactions, shares, and likes, indicating low levels of interaction. Additionally, many universities had no comments on Facebook, emphasizing a widespread lack of engagement across social media platforms. University libraries exhibited a strong presence on social media platforms but faced significant challenges with low user engagement. Libraries are urged to boost user engagement on social media by creating captivating content, fostering dialogue, and promptly responding to user interactions, thereby enhancing the overall user experience.

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## Subject Areas

Big Data Search and Mining, Information Management, Online Social Network Computing

## Keywords

Social Media, Social Media Analytics, University Libraries, User Engagement

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## 1. Introduction

Social media are vibrant online platforms on which various forms of information can be transmitted as consistent interaction and participation with these forms of information takes place between persons (Manning, 2014) [1]. They are website platforms on which networking, meeting and building contacts with communication being the context on which this interaction happens (Warner & La-Fontaine, 2014) [2]. According to Aichner *et al.* (2021) [3], Social Media as a term first emerged with reference being made to the online commerce-based media environment within Tokyo sometime back in the year 1994. It has since metamorphosed into one of the most essential applications in the internet due to the explosiveness in terms of new platform development and the significant growth of social media users. Research conducted by Sreenivasan (2021) [4] reveals that 81% of Americans have at least one social media account. Globally, 74.65% of the population is on Facebook while 8.22% of the same population is on twitter. Therefore, the importance of social media cannot be ignored and its application in diverse areas cannot be overemphasized.

Social media sites mainly ride on the premise of people's ability to create engaging content, post or share this content and have others interact with the shared content. The content may include text, videos, photos, graphics and audio material (Muhlenbach *et al.*, 2017) [5]. Users are at liberty to join certain groups through their profiles from which they can receive regular updates on newly released content (Osterrieder, 2013) [6]. Social media platforms and interfaces are dynamic rather than static as they are all founded on a principle of constant change which to a great extent is influenced by the emergence of trends (Chen & Wei, 2020) [7]. New social media platforms are invented and vastly emerge into the media world so as to gain so much attention, and while some of these platforms gain a foothold, others gradually fade away completely (Lomborg, 2015) [8]. The fading away majorly is a result of failure to realign with the preferences of the targeted audience.

The main aim of any library is to get materials into users' hands, which requires reaching the audience, making them aware of what is available, and increasing circulation. Traditionally, the library has been using offline approaches to achieve these objectives. However, the physical accessibility of libraries is experiencing a downward trend due to various reasons among them being chang-

ing user behavior, digitalization of reading material and emergence of epidemics, shift to distance learning and social distancing due to outbreak of pandemics such as COVID-19. Libraries are also facing funding challenges which force them to downsize the staffing level. Faced with these challenges, university libraries must act responsively to continue with their core mandate of providing services to their clients. Universities can use social media to engage with their audience, gain stakeholders feedback and elevate their brands. The online communication affordances in social media can be used by university libraries to fulfill the requirements of their users (Ansari & Khan, 2020) [9]. When used properly, social media can be a valuable addition to a university library's communications strategy.

Extant literature on social media usage in academic libraries underscores the importance of user engagement, content strategies, and addressing challenges. Dempsey and Malczewski (2017) [10] emphasized the need for active monitoring and response to user comments despite low engagement rates. Kim *et al.* (2016) [11] advocated for interactive content and social media guidelines to maintain consistency and meet user expectations. Love *et al.* (2012) [12] stressed the importance of addressing privacy concerns and promoting responsible sharing practices among students. Ma and Agarwal (2016) [13] highlighted the significance of tailored content and active library participation to meet students' information needs effectively. Xu and Gao (2016) [14] recommended strategic planning, resource allocation, and staff training to enhance social media efforts. Abok and Kwanya (2017) [15] discussed the potential benefits of social media usage in Kenyan academic libraries for improved communication and visibility. Additionally, insights from the 2023 Guide to social media for Libraries provided demographic and usage patterns, while Lund (2019) [16] and Drivas *et al.* (2022) [17] respectively discussed Facebook engagement dynamics among Australian universities and global benchmarks for engagement metrics in libraries, archives, and museums, underlining the need for continuous improvement in user interaction and content engagement strategies.

The reviewed literature provides valuable insights into social media usage in academic libraries, highlighting the importance of user engagement and content strategies. However, there is a notable gap in research regarding the utilization of Fanpage Karma as a data collection tool, which could offer further understanding of social media dynamics in this context. As library users shift to online platforms and libraries increasingly deliver information services off-campus, there is a need for librarians to get an understanding of social media use behavior, and how universities apply various social media communication channels to engage with library users. Social Media analytics provides a better representation of social media usage in terms of their actions, interactions, and content on social media platforms. It also gives precise data that can be used as the basis of assessment when any library needs to establish how their Social Media handles rate when compared to others globally. In Kenya, most studies on this front have been based on single case studies utilizing self-report data that may not provide

a true representation of social media use and engagement in the academic library landscape in Kenya (Karanja, 2018 [18]; Zubeda, 2018) [19]. The present study sought to assess the application of social media by university libraries in engaging their users using social media analytics. The study was guided by two objectives: 1) to determine how university libraries in Kenya are using social media to engage their users and 2) to develop a strategy for application of social media by university libraries. It also gives precise data that can be used as the basis of assessment when any library needs to establish how their Social Media handles rate when compared to others globally.

## 2. Methodology

Careful consideration should be given to the major aspects while selecting an appropriate research design. When picking the appropriate research design, priority must be given to the crucial most dataset in a case where data available may both be in qualitative and quantitative forms. In such a case, priority of the research design will be based on the relative importance of the qualitative and quantitative data for answering research questions (Plano Clark & Ivankova, 2016) [20]. In a case where data sets that are used to elaborate research findings, may either be qualitative and quantitative, yet both are equally important, without either being accorded priority or biasness over the other, a mixed method approach should apply as the research design. Both sets of data are read collaboratively in order to bring out a holistic meaning into the research. In this research therefore, Mixed Methodology was applied where the researchers used fan page Karma as a Social Media Analytics tool for obtaining analytical data and an online questionnaire to collect information from respondents. The Questionnaire was used to obtain further interpretation from the Librarians, in order to clearly understand the phenomenon as depicted from the analytical data. Social Media analytics refers to the process of collecting, analyzing, and interpreting data from social media platforms to gain insights into user behavior, engagement, and trends (Ganis & Joshi, 2018) [21]. This process is beneficial since it collects even the data that respondents may not remember when filling in a questionnaire. Fan page Karma is a comprehensive tool used for Social Media Analytics. The tool has the capacity to collect metrics such as follower count, post reach impressions, engagement rates (likes, comments, shares) on Facebook, Twitter, Instagram and Youtube. Fan page Karma has been used in collecting data in social media related research by (Drivas *et al.*, 2022) [17] and (Lee, 2020) [12] which targeted analyzing ways of improving user engagement in the fields of Information and Knowledge Management and in Retail respectively.

This data was collected between 24<sup>th</sup> June 2022 and 21<sup>st</sup> July 2022. Online questionnaires were also sent to the university librarians. The benefit of the questionnaires is the different perspectives on an issue one might get from the respondents. There is also the scalability aspect where audiences can be reached from different locations across the country as long as the survey is conducted online.

The target population was all the 71 public and private Universities in Kenya. However, only 30 of these Universities had active Facebook and Twitter accounts for their library as at the time of the study. The data contained metrics such as number of fans, engagement, post interactions, number of posts, number of comments, page performance index and average weekly growth. The collected data samples are as shown in the **Figure 1** and **Figure 2** below.

Profile	Network	Fans	Engagement	Post interaction	Total Reactions, Comments, Shares	Number of posts	Number of Comments (total)	Page Performance Index	Follower Growth Average Weekly (in %)	Number of Likes
Amref University Library	FB	576	0.01%	0.18%	1	1	0	-	-	1
Chuka University Library	FB	2751	0.0%	0.0%	0	0	0	-	-	0
Egerton University Library	FB	2105	0.0%	0.0%	0	0	0	-	-	0
Jkuat Library	FB	6596	0.0%	0.0%	0	0	0	-	-	0
Kabarak University Library	FB	10140	0.0%	0.0%	0	0	0	-	-	0
Karatina University Library	FB	5911	0.0%	0.0%	0	0	0	-	-	0
Kisii University Main Campus Library	FB	6143	0.0%	0.0%	0	0	0	-	-	0
Maasai Mara University Library	FB	590	0.0%	0.0%	0	0	0	-	-	0
Machakos University Library	FB	4343	0.0%	0.0%	0	0	0	-	-	0
MUST Library	FB	1458	0.0%	0.03%	2	4	0	-	-	2
PAC University Library	FB	294	0.05%	0.14%	4	10	0	-	-	4
PUEA Library	FB	1934	0.0%	0.0%	0	0	0	-	-	0
Pwani University Library	FB	4049	0.0%	0.0%	0	0	0	-	-	0

**Figure 1.** Metric distribution for the university libraries' Facebook handles. (Source: Kenyan academic libraries, 2022) [22].

Profile	Network	Fans	Engagement	Post interaction	Total Reactions, Comments, Shares	Number of posts	Number of Comments (total)	Page Performance Index
Aga Khan Library	TWITTER	800	0.0%	0.0%	0	6	0	-
Alupe University College	TWITTER	57	0.0%	0.0%	0	0	0	-
AMREF International University Library	TWITTER	156	0.0%	0.0%	0	0	0	-
CUEALIBRARY	TWITTER	182	0.0%	0.0%	0	0	0	-
Egerton University Library	TWITTER	564	0.0%	0.0%	0	0	0	-
Islamic University of Kenya	TWITTER	1133	0.16%	0.63%	50	7	0	-
JKUAT Library	TWITTER	1183	0.0%	0.0%	0	0	0	-
JOUSTLIB	TWITTER	856	0.0%	0.0%	0	0	0	-
Kabarak Univ Library	TWITTER	888	0.0%	0.0%	0	0	0	-
Kaimosi Friends University	TWITTER	283	0.08%	0.71%	6	3	0	-
KarU Library	TWITTER	391	0.0%	0.0%	0	0	0	-
KeMU Library	TWITTER	1508	0.0%	0.0%	0	0	0	-
Kibabii Library	TWITTER	68	0.0%	0.0%	0	0	0	-
KU Library	TWITTER	377	0.0%	0.0%	0	0	0	-
library.tukenya	TWITTER	327	0.0%	0.0%	0	0	0	-
Marist Libraries	TWITTER	206	0.0%	0.0%	0	0	0	-
MKU Law Library	TWITTER	140	0.0%	0.0%	0	0	0	-

**Figure 2.** Metric distribution for the university libraries' Twitter handles. (Source: Kenyan academic libraries, 2022) [23].

Simple descriptive analytics was used to understand the characteristics of the sample data sets. This enabled the assessment of the effectiveness of social media strategies and campaigns. The Data that was collected was processed and analyzed using the Statistical Package for the Social Sciences software (SPSS version 23). This is a software package used for statistical analysis, data management, and data visualization (Field, 2018) [24]. The software allows users to import data from various sources, manipulate and transform data, perform statistical analyses, and generate reports with tables and charts to summarize findings (Pallant, 2016) [25]. In this study, the data analysis process entailed first entering the data collected, into the SPSS software for analysis. The data being entered into the software was imported from CSV file to SPSS and when analyzed by the software, brought out results in relation to the questions asked. The results were then presented in frequency form and thereafter illustrated in figures in order to represent various Social Media engagement metric representations, and tables to present the refined data.

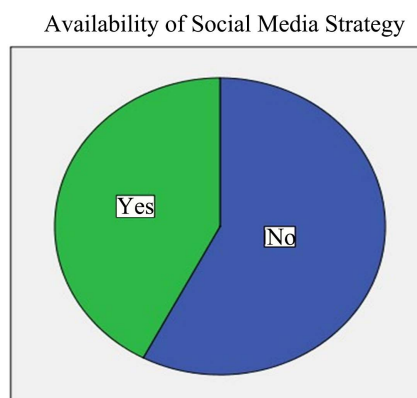
The study made a number of ethical considerations throughout the research cycle. First and foremost, oral permission was obtained from the school librarians who provided access to the online library information. The librarians were assured that the data would be used achieve the objective of this research only and for no other purpose whatsoever. Measures were taken to safeguard the data provided by assigning password protection so as to keep off unauthorized access (Nanda & Kumar, 2021) [26]. In order to maintain the confidentiality and protects the privacy the institutions represented, no identifying information was included in this report as only aggregated data was analyzed and discussed.

### 3. Results

The following presents the findings, comprising key metrics and trends. This is followed by a discussion of their implications for improving library services and enhancing user experiences in the digital age.

Comparative analysis of **Table 1** and **Table 2** indicates that all 30 universities had fans on Twitter and 27 universities had fans on Facebook. On average, universities had more fans on Facebook ( $\mu = 3363.96$ ,  $\sigma = 2391.311$ ) than Twitter ( $\mu = 523.00$ ,  $\sigma = 714.775$ ). The university library with the highest number of Facebook fans had 10,140 fans while the university with the lowest number of Facebook fans had only 294 fans. In comparison, the university with the highest number of Twitter fans had 3614 fans while the university with the lowest number of Twitter fans had only 14 fans. All (100%) of the universities recorded zero engagement and post reactions which is extremely low in comparison to the average provided in Drivas *et al.*, (2022) [17] research that states that Libraries, Archives and Museums globally record an average of 101.424 reactions per comment and an average of 3148.467 reactions in total. The phenomenon of high number of fans on the social media handles yet with very minimal reactions can be attributed the lack of Social Media strategy within the University Libraries. From the questionnaire sent out, at least 56% of the respondents said that

their library doesn't have a social media strategy. The same phenomenon may also be attributed to lack of a social media Calendar whose role is to bring out the calendar of events. This means that 48% of the libraries who do not have a calendar do not create and share content based on a specific schedule of outlined events. The information is shown in the charts below. (See **Figure 3** and **Figure 4**)



**Figure 3.** Availability of social media strategy in the university libraries. (Source: Wakahia & Owoche, 2024) [27].

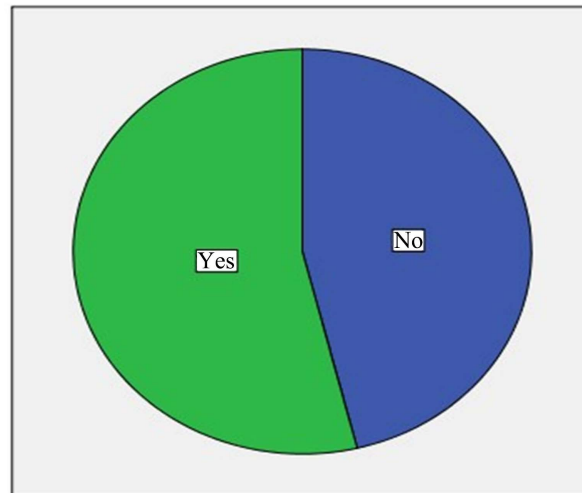
**Table 1.** Descriptive statistics for Facebook.

Metric	N	Min	Max	Mean	Std. Dev	(%)
Fans	27	294	10,140	3363.96	2391.311	0.0
Engagement (%)	27	0	0	0.00	0.000	100.0
Post Interaction (%)	27	0	0	0.00	0.000	100.0
Total Reactions, Comments, Shares	27	0	56	3.63	11.633	74.1
Number of posts	27	0	10	1.11	2.501	74.1
Number of Comments (total)	27	0	3	0.15	0.602	92.6
Number of Likes	27	0	52	3.41	10.948	74.1
Posts per day	24	0	0	0.0	0.000	83.3

**Table 2.** Descriptive statistics for Twitter.

Metric	N	Min	Max	Mean	Std. Dev	Nil (%)
Fans	30	14	3614	523.00	714.775	0.0
Engagement (%)	30	0	0	0.00	0.000	100.0
Post Interaction (%)	30	0	0	0.00	0.000	100.0
Total Reactions, Comments, Shares	30	0	95	5.93	19.682	86.7
Number of posts	30	0	79	3.57	14.500	83.3
Number of Comments (total)	30	0	0	0.00	0.000	100.0
Number of Likes	30	0	66	4.43	14.112	86.7
Posts per day	30	0	3	0.13	0.518	83.3

Availability of Social Media Calender



**Figure 4.** Availability of social media calendar in the university libraries. (Source: Wakahia & Owoche, 2024) [28].

The results also showed that the universities recorded marginally higher average total comments, reactions and shares on Twitter ( $\mu = 5.93$ ,  $\sigma = 19.682$ ) than on Facebook ( $\mu = 3.63$ ,  $\sigma = 11.633$ ). Similarly, a marginally higher number of posts was recorded on Twitter ( $\mu = 3.57$ ,  $\sigma = 14.500$ ) than on Facebook ( $\mu = 1.11$ ,  $\sigma = 2.501$ ). The highest total comments, reactions and shares on Twitter was 95 and the highest total comments, reactions and shares on Facebook was 56 (again lower than the average provided by Drivas *et al.*, (2022) [17] in his research, which provides average of 3148.467 reactions in total for Libraries, Museums and Archives globally), suggesting that there were more shares, comments and reactions on Twitter than on Facebook. However, some university libraries recorded zero comments, reactions and shares on both social media platforms. Specifically, 86.7% of the university libraries recorded zero comments, reactions and shares on Twitter and 74.1% of the university libraries recorded zero comments, reactions and shares on Facebook. This is an indication that almost every university library recorded an average that pales in comparison to the recommendation of 3890.619 comments, reactions and shares in total as provided by Drivas *et al.*, (2022) [17].

The results further indicated that on average, the university libraries recorded a marginally higher number of likes on Twitter ( $\mu = 4.43$ ,  $\sigma = 14.112$ ) than on Facebook ( $\mu = 3.41$ ,  $\sigma = 10.948$ ). The maximum number of likes on Twitter was 66 while on Facebook was 52. A total of 74.1% of the University Libraries recorded nil likes on Facebook and 86.7% recorded nil likes of Twitter. The University Libraries with the highest total number of comments on Facebook had only 3 comments while Twitter had zero total number of comments. University Libraries with nil comments on Facebook were 92.6%. This means that almost all University libraries fall below the average attraction of 3.562 comments per post and 121.029 comments in total as per Drivas *et al.*, (2022) [17].



Some of the comments made by the University Librarians in the questionnaire could justify why the reactions from the users are at such a low level. Such comments include.

“Resistance from users and staff on building genuine connections.”

“All Social Media Handles controlled by the university’s corporate affairs department.”

“Low Technology Acceptance levels by users.”

“Challenges Creating appealing content.”

“Unavailability of dedicated Social Media staff.”

Social Media networking is premised purely on connections. Without these connections, the engagements building out of the interactions may not thrive. Within the libraries, there is need to deploy staff that are dedicated to ensuring that the social media handles are vibrant. Therefore, there is need equip staff with required skills to enable them build the connections with the fans, create appealing content, monitor user metrics continuously and eventually this may translate to improved reactions from the fans.

None of the universities had metrics for page performance index, follower growth average weekly (in %), sum of total impressions of single posts, sum of reach of single posts, follower growth (absolute), follower growth (in %), daily reach (total), and page visits.

#### 4. Discussion

The findings hold significant implications for developing a strategy for the application of social media by University Libraries. At first, the study highlights the popularity and presence of university libraries on Facebook and Twitter, with a majority of universities having established a presence on both platforms. From the findings, 85.7% of all responsive institutions operate social media handles. These libraries have at least a Facebook account, a Twitter account or both. The substantial difference in the number of fans or followers on Facebook and Twitter suggests that Facebook is currently more favored by University Libraries in Kenya, as it attracts a larger user base. This finding affirms the results of studies that identify Facebook as the most popular social media platform among users (Sreenivasan, 2021) [4]. Furthermore, the substantial variations in the number of fans or followers among different universities emphasize the importance of tailoring social media strategies to each library’s specific needs and goals. The lack of engagement and post interactions recorded across both Facebook and Twitter, where users record very low sharing, liking or commenting highlights the need for these University Libraries to focus on improving their content and interaction strategies.

The higher average total comments, reactions, and shares on Twitter compared to Facebook suggest that Twitter may be more conducive to fostering engagement and interaction with library users. The marginally higher number of posts on Twitter compared to Facebook indicates that Twitter is potentially a

more active platform in terms of content creation and sharing. The presence of University Libraries that recorded zero comments, reactions, and shares on both platforms highlights the need for Libraries to actively cultivate user engagement. This is in line with the recommendations by Dempsey and Malczewski (2017) [10] that libraries proactively observe and address user feedback on social media platforms in order to improve user interaction and involvement. Furthermore, the variations in engagement levels among University Libraries emphasize the importance of tailoring social media strategies to the unique characteristics and goals of each library. The fact that a significant percentage of University Libraries recorded zero likes on both Facebook and Twitter indicates that gaining traction and engagement on social media platforms can be challenging. This finding agrees with the observation by Kim *et al.* (2016) [11] among universities in Korea that maintaining a consistent social media presence was a challenge facing libraries.

The findings reveal a lack of comments on both Facebook and Twitter, suggesting a need for strategies that encourage more active participation from users, such as asking questions, soliciting feedback or even posting content that attracts followers' engagement. Since the maximum number of likes differs between Facebook and Twitter, it implies that the audience's behavior and preferences may vary across these platforms. Despite the slightly higher average likes on Twitter, it is important for university libraries not to neglect Facebook altogether. Different users may prefer different platforms, and maintaining a presence on both can help reach a wider audience. The low number of comments on Facebook and the absence of comments on Twitter indicate a potential lack of active engagement.

## 5. Conclusions

In conclusion, the university libraries had a high social media presence but dismally low user engagement. The University Libraries recorded minimal likes, comments and sharing of content on these social media handles. The implications of the study for developing a social media strategy for university libraries are significant. The findings underscore the importance of utilizing multiple social media channels to reach a wider audience and engage with library users effectively. The findings also emphasize the importance of actively engaging with users to harness the full potential of these platforms for academic libraries. Libraries should strive to create engaging and relevant content, initiate conversations, directly ask questions as a way of attracting responses and actively respond to user queries and feedback. This will foster a sense of community and encourage users to actively participate and interact with library social media handles. Libraries should consider factors such as their target audience, institutional characteristics, and resource availability when formulating social media strategy.

University libraries should consider allocating more resources and efforts toward their Twitter presence to encourage user engagement and amplify the

reach of their content. Libraries should take advantage of this by consistently posting relevant and engaging content on Twitter to maintain user interest and stimulate conversations. Librarians should focus on implementing strategies that encourage users to interact with their social media content, such as posing questions, initiating discussions, and responding promptly to user comments and inquiries. They should further conduct audience research to understand their users' preferences and interests and tailor their content and messaging accordingly.

Librarians should create content that is suitable for each platform's format, tone, and audience demographics to maximize engagement. A comprehensive social media strategy could involve utilizing multiple platforms while tailoring content and engagement strategies for each one. They should prioritize efforts to foster a sense of community by encouraging discussions, responding to comments, and actively engaging with their audience to create an interactive and vibrant social media presence.

## 6. Recommendations

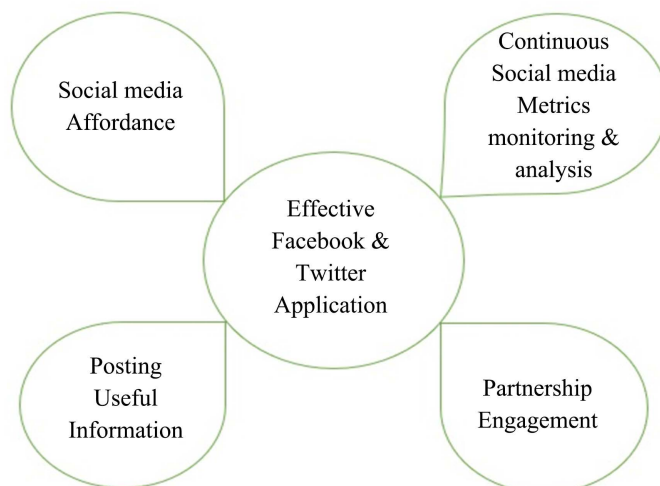
Based on the findings of this study, the following are recommendations that can be adopted as a strategy for effective application of Facebook and Twitter social media in service delivery in the University libraries. (See **Figure 5**)

### 1) Useful Information:

When managing a university's Facebook and Twitter accounts, university librarians should provide useful information that is essential to engage their audience, build trust, and fulfill your communication objectives.

### 2) Monitor and Analyze User Metrics Continuously:

University Libraries need to come up with monitoring and analytic strategies that enhance regular generating of social media metrics. These social media Metrics must include the tracking of likes, comments, shares, and emoji reactions.



**Figure 5.** Effective social media application strategy. (Source: Wakahia & Owoche, 2024) [27].

University libraries also need to familiarize themselves with the unique characteristics and algorithms of each platform to tailor their content and strategies accordingly. Monitoring such metrics will provide insights that are data driven hence prompting adjustments and improvements where necessary. Existing social media policies need to be reviewed to incorporate guidelines on how and how often these monitoring and analytic strategies must be conducted.

### 3) Partnership Engagement:

University Libraries Must look for ways of working together with other university departments and student organizations as a way of expanding the audience visiting their social Media handles. Social Media Handles promotions done collectively through various departments can boost user engagement. Trainings on best practices in the utilization of Social Media Handles may be enhanced as a way of empowering library staff on how to initiate and implement effective strategies, and students so as to lower the acceptance levels. Library staff should also be encouraged to consider bench marking the adopted social media activities with both local and international institutions known to have set up strategies that have succeeded in the past or that are currently succeeding.

### 4) Social Media Affordance:

University Library staff should encourage their users to make utmost utilization of Social Media Affordance. Social Media Affordance can be defined as mutuality of actor intentions and technology capabilities to provide the potential that provide the potential for a particular action (Faraj & Azad, 2012) [28]. Social Media Affordance can be conceptualized as the unique features and capabilities of social media platforms that can be leveraged to enhance communication and engagement. For instance, a library can use a Tik Tok video to convey information about the availability of an off-campus access platforms that users can utilize remotely to access library content. Different affordance strategies include meta voicing, triggered attending, network-informed associating, and generative role-taking. These can be used in Facebook and Twitter conversations.

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## Authors' Contributions

Samuel Wakahia was responsible for the overall investigation. Samuel Wakahia and Patrick Owoche were responsible for the design. SW and PO contributed equally to this work. SW and PO were responsible for conducting the Social Me-

dia Analytics. PO was responsible for statistical data analysis. Each author had participated sufficiently in the work to take public responsibility for appropriate portions of the content. Both authors read and approved the final manuscript.

### Conflicts of Interest

The authors declare that they have no competing interests.

### Availability of Data and Materials

All sets of data that were produced during the research are fully available.

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