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Social Media Engagement Across Public Libraries in Monroe County: A Webometric Study

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By Danielle D'Agostino

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INTRODUCTION
Social media is a vital aspect of how libraries in all disciplines can market their services, expand their audience, and share information with users (Dankowski, 2013). Effective social media marketing through popular platforms such as Instagram, TikTok, and Facebook has indicated effective engagement results for libraries all over the United States. Dankowski (2013) found that the New York Public Library's effective use of Twitter for promotional marketing in 2018 garnered a 35 percent increase in library card sign-ups over one month. The content of a library's social media posts also has a lasting impact on the types of audiences they reach and the engagement they foster. For example, the effective use of pop culture "memes" to share content in a humorous manner has the potential to make a library's social media post go viral, thereby reaching a much wider audience (Woodworth, 2018). While the effectiveness of social media marketing for libraries has been indicated, a deeper look into which platforms lead to greater engagement is necessary to determine best practices for libraries.

Social media has continued to develop and change rapidly since its inception. In order to best meet the information needs of users and gather as much visibility as possible, new platforms have been created and older platforms have been updated to improve usage. Because of these changes, engagement with newer, yet highly popular social media platforms such as TikTok has not been studied as widely as more traditional platforms such as Facebook. Additionally, post formats, character limits, and post content can vary greatly by platform. Comparing multiple social media platforms in this study allowed for a wider view of how users engage with public libraries on different social media platforms.

Purpose Statement
The purpose of this webometric analysis is to evaluate social engagement across TikTok, Instagram, and Facebook social media accounts at public libraries in Monroe County in Western New York by categorizing post content and measuring engagement through reactions or likes, shares, and comments.

Research Questions
R1. Between TikTok, Instagram, and Facebook, which social media platforms garner the highest instances of likes, comments, and shares from users?

R2. Which libraries in Monroe County use social media most frequently?

R3. What percentage of posts were used to advertise for library special events and programs?

R4. What does social media use look like by platforms by libraries in Monroe County?

R5. Which types of social media posts are made by public libraries in Monroe County?

Definitions
Social Engagement: is the process of communicating in an online format through social media interactions (Qualtrics, 2022).

Meme(s): are a type of post, usually humorous, where the content is shared widely across the Internet on users' social media platforms (Merriam-Webster, 2022).

Viral: Specifically in relation to social media, a post going *viral* refers to the rapid sharing of content on the Internet (Merriam-Webster, 2022).

Webometric Analysis (webometrics): is a form of research analysis where web-based content, such as scholarly works and websites, is evaluated and described. In this method, the Internet is evaluated as a "scholarly research tool" (Reitz, 2014).

Delimitations
This study focused on public libraries in one of the most populous counties in Western New York; Monroe County. The information evaluated was pulled from the social media pages run by these libraries. This research did not consider who runs

these social media pages, how much time was put into creating social media posts, or whether these social media posts had an effect on physical attendance at these libraries. Social media posts on platforms beyond Facebook, Instagram, and TikTok were not taken into consideration. The data are limited to posts made from April to June 2022. The social engagement of users was measured by the number of reactions or likes, shares, and comments as visible to the public. Social media pages were evaluated for their amount of posts and for their content. The number of users who like or follow each library's page was not notated in the data.

Assumptions

This research assumed that the public libraries in Monroe County had the time and funding to have some degree of presence on Instagram, TikTok, or Facebook. This study also assumed that social engagement with the library's social media pages was a positive interaction. The content of comments on posts were not evaluated, so negative comments were not taken into consideration. Regarding the user base, this research assumed that users who engage on social media with a library are a part of the community that has access to that library's resources. In the case of a video or post becoming viral, there can often be users who engage with the viral post on social media but do not have access to the public library they interact with.

Importance of Study

Social media engagement has become a necessary facet of facilitating engagement with libraries, especially as libraries continue to offer more and more of their services in a digital format. Individual libraries also have different social media marketing needs and different levels of skill in utilizing social media platforms. Libraries also have to consider the unique needs of their user base. Thoughtful social media marketing with a plan for strengthening social engagement is a key tool for libraries to create an online community (Woodworth, 2018). Determining which social media platforms receive the most engagement is the first step to formulating a plan for effective post content and social media use. This study sought to discover whether any one platform between Instagram, TikTok, and Facebook is definitively more popular with users and whether the content and number of posts have a notable correlation with social engagement.

LITERATURE REVIEW
Measuring Social Media Engagement with Libraries and Archives

Understanding how libraries can most effectively use social media to market their services is a vital part of increasing engagement with library services. Scholarly literature over the past 10 years related to this topic has approached social media marketing for libraries from a variety of angles, including evaluating post content on specific social media platforms, taking surveys from information professionals, and evaluating in-person library outcomes. For example, research at the New York Public Library evaluated their social media marketing strategies by focusing on the content of posts. They determined results through measurable outcomes such as average monthly library card sign-ups (Dankowski, 2013).

Dankowski's (2013) evaluation of the content posted through various social media tools at the New York Public Library such as Twitter, Facebook, and Google Hangouts, led to their determination that creative, humorous, and well-timed posts with effective content can lead to significant increases in user engagement with the library. Other research from this time focused on outcomes from using specific platforms such as Twitter. Kriesberg (2014) analyzed the Twitter usage of 34 different archival institutions, evaluating their post frequency, content, and follower counts. This data was then used to identify models for effective marketing on Twitter. Rather than evaluating engagement through user comments and interactions, Kriesberg's research questions focused on conducting a content analysis to gain a deeper understanding of how these institutions used Twitter. This study concluded that frequent posting, engaging with other users, and sharing related posts through retweets led to increased awareness by users of these archival collections (Kriesberg, 2014).

Twitter is one of several highly popular social media platforms in use today. Further research in archival settings focused on other platforms such as Hager's (2015) research regarding archival outreach on Facebook. This research sought to understand why professionals choose to use Facebook for their posting and evaluate the effectiveness of this platform for outreach. The purpose of this research

was to be able to identify a set of recommendations for how to effectively use social media to market archival institutions. Hager used qualitative interviewing and analytical data to uncover how archival professionals decided to use Facebook for their institutions. After receiving results from 23 institutions, Hager determined that having a Facebook presence is now an expectation for public institutions, and this public expectation was the driving factor for creating these pages. Respondents also felt that having a social media page implies that the institution is technologically capable. Finally, these respondents also felt that using Facebook was an integral piece of their community engagement (Hager, 2015).

Social Media Marketing Outcomes

Another way that social media can increase engagement for libraries is by leading to a greater volume of "word of mouth" marketing. This is most likely to occur when a social media post goes viral, but this outcome is still possible with effective and consistent social media use. In Barber's (2014) research surrounding word-of-mouth marketing, she determined that social media posting serves as a tool for librarians and patrons to increase word-of-mouth marketing and, as a result, increase user engagement. Barber also made a point of mentioning that library marketing is a team event that requires cooperative efforts from multiple employees for success (Barber, 2014).

Having a team dedicated to social media marketing purposes in libraries is examined several times in related research. The San Antonio Public Library, for example, has a team of seven employees whose purposes are strictly related to marketing, and none of these individuals are librarians (Cowart et al., 2017). This process included greatly expanding their social media presence across various platforms including Facebook, Instagram, Twitter, and YouTube. This research in marketing at San Antonio Public Library evaluated the demographics of the library's audience. They concluded that the highest levels of engagement on their social media came from women aged 25-44, and the posts they engaged with were most often related to children's programming (Cowart et al., 2017). Evaluating engagement results as they relate to the demographics of users is valuable for understanding which posts are most beneficial and informative to their users.

Social media presence for libraries and archives has become significant enough that researchers have made efforts to create guidelines for teaching professionals how to most effectively use social media to market their institutions. Understanding the importance of having this engagement is key to successfully fostering these networks. A survey that asked information professionals specific questions about how they used social media sought to identify the key components of social media literacy and the ideal skill sets for this task. Rather than measuring successful social media posts by user engagement, this study took an outward approach, gathering data about which skills and tools information professionals deemed the most important for conducting these tasks within the broad nature of social media. After collecting data from 49 professionals, the study determined that "communication skills" were ranked higher than any other skill set for social media marketing (Simons et al., 2016).

In a more focused study, researchers evaluated the social media outcomes of the Emily Carr University of Art and Design Library over the course of one year. This research was inspired by an article in *Library Journal* that claimed that, while many institutions are using social media, they rarely keep track of their social media outcomes and improvements (Webb & Laing, 2015). Before determining how they would measure successful social media use, the library formed a social media committee and established what their goals were for social media posts, what content should be included, and their reasons for using social media. By establishing these baselines first, the library was able to set up multiple parameters for gauging successful social media marketing such as follower counts, user comments, and connections with alumni. This was paired with a survey sent out to social media users that asked for their input about their interactions with these pages. Facebook and Twitter analytics also offered a unique window into which shared posts led to the highest increases in followers, such as a Facebook post that was shared by a local publisher and led to reaching 543 new users. Ultimately, their research concluded that highly visual posts, active participation, and networking were the key factors in creating successful social media posts for this library (Webb & Laing, 2015).

Related Methodologies

This research is not the first to evaluate social engagement with social media pages through reactions, likes, and comments. For example, Williamson et al. (2015) evaluated social media use at Sam Houston State University's Special Collections archive to see how effective their efforts were at increasing traffic to their finding aids and special collections. The team evaluated engagement by the volume of likes, shares, and click-throughs. Their final conclusion was that WordPress was an especially effective platform for sharing finding aids, but overall, a combination of utilizing WordPress, Facebook, and Twitter was most effective for marketing their archive and its services (Williamson et al., 2015). While 10 different social media sites were evaluated in this study, one of the most popular sites today, TikTok, did not launch until one year after the publication of this research.

In a more recent study, Doney et al. (2020) conducted a content analysis of Instagram posts on accounts representing 11 academic libraries. This content analysis created a record of all of the posts made in a two-month time frame, the number of followers the account had, and the likes and comments on each post. Posts were categorized by their functionality. The results indicated that the majority of Instagram posts fell into their "Showcasing" category, which included posts that provided references for library resources or current events. The posts with the highest number of likes fell into their "Crowdsourcing" category, which included posts that intentionally request feedback in the form of likes or comments. The result was expected due to the incentive to engage. Ultimately, they concluded that academic libraries benefit from including a variety of types of posts in their Instagram accounts (Doney et al., 2020).

Examining social media engagement is also prevalent outside of the information science field. Habibi and Salim (2021) at Ontario Tech University conducted research on user engagement with science-related posts on Instagram and TikTok. Their goal was to understand which types of educational science content users are most likely to engage with. The results showed that experimental videos on TikTok received more likes and comments than lecture-style educational videos. On Instagram, experimental videos on this topic also garnered higher rates of comments and likes than still image posts (Habibi & Salim, 2021).

The existing research around social media engagement in libraries focuses strongly on academic libraries, special institutions, and institutions related to other fields. Additionally, social media platforms and the ways people use these platforms are always changing. As a result, research from just a few years ago on this topic can easily be built upon due to new social media platforms rising in popularity, such as TikTok. This study evaluated user engagement with social media posts through comments and likes to gain a deeper understanding of what successful social media marketing is for public libraries in Monroe County, New York.

METHODOLOGY

This study reviewed and compared the volume of reactions or likes, comments, and shares publicly available on TikTok, Instagram, and Facebook from the social media pages of public libraries in Monroe County in Western New York. Higher rates of likes, comments, and shares were considered an indicator of higher levels of engagement with that library's social media platform. Comparisons were made across libraries and across each platform to discover any patterns in post types and to determine if any one platform led to higher rates of engagement than the others. Monroe County in Western New York is home to a total of 32 public libraries of which 31 had independent social media pages to review. The evaluated posts were taken from a three-month period beginning April 1, 2022, and concluding June 30, 2022.

Information Sources and Procedures

The sources of data for this research were the publicly available social media pages for these libraries. This information was found by searching for each library in Monroe County by name on each social media site. The address of the library on each page was checked to confirm that the correct library in Monroe County was selected. On TikTok, where user names of the libraries were sometimes abbreviated, additional scrolling through tagged posts was sometimes necessary to ensure that any existing account would be found.

The content and number of posts made by these libraries were also evaluated to determine if there were differences in post content or number of posts across these platforms. This was evaluated to search for correlations between social engagement and post frequency. Parameters were established for how each type of post would be categorized. These categories included 1) posts that promoted programming and events, 2) posts related to providing community resources or assistance, such as temporary assistance, 3) informational posts such as changes to operating hours, 4) posts promoting the library's collection materials, and 5) all other posts beyond these parameters. Habibi and Salim (2021) used more limited parameters, differentiating post types as either lecture-style or experimental. However, due to the varied nature of posts by public libraries, more categories are needed to categorize the purpose of a post more accurately.

The data collected spanned over three months of posting by these public libraries, from April to June 2022. A chart was made for each library to take a record of the number of posts made, if any, each day on each platform, as well as the number of comments, likes, or shares on each post. Posts were labeled with their corresponding category to establish the number of posts made in each section. These charts were then compiled into an Excel spreadsheet that included final figures for the number of posts on each platform for each library, the number of reactions or likes, comments, or shares on each platform, and the number of posts in each category.

This data was then compared across each of the three platforms to gather data regarding post frequency and responsiveness from library users on social media.

Limitations
This study focused on a relatively small span of time across public libraries in a specific geographic area and is limited by the assumption that the selected time frame is representative of general posting and responses for those libraries. This study also assumed that the rate of reactions, comments, and shares on social media posts is an indicator of engagement with a library's social media page.

RESULTS
R1. Between TikTok, Instagram, and Facebook, which social media platforms garner the highest rates of likes, comments, and shares from users?
The data uncovered that rates of likes, comments, and shares from users were most prevalent on Facebook (Figure 1). Across all of the library social media pages surveyed in this research, posts on Facebook were reacted to 14,712 times (Table 1). Posts on Instagram received 11,327 likes and posts on TikTok received 429 likes. While a greater number of reactions occurred on Facebook posts, when the total post count is considered, the rate of likes or reactions on each post was highest on TikTok. The total number of Facebook reactions related to the total number of posts leads to an average of 6.77 reactions per post. For Instagram, this ratio leads to 10.71 likes per post. On TikTok, this number is 53.63 likes per post.

Figure 1. Total Rates of Reactions or Likes, Comments, and Shares Across All Libraries
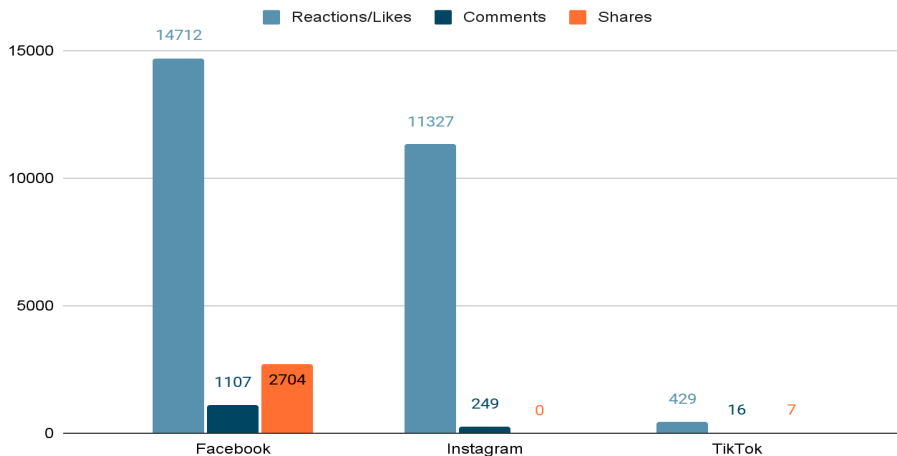

Table 1. Total Likes or Reactions Per Post Across Facebook, Instagram, and TikTok

Social Media Pages	Facebook	Instagram	TikTok
Total Number of Reactions or Likes	14,712	11,327	429
Total Number of Posts	2,174	1,058	8
Reactions or Likes Per Post	6.77	10.71	53.63

R2. Which libraries in Monroe County use social media most frequently?

The two libraries with the highest number of posts on both Facebook and Instagram were Parma Public Library and Fairport Public Library. From April through June 2022, Parma Public Library posted on Facebook 191 times, on Instagram 183 times, and on TikTok 6 times (Table 2 and Table 3). Their posts on TikTok constituted most of the data gathered on TikTok, where only 8 total posts were made by any libraries during the three-month period. Fairport Public Library made 173 Facebook posts and 121 Instagram posts during the three-month period. The only other library to include posts on TikTok was East Rochester Public library with a total of two posts From April to June 2022. However, East Rochester Public library fell rather far below several other libraries in the County in their numbers of Facebook and Instagram posts.

Table 2. Five Libraries with Highest Rate of Facebook Posts

Library	Number of Facebook Posts
Parma Public Library	191
Fairport Public Library	173
Central Library of Rochester	152
Brighton Memorial Library	138
Webster Public Library	124

Table 3. Five Libraries with Highest Rate of Instagram Posts

Library	Number of Instagram Posts
Parma Public Library	183
Fairport Public Library	121
Webster Public Library	115
Gates Public Library	106
Central Library of Rochester	82

R3. What percentage of posts were used to advertise for library special events and programs?

Five categories were established for sectioning each post made by each library from April to June 2022.

Posts that advertised for special events and programs fell into category 1, which included all posts discussing or promoting library programming and library events. The other categories included 2) posts providing community resources or library services, 3) informational posts such as operating hours or job postings, 4) posts that promote collection materials, and 5) all other posts. Posts in category 1 were the most commonly recorded type of post from April to June 2022, comprising 47.5 percent of all posts made during this time period (Figure 2).

R4. What does social media use look like by platforms by libraries in Monroe County?

The social media platform most commonly used by public libraries in Monroe County was Facebook (Figure 3). Out of the 32 total libraries examined in this study, only the Mumford branch of the

Scottsville Free Library had no social media pages at all. However, this library is a smaller, more rural subsection of the larger Scottsville Free Library branch, which did have social media pages. In total, 31 of the 32 libraries examined had pages on Facebook that were active during the three-month period. For Instagram, 26 libraries had active social media pages. TikTok included a much smaller category with two libraries having active social media pages during the three-month period.

While 26 libraries had active Instagram accounts, five libraries had accounts that could not be used for this study because they were not active during the three-month period and had no posts to record for consideration. An additional two libraries had TikTok accounts that could not be surveyed because they also had no posts during the three-month period.

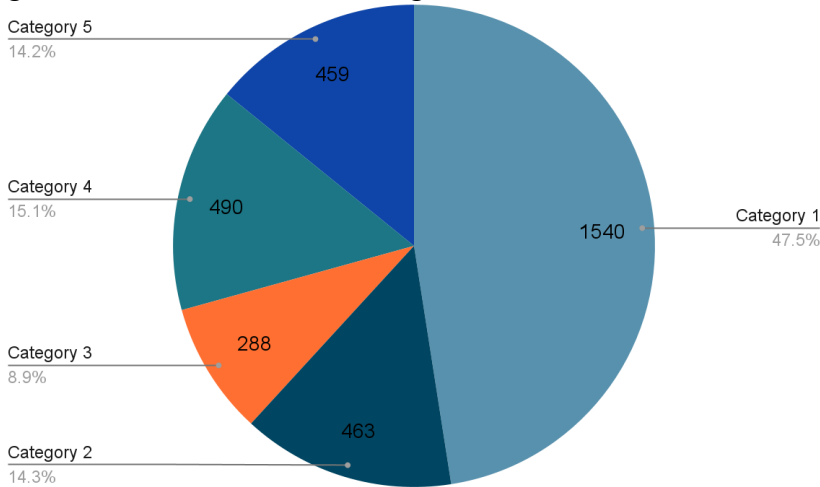Figure 2. Prevalence of Post Categories

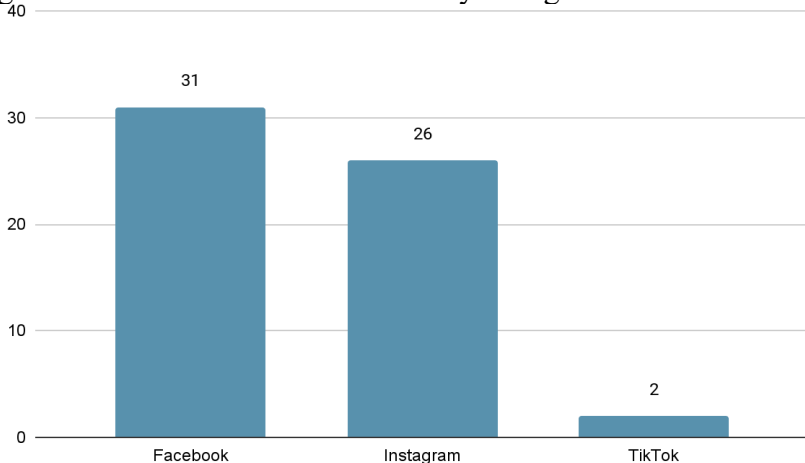Figure 3. Number of Libraries Actively Using Each Social Media Platform

Table 4. Number of Posts Occurring in Each Category

Post Categories	Number of Posts
1: Posts promoting programming or events	1540
2: Posts providing community resources or library services	463
3: Informational posts	288
4: Posts promoting collection materials	490
5: Other	459

R5. Which types of social media posts are made by public libraries in Monroe County?

Public libraries in Monroe County predominantly made posts that were listed in category one, which included posts promoting library programming and library events. During the three-month period, a total of 1,540 posts were listed in category one. Category two included 463 posts, category three included 288 posts, category four included 490 posts, and category five included 459 posts. Posts in category three, which were informational posts, were noted least often in the data (Table 4).

DISCUSSION AND CONCLUSION

The results of this study indicate that Facebook is the most commonly used platform for libraries in Monroe County, New York. Additionally, these libraries are most likely to make posts that advertise special events and programming within the library. Some instances in the data did not exactly correlate with this conclusion. For example, within the three-month period, the Arnett Branch Library's most common post category was category two, which included posts that provide community resources or library services. Overall, however, posts advertising for events or programming comprised the overwhelming majority of total posts.

King and Poulin (2011) discussed the importance of considering how frequently one should make posts on social media for their libraries and how daily engagement can be key for engaging with the user base. Across Monroe County, the number of posts made by each library during the three-month period varied greatly. The Parma Public Library made 191 Facebook posts over the three-month period while the Scottsville Free Library only made six posts during that span of time. Parma Public Library's increased rates of posts led to an increased number of reactions, comments, and shares, bringing their posts to a wider audience range.

A multitude of factors could influence each library's decision on when and how to make social media posts including staffing, time constraints, budget allowances, and social media literacy. The data also uncovered that, unlike Facebook and Instagram, TikTok was not a commonly used platform by libraries in Monroe County. Four total libraries had TikTok accounts and only two had posted during the three-month period. The library with the most TikTok posts was Parma Public Library, which also had the highest post rate on Facebook and Instagram. This library's ability to maintain a posting schedule across multiple platforms could play a role in their higher numbers of social engagement.

Further research into this subject could more deeply explore the reasons for variations in post type, frequency, and social media platform preferences. The next step to consider could be comparing social media engagement with libraries and back-end user data detailing the number of users each library has to see if higher rates of social media engagement correlate with the use of services. Additionally, further research could compare posts promoting programming and events with attendance data to potentially uncover a relationship between promotional social media posts and event attendance. This further research could also take note of the names of users reacting to posts to determine if users who interact online are also attending in-person events. Overall, these findings uncover a need to better understand the value of social media promotion

for improving community engagement with libraries and their services.

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