

Social Media Analytics for Libraries: A Case Study

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Abstract

The purpose of the study is to measure the effectiveness of three social media channels managed by the library of Kendriya Vidyalaya Pattom in achieving the set objectives of providing resources, publicizing library activities and reaching out to the users irrespective of their space and time. An analytical study of the data obtained from the inbuilt analytics tools available with WordPress, Facebook and Twitter was conducted based on five performance social metrics (activity, audience, engagement, referral and return on investment). The analysis revealed that blog was the most used social media channel by students and teachers to get academic resources, followed by Twitter and Facebook. The reach and engagement was maximum among people in the age group of 18-24. Most shared posts on the channels were of academic in nature and content whereas, posts with photographs recorded maximum likes, clicks and comments. The study also confirmed the trustworthiness of resources provided by government agencies. The analysis of the return on investment metric underlined the success of social media channels in libraries as valuable investment options for present and future.

Keywords: Social media; Social metrics; Social media analytics; Library blogs; School library

1. Introduction

Social Media has become a widely used and effective tool in modern libraries to reach out to the current users and the society at large. Services and applications using social media, particularly blogs and online social networks, have immensely helped libraries to increase their online presence, marketability and influence. The trend is steadied with the exponential growth in the global use of internet and mobile technologies. This demands libraries to repackage and redesign their products and services more compatible with popular social media tools. A large number of libraries around the world took hold of this opportunity and became socially relevant. In this context, blog(s) and social network page(s) maintained by such libraries can be monitored to assess how effectively these tools perform and help them to accomplish the set objectives. Analyzing a set of relevant social media metrics retrieved from a library's blog or a social network page (like Facebook or Twitter) will help us to carry out a quantitative assessment of

their effectiveness. This paper presents a brief general textual overview of important social media performance metrics and data analytical tools available with these channels those are useful and relevant for libraries. At the application level, the paper studies the data analytics to assess the performance of the library blog and social networking pages managed by Kendriya Vidyalaya (KV) Pattom, Thiruvananthapuram.

2. Literature Review

The use of social media tools in libraries has become a notable trend in the last decade. A number of studies were conducted on how these tools have been or could be incorporated as a resource as well as a service in a library. Most of the studies were confined to investigate the application potentials of these tools. Measuring the impact of social media channels set up by a library in achieving its institutional goals requires an analytical approach based on dynamic social media metrics.

Mon (2015) traced the early history of social media adoption as it happened in 2005-2007 by the creation of institutional accounts by some public libraries of USA with one of the most popular social networking site of the time, MySpace (which started in 2003). Mack, Behler, Roberts and Rimland (2007) in one of the early studies on the use of social media in libraries discussed some best practices for adopting Facebook as a tool to reach out the users. Facebook surpassed MySpace by 2010, as found in a survey of ARL library websites, on the adoption of web 2.0 in U.S. academic libraries (Mahmood and Richardson, 2011). Gupta, Dhawan and Visakhi (2016) presented a scientometric assessment of literature output during 2003-2014 on social media and libraries in which they pointed out that literature on blogs contributed the largest share (34.99%) of publications among social media sites, followed by Wikipedia (19.97%), Facebook (13.65%) and others. The study revealed that among social media tools blogs and social networking websites were popular choices for libraries. Two important studies on the early adoption of Twitter by libraries showed a surge during the period 2008-2010 (Stuart, 2010; Del Bosque et al., 2012).

An extensive content analysis study conducted in 2005 described blog as an efficient tool for "marketing" library events and resources (Bar-Ilan, 2007). King (2015) presented a detailed study on the types of analytics relevant for libraries that can be found on different social media channels and how these can be used to track a library's goals. In a case study of using social media in an academic library to enhance audience engagement and create a community of users Zelda and Sarah (2016), asserted the importance of selecting the right platform depending on the characteristics of users or aims of the organization. Ruhi (2014) offered a business intelligence perspective of social media analytics with the aim to provide guidelines to help businesses align their social media programs, processes and technologies with the overall strategic objectives of the organization.

These concepts could be effectively applied when analyzing the social media performance metrics retrieved from the library's social media channels.

The review of literature established the relevance and usability of social media in libraries as tools to market resources and reach out the users while keeping them at their own space and time. The widespread adoption of these channels by libraries warranted an assessment of corresponding analytical tools to evaluate their effectiveness.

3. Objectives of the Study

- i. To recognize a basic set of social media metrics relevant for libraries.
- i. To study the inbuilt data analytics tools provided by the library blog and social networking website pages managed by Kendriya Vidyalaya Pattom and assessing the effectiveness of each channel in achieving set objectives.

4. Methodology

The official statistical and graphical data obtained through the built-in analytics tool of the library blog and social networking pages were analyzed based on a set of selected social media metrics. The observations were studied to find relations between the set objectives of the library and performance of the social media channels.

5. Library Social Media Channels of KV Pattom

The KV Pattom library blog (<https://librarykvpattom.wordpress.com>) was launched in September 2007, as one of the first library blogs in India. The twitter profile (<https://twitter.com/librarykvpattom>) was created in November 2007, followed by the creation of a Facebook page (<https://www.facebook.com/LibraryKVPattom>) in December 2011. All channels are linked each other and can be accessed also from the school website, Facebook page, library's own online academic network and e-magazine.

The specific objectives of the library to create all these three social media channels were:

- i. to collect, organize and provide useful resources to students and teachers;

- ii. to publicize library resources, services and programmes; and
- iii. to reach out to the digital natives and the society at large at their own space and time.

6. Social Media Metrics and Analytics

There are over 1.5 billion websites on the World Wide Web today. Of these, less than 200 million are active ("Total number of Websites", 2018). In June 2018, Facebook officially declared as having 1.47 billion daily active users on average ("Facebook newsroom", 2018). Nielsen estimated 173 million blogs online in 2011("Buzz in the blogosphere", 2012) which crossed 440 million in 2017. These statistics reveal a lot about how today's channels of communication are dominated by social media.

When libraries adopt social media with certain institutional objectives, like to reach out to more users online or to publicize library activities, it became necessary to measure the change before and after the adoption to assess the effectiveness of the channel. And to measure that we need to analyse some basic performance activity metrics. King (2015) proposed five types of social media metrics that can be tracked. They are (i) activity metrics (ii) audience metrics (iii) engagement metrics (iv) referral metrics and (v) ROI (Return on investment) metrics. In a broader sense, the analysis of these social media metrics constitutes social media analytics. A definition proposed by Lovett (2011) states, "Social Analytics is the discipline that helps companies measure, assess, and explain the performance of social media initiatives in the context of specific business

objectives". This can be easily applied in the domain of libraries too. Simply, social media analytics draws upon and analyses the data (social metrics) and generates insights. These insights are studied to assess the degree of effectiveness in achieving specific objectives.

7. Social Media Data Analysis

Mon (2015) described four types of data analysis techniques commonly used to assess social media channels. They are:

- i. surveys, interviews, and focus groups
- ii. text mining and content analysis
- iii. social network analysis and
- iv. analytics tools

This paper reports the data analysis carried out using the fourth technique mentioned above (i.e., analytics tools), based on five social media metrics proposed by King (2015). There are many free (e.g., Google Analytics, Follower wonk, Quintly, Klout, etc.) and paid (e.g., Sprout Social, BuzzSumo, Tailwind, Iconosquare, etc) social media analytics tools available online. But the study was limited to the three inbuilt analytical tools provided by the blog (WordPress Stats), the Facebook page (Insights) and the Twitter profile (Twitter Analytics).

8. Analysis and Discussion

The analysis of data provided by all the three social channels based on five social media metrics are discussed below. All-time, quarterly and monthly statistics of blog and social networking pages were considered for the study.

Table 1
Activity metrics of social media channels

Sl. No.	Channel	All-time total number of posts	Number of posts in the Quarter (July-Sept 2018)		
			July	August	September
1	Blog posts	1147	2	4	2
2	Facebook posts	235	7	3	5
3	Twitter Tweets	885	20	3	12
	Total	2767	29	10	19

8.1 Activity Metrics

Activity metrics are the numerical data of activities derived from the creation and publishing of posts, tweets, videos, links, etc. held during a specific period of study. Table 1 presents an all-time activity metrics and that for the Quarter, July-Sept 2018.

The library blog was found as the most active

channel with an all-time post count of 1147 followed by Twitter (885) and Facebook (235). The month of July recorded maximum posts/tweets in the quarter (July-Sept.).

8.2 Audience Metrics

Audience metrics checks the growth or decline in the number of followers a social media channel gained or lost over a period of time. WordPress

Months and Years													
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
2007									459	1,043	1,797	2,221	5,520
2008	2,392	3,440	5,254	20,077	9,538	10,466	11,605	9,594	11,603	16,956	31,374	30,799	163,098
2009	37,619	55,362	43,999	25,549	20,618	26,717	38,915	34,048	41,393	35,805	34,519	36,800	431,344
2010	50,676	53,341	45,242	31,099	25,112	24,858	26,301	31,775	46,027	37,108	52,905	36,991	461,435
2011	46,174	56,833	57,917	34,636	29,756	29,988	36,141	51,838	69,938	51,945	65,105	64,327	594,598
2012	77,309	105,611	87,223	35,678	32,360	54,452	50,291	51,135	62,378	43,017	37,789	32,661	669,904
2013	34,462	36,233	34,190	23,062	26,585	30,206	30,615	44,951	84,100	36,200	39,108	56,732	476,444
2014	62,140	92,176	105,833	40,293	37,629	40,563	58,448	69,222	88,641	48,154	98,669	83,537	825,305
2015	69,119	65,424	72,379	50,965	43,226	58,758	79,326	81,848	107,754	78,139	66,533	56,609	830,080
2016	62,124	68,640	57,497	39,326	33,547	45,368	59,582	64,086	78,518	54,261	61,150	68,724	692,823
2017	75,549	102,901	112,147	42,636	33,468	44,612	74,623	86,128	89,362	87,128	68,334	78,862	895,750
2018	82,048	98,219	118,794	63,640	47,318	56,628	73,550	71,138	81,407	25,605			718,347

Fig. 1. Month & Year wise growth in the number of visitors

analytics presents the audience metrics through recording the change in the overall growth in the number of unique visitors. Figure 1 shows month and year wise growth in the number of visitors.

The data indicated that so far a total of 2,314,216 unique visitors came to the blog which received

6,756,108 views. It means that the unique visitors stayed on the site for a while and were interested to visit other pages of the blog too. The month-wise visitor analysis also shows an interesting trend of an increased viewer count in the month of



March (Figure 2). The highest views and visitors counts (118794 & 63487) were recorded in March 2018. March is the month during which the annual academic examinations have been conducted every year and the statistics revealed that people

used the blog for exam related resources during that period.

Facebook analytics revealed as in Figure 3, a total of 2377 followers with a growth of 35 in the Quarter July - September 2018 with a monthly average of 12 new followers.

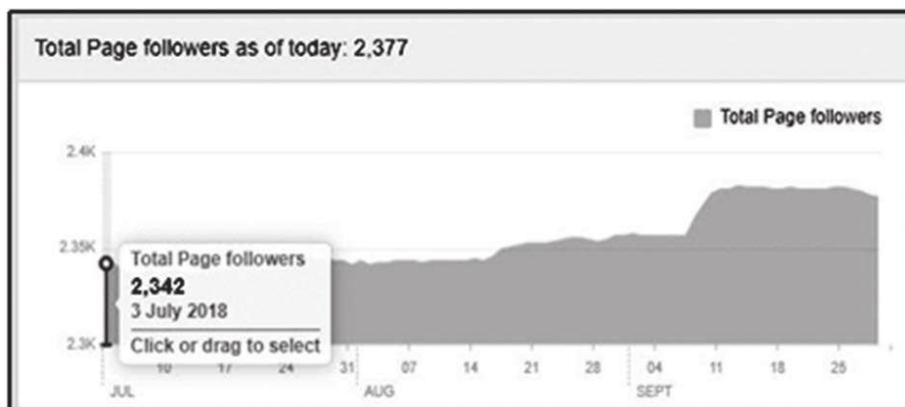


Fig. 3. Quarterly growth in the Facebook page Followers

A detailed analysis of the characteristics of followers on Facebook (Figure 4) revealed that (i) 62% of the followers were men (ii) 30% of male followers and 17% of female followers were in the

age group of 18-24 (iii) out of 2377 total followers, 48 were from USA and 32 were from United Arab Emirates (iv) 1054 (44%) of the followers are from Thiruvananthapuram followed by Bangalore (99).

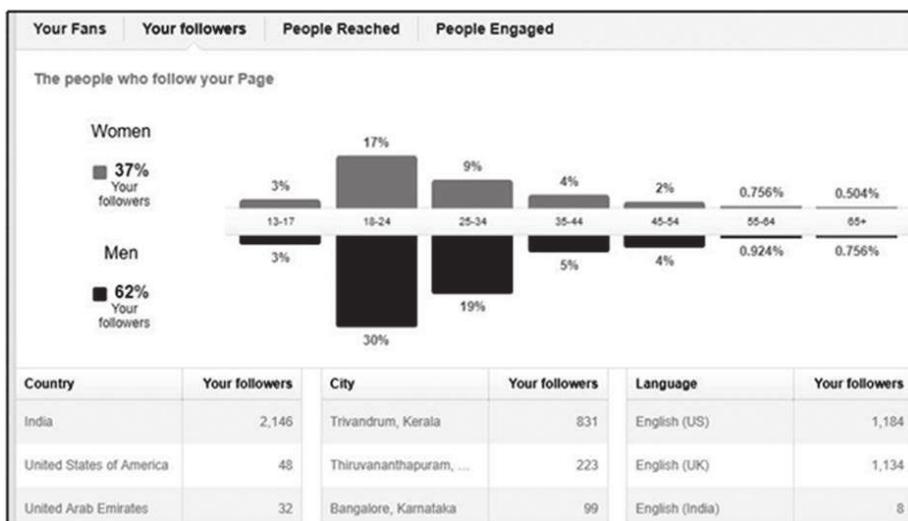


Fig. 4. Detailed analysis of Facebook followers

Figure 5 recorded the Twitter analytics of the user growth of 1% in September 2018 added to the current total followers of 662.

The audience metric analysis showed a considerable growth in the number of followers of blog and Facebook page where as a low increase in the number of Twitter followers.

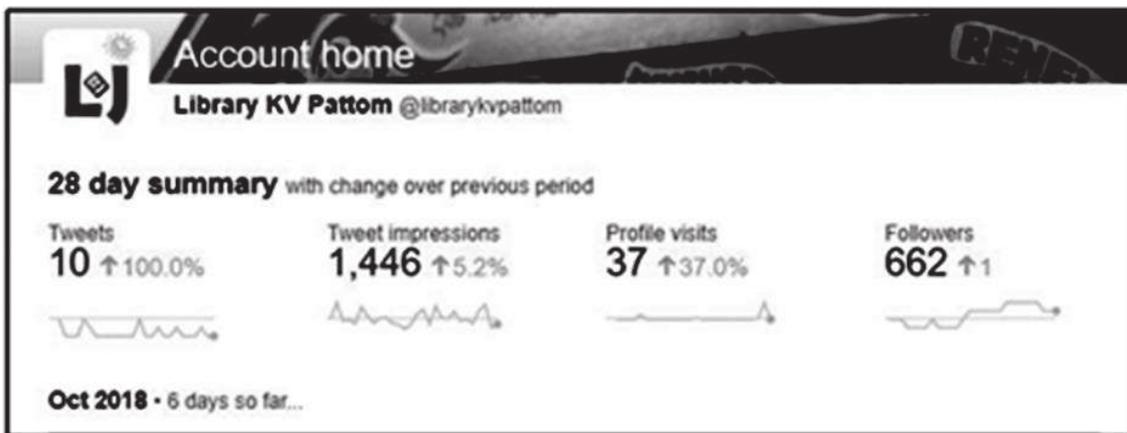


Fig. 5. Twitter follower growth summary

8.3 Engagement Metrics

Engagement metrics recorded the activities people do on library’s social media channels like clicking ‘Like’, sharing a post, clicking a link embedded within the post, watching a video, retweet or mention (in the case of twitter) or leaving a comment.

The library blog recorded a total of 13581 shares of its content on various platforms including

Facebook (5479), Twitter (2906), Google (521), LinkedIn (303) and Pinterest (284). The five most shared posts on the blog are shown in Figure 6. The data showed that the most shared posts on the blog were curriculum related resources. This lead to the conclusion that students and teachers use the blog to get resources to support their learning and teaching.

Title	Shares
Model Question papers, Class X & XII by NCERT	469
Sample Question Papers for Class IX and X for Term II (Second Term March'2012)	421
SA-1 & 2, Sample Question Papers, Class III-V	335
Educational Institutions Directory	292
Question Banks, MCQ, HOTS- VI, VII, VIII	270

Fig. 6. Most shared posts on the library blog

When analysing the all-time clicks on embedded links, www.cbse.nic.in topped the table with 390,884 clicks followed by www.kvchenani.org (183,645) and www.zietmysoreprt.files.wordpress.com (178,296) (Figure 7). The data shows the usefulness and trustworthiness of the educational resources provided by Central Board

of Secondary Education (CBSE) among the users.

Figure 8 presents the average reach and engagement metrics recorded on Facebook page. Photographs received the highest average Reach score (909) followed by Status updates (192) and Links (161). Posts comprising photos documented



Fig. 7. All-time clicks on embedded links

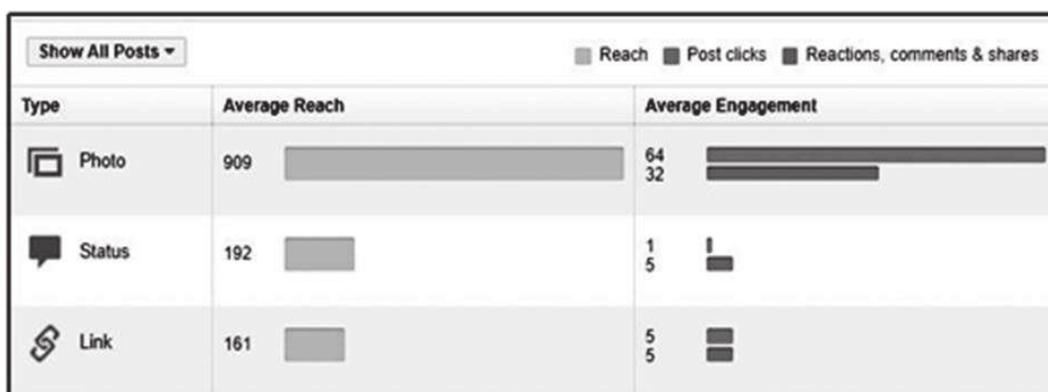


Fig. 8. Average reach and engagement analysis

a maximum engagement score based on 'post clicks' of 64 while links stood second (5). Photos also came first with a maximum average engagement score (32) of Reactions (Likes), Comments and Shares. The analysis revealed that posts with photos caught maximum reach and engagement.

8.4 Referral Metrics

The referral metrics indicates how many referrals from a social media channel direct a user to the library or institution website. This may be through a post/tweet/link.

An analysis of the blog insights showed that the library blog had so far received 6755 referrals from the Facebook page and 997 from the Twitter profile. In the quarter (July-Sept, 2018), Facebook and Twitter sent 66 and 10 referrals to the library blog.

8.5 Return on Investment (ROI) Metrics

ROI is a performance measure used to evaluate the efficiency of investment or to compare the efficiency of a number of different investments (Botchkarev, 2015). When we treat social media channels of the library as an investment, measuring its performance requires the assessment of tangible returns in the form of increase in the number of visits to the library website and the number of interactions per posts created.

In the quarter July-Sept 2018, the number of visits to the library blog through referrals (66) per post created (15) on Facebook was calculated as 4.4. On twitter the number of visit per tweet was found as 0.2. In the case of library blog, an all-time analysis of the number of views received (6,756,108) per posts created (1147) was 5890,

whereas number of unique visitors (2,314,216) per posts created (1147) was 2017. The analysis recorded a positive performance status and trend in the Return on investment metrics of social media channels in the library.

9. Findings

The study was conducted to assess the effectiveness of library's social media channels through an analysis of selected social media metrics. Major findings of the study are:

- i. Blog is the most popular and active social media channel managed by the library, followed by Facebook and Twitter pages.
- ii. The library blog is mostly used to access and retrieve curriculum related information and resources.
- iii. A large percent of users of social media channels are of age group 18-24.
- iv. Government websites are more trusted by the users to find academic resources.
- v. Most shared posts on social media channels were of academic in nature and content.
- vi. Facebook and twitter posts with photographs received maximum reach and engagement.
- vii. Adoption of social media channels help the library to market its resources and services, particularly to the digital natives.
- viii. Return on Investment (ROI) metric analysis of social media channels confirmed them as a successful investment.
- ix. Large quantity of data that can be harvested using analytical tools warrants in-depth studies in this field.

10. Conclusion

Social media is now right in the plan of any modern library. The user friendliness and cost-effectiveness of social media channels made them popular choices for libraries to market and publicize resources and services. The effectiveness of social media adopted by libraries shall be assessed periodically to keep intact the quality of its content and interactions. Social media

provides different metrics like activity, audience, engagement, referral and return on investment which can be tracked using the inbuilt analytics tools available with blogs and social networking pages like Facebook and Twitter. The study proved that social media can be effectively used to achieve the basic objectives of a library. It can greatly support the initiatives to redesign libraries as social spaces with human characteristics.

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