Despite the vast amount of research into social media use by libraries, no research has been made into its use by smaller UK libraries. Although many statements have been made regarding the time- and cost-saving nature of social media, there is a lack of comparative research about its usefulness in different types of library. To address these points, this study gathered statistics from 1,425 library accounts on the social media tool Twitter. Five smaller libraries were selected for a more in-depth metric analysis and interview regarding their accounts and their measuring of return on investment (ROI).

The study found that while many libraries are using Twitter, academic libraries were the first to sign up en masse. Despite clear best practice criteria, many accounts are not utilizing Twitter to its fullest capacity. The two greatest influencing factors on followers were found to be the amount of time since the account’s registration and the type of library.

When interviewed, the smaller libraries in this study were shown to be following best practice criteria, but were working outside these parameters to create unique initiatives. However, the five interviewed libraries have not been recording any metrics, data or examples of successful tweets on social media, making it difficult to measure ROI. Furthermore, the libraries interviewed have been reaching followers who are not library users. This alters libraries’ social media strategies and is something that should be part of the discussion surrounding library use of social media.

**Keywords**
Twitter; social media; comparative study; library; smaller libraries

**Introduction**

In 2017 Eddie, a teenager on work experience, posted on the Twitter feed for Southern Rail.\(^1\) Thanks to his informal and humorous responses to enquiries, Eddie was soon trending with the hashtag #AskEddie.\(^2\) This style of low-key guerrilla marketing is becoming common on social media, especially the microblogging site Twitter (founded in 2006). With 90% of the UK population online, 78% having access ‘on the go’ with smartphones or tablets, and 66% of their time being spent using social media,\(^3\) exploiting social media for marketing is common. The importance and impact of social media can be measured with profits, sales figures or, in the example of Southern Rail, reputational cachet. However, measuring return on investment (ROI) in not-for-profit institutions like libraries is difficult.

There is a gargantuan body of literature about libraries using social media, with a lot of advice regarding best practice (discussed later). While there are plenty of individual case studies, there is a curious lack of quantitative analysis using data taken straight from the tools themselves despite tools like Twitter having open APIs to allow for this type of data gathering. Scholarship on the topic of social media use in libraries is siloed, with a bias towards academic libraries. Despite claims about the benefits of Twitter for small or low-staffed libraries,\(^4\) there has been very little research in this area. With that in mind, this study:

**‘measuring ROI in not-for-profit institutions like libraries is difficult’**
• created a data set for use when studying UK libraries on Twitter
• characterized/described Twitter use by different types of library
• used the data set to analyze Twitter use with reference to best practice literature and to identify the factors which increase follower count
• developed five case studies, one from each type of library, with a focus on smaller UK libraries, and discussed how they measure and achieve ‘successes’ and ROI when using Twitter.

Literature review

Social media – definition and history

Social media is over two decades old (Figure 1), having begun with the website Sixdegrees.com. The current most popular tool, with 2,006 million active users, is Facebook.

The originator of the term ‘social media’ is contested, and sometimes contradictory terminology has been applied. Obar and Wildman define social media as:

• using (currently) Web 2.0 applications
• dependant on user-generated content (USG) for continuing existence
• a service which creates (or facilitates creation of) a user profile
• a service which facilitates the connections of an individual to a community online.
Previous research

Library researchers began to study social media in the mid 2000s. A search (on 10 May 2019) of Library and Information Science Abstracts for peer-reviewed articles on ‘Social media’ AND (Library OR Libraries) netted 4,124 results. Short of a full systematic review, any study is restricted to a snapshot of the scholarship. In addition, social media is in a constant state of flux, and articles become outdated fast, for example by mentioning defunct tools such as the six-second video tool Vine. This desire for currency means that the scholarship seems to be more article-, blog- and web-based.

Researchers have parsed the literature around social media use by libraries into chronological phases, beginning with the initial discussion and distaste for social media, progressing into enthusiasm and uptake, then analysis of tools and usage, and finally into issues with the new medium. However, a research area barely two decades old does not need to be parsed chronologically. Instead, it is possible to classify the research by content into the following genres:

- advice for libraries using social media (‘how to’)
- measuring the success of social media (‘appraisal’)
- case studies using social media (‘what happens’)
- dialogues about social media and some limited criticism (‘why bother?’).

Inevitably, a few researchers produce work which fits into more than one category, but it is still a useful classification.

‘How to’ literature

Representing the largest genre of literature, this section focuses on tutoring the ‘at work’ librarian, providing a methodology for implementation, sometimes refined for specific types of library and focusing on elements such as marketing or specific tools like Twitter. Others eschew discussion of specific tools for a more holistic approach to using internet-based information gathering.

‘How to’ literature formalizes best practice for social media use. A good library social media account may be considered to fulfil the following five criteria:

- (1) is active
- (2) utilizes the tool fully and correctly – for Twitter this would involve using hashtags, handles and other formalized, searchable terms in a user’s bio and tweeting using images
- (3) considers its audience – knowing who, what and where their audience is
- (4) has a strategy for their social media including, perhaps, an official policy
- (5) uses tact and style – being considerate of their audience and the open nature of social media.

However, it is acknowledged that the standard model may not fit well for smaller teams, and we may ask whether libraries who have experienced ‘success’ also follow these criteria.

‘Appraisal’ literature

This type of literature addresses ROI for libraries, outlining the recording and analysis of metrics and key performance indicators (KPIs) to determine success or failure. While warning of the dangers of using social media as a ‘quick fix’ for marketing, researchers espouse its virtues for smaller libraries. Some discuss more nebulous ideas for measurements such as the idea of a ‘relationship currency’ mentioned in the introduction.
'What happens' literature

Containing reflective case studies, surveys and statistical analysis of social media usage, this type of literature provides a snapshot of specific areas of the social media landscape. Analysis is limited, e.g. to one or two specific libraries, or restricted by tool. Overall, there is a distinct bias towards academic libraries. This literature provides conclusions, questions and methods which will be discussed and utilized in this study.

Despite the large number of ‘best practice’ works, some of these case studies have concluded that a ‘one size fits all’ methodology does not work and that libraries would be better served formulating their own strategies. Some conclusions reached imply that use of social media requires little training and indeed, that this is one of the advantages. Survey respondents have also concluded that social media is perceived to be a low-cost option for libraries but gathering metrics to analyze ROI is difficult.

There are few studies that compare different types of library and analysis of intended audience and participation often nets contradictory findings. Many are restricted to a single type of library and conclude that social media does not in fact save costs as it can often take a substantial time investment across multiple tools for true success, contradicting the time-saving benefits espoused in appraisal literature.

Three case studies are particularly notable for having collected and analyzed large quantities of data. Crawford’s study of US public libraries criticizes the Twitter follower metric and warns of the dangers of empty profiles, noting that larger libraries often reach a smaller percentage of their users than smaller libraries. He is one of the few researchers to discuss in depth auditing and the closing of accounts upon bad ROI. Mon and Lee’s study into Twitter builds upon Crawford’s earlier work utilizing ‘new key metrics emerging for assessing social libraries on Twitter in terms of visibility and self-representation, reciprocity, audience, activity, and influence’. This paper discusses how earlier users of Twitter became ‘power users’ and concludes that there is a ‘strong correlation’ between visibility on Twitter lists curated by Twitter users and libraries’ PeerIndex (now known as Brandwatch) scores.

Al-daihani et al.’s analysis of Twitter concludes that ‘regularly updating and maintaining the library Twitter feeds (attracts) more users’ and there is no relation between the number of tweets and the number of followers. This study will attempt to corroborate this conclusion.

Shulman measured not followers, but the influence of a Twitter network, finding that institutional networks ‘such as those maintained by the college/university, departments, and programs’ have the highest influence on Twitter, despite not having the highest number of followers or the most tweets. Shulman’s study is of interest for the originality of its methods, if not for the scale of libraries studied (only two). Its interesting conclusion that influence, not followers, should be the true measure of success was discussed with the smaller libraries in this study.

'Why bother' literature

More discursive in nature, this small genre discusses legal issues, ethics and the pros/cons of social media use while debunking myths. Again, there is an academic bias in this section. There was one example found of analysis and criticism of social media, which asserts that people, especially academic library staff, are not ‘asking the right questions’. Instead, libraries are overwhelmed by positive portrayals of social media and are not viewing it objectively.

Summary and studies used

The literature on social media cannot be summarized neatly and has not existed long enough for chronological trends to be apparent. Instead, it can be divided into thematic groups. The largest, instructional ‘how to’ literature formulates universal principles for best practice. Other literature outlines case studies, surveys and statistical analysis of the current state
of social media use, often restricted to a tool or type of library. Few papers outline the appraisal of ROI for social media and provide discursive pieces about the changing face of libraries, ethics and law with regards to social media.

The review of the literature reveals several key areas for further analysis. A lack of cross-discipline library studies has given the literature an academic library bias. Social media has been deemed a time-saving device for smaller library teams or, contradictorily, a significant investment across different tools. The smaller libraries contributing to this study were questioned on their uptake of ROI appraisal methods and their use of multiple tools for social media. Finally, there is limited literature available on the legality, ethical and objective analysis of social media use in libraries that is not overwhelmingly positive, and this study therefore attempted to be more objective.

Methodology

This study draws on the methods used by Crawford and Mon and Lee. These studies extracted data directly from the tools themselves, with follow-up questions to specific libraries after preliminary conclusions had been made. The extra information gained by Crawford from studying the catchment areas of US public libraries, or the PeerIndex scores available to Mon and Lee, could not be used in this study as this information is not available for all the libraries herein. This study did not consider national libraries, as Canty has written a very useful article on this subject.

Stage 1: creating a list of UK library Twitter accounts

A list of UK library Twitter accounts had to be created as one did not exist at the start of this project. The lists used here may not be comprehensive, and there is currently no comprehensive list of libraries in the UK. Considering that not all libraries will have a single account, or have a social media presence at all, names and metrics were gathered from a range of sources and used to estimate numbers.

Five categories were created for this project: Academic/Higher Education (Acd/HE), School/Further Education (Sch/FE), Medical (Med) and Public (Pub). Public libraries were further segmented into accounts posting for an entire county (Pub/CC), a London borough (Pub/Borough) and any combined or joint accounts (Pub/Joint), for example @leedslibraries and @HarrisPreston. A final category, other, was created to encompass miscellaneous libraries including arts/heritage and law libraries. Using the available metrics, a required number of accounts for each type of library was assigned: 500+ for Pub, 100+ for Med, 200+ for Acd/HE and 200+ for Sch/FE.

A Twitter account (@SarahHLib) was created, with Twitter lists for each type of library. A general search was made for ‘UK Libraries’ and the term ‘Library’ with a geographical restriction to the UK. Some of the lists and metrics were used to formulate other search terms, such as the names of Oxford libraries or London boroughs. Pre-existing Twitter lists and the ‘who to follow’ function on Twitter also revealed several overlooked accounts.

The gathering was impeded by several factors. Twitter’s internal search has little nuance, making it difficult to create meaningful search results.
These lists were exported into Excel using Twlets,\textsuperscript{74} which extracted the account name, location data, time/date created and basic Twitter metrics, such as number of followers. As the information gathered was (and is) publicly available on Twitter, it was deemed unnecessary to anonymize the data. Data was extracted from Twitter on two convenient occasions: 12 June and 24 July 2017. As with any social media study, the data quickly grows stale, and Dave Rowe, working with the Libraries Hacked group, has created a site\textsuperscript{75} should anyone wish to replicate or use a current version of this data, though random checks have indicated that results will be similar to those in this study.

**Stage 2: defining smaller libraries**

This article is specifically interested in Twitter use by smaller libraries. The definition of a ‘smaller library’ will vary depending on the type of library. For example, a university library with a large collection but few staff will have similar challenges to a smaller school library with a single member of staff. Crawford’s\textsuperscript{76} study ranks the size of library dependent upon the size of the catchment area for users. However, this method cannot be applied to libraries with no numerically defined catchment area, such as special libraries or international libraries. In a more specific, type-restricted study, stricter criteria could be used.

For the purposes of this study, a smaller library was defined as one which:

- represents a single institution (nt national libraries or an account for many libraries posting with one ‘voice’)
- has staff numbers that are below the average for that type of library\textsuperscript{77}
- has a low staff-to-collection size ratio (discovered through direct enquiry to the library).

**Stage 3: interviews**

Five libraries were selected (one representing each type of library) using a list ranked by follower count (Table 1), with the top ‘smaller’ library contacted for interview. Interviews were used as a more insightful method into the libraries’ actions concerning social media, as the interviewer could steer answers in a manner they could not in questionnaires.

<table>
<thead>
<tr>
<th>Type</th>
<th>Library name</th>
<th>Followers</th>
<th>Tweets</th>
<th>Likes</th>
<th>Account creation date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acd/HE</td>
<td>African Studies Library (ASL) @AfrStudiesLib</td>
<td>1,757</td>
<td>9,916</td>
<td>420</td>
<td>10/03/2011</td>
</tr>
<tr>
<td>Med</td>
<td>NHFT Library Service (NHFT) @NHFTNHSLibrary</td>
<td>1,253</td>
<td>10,824</td>
<td>1,205</td>
<td>20/02/2012</td>
</tr>
<tr>
<td>Other</td>
<td>St Bride Library @stbridelibrary</td>
<td>10,475</td>
<td>5,213</td>
<td>3,165</td>
<td>12/04/2008</td>
</tr>
<tr>
<td>Pub</td>
<td>Orkney Library @OrkneyLibrary</td>
<td>35,075</td>
<td>19,300</td>
<td>9,280</td>
<td>29/06/2009</td>
</tr>
<tr>
<td>Sch/FE</td>
<td>PLHS Library (PLHS) @PLHSLibrary</td>
<td>987</td>
<td>4,611</td>
<td>7,247</td>
<td>19/08/2015</td>
</tr>
</tbody>
</table>

Table 1. Smaller libraries selected for interview

Key to types of library:
Acd/HE: Academic/Higher Education; Med: Medical; Pub: Public; Sch/FE: School/Further Education

NB The PLHS account is currently inactive

Two SurveyMonkey ‘forms’\textsuperscript{78} were sent to these libraries along with a request for permission for the information to be used in this study. The first form asked for details about the library and their social media presence including other tools, such as Facebook, for comparative purposes. The second form guided the library through the taking and recording of basic metrics on their Twitter accounts, using the following services:
• Twitteraudit\textsuperscript{79} – takes a sample of 5,000 followers and analyzes their accounts, calculating if said accounts are bots or other ‘fake’ accounts

• Twocation\textsuperscript{80} – reveals where followers are located by percentages, which are indicative of declared non-audited locations

• Twitter analytics – retrieves metrics regarding tweets, tweet impressions, profile visits, mentions, top mention engagement figure and most popular tweets and engagements.

Each participating library was sent a list of questions, and interviews were conducted over the internet using Appear.in\textsuperscript{81} and recorded using Audacity.\textsuperscript{82} After editing, a transcription was sent to the library for them to verify that the quotations and information were correct.

**Results and analysis**

The data sets and transcriptions are available at:

Title: Library Twitter Data 2017

DOI: https://doi.org/10.5287/bodleian:mzoK5npDM

**Twitter use by different types of library**

*Libraries registering on Twitter*

The study located 1,423 unique library Twitter accounts in the UK. The first three had registered accounts in 2007, with a further ten having registered in 2008. The surge of registrations began in 2009 and has remained steady since (Figure 2).

![Figure 2. Number of libraries registering on Twitter by year](image)

**Types of library with Twitter accounts**

Different types of library are not evenly represented on Twitter (Figure 3). Despite the literature focusing on academic libraries, this study found public libraries (when taken in their totality) to be the most common.

Different types of library took to Twitter at different times (Figure 4). The first libraries to begin registering en masse were Acd/HE libraries, peaking in 2009. Public libraries have also been registering since the beginning, although registration did not peak until 2013. Med and Sch/FE libraries did not begin registering until 2009. Thus far, Med libraries appear to have reached their peak in 2015, whereas Sch/FE peaked in 2014, but registrations have stayed high. The ‘other’ category remains low, peaking in 2010 during which year 12 ‘other’ libraries registered.
Are libraries on Twitter following best practice criteria?

Two of the five best practice criteria identified earlier – whether an account is active and whether it uses the tool fully – can be assessed using this data set.

**Criterion 1: is active**

Of the libraries on Twitter, six have never tweeted at all. A further 134 have not tweeted for six months and were deemed inactive. Approximately 90% of accounts can be considered active, having posted a tweet in the last six months (Table 2).
The average number of tweets per day by UK libraries was shown to be 1.48. Pub/CC libraries have the highest average number of tweets per day, posting approximately 3.56, followed by the other public library accounts for joint libraries (2.64). The lowest rate of tweets is from Sch/FE libraries, who post 0.92 tweets on average per day (Figure 5).

Table 2. Number of libraries by last year tweeted (up to 2017)

<table>
<thead>
<tr>
<th>Last tweet year</th>
<th>No. of libraries</th>
</tr>
</thead>
<tbody>
<tr>
<td>Never</td>
<td>6</td>
</tr>
<tr>
<td>2009</td>
<td>2</td>
</tr>
<tr>
<td>2010</td>
<td>8</td>
</tr>
<tr>
<td>2011</td>
<td>8</td>
</tr>
<tr>
<td>2012</td>
<td>12</td>
</tr>
<tr>
<td>2013</td>
<td>11</td>
</tr>
<tr>
<td>2014</td>
<td>12</td>
</tr>
<tr>
<td>2015</td>
<td>23</td>
</tr>
<tr>
<td>2016</td>
<td>53</td>
</tr>
<tr>
<td>2017</td>
<td>1,288</td>
</tr>
</tbody>
</table>

Criterion 2: utilizes the tool fully and correctly (using hashtags, handles and other formalized, searchable terms in a user's bio)

Analyzing the 'user bio' of the Twitter accounts (Table 3) revealed 187 (approx. 13%) accounts lacked location data and 99 (approx. 7%) had no description text. By comparison, 188 (approx. 13%) accounts had a Twitter handle linking the account to another in the description text and 54 (approx. 4%) had one or more ‘#’ links in their description. Approximately 77% of the accounts included the keyword ‘library’ or ‘libraries’ in either the name or the description.

Comparing the two data sets revealed that several libraries were making active steps to cultivate their accounts. For example, 32 altered the description of their account, some by altering the 'currently reading' section in their description to a different hash-tagged book, others by altering the named person specified for tweeting. Eleven accounts added location data and three altered the entirety of their account, changing the description, location data, etc.
There were 31 accounts identified as having the same name, if not the same Twitter handle, as another account (Table 4). A possible duplicate account was identified – possibly an account founded later, perhaps without the newer founder realizing that the old account existed, as the creation date differs (Table 5). Four accounts disappeared between the two data gathering periods or changed to such an extent as to be ‘new’ (Table 6).

<table>
<thead>
<tr>
<th>Good practice</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole account details were altered</td>
<td>3</td>
<td>0.21</td>
</tr>
<tr>
<td>Altered the named person</td>
<td>4</td>
<td>0.28</td>
</tr>
<tr>
<td>Additional location was added</td>
<td>11</td>
<td>0.77</td>
</tr>
<tr>
<td>Altered the description</td>
<td>32</td>
<td>2.25</td>
</tr>
<tr>
<td>Accounts with # in description</td>
<td>54</td>
<td>3.79</td>
</tr>
<tr>
<td>Accounts with a Twitter handle in description</td>
<td>188</td>
<td>13.21</td>
</tr>
<tr>
<td>Accounts with ‘Library/Libraries’ in their description</td>
<td>1,101</td>
<td>77.37</td>
</tr>
<tr>
<td>Accounts with ‘Library/Libraries’ in their name</td>
<td>1,107</td>
<td>77.99</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bad practice</th>
<th>No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounts with no description</td>
<td>99</td>
<td>6.96</td>
</tr>
<tr>
<td>Accounts with no location</td>
<td>187</td>
<td>13.14</td>
</tr>
</tbody>
</table>

Table 3. Identified good and bad practice in Twitter account use

There were 31 accounts identified as having the same name, if not the same Twitter handle, as another account (Table 4). A possible duplicate account was identified – possibly an account founded later, perhaps without the newer founder realizing that the old account existed, as the creation date differs (Table 5). Four accounts disappeared between the two data gathering periods or changed to such an extent as to be ‘new’ (Table 6).

<table>
<thead>
<tr>
<th>Name</th>
<th>No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>LRC</td>
<td>5</td>
</tr>
<tr>
<td>Librarian</td>
<td>5</td>
</tr>
<tr>
<td>SHS Library</td>
<td>4</td>
</tr>
<tr>
<td>St John’s Library</td>
<td>4</td>
</tr>
<tr>
<td>Library</td>
<td>4</td>
</tr>
<tr>
<td>The Librarian</td>
<td>3</td>
</tr>
</tbody>
</table>

Table 4. Library accounts with more than two duplicate names

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
<th>Description</th>
<th>Date created</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHS Library (handle no longer available)</td>
<td></td>
<td>Twitter feed of Greenford High School Library. Encouraging a love of books and reading.</td>
<td>11/04/2014</td>
</tr>
<tr>
<td>GHS Library (@ghslibraryreads)</td>
<td></td>
<td></td>
<td>06/01/2015</td>
</tr>
</tbody>
</table>

Table 5. Duplicate Twitter accounts

<table>
<thead>
<tr>
<th>Name</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surrey Library</td>
<td>Guildford, Surrey</td>
</tr>
<tr>
<td>BCH Staff Library</td>
<td>Birmingham, England</td>
</tr>
<tr>
<td>Lingfield Library</td>
<td>Surrey</td>
</tr>
<tr>
<td>Winterbourne Library</td>
<td>South Gloucestershire, GB</td>
</tr>
</tbody>
</table>

Table 6. Twitter accounts which disappeared

**What are the key influencers on follower count?**

The most rudimentary test for success on Twitter is the number of ‘followers’, with ‘likes’ representing account interaction. The data gathered here can be used to verify suggested influences on follower count.

The average number of followers per account (Table 7) was 1,381, falling by 12 in the six weeks between data gatherings. However, follower numbers varied considerably, from 1 to 51,501. ‘Likes’ per account average out to 612 per account.
The average number of followers was found to be quite variable between libraries of different types. The highest category was ‘other’, with 5,460 followers on average, followed by Pub/CC with 2,763, Pub/Joint with 2,551, Pub/Borough with 1,984, Acd/HE with 2,318, Pub with 901, Med with 582 and Sch/FE with 287. Most of these averages saw an increase in total followers between the two data gatherings, although Acd/HE and Pub/CC showed a decrease of 23 and 102 respectively. This affected the overall public library average, causing it to decrease by five.

The number of likes per account also varied wildly depending on the type of library, though the highest and lowest average were also ‘other’ (with 1,327) and Sch/FE (with 429).

### Activity

The activity of an account also has a dramatic effect on follower numbers. Out of the 1,423 libraries, 1,288 (approx. 90%) posted at least once in 2017. These accounts had a higher follower count than accounts that had not posted so recently (Figure 6). However, even accounts with no tweets whatsoever (six accounts) still had some followers, averaging around 109.

![Figure 6. Average number of followers by most recent tweet](image)

**Table 7. Type of libraries with Twitter accounts (24 July 2016, with average follower increases from 12 June 2016)**

<table>
<thead>
<tr>
<th>Type of library</th>
<th>No. with Twitter accounts</th>
<th>Average followers (+/– between data sets)</th>
<th>Max. followers</th>
<th>Min. followers</th>
<th>Average likes per account</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acd/HE</td>
<td>298</td>
<td>2,318 (+23)</td>
<td>51,501</td>
<td>13</td>
<td>603</td>
</tr>
<tr>
<td>Med</td>
<td>164</td>
<td>582 (+72)</td>
<td>12,152</td>
<td>13</td>
<td>466</td>
</tr>
<tr>
<td>Other</td>
<td>57</td>
<td>5,460 (+214)</td>
<td>33,376</td>
<td>14</td>
<td>1,327</td>
</tr>
<tr>
<td>Sch/FE</td>
<td>374</td>
<td>287 (+12)</td>
<td>5,601</td>
<td>10</td>
<td>429</td>
</tr>
<tr>
<td>Public Libraries (All):</td>
<td>530</td>
<td>1,436 (+5)</td>
<td>35,075</td>
<td>1</td>
<td>715</td>
</tr>
<tr>
<td>Pub (Misc.)</td>
<td>352</td>
<td>901 (+22)</td>
<td>35,075</td>
<td>1</td>
<td>516</td>
</tr>
<tr>
<td>Pub/Borough</td>
<td>29</td>
<td>1,984 (+20)</td>
<td>4,290</td>
<td>15</td>
<td>801</td>
</tr>
<tr>
<td>Pub/CC</td>
<td>28</td>
<td>2,763 (+102)</td>
<td>7,584</td>
<td>236</td>
<td>1,091</td>
</tr>
<tr>
<td>Pub/Joint</td>
<td>121</td>
<td>2,551 (+37)</td>
<td>18,490</td>
<td>22</td>
<td>1,188</td>
</tr>
<tr>
<td><strong>Grand Total</strong></td>
<td><strong>1,423</strong></td>
<td><strong>1,381 (+12)</strong></td>
<td><strong>51,501</strong></td>
<td>1</td>
<td><strong>612</strong></td>
</tr>
</tbody>
</table>

Key to types of library:

Acd/HE: Academic/Higher Education; Med: Medical; Sch/FE: School/Further Education; Pub (Misc.) – other public; Pub/Borough: public posting for a London borough; Pub/CC: public posting for an entire county; Pub/Joint: public with any combined or joint Twitter accounts.

‘The activity of an account … has a dramatic effect on follower numbers’
Number of tweets posted
In terms of frequency of posting, the number of tweets was divided by the year fraction (created using the YEARFRAC function in Excel) and then 365 to establish a rough estimate for the number of tweets per day. After three tweets per day, we can infer no relationship between the number of tweets posted per day and the number of followers gained. However, this is not statistically significant as only 161 libraries in this study tweet more than three times per day (Table 8) and 836 libraries in the study tweet less than once a day.

<table>
<thead>
<tr>
<th>Number of Tweets per day</th>
<th>Percentage of total libraries tweeting</th>
<th>Number of libraries tweeting</th>
<th>Average followers</th>
</tr>
</thead>
<tbody>
<tr>
<td>0–1</td>
<td>59%</td>
<td>839</td>
<td>456</td>
</tr>
<tr>
<td>1–2</td>
<td>20%</td>
<td>279</td>
<td>1,659</td>
</tr>
<tr>
<td>2–3</td>
<td>10%</td>
<td>144</td>
<td>3,283</td>
</tr>
<tr>
<td>3–4</td>
<td>4%</td>
<td>51</td>
<td>3,086</td>
</tr>
<tr>
<td>4–5</td>
<td>3%</td>
<td>46</td>
<td>4,439</td>
</tr>
<tr>
<td>5–6</td>
<td>1%</td>
<td>21</td>
<td>2,553</td>
</tr>
<tr>
<td>6–7</td>
<td>1%</td>
<td>14</td>
<td>5,398</td>
</tr>
<tr>
<td>7–8</td>
<td>0%</td>
<td>6</td>
<td>7,142</td>
</tr>
<tr>
<td>8–9</td>
<td>0%</td>
<td>4</td>
<td>2,854</td>
</tr>
<tr>
<td>9–10</td>
<td>0%</td>
<td>2</td>
<td>5,200</td>
</tr>
<tr>
<td>10–11</td>
<td>0%</td>
<td>1</td>
<td>9,326</td>
</tr>
<tr>
<td>11–12</td>
<td>0%</td>
<td>3</td>
<td>4,287</td>
</tr>
<tr>
<td>12–13</td>
<td>0%</td>
<td>4</td>
<td>2,700</td>
</tr>
<tr>
<td>13–14</td>
<td>0%</td>
<td>1</td>
<td>4,116</td>
</tr>
<tr>
<td>14–15</td>
<td>0%</td>
<td>1</td>
<td>299</td>
</tr>
<tr>
<td>16–17</td>
<td>0%</td>
<td>2</td>
<td>2,954</td>
</tr>
<tr>
<td>17–18</td>
<td>0%</td>
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<td>3,418</td>
</tr>
<tr>
<td>20–21</td>
<td>0%</td>
<td>1</td>
<td>33,376</td>
</tr>
<tr>
<td>26–27</td>
<td>0%</td>
<td>1</td>
<td>10,609</td>
</tr>
<tr>
<td>28–29</td>
<td>0%</td>
<td>1</td>
<td>650</td>
</tr>
<tr>
<td>63–64</td>
<td>0%</td>
<td>1</td>
<td>270</td>
</tr>
</tbody>
</table>

Table 8. Tweets per day vs. average followers

Time since account registration
A further major factor influencing follower count, which has not previously been recognized or analyzed, is the amount of time an account has existed. The average number of followers gained per year was calculated (followers divided by year fraction) for every account in the data set. Averages for each type of library were then calculated.

Discounting 2007 (when only three accounts registered), the average number of followers gained per year falls from 4,730 for accounts registering in 2008 to 98 for accounts in 2017, a decrease of 4,632 over nine years (Figure 7). There is a distinct downward trend regardless of library category (Figure 8).

Case study interviews: how smaller UK libraries measure and achieve ‘success’ and ROI when using Twitter
To gain a more detailed understanding of the use of Twitter by smaller UK libraries, this study interviewed five institutions with high followings for their type and size. The libraries were asked to capture metrics for discussion and were questioned regarding criteria two, three and four in the best practice criteria. (See data declaration for location of transcripts and case studies.) Criterion five – uses tact and style – was not assessed in this study due to a lack of data to enable a sentiment analysis like Sultan’s® to be made.
Criterion 2: utilizes the tool fully and correctly

All the libraries mentioned that tweeting pictures is a good way to get attention on their tweets. St Bride, due to the nature of their collection, expressed frustration at not being able to take professional images of items to post on Twitter. PLHS stated they use a basic phone camera for activity photos but go to great lengths to anonymize any images taken of schoolchildren, for safeguarding reasons. These successful libraries are also aware of the use of hashtags and tagging as a method for drawing attention,
particularly within the discussion about their most popular tweets. Orkney discussed the ‘global clock’ when using Twitter, mentioning that staff often take their work home and check the account outside work hours, accounting for the global clock when tagging celebrities.

Several specialist programmes exist which are intended to make social media accounts more successful. Common functions of these programmes include scheduling posts, unifying social media tools into one platform, hyperlink click tracking and advanced metric analysis. While ASL uses Bitly to track clicks on hyperlinks, no other specialist software was used by the libraries interviewed. NHFT acknowledged that being able to schedule their posts over the weekend would be useful but, in contrast, ASL stated that this would hinder their current running due to the nature of global time in academia, which moves very fast and could alter the interpretation of scheduled tweets.

**Criterion 3: considers its audience**

‘I know that some people follow huge numbers of accounts and therefore we may be very peripheral to them but, we do have 10,500 people following the account and I can’t believe that all of them are indifferent to what we say.’ (St Bride)

Having established what the libraries perceived they were employing social media for and their methods for achieving their goals, each library was prompted to discuss who they thought their primary audience was and to reflect on the information provided by the location metric. Both the ASL and St Bride libraries professed satisfaction to the global outlook of their following. The ASL said they were pleased that almost the same percentage of followers came from Africa as came from the UK, while St Bride pointed out that their social media following may well represent a specific, technologically engaged, section of their audience, for example, graphic designers. NHFT compare their followers on Twitter to their list of known NHS Trust members. PLHS said that they were pleased to note the number of followers in Australia as it links in with initiatives to connect the school library to libraries in other countries.

Orkney’s following exceeds the population of Orkney itself, which, as a public library, should logically constitute their primary audience. Of Orkney’s followers, 2.34% (823/35,202) declare an Orkney location on Twitter (metric taken 18/08/17), representing 3.80% of Orkney’s total population. This agreed with their belief that the ‘Twitter fans’ were not always Orkney residents and therefore not library users. However, 10,676 of Orkney’s followers (approx. 30.33%) do not declare a location on Twitter, and some locations are likely to be false, so it is difficult to discern a true metric.

The libraries were asked to audit their accounts for fake followers using Twitter Audit. Each library expressed concern regarding the thought of ‘fake’ followers and were relieved to discover there were not as many as they suspected. Both PLHS and NHFT discussed their monitoring and cultivation of their followers, referencing fake accounts created for marketing and accounts unsuitable for a school environment. Orkney library had researched the concept and were not surprised by the 5,522 ‘fake’ followers, which represented approximately 16% of their total 35,000+ followers on Twitter; more than the number of known Orkney residents who follow the account.

Each library had a good understanding of why their top tweet was successful, either for the sensational subject matter, long expected upgrades, creative use of hashtags or celebrity interaction. St Bride recognized a lack of knowledge about link measuring software available for checking the interaction with their tweet (a notification directing people to the new library catalogue) and acknowledged it would be useful to determine the tweet’s success.
Criterion 4: has a strategy for their social media, including, perhaps, an official policy

‘To reach out to parents, engage with students and perhaps also look at other libraries […], as a promotional tool and engagement tool and a tool that could be used to highlight partnership work.’ (PLHS)

When asked to elaborate on what the libraries thought they were using their accounts for, each library expressed a similar outlook: social media was for outreach and publicity. However, upon analyzing the metrics and further questioning, it was revealed that each library had a more nuanced understanding of what this superficial terminology means.

Since starting at ASL two years ago, the Library Manager has transformed their account into a resource gathering initiative, exploiting the global nature of Twitter to collate and promote resources on African studies. In a similar style, the medical library NHFT uses Twitter as a current awareness tool for medicine, as their previous tool, an RSS feed, had fallen into disuse. St Bride have developed their social media not just for outreach but as a further measure and validation of the library’s continuing existence. The school library PLHS engages with Twitter to connect with foreign penpals for students, amongst several other unique initiatives. Having set up a Twitter account relatively recently, this account is still very much in the initial ‘explorer’ stage of formation of policy and practice.

‘[Initially] to reach out to our very scattered island community and to [contact] authors, publishers and other libraries.’ (Orkney)

Orkney observed an alteration in their initial goals since the founding of their Twitter account in 2009. Initially used for connecting with authors and other initiatives that they may have been left out of due to the location of the library, Orkney’s goal has expanded exponentially due to the massive number of followers they now have on Twitter. The library has now created a ‘fourth space’ where fans of the library, not necessarily those who would even use the library in any way, can hold discussions and share thoughts on library activity and the Orkney islands themselves.

I don’t want to see (The Twitter account) lose its freedom, its spontaneity, I don’t want it to just become grey and dull and branded and stifled, so, yes, we ought to have […] a social media policy […] but, they can become a bit of a strait jacket. (St Bride)

Whilst having a policy is recommended by many as best practice, the libraries interviewed were divided as to the usefulness of an official social media policy. Both PLHS and Orkney have policies scripted from their local authority. However, Orkney stated that policy came much later than their Twitter account’s creation. NHFT library does not have a policy per se, more an instructional manual and guidelines, while St Bride and the ASL do not have any policies and are undecided as to the level of connectivity they should have with their governing body (The University of Cambridge and the St Bride Foundation) regarding said body’s ability to dictate future use.

Lessons learned and measuring success and ROI

The ASL shared ‘lessons learned’ regarding the potential for controversial subjects to become inflammatory on Twitter, stressing the importance of source validation, a sentiment echoed by other libraries. PLHS discussed the issues around the inability to edit tweets and the possibility for embarrassing grammatical errors, while also highlighting the responsibility for a school librarian to consider safeguarding in their tweets, such as children’s names.

Overall, the libraries thought their accounts were successful, pointing to the number of followers as evidence. All five libraries have found this, despite any start-up hazards, and intend to continue to develop their platforms, advising other libraries to ‘be brave’ and ‘go forth and conquer’. This is unsurprising, as these accounts were chosen for their ‘success’ as measured in follower numbers. However, we have seen in the literature review that the number of followers alone is not a sufficient criterion for judging success.
None of the libraries interviewed made long-term recordings of their metrics, instead making ad hoc inspections of Twitter analytics. Orkney relied on staff memory for successful outreach to authors by recalling various successful events where authors responded to tweets.

**Discussion and critique**

**Types of library using Twitter**

Libraries are now well established on Twitter, with the number of registrations per year peaking in 2009. Some libraries which should, theoretically, be on Twitter (Waltham Forest, Barking and Dagenham Borough Libraries and Bournemouth University Library) are not. Interestingly, early academic library uptake of Twitter appears to have significantly shaped the literature itself and the approach to Twitter.

**Analysis of best practice**

Despite an impressive amount of best practice advice available, many libraries are still not utilizing the potential of Twitter to its fullest extent. Some accounts are not using Twitter’s in-built formatting tools to improve the discoverability of their ‘Twitter bio’, lacking descriptions, location data or even searchable keywords such as ‘library’. Accounts are mismanaged and sometimes not used at all – despite warnings from researchers regarding misusing social media. There were, however, also examples of good practice evident, representing libraries utilizing the tool to its fullest extent. Examples of all-encompassing best practice are in the minority, so it cannot be said with confidence that good practice = successful accounts, especially if using the simple metric of Twitter followings.

**Effect on followings**

The variation of followings according to the type of library is significant. School and medical libraries have smaller followings than academic and public libraries, though there are underachieving accounts in all types, with the variation being most pronounced in public and academic categories. Therefore, the type of library appears to influence growth in followers, and this should be borne in mind when setting social media goals and measuring success. Further research could be made into how the content of each type of account influences this.

After the type of library, the core influence on follower counts is time. Followers grow over time, regardless of activity. While an active account will have more followers than an inactive one, even abandoned accounts can have hundreds of followers.

Crawford’s criticism of the follower metric and Al-daiani’s conclusions regarding number of tweets and followers is corroborated by the data in this study, though the daily number of tweets is less important than ensuring the account is active. This research has shown that the number of followers is dependent on the date on which an account was created and on the type of library, rather than on best practice. Newer accounts may have ‘missed the boat’ for high follower numbers, skewing the perception of success when using the blunt comparison of follower counts.

**Are smaller UK libraries using best practice?**

The five libraries contacted for this study have large followings and a sound grasp of how to use Twitter, though they could be using more tools, etc. to exploit it fully. They are cognizant
of a strategy but remain willing to alter things, allowing for a ‘guidelines not policies’ approach to social media structuring.

On paper, social media seems to be a win-win situation for smaller UK libraries, representing a new, faster, cheaper platform for more traditional library work in marketing, outreach and publicity. The five libraries interviewed demonstrate a more complicated reality as their audiences go beyond their obvious user groups. This presents a problem currently under addressed in the body of research on library social media use; if the libraries are not connecting with their user group, who are they connecting with? Does it even matter? Or is it, like St Bride asserted, about the evidence of interested people, not the nature of the interaction?

Social media is not just for basic outreach and publicity,  it is for collaboration work, interaction with global users, current awareness (be it with parents, scholars or staff), resource gathering and for telling people who will never visit or interact with a library that it exists. Social media is a defence against invisibility for smaller libraries, allowing libraries previously sidelined by their geographical location or collection type to highlight what they do and allow people to assist them in their endeavours, cashing in their ‘relationship currency’.

**How do smaller libraries measure success/ROI?**

The libraries studied have devoted a significant amount of time to their social media accounts, with some such as Orkney spending time out of work hours to perfect their Twitter. This refutes some conclusions while supporting others, testing the boundaries of the concept that social media is ‘cheap’. Once you discount the initial ‘followers = successful’ equation, success becomes more nuanced. Some libraries attribute success to the number of retweets and likes, others to authors agreeing to visit the library. Yet, despite knowing many examples of ‘success,’ none of the libraries have recorded these experiences. This creates some concerns for the future of these accounts, as they lack the KPIs that would allow them to note a fall in ROI.

**Study critique and further research**

The main limiter of this study was the choice to restrict social media observation to Twitter. Twitter was chosen due to the accessibility of information and the large number of libraries using it. Finding the same metrics for Facebook would be more complicated due to the private nature of certain groups. Analytical tools exist for Twitter which have the capacity to gather large amounts of publicly available data, making it an ideal tool for a dedicated study of UK libraries. As a tool, Twitter presented some challenges with regards to ‘real’ followings, true location data and the libraries themselves being difficult to find due to duplicate accounts, mismanaged accounts and inactive accounts.

This study was originally conceived to analyze several social media tools. However, the workload involved proved too great, especially as there was no consolidated list of UK libraries. Further research into creating these data sets would be useful. Active data for the 1,500+ libraries now on Twitter is currently available and further analysis could perhaps investigate a sentiment analysis of types of tweets or the influence of an account using Shulman’s methodology or Mon and Lee’s PeerIndex scores.

**Conclusion**

In 2012 a survey respondent wrote the prophetic statement, ‘We’re just starting, and I think the importance will build with time.’ With so many libraries now on Twitter, the days of intrepid explorers creating accounts free of oversight are over.
The literature available on libraries using Twitter is colossal and can be split into the genres ‘how to’, ‘appraisal’, ‘what happens’ and ‘why bother’. The advice given can be contradictory and often vague, with a distinct academic library bias. As early as 2011, Bodnar and Doshi were prompting librarians to think carefully about social media, yet researchers do not outline specific means and methods to ascertain ROI. Perhaps this is because there is no magical ‘one size fits all’ model for social media use and the assessment of ROI.

This study was created to fill a gap in the body of research, presenting a cross-category look at UK libraries on Twitter, with case studies for five ‘successful’ smaller libraries. The gathered data revealed that academic libraries led the way into social media usage. Despite clear best practice outlined in the literature, libraries are not all following the rule of law. Inactive accounts gather followings, accounts fail to utilize Twitter fully or are difficult to locate, and different types of library are wont to receive different numbers of followers. Meanwhile, the pioneers who started their accounts early are reaping the benefits of a following which has grown over time. Perhaps Twitter is now oversaturated with library accounts? New accounts will have to be breaking new ground to ascend to the heady heights of accounts like Orkney.

Smaller libraries are thought to benefit from the use of social media due to its perceived time and cost-saving nature. Through case studies and interview, it was revealed that five smaller libraries were aware of best practice and were using their high-follower accounts in interesting ways. However, the time and effort involved was substantial, refuting the assertion of time-saving. The interviewed libraries have not been recording or measuring their social media accounts, which presents concerns for the future measurement of ROI. This more prosaic itemization of an account’s success may not be as interesting or engaging as the initial exploration of the tool, but it will pay dividends for libraries measuring ROI.

A core question arises: why bother? If ‘success is what you make it’, and you have no clear strategy for social media, you may well be tweeting into the void, wasting time and energy which could be better spent on other projects. If, on the other hand, you have a clear strategy and, more importantly, know how you are going to record ROI, then, as the ASL librarian put it, ‘Go forth and conquer!’

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Abbreviations and Acronyms
A list of the abbreviations and acronyms used in this and other Insights articles can be accessed here – click on the URL below and then select the ‘full list of industry A&As’ link: http://www.uksg.org/publications#aa

Competing Interests
The author has declared no competing interests.

Data accessibility statement
The data sets and transcriptions are available at:
- Title: Library Twitter Data 2017
- DOI: http://dx.doi.org/10.5287/bodleian:mzox5npDm.

The interviews were recorded over the internet and auto transcribed. For more information on the methods used please go to:
- Auto-Transcribing recordings: https://librarycactusblog.wordpress.com/2017/10/17/free-auto-transcribing-an-mp3-using-youtube
- Or access a copy of this blog on the Oxford research Archive.
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