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# Use of Hashtags by Two Canadian Public Libraries: A Comparative Review

## **Abstract**

This research presents a comparative review of hashtags in tweets posted by the two large Canadian public libraries, Edmonton Public Library (EPL) and Calgary Public Library (CPL), serving communities in the Province of Alberta. The descriptive statistics reveals variation between the two libraries in the number and types of hashtags. Both the libraries used a number of hashtags that had libraries' names including initialism to contribute to their visibility, and local airport codes or the respective city names to establish their explicit and implicit associations with their geographical area of operations. The paper contributes to literature on the use of hashtags particularly in the context of Canadian public libraries. It will provide evidence-driven insights to other libraries on ways to create hashtags to strengthen their online presence, and digitally share information and promote events, programs and services.

## **1. Introduction**

Twitter is counted among “the more popular social media” applications (Yep et al., 2017, p.194). It is used by organizations including libraries and they use application functionalities such as reply, retweet and hashtags to share information and engage with their stakeholders on a variety of topics such as disaster management (Yang & Ju, 2021). Hashtag is a user-generated keyword(s), which is “a unique tagging format with a prefix symbol, #,” and primarily it reflects message content (Chang and Iyer, 2012, p.248; Bastos et al., 2013; Sakas and Sarlis, 2016). Individual users and organizations create and use hashtags for different purposes such as dissemination of advocacy messages, and promotion of products and services (Ewbank, 2015; Demirel, 2020). Researchers have examined hashtags in domains including Library and Information Studies (LIS), and with different perspectives such as user engagement (VanScoy et al., 2018) and sentiment analysis (Lund, 2020). Hashtag is “one of the most unique yet understudied tools available on social media platforms” (Saxton et al., 2015, p.1). This research examines tweet hashtags posted by the two large Canadian Public Libraries. The study contributes to literature on hashtags particularly with Canadian context, and provides insights to other libraries to review and reconsider their organizational hashtag strategies.

## **2. Literature Review**

Twitter-focused research is multi-faceted and researchers have examined the use of Twitter with diverse perspectives in different libraries such as public, academic and health (e.g., Neilson, 2016), and temporal periods including the pandemic (Rathi, 2021). For example: analyzed tweet content to create topical categories (e.g., Shiri and Rathi, 2013; Stvilia and Gibradze, 2014; Al-Daihani and AlAwadhi, 2015); examined the diversity of use including relationship building with customers/patrons (e.g., Kushniryk and Orlov, 2021; Karami and Collins, 2018); studied the

diversity in tweet content as posted by different libraries (e.g., Aharony, 2010), and; identified types of tweets that may be liked and/or retweeted (e.g., VanScoy et al., 2018). There is a body of research that examined (tweet) hashtags in the LIS field including the use of specific hashtags such as “#savelibraries and #getESEArighT” in the context of the “library advocacy” work (Ewbank, 2015, p.26); hashtag to improve future “library catalogues” (Chang and Iyer, 2012, p.248); hashtags in the context of a digital library (Papadakis et al., 2017), and; a specific hashtag, “#ProtectLibraryWork” to support library employees (Phillips, 2021, p.250). Similarly, there are studies that have examined hashtags in non-LIS areas including researching “the potency of hashtags as a means of constructing the identity...” (Page, 2012, p.184); looking into the use of hashtags by two groups of users, politicians and journalists (Enli and Simonsen, 2018); focusing on analyzing the use of hashtags in the context of a brand (Perez-Hernandez, 2018), and examining “a brand’s campaign hashtag...” (Demirel, 2020, p.178).

### **3. Methodology**

This research examined over 800 and 900 tweets (including retweets) posted by the Edmonton Public Library (EPL) (<https://www.epl.ca/>) and the Calgary Public Library (CPL) (<https://calgarylibrary.ca/>) respectively. They are two large multi-branch public libraries in Alberta, Canada. Tweets used in this research were from mid-March to mid-August in 2020, the initial pandemic phase. Tweets were drawn from the collection maintained by the Grebe Social Media Aggregator (Samuel et al., 2018). Tweets and hashtags were primarily processed using Microsoft Excel. The tweets were pre-processed including removal of special characters (e.g., exclamation (!), comma (,), period (.), question mark (?), colon (:), newline characters) and others (e.g., b'). Tweets’ content (Weber, 1990; Vaismoradi et al., 2013) was reviewed to have an enhanced understanding of hashtag context. Microsoft Excel was used for descriptive statistics (Woodrow, 2014). Hashtags in singular and plural forms (e.g., #audiobook and #audiobooks), and with possible spelling errors were counted ‘as-is’ for the descriptive statistics.

### **4. Key Findings and Discussion**

The emerging findings revealed that both the libraries had common grounds i.e., similarities and differences in their practices of using hashtags. The analysis is presented using four facets and selected examples are included in the following subsections.

#### **4.1 Descriptive Statistics**

The average number of hashtags were 0.58 and 1.42, and the maximum number of hashtags in any tweet were 4 and 6 for EPL and CPL respectively. More than half of tweets posted by EPL (59.1%) and CPL (51.5%) had no hashtag (Table 1). Both the libraries had variations in the number of hashtags included in tweets. For example, two-fifth (40.7%) of EPL’s tweets while nearly half (48.5%) of CPL’s tweets had one or more hashtags. EPL had 29% and CPL had 6.0% of tweets with one hashtag. EPL and CPL used multiple hashtags (two or more) in 11.9% and 42.5% respectively of their tweets (Figure 1), and they had a maximum of 4 and 6 hashtags respectively in a single tweet (Table 1).

A total of 144 and 221 unique hashtags (separate count for singular and plural form of hashtags) were used by EPL and CPL respectively (Table 1). Over three-fifths (61.8%) and half (52.0%) of the unique hashtags were used just once by EPL and CPL respectively. EPL used 10 and CPL used 24 unique hashtags 10 or more times. The most often used hashtag by EPL was ‘#yeg’

(Edmonton airport code) (10.9%) and CPL was ‘#yyc’ (Calgary airport code) (24.9%). Examples of other often used hashtags by EPL include #EPLMarchMadness and #EPLfromHome, and CPL include #calgarylibrary, #yyckids, and #LearnatHome (Figures 2 and 3).

Table 1. Key Descriptive Statistics

Description	EPL	CPL
Percentage of Tweets with No Hashtags	59.1%	51.5%
Percentage of Tweets with at least one Hashtag	40.9%	48.5%
Minimum Hashtags in a Tweet	0	0
Maximum Hashtags in a Tweet	4	6
Average Hashtags	0.58	1.42
Number of Unique Hashtags in the Dataset	144	221

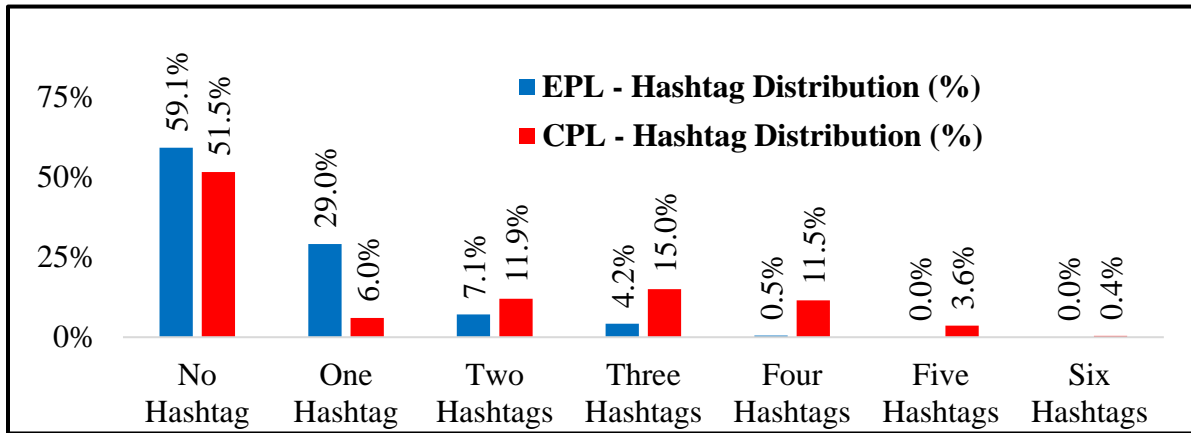


Figure 1. Distribution of Hashtags in CPL and EPL Tweets

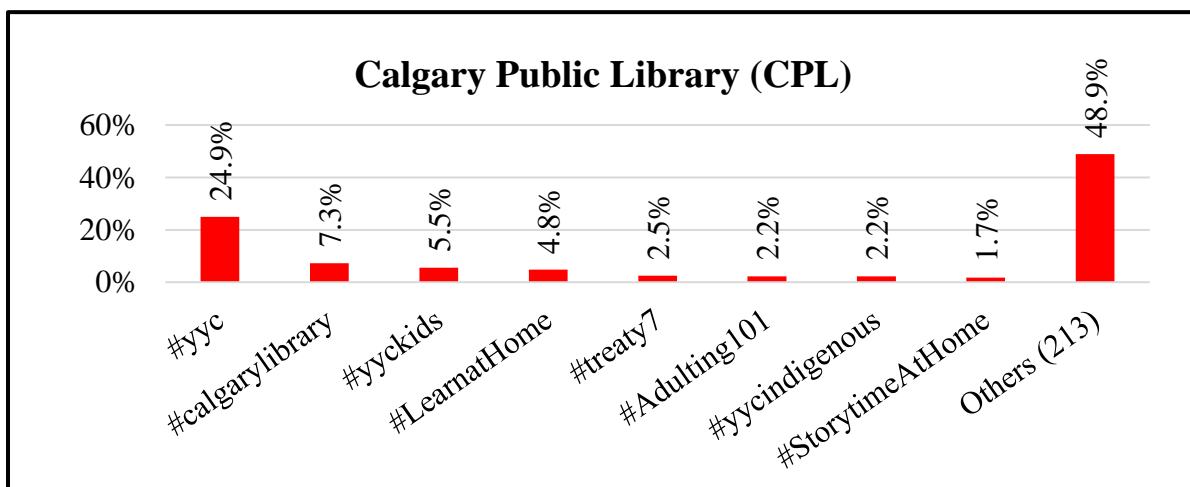


Figure 2. Frequently Used Hashtags by CPL (% of Total Hashtags Count in the CPL Dataset)

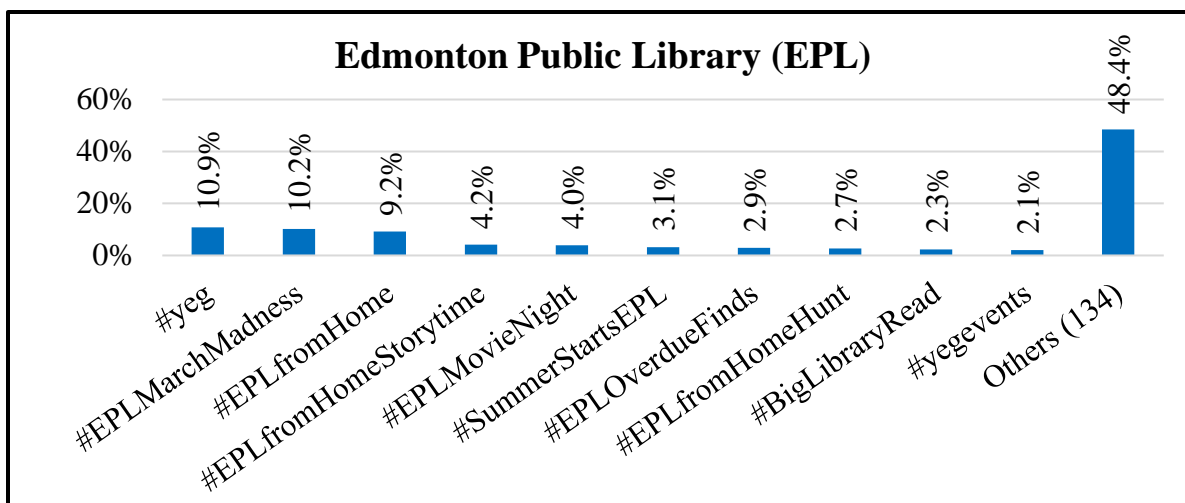


Figure 3. Frequently Used Hashtags by EPL (% of Total Hashtags Count in the EPL Dataset)

#### 4.2 Thematic Grouping

A number of common thematic groupings emerged from the analysis. EPL and CPL, for example, used hashtags that reflected themes related to: *the pandemic* (e.g., EPL and CPL used hashtags like #covid19), *programs and services* (e.g., EPL used #EPLfromHome, and CPL used #LearnatHome), *events* (e.g., #yegevents by EPL), *city specific* (e.g., #yegschools by EPL, #yychistory by CPL), and *special days and/or occasions* (e.g., #canadaday, #VictoriaDay, #EarthDay by EPL and CPL), among *other themes*. Libraries used hashtags with varying frequencies and this may possibly have an impact on the overall importance of themes for each library.

#### 4.3 Reflecting Geographical Location of Operations

The use of airport codes (Edmonton: 'yeg' and Calgary: 'yyc') presented evidence that the libraries are explicitly and implicitly making connections with their geographical area of operations. Both the libraries used the airport codes of their cities with varying degrees. For example, CPL used '#yyc' 24.9% times and EPL used '#yeg' 10.9% times (Figures 2 and 3). Unlike EPL, CPL also used their city name (i.e., #calgary) in their tweets reflecting connection with the city.

#### 4.4 Promoting, Communicating ... and Branding

CPL and EPL used different strategies and types of hashtags for promoting and sharing of information, and communicating with users, and to some extent branding their organization using tweets. CPL and EPL used over 40 and 15 unique hashtags (singular and plural counted separately) with their airport codes, 'yyc' and 'yeg' respectively, as prefixes (examples in Figures 4 and 5). Such hashtags with prefixes accounted for 23.1% for CPL and 7.7% for EPL. There was limited use of the airport codes as suffixes in hashtags. Unlike EPL, CPL used city's name in their hashtags as a prefix in a number of instances (e.g., #calgaryparents) and as a suffix in selected hashtags (e.g., #covidcalgary).

Analysis also revealed that EPL used organization initialism (i.e., EPL) in their hashtags to promote its products and service to users. EPL used initialism as a prefix in a number of hashtags (e.g., blue and green boxes in Figure 6) and as a suffix in a couple of instances (e.g., #SummerStartsEPL). Two out of five hashtags (41.5%) used ‘EPL’ as a prefix and/or suffix. EPL’s hashtags with initialism also reflect some hierarchy (e.g., #EPL → #EPLfromHome → #EPLfromHomeHunt). Though there is no confirmation, a review of Figure 6 gives the impression that EPL used its initialism in hashtags systematically and strategically, and this can possibly serve as one of the models to other large library systems offering products and services, digitally. [Note: hashtags in Figure 6 are case insensitive, and the singular and plural forms are combined as indicated by ‘(s)’].

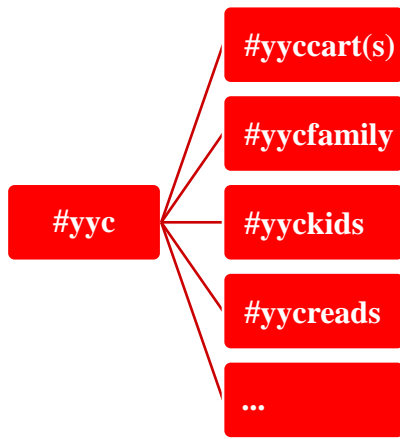


Figure 4. Use of YYC (Airport Code) in Hashtags by CPL

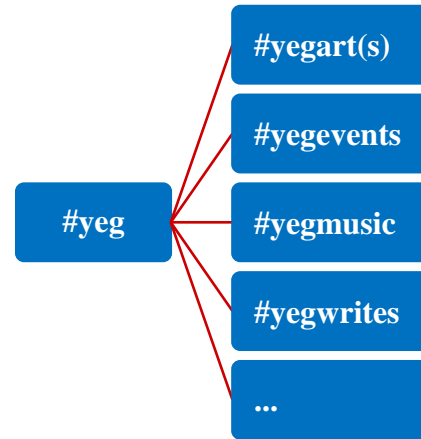


Figure 5. Use of YEG (Airport Code) in Hashtags by CPL

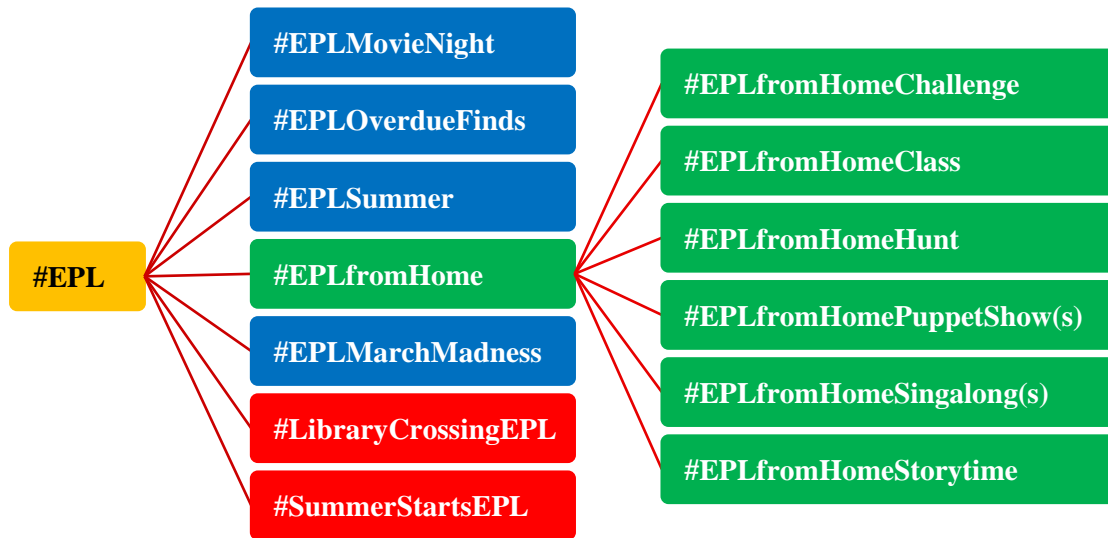


Figure 6. Hashtags with (#)EPL Initialism

The findings from this study such as the number of tweets having hashtags aligns well with the results presented by Choi and Kim (2021) who noted that 45.32% of library tweets in their dataset had hashtags. The authors also noted that “many hashtags denote the library itself” (p.725) and this was evident in this research as well (e.g., #EPLfromHome, #calgarylibrary). Researchers suggested that hashtags can be used for different purposes including adding “context and metadata” (Furini et al. 2017, p.189), promoting content (Page, 2012; Papadakis et al., 2017), helping in “different visual representations”, searching and tracking of resources, supporting faceted categorization (Chang and Iyer, 2012, p.248), fostering community conversation, engaging users (Ewbank, 2015; Furini et al., 2017), branding and creating visibility (Page, 2012), and promoting and generating interests in events, programs and services (Demirel, 2020). Furini et al. (2017), for example, noted that the entertainment sector used hashtags to create interest in their offerings and “observed that a smart usage of hashtags” has a potential to “stimulate the interest...” (p.197).

The use of appropriate hashtags such as those with organizational name or initialism (e.g., #EPL, #calgarylibrary) has the potential to serve different purposes as discussed above including improving overall communication (Kushniryk and Orlov, 2021), providing support to search content from a specific library (Del Bosque et al., 2012), and particularly, providing opportunities for advocacy and to strengthen “library's digital brand and identity...” (Waddell et al., 2012, p.7).

## 5. Conclusion

The paper examined hashtags included in tweets posted by the two large public libraries, CPL and EPL. The analysis revealed that the libraries used a wide variety of hashtags with varying frequencies. Libraries used hashtags that explicitly and implicitly connected with their area of operations they primarily serve by using city names and airport codes, and reflected libraries names, for example, by using library initialism (EPL) to promote events, products and services using Twitter. The research work has limitations (e.g., number of tweets). The paper aims to contribute to literature on hashtag, and to provide foundation for future research, for example, ways hashtags can be used more effectively by libraries to build brand and enhance their advocacy efforts using Twitter.

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