

U.S. Public Libraries and the Use of Web Technologies, 2014

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by

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Introduction

In 2008, researchers at the Library Research Service (LRS) undertook the *U.S. Public Libraries and the Use of Web Technologies*¹ study, with the intent to document the use of various Internet technologies on the websites of public libraries throughout the nation (Lietzau, 2009²). The results of that study set a baseline for the adoption of web technologies nationwide by studying a random sample of public library websites, stratified by legal service area (LSA) population group, and included a Colorado-specific section of all public libraries in Colorado. From its inception, *U.S. Public Libraries and the Use of Web Technologies* was conceived as a longitudinal study, with plans to revisit the sample libraries at regular intervals to track the changing nature of technologies on the websites of public libraries throughout the country and in Colorado. This report constitutes the results of the fourth iteration of the biennial study.

What are web technologies?

The term “web technologies” refers to a variety of Web 2.0 tools that enable interactivity with users, such as social networking, virtual reference, mobile friendliness, and blogs. For the sake of brevity, we use the term “web technologies” to encompass all of these types of software, tools, delivery methods, and techniques.

In the vein of previous studies, the 2014 edition was conducted as a content analysis, as opposed to a survey to the field. Please see the first report for an explanation of the benefits and drawbacks to this methodology. In 2014, LRS staff visited the websites of 889 public libraries in the United States, searching for the presence of various technologies. The national longitudinal sample was comprised of 584 libraries, the national random sample included an additional 202 libraries, and the remaining 105 were Colorado public libraries that had not been selected as part of the national samples (see “Methodology” for descriptions of the samples).

The results included here represent a “snapshot in time” for each library. It is quite possible that a library adopted a specific technology shortly after LRS staff visited its website. In such a case, for this study it will still be treated as not using the technology in question. Also possible, though less likely, would be libraries which abandoned technologies shortly after staff visited their sites.

Methodology

Sample

Public libraries of different sizes have vastly different characteristics in terms of inputs and usage, and these differences no doubt appear in the realm of web technology usage as well. To address these disparities, a stratified sample of public libraries was generated for the first iteration of this study based on each library’s LSA population. At that time, sample libraries were

¹ Library Research Service. (2016). *U.S. Public Libraries and the Use of Web Technologies*. Available at <http://www.lrs.org/data-tools/public-libraries/u-s-public-libraries-and-the-use-of-web-technologies/>

² Lietzau, Z. (2009). *U.S. public libraries and the use of web technologies* (Closer Look Report). Denver, CO: Colorado State Library, Library Research Service.

pulled from the 2005 Public Library Survey, as collected and reported by IMLS. One hundred libraries were randomly selected from each of the following population groups: less than 10,000 served, 10,000-24,999 served, 25,000-99,999 served, and 100,000-499,999 served. In addition, all 83 public libraries in the country that served at least 500,000 people were included in the study.

The same libraries were used and expanded upon as the basis of the 2010 edition of the study, which relied upon 2007 IMLS data to group the libraries by LSA population. In addition to the original study's libraries, the sample for the 2010 edition of the study included an additional 25 libraries from each population group, bringing the total number of libraries in the sample for each population group to 125, as well as all 84 libraries that served at least 500,000 people.

For 2012, the sampling methodology continued as described above and used 2010 IMLS data to group libraries by LSA population.

In 2014, this **longitudinal sample** was again analyzed to allow researchers to discern trends in web technology adoption and usage. Also in 2014, a **stratified random sample** of public libraries was created using 2012 IMLS data (the most recent data available) to provide equitable representation of libraries of all sizes, based on their frequency in the population. This was accomplished by adding an additional 202 libraries to the smallest population group, and reducing the other population group subsamples to match their frequencies in the population (see chart). Throughout this report, this sample will be referred to as the **nationally representative sample**.

Population Group	Number of US Libraries	Percent of US Libraries	Number of Libraries in Nationally Representative Sample
Less than 10,000	5,377	58%	327
10,000-24,999	1,768	19%	107
25,000-99,999	1,589	17%	96
100,000-499,999	472	5%	28
500,000+	85	1%	6
Total	9,291	100%	564

In each year, all 114 public libraries in Colorado (9 of which were in the longitudinal and national samples) were also analyzed to provide a case study of the state's web technology trends.

Data Elements

Many of the data elements used in the previous instruments were included in this iteration with little to no modification. Again, LRS staff looked for the presence of blogs, virtual reference, and social networking when assessing the web presence of the libraries in the study. General areas of research included:

- **Basic Website:** Did the library have an online presence, provide access to the patron's online account, and offer the ability to sign up for a library account online and immediately start using resources?

- Extended Website: Did the library’s website have a ShareThis/AddThis-type interface or offer an email newsletter?
- Blogs: Did the library have a blog?
- Virtual Reference: Which types of remote reference services did the library provide, including chat, email, and text messaging?
- Social Networking: Did the library have a presence on various social networking sites (Facebook, Twitter, YouTube, Instagram, Flickr, Foursquare, Tumblr, Pinterest, Vimeo, and Google+)?
- Mobile: Did the library have a mobile version of its website, offer a mobile app, or have a website with responsive design?
 - Responsive design: Website automatically adapts to screen size (laptop, tablet, smartphone, etc.)
 - Mobile-optimized: Website with a URL that redirects to a mobile site when viewed on a mobile device.
 - Mobile apps: Applications that are downloaded to smartphones via iTunes, Android Market, etc.

See the Appendix for the survey instrument.

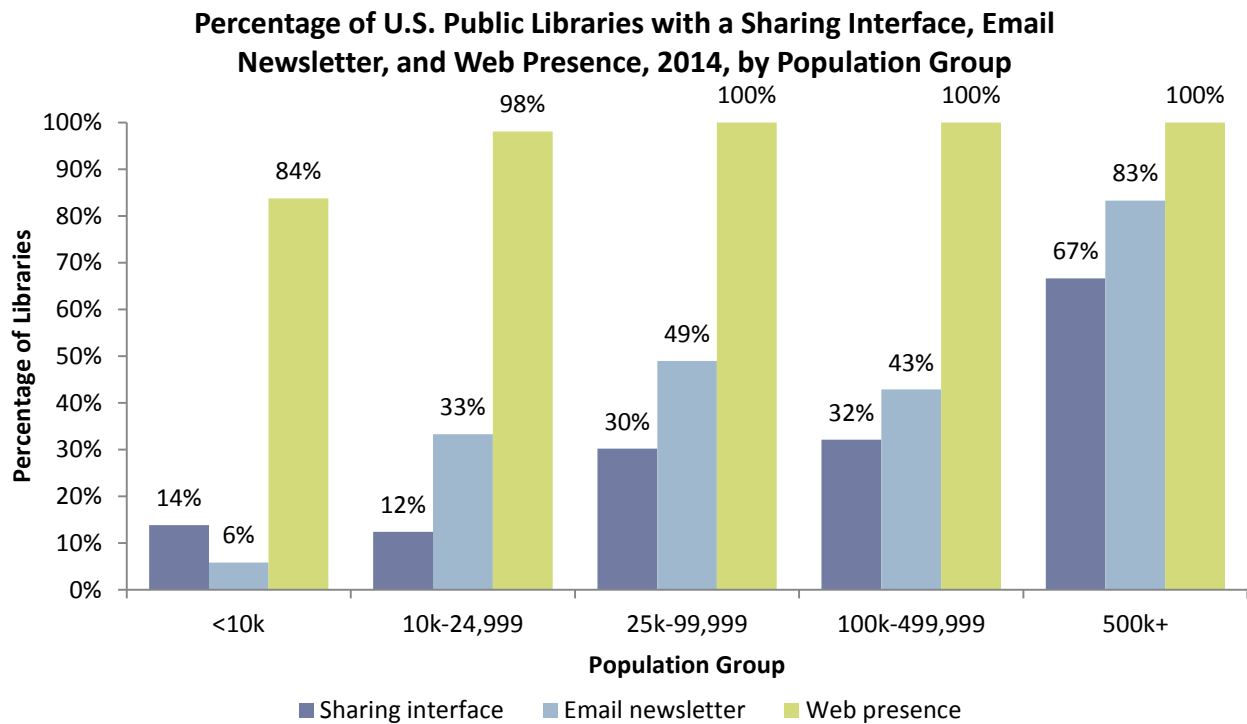
Study Procedures

From the late spring through fall of 2014, LRS staff members examined the websites of the public libraries included in the longitudinal sample as well as the new random sample for the presence of these data elements. In order to be counted, the elements either needed to be present on the homepage or linked from the homepage (e.g., a “contact us” link from the homepage that leads to a page with links to the library’s social media sites). Social media accounts were only included in the study if they were linked from the library’s website or from another social media account (e.g., a Foursquare link from the library’s Facebook page).

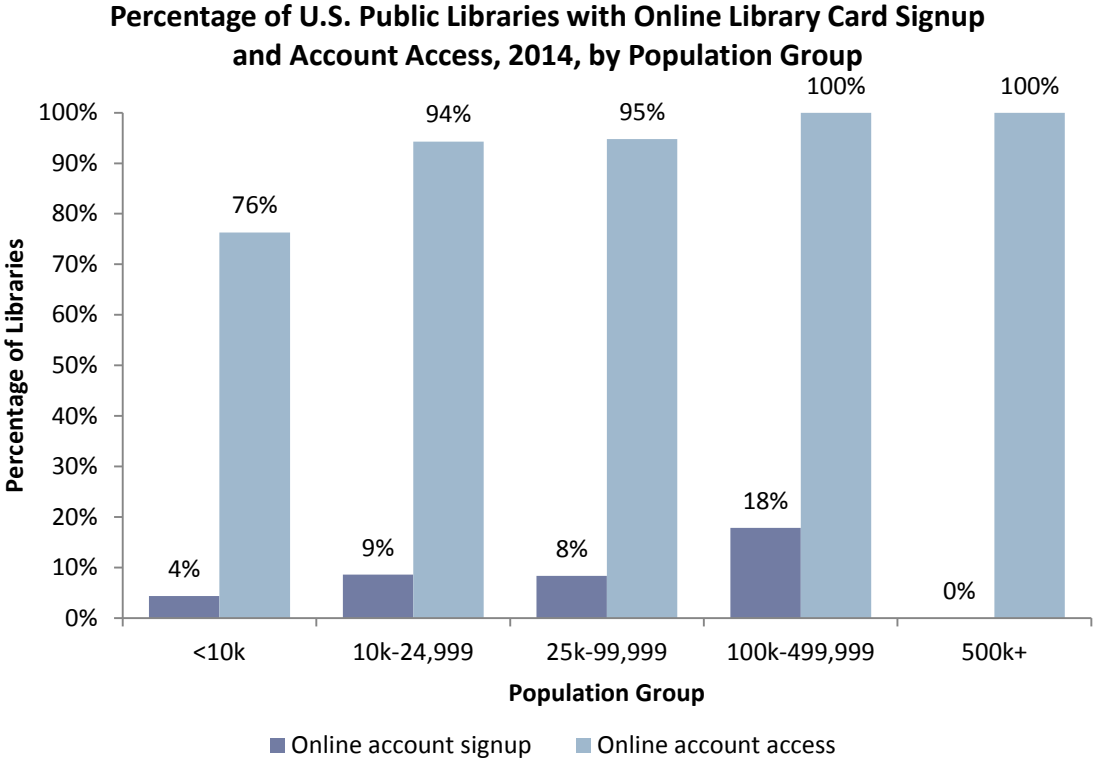
Results –Nationally Representative Sample

This section examines the rate of adoption of various web technologies in the nationally representative sample of 564 public libraries in the U.S. Findings are presented based on the size of the libraries' LSA population.

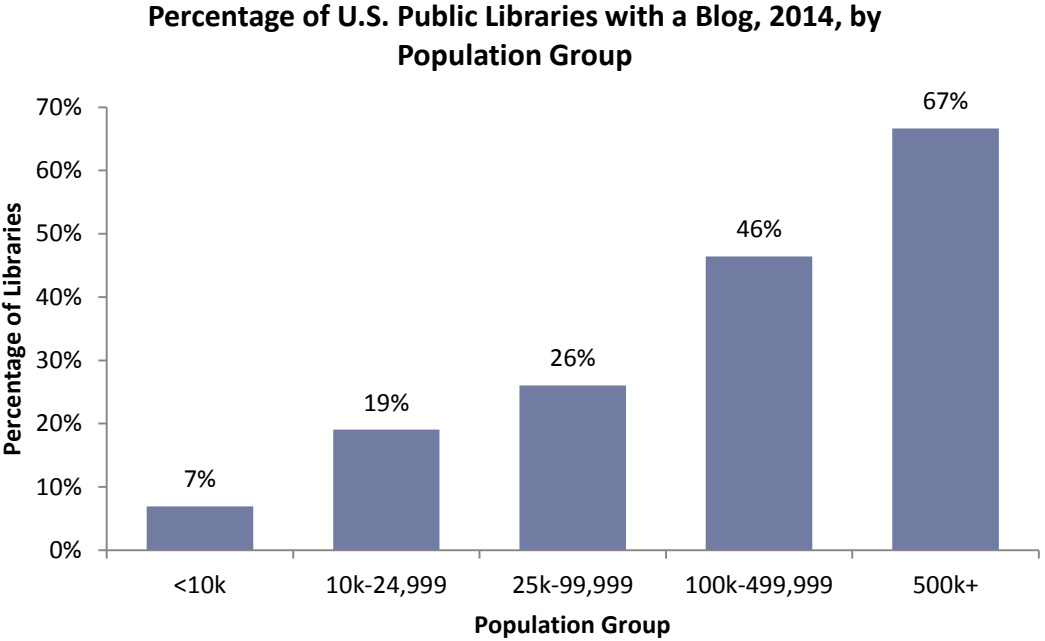
Web Presence, Email Newsletter, and Sharing Interface



Online Card Signup and Account Access

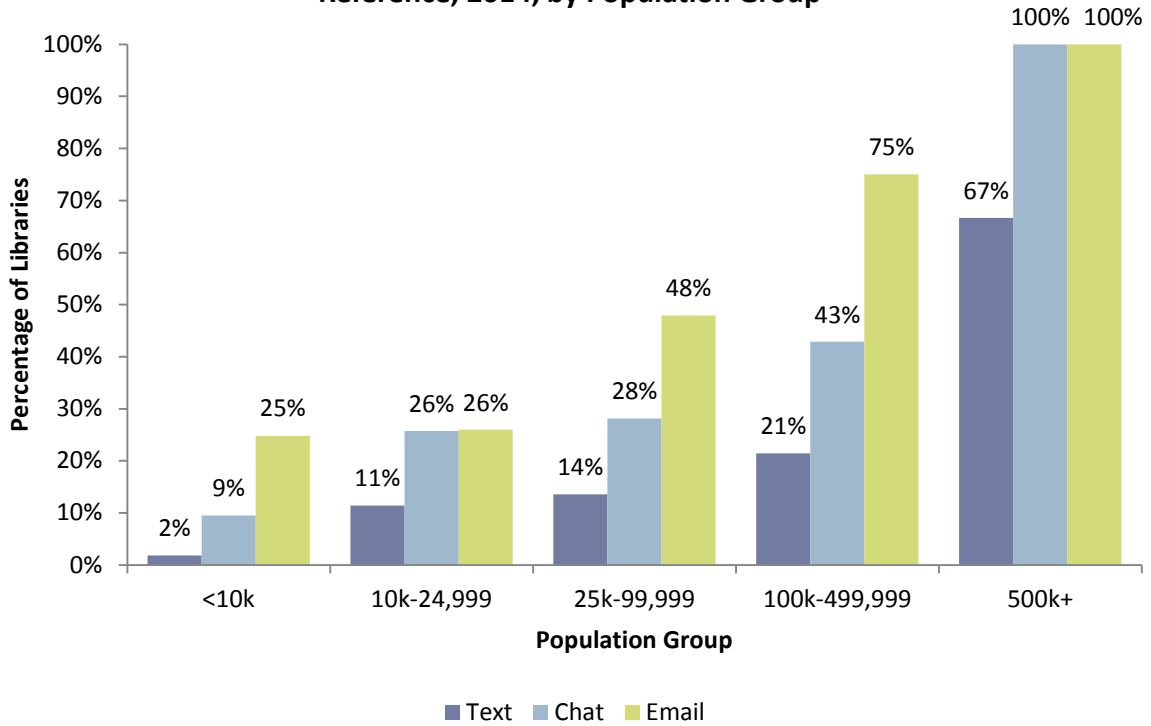


Blogs



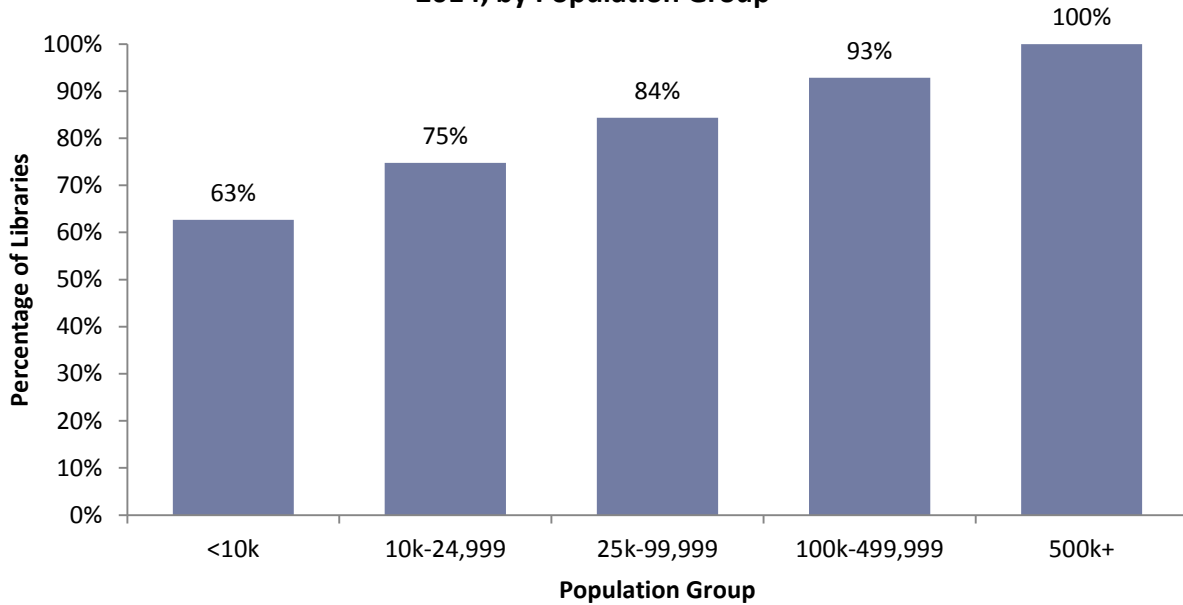
Electronic Reference

Percentage of U.S. Public Libraries with Text, Chat, and Email Reference, 2014, by Population Group

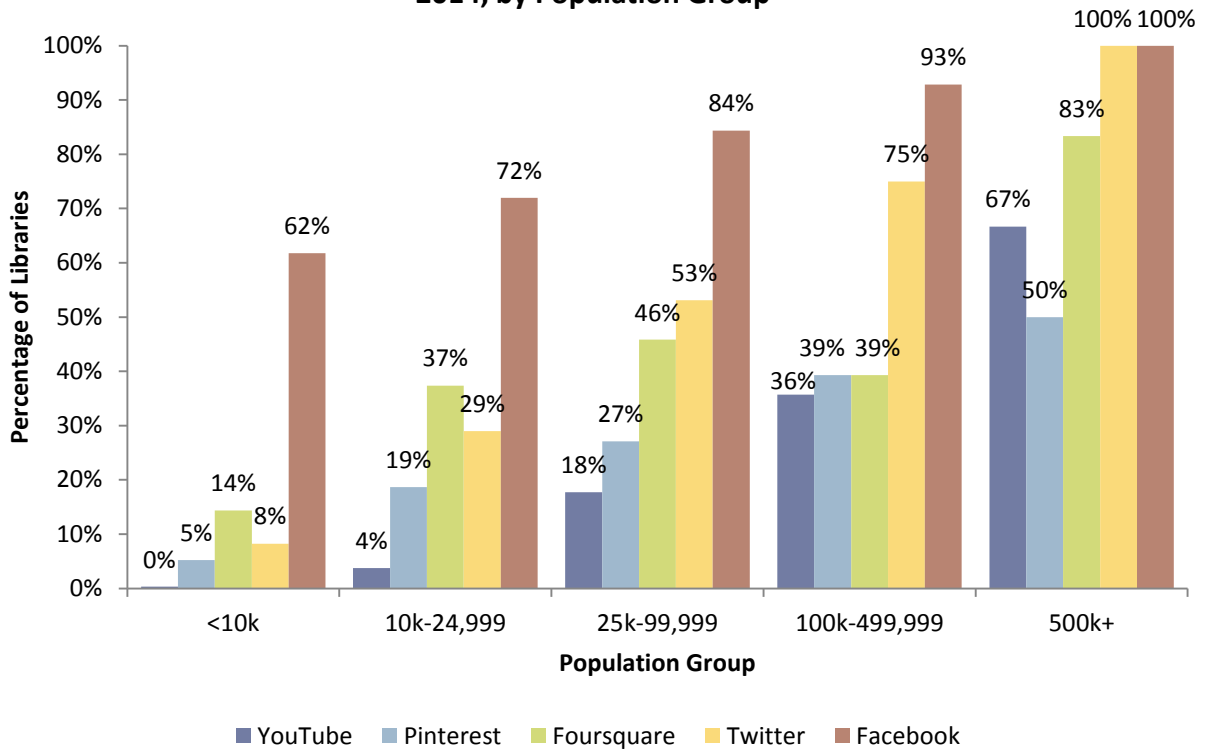


Social Media Presence

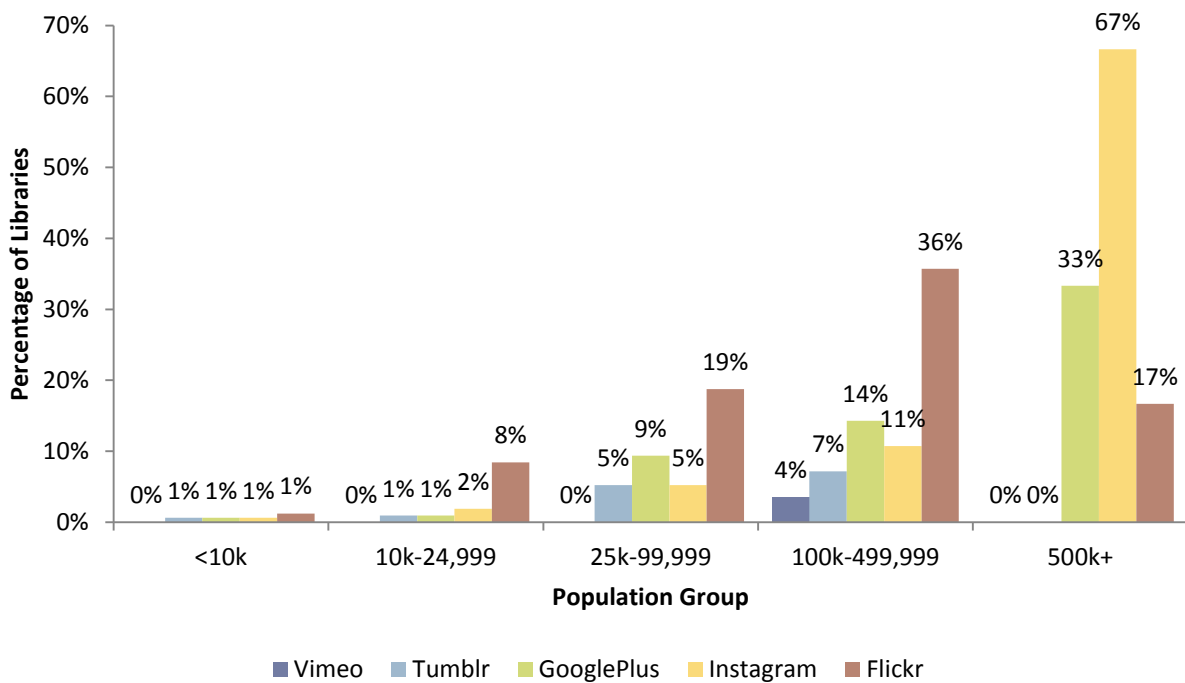
Percentage of U.S. Libraries with at Least One Social Media Account in 2014, by Population Group



Percentage of U.S. Public Libraries with Various Social Media Networks, 2014, by Population Group

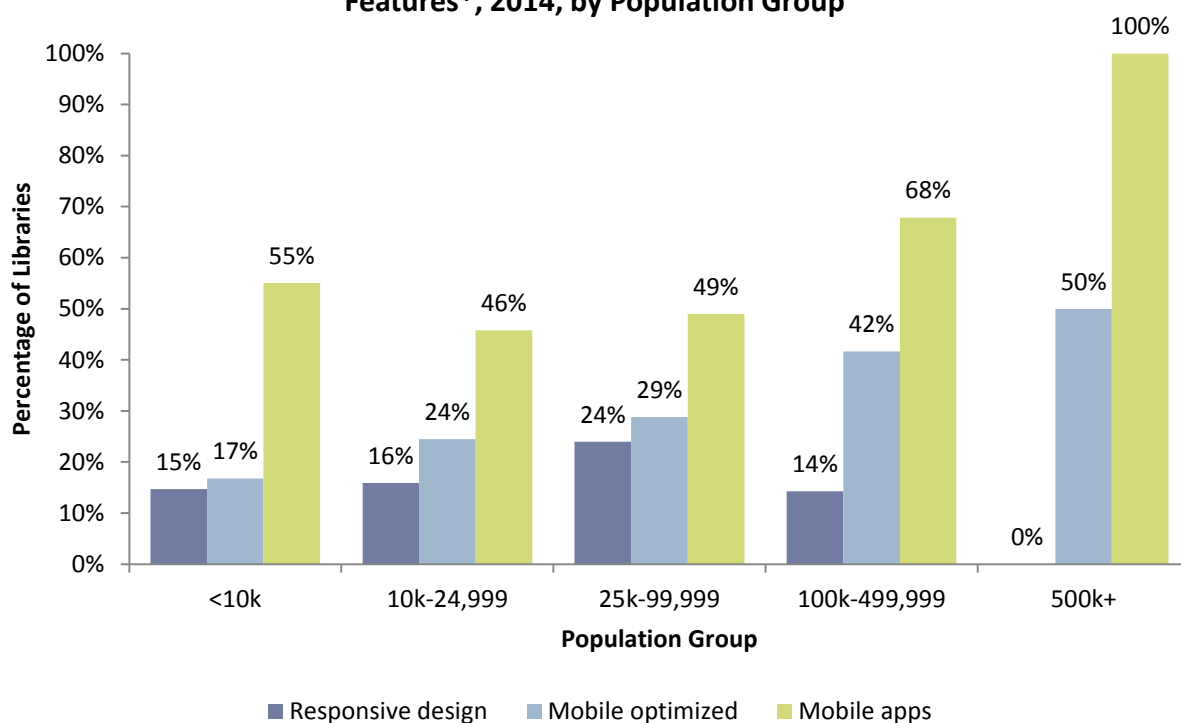


Percentage of U.S. Public Libraries with Various Social Media Networks, 2014, by Population Group



Mobile

Percentage of U.S. Public Libraries with Various Mobile-Friendly Features*, 2014, by Population Group



*Mobile friendly features include:

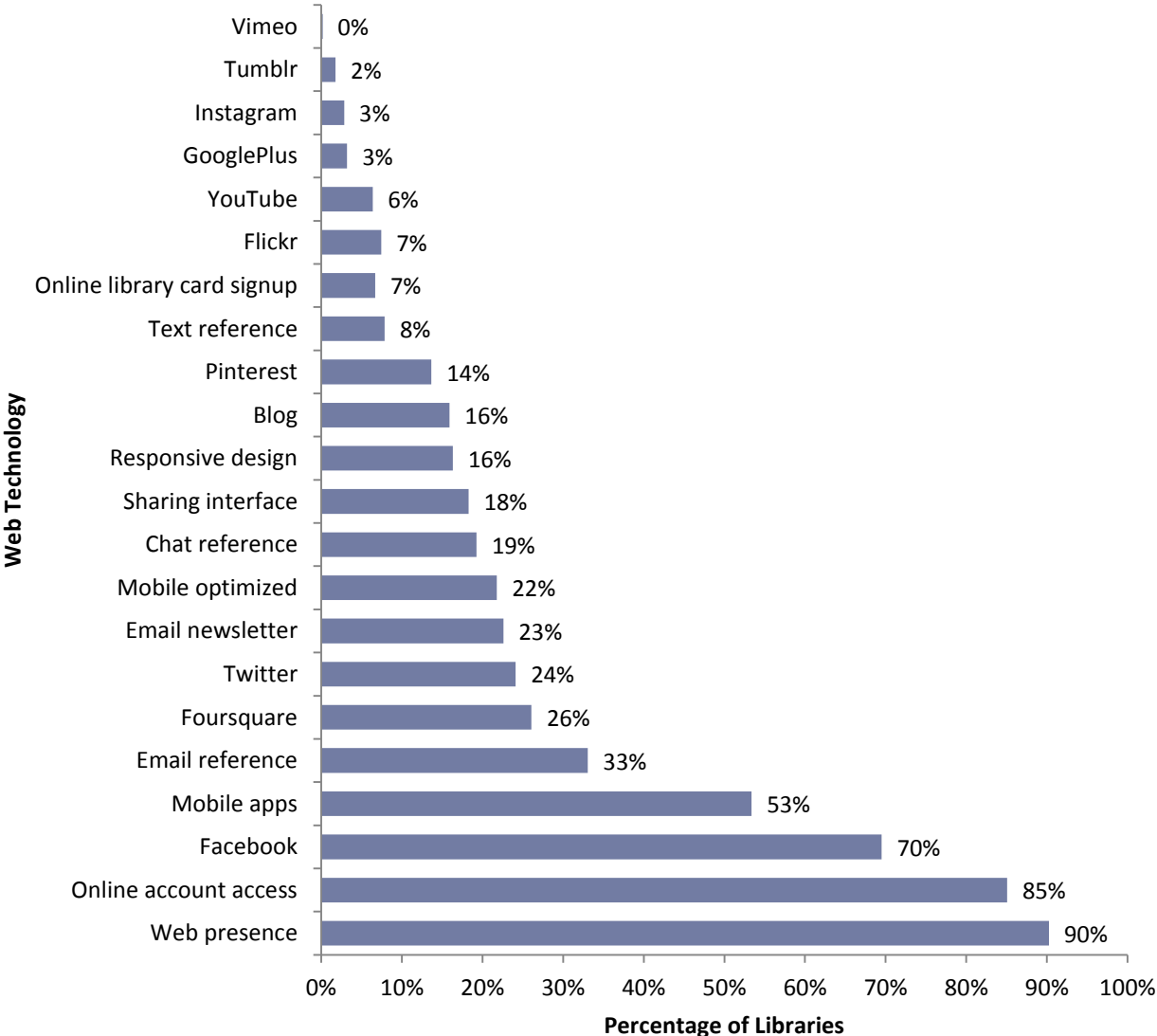
Responsive design: Website automatically adapts to screen size (laptop, tablet, smartphone, etc.)

Mobile-optimized: Website with a URL that redirects to a mobile site when viewed on a mobile device.

Mobile apps: Applications that are downloaded to smartphones via iTunes, Android Market, etc.

Overall Web Technology Usage

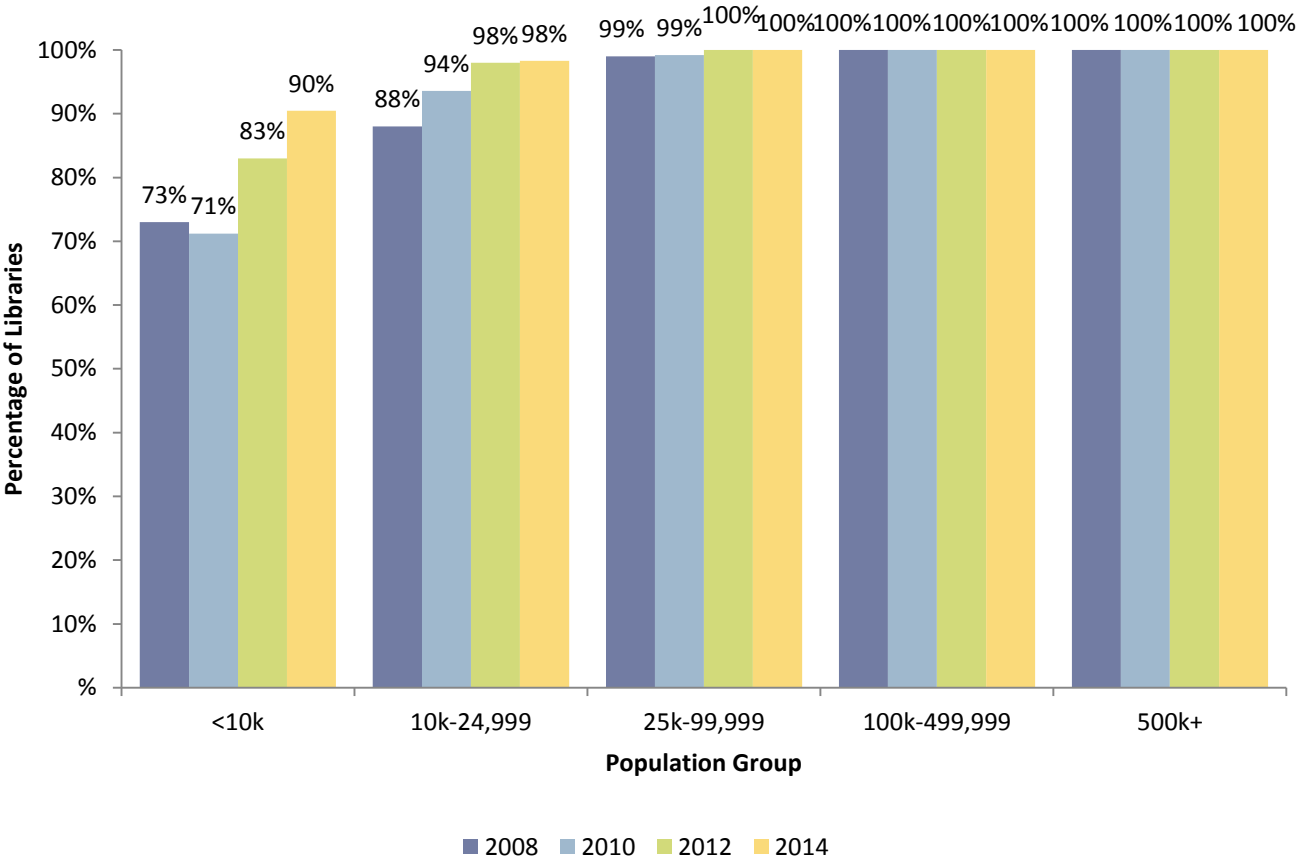
Percentage of U.S. Public Libraries Offering Various Web Technologies, 2014



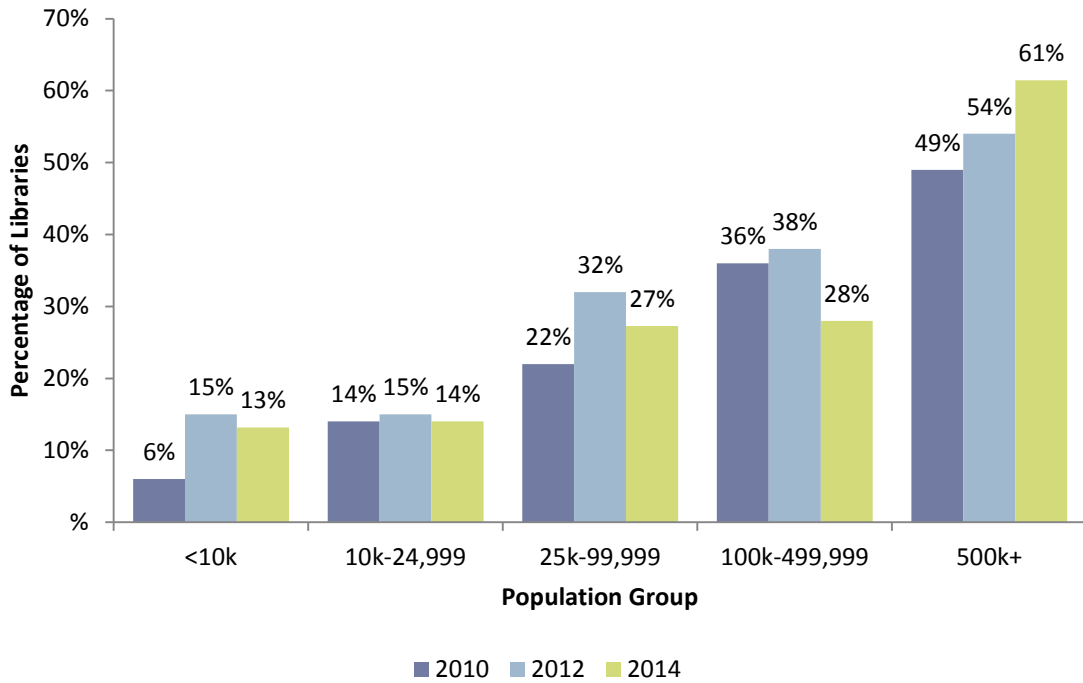
National Trends – Longitudinal Sample

This section examines the rate of adoption of various web technologies in the longitudinal sample of 584 public libraries in the U.S. used in the 2008, 2010, and 2012 editions of the *U.S. Public Libraries and Web Technologies* study. Findings are presented based on the size of the libraries' LSA population.

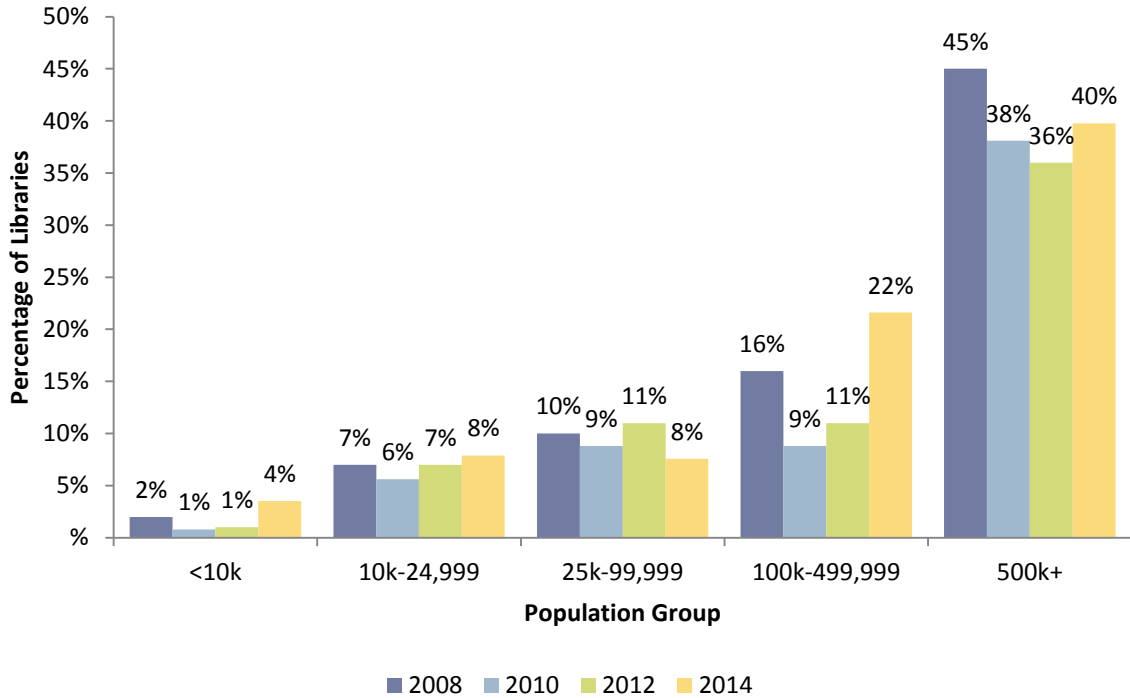
Percentage of U.S. Public Libraries with a Web Presence Across Time, by Population Group



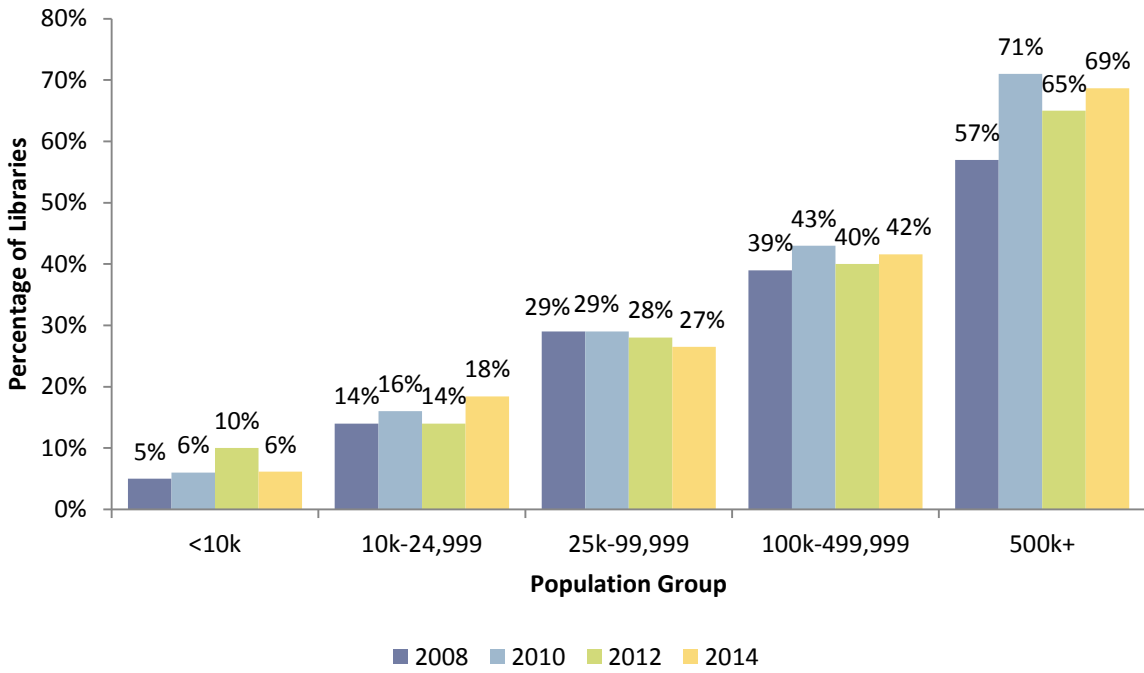
Percentage of U.S. Public Libraries with a Sharing Interface Across Time, by Population Group



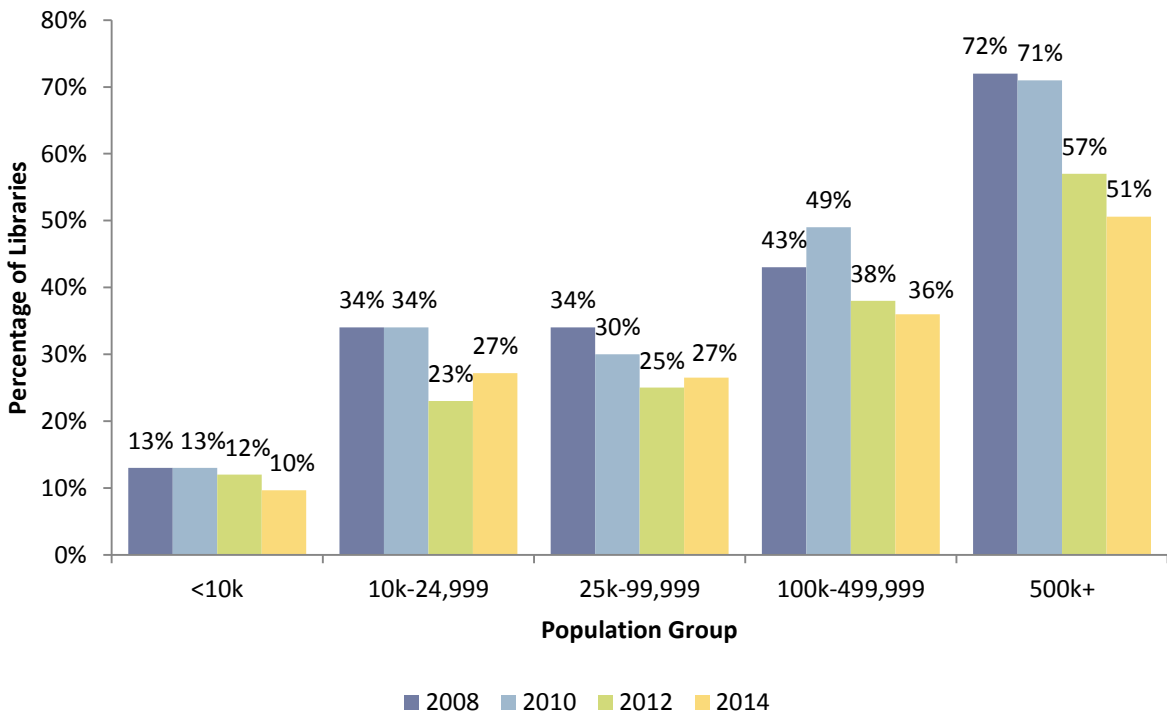
Percentage of U.S. Public Libraries with Online Library Card Signup Across Time, by Population Group



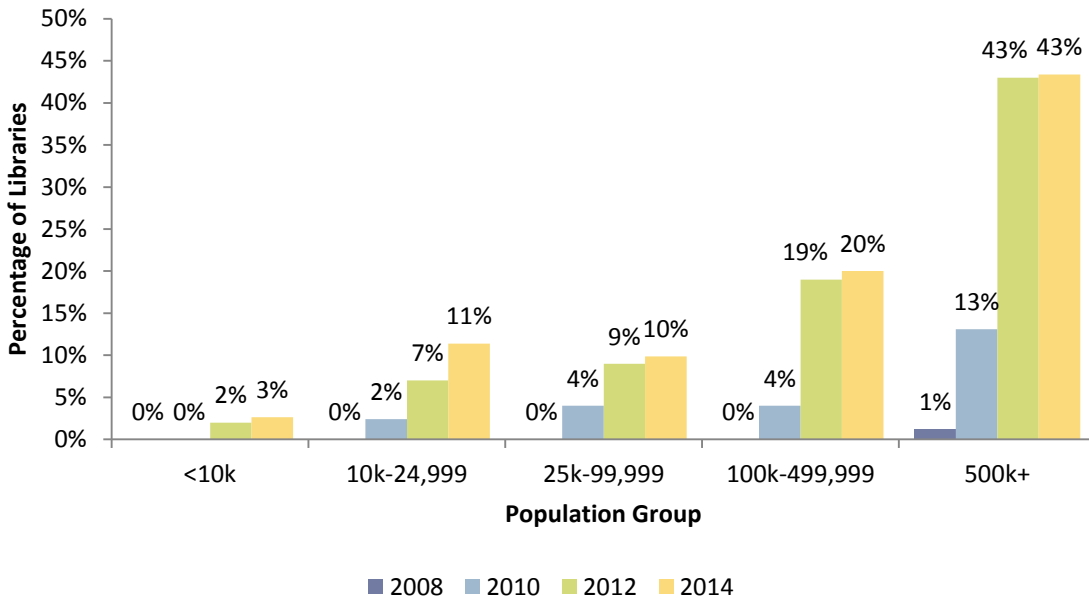
Percentage of U.S. Public Libraries with a Blog Across Time, by Population Group



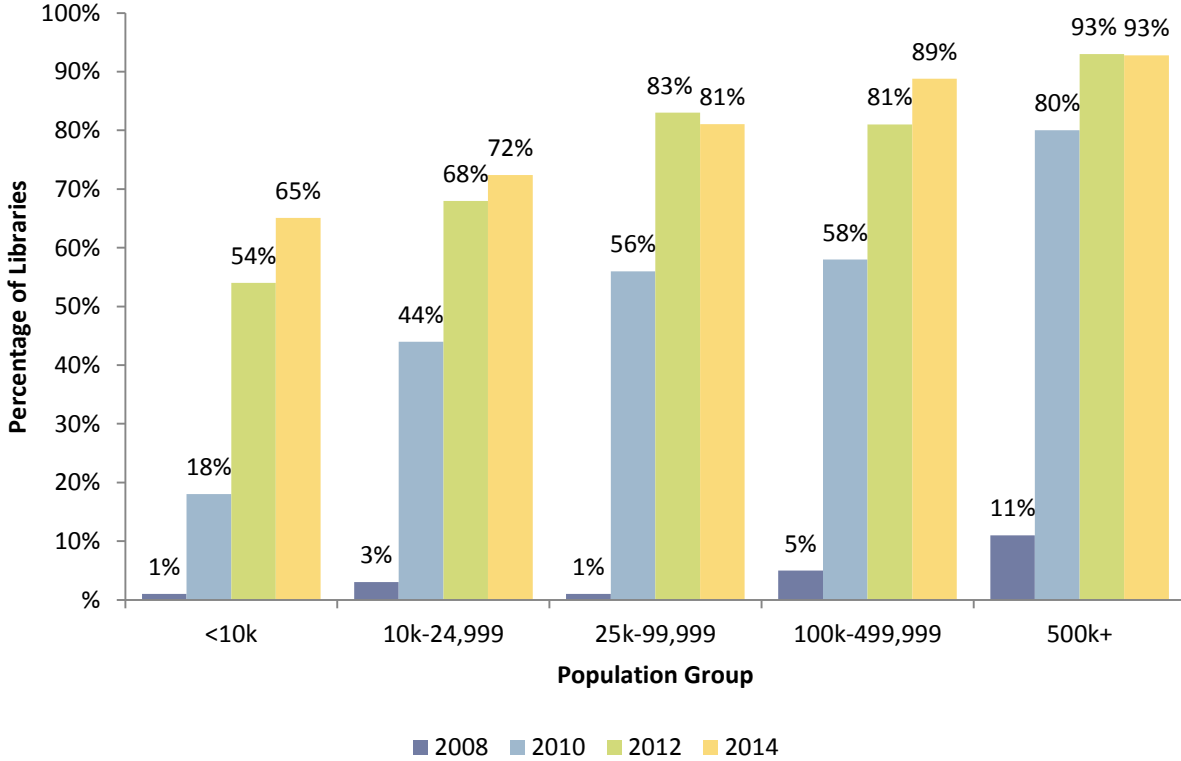
Percentage of U.S. Public Libraries Offering Chat Reference Across Time, by Population Group



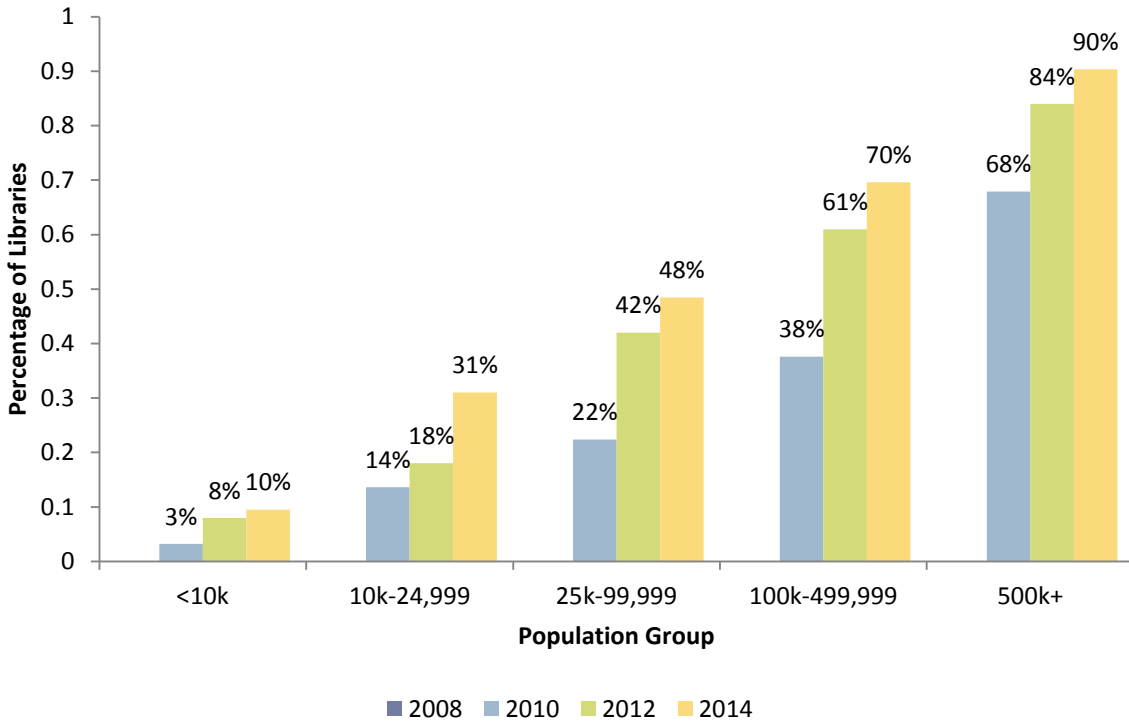
Percentage of U.S. Public Libraries Offering Text Reference Across Time, by Population Group



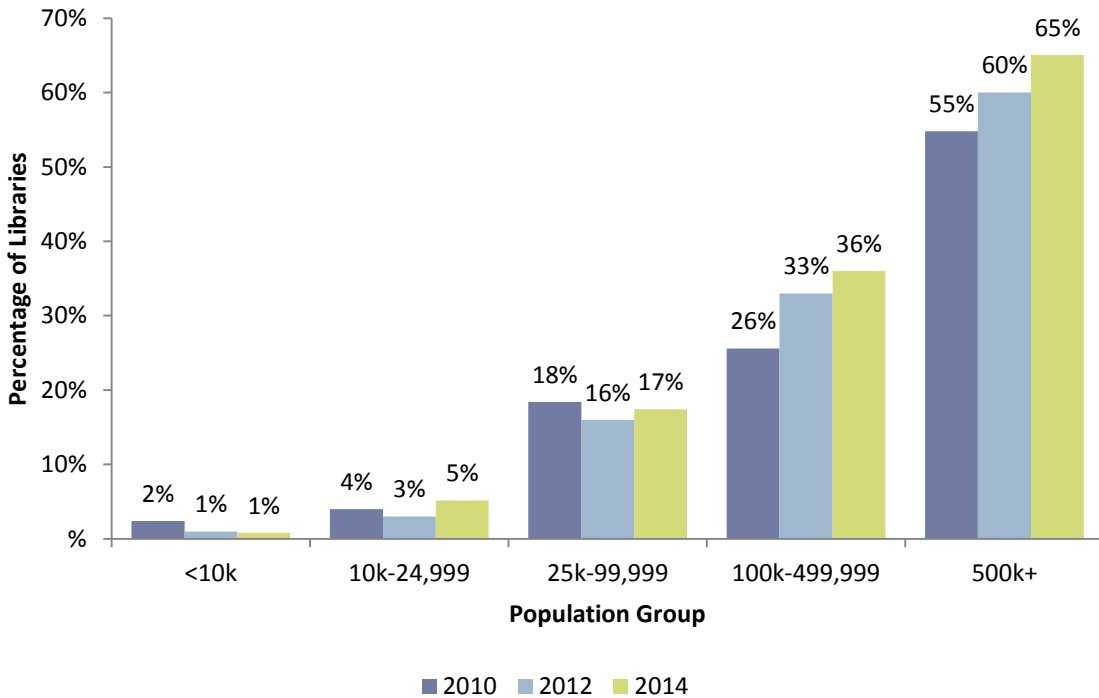
Percentage of U.S. Public Libraries Using Facebook Across Time, by Population Group



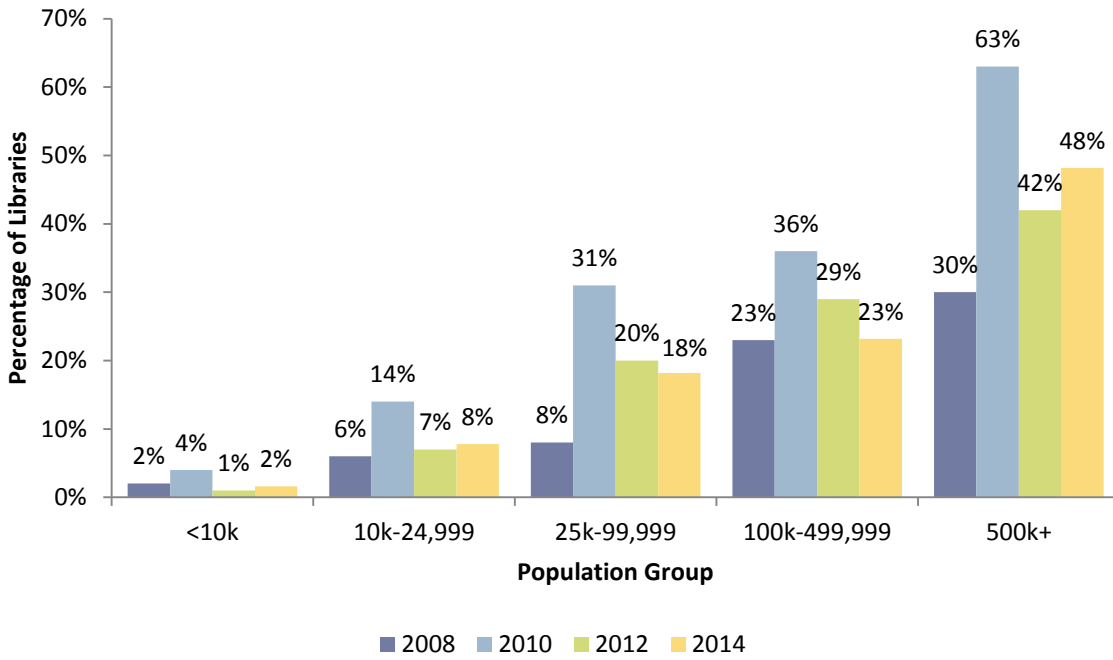
Percentage of U.S. Public Libraries Using Twitter Across Time, by Population Group



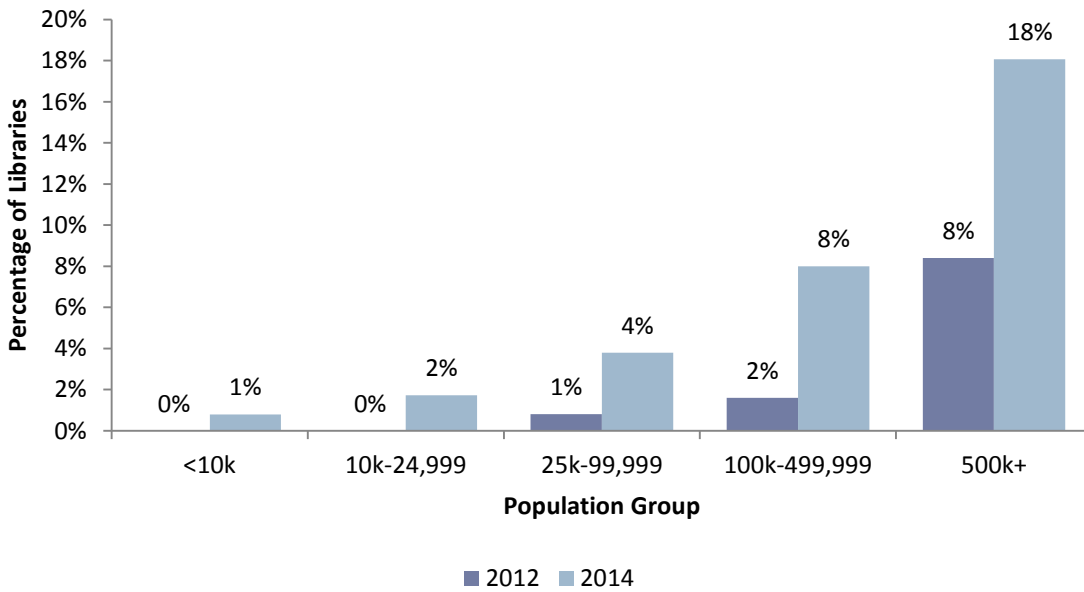
Percentage of U.S. Public Libraries Using YouTube Across Time, by Population Group



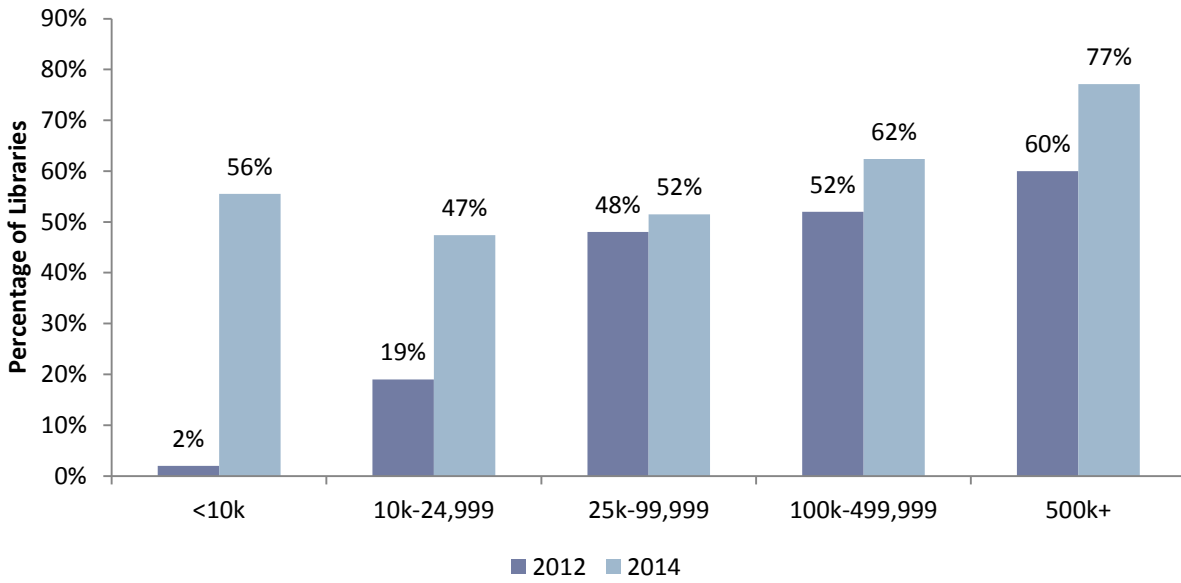
Percentage of U.S. Public Libraries Using Flickr Across Time, by Population Group



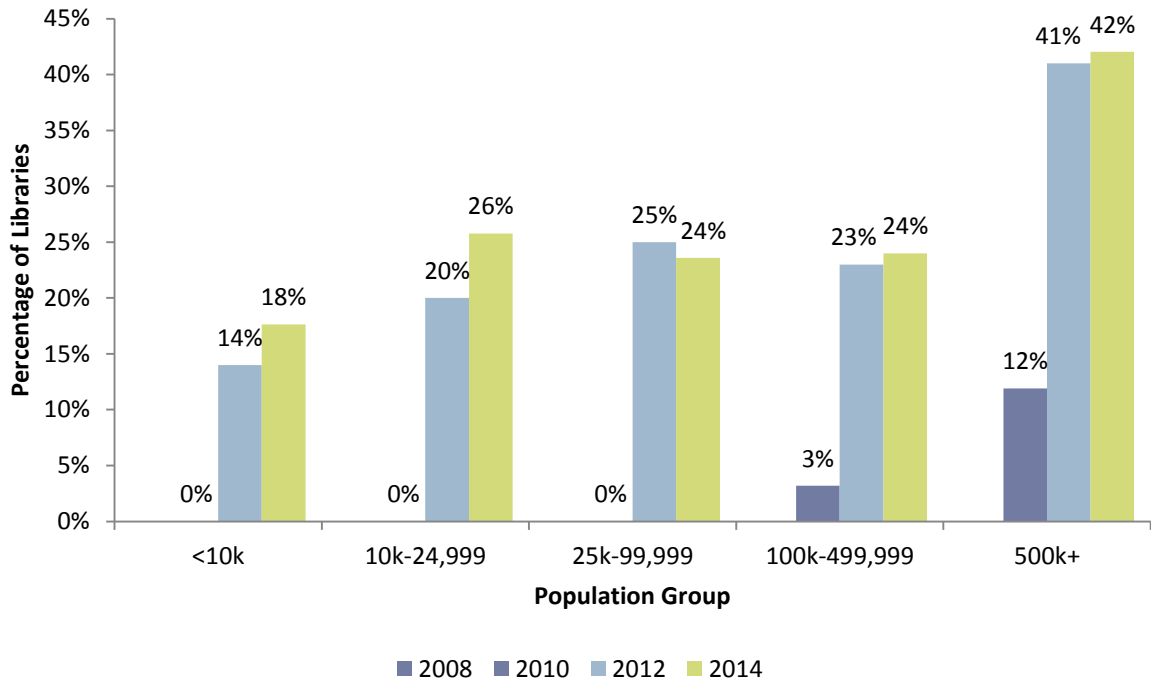
Percentage of U.S. Public Libraries Using Tumblr Across Time, by Population Group



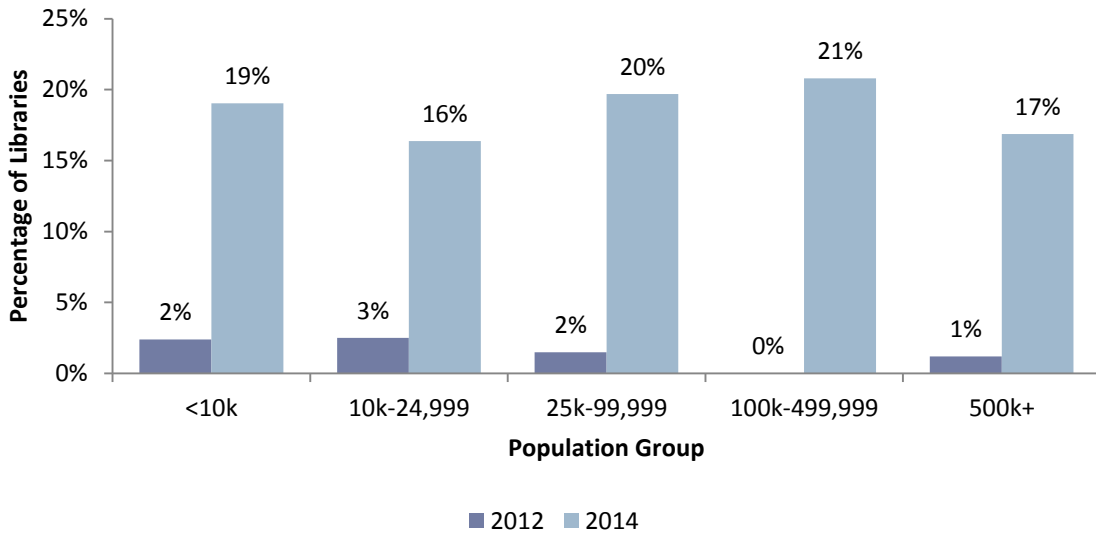
**Percentage of U.S. Public Library Websites with Mobile Apps
Across Time, by Population Group**



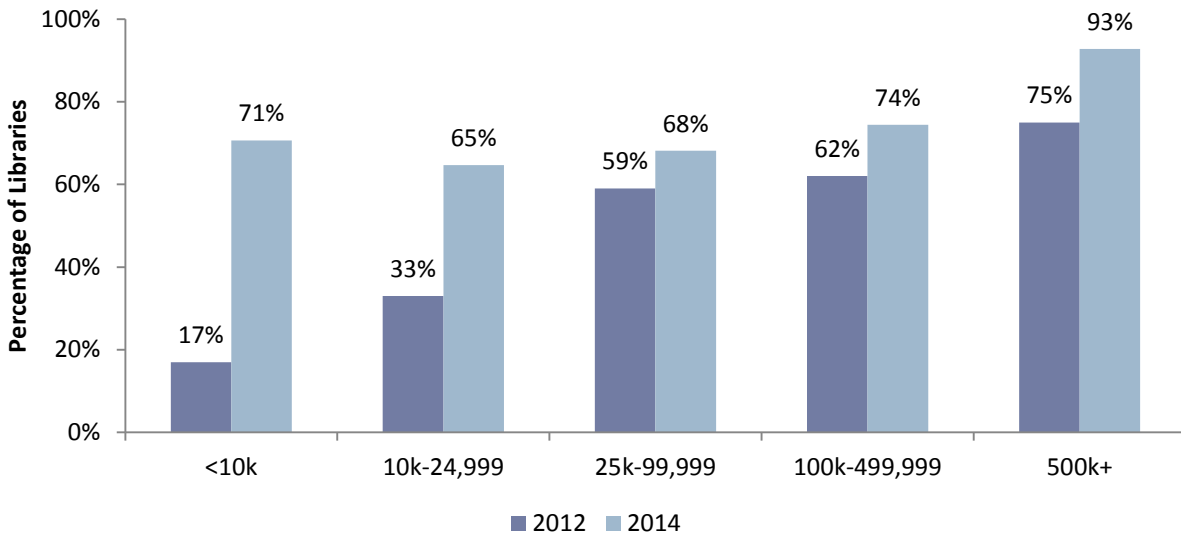
**Percentage of U.S. Public Library Websites Catering to Mobile Devices
Across Time, by Population Group**



**Percentage of U.S. Public Library Websites Using Responsive Design
Across Time, by Population Group**



**Percentage of U.S. Public Libraries Offering Any Mobile-Friendly Feature
Across Time, By Population Group**

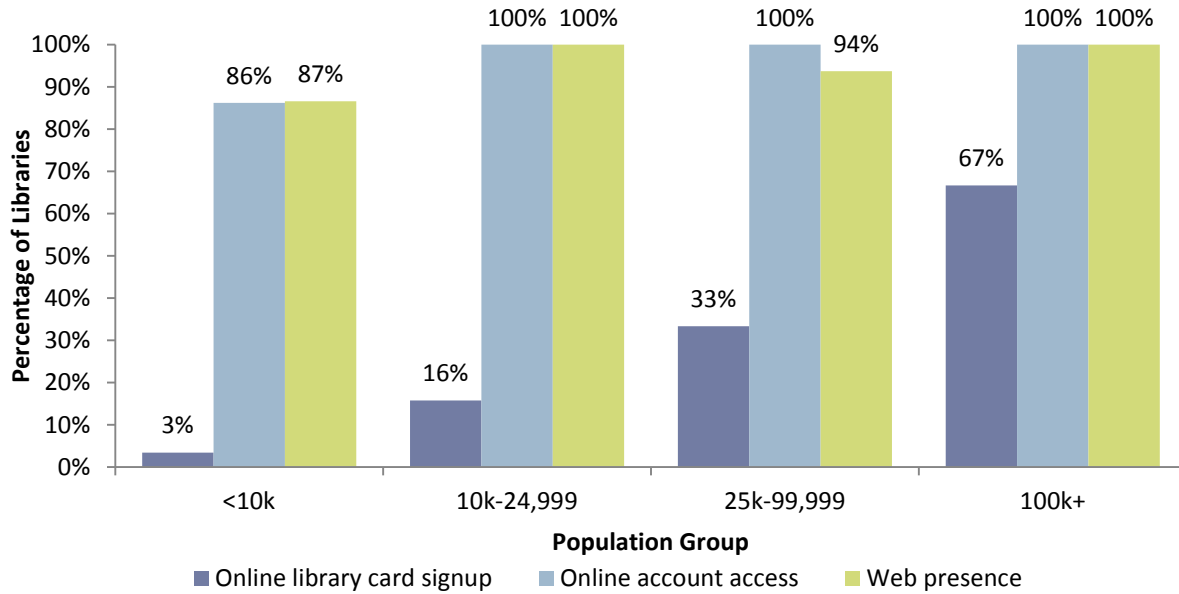


Colorado Results

This section examines the rate of adoption of various web technologies in all 114 public libraries in Colorado. Findings are presented based on the size of the libraries' LSA population. Unlike the national sample, few Colorado libraries serve 500,000 or more, therefore the largest LSA group below includes libraries serving 100,000 or more.

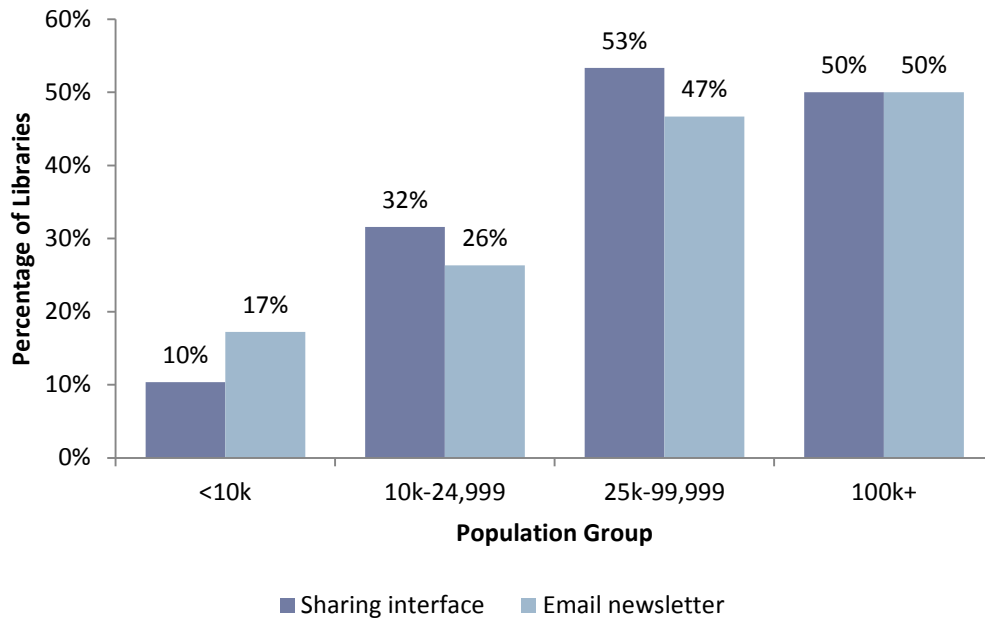
Web Presence, Patron Access, and Online Card Signup

Percentage of Colorado Public Libraries with Web Presence, Online Account Access, and Online Card Signup, 2014, by Population Group



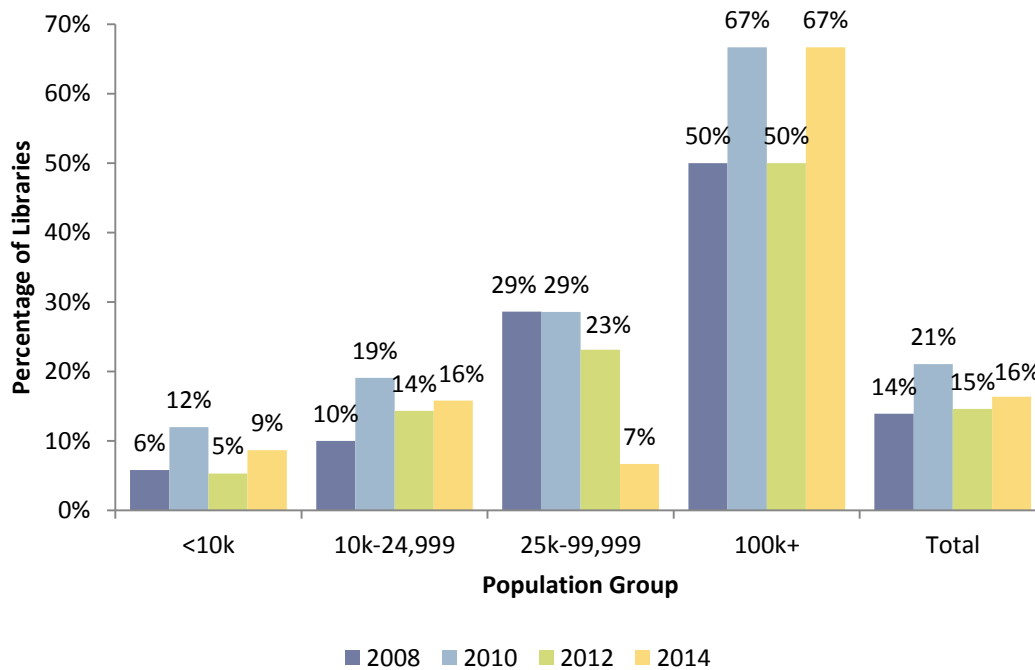
Email Newsletter and Sharing Interface

Percentage of Colorado Public Libraries with a Sharing Interface and Email Newsletter, 2014, by Population Group



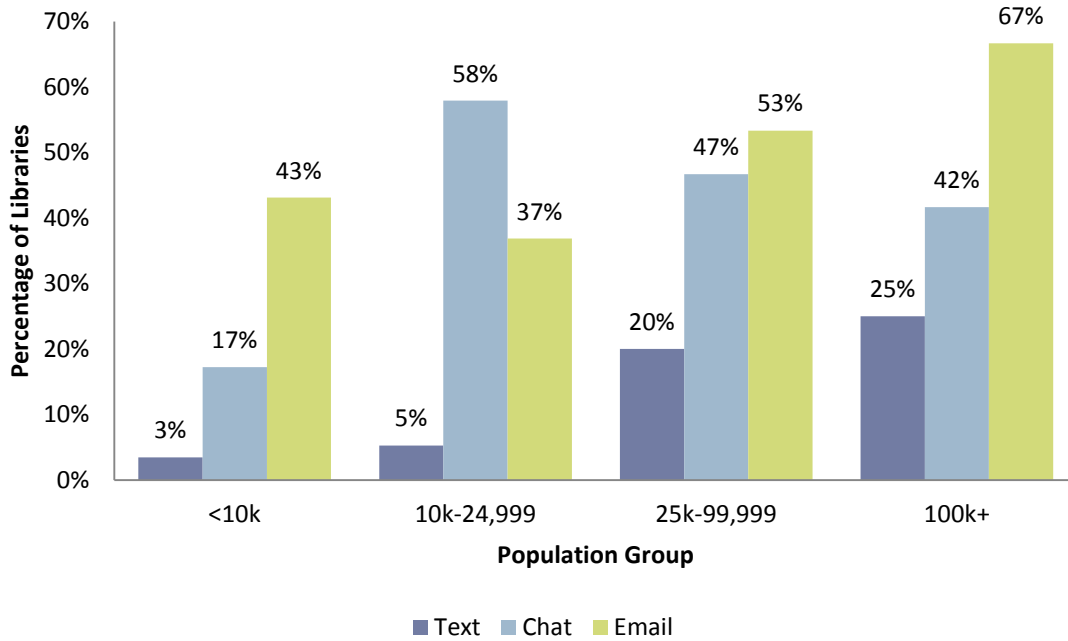
Blogs

Percentage of Colorado Public Libraries with a Blog Over Time, by Population Group

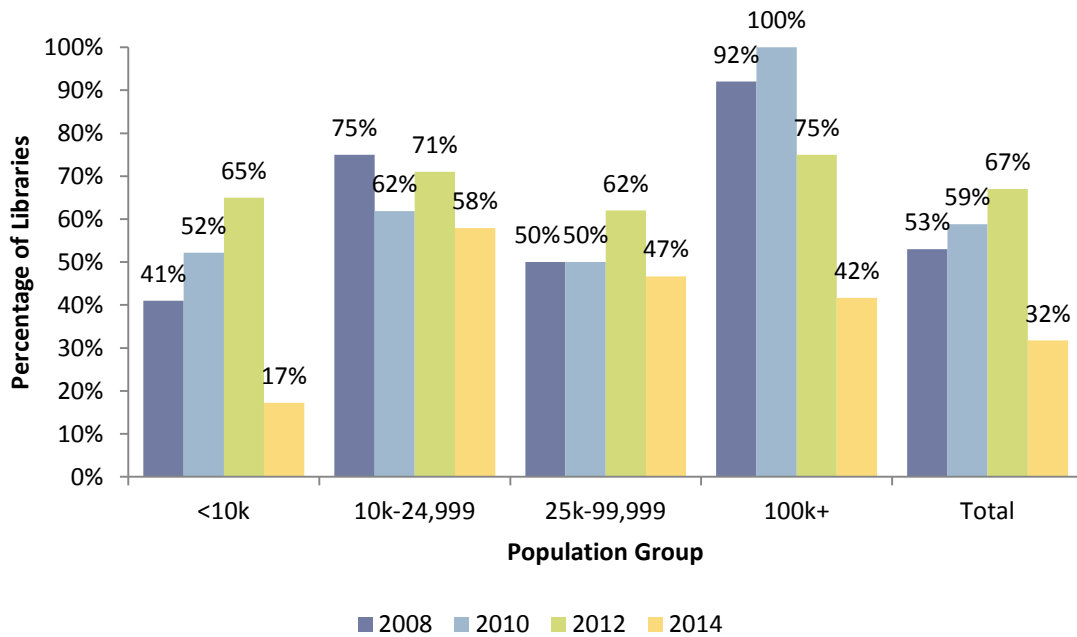


Electronic Reference

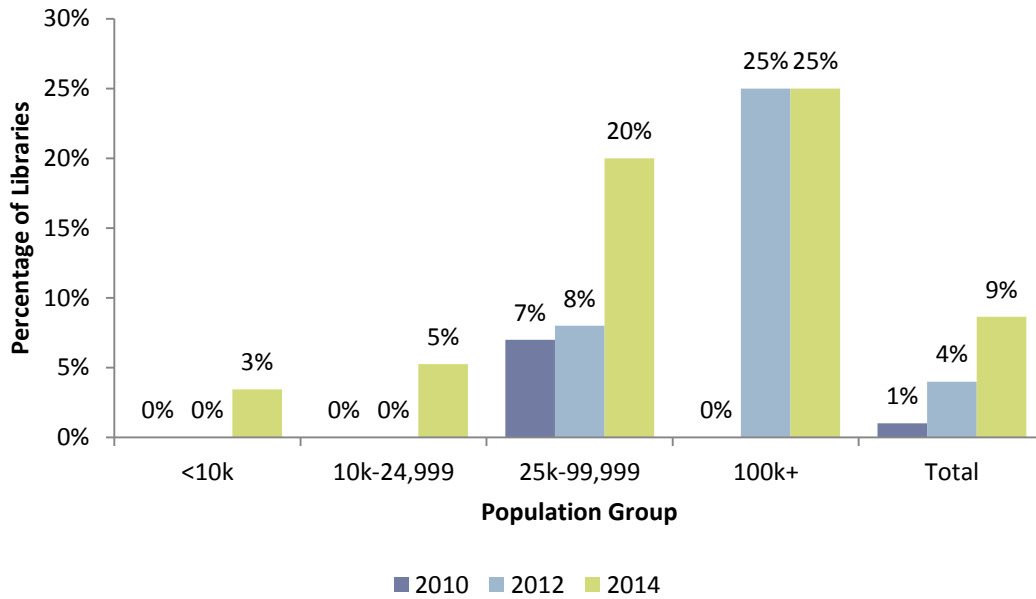
Percentage of Colorado Public Libraries with Text, Chat, and Email Reference, 2014, by Population Group



Percentage of Colorado Public Libraries Offering Chat Reference Over Time, by Population Group

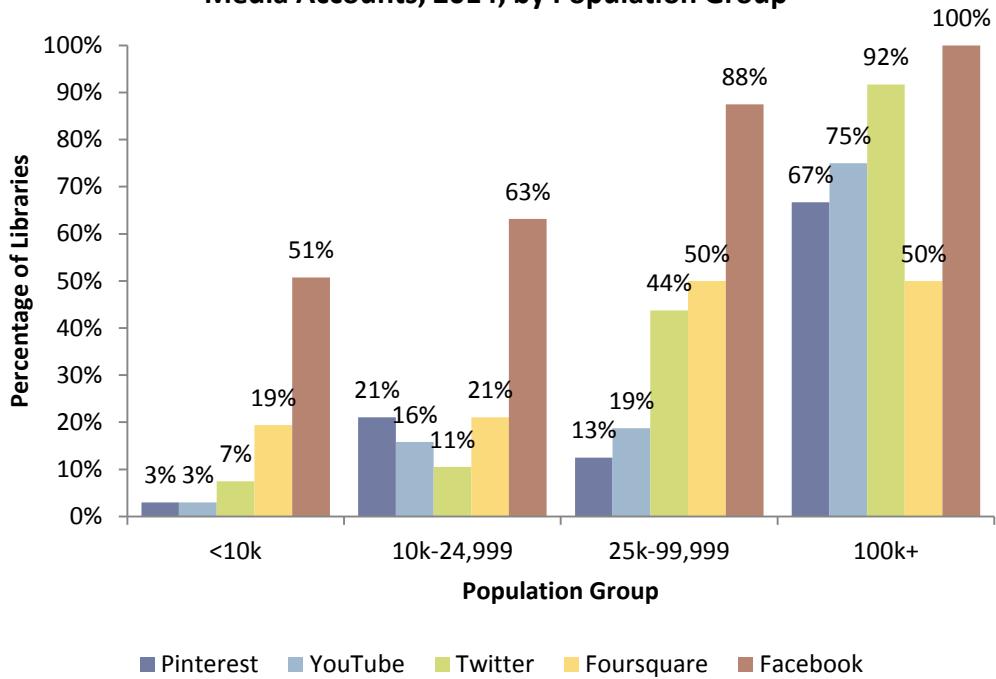


Percentage of Colorado Public Libraries Offering Text Reference Over Time, by Population Group

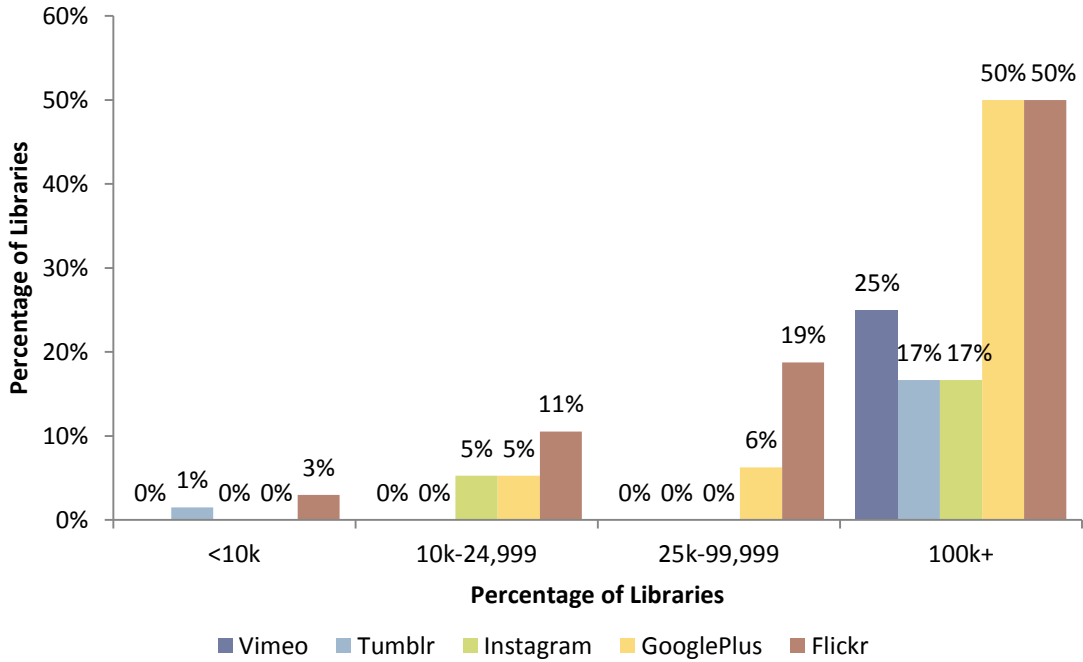


Social Media Presence

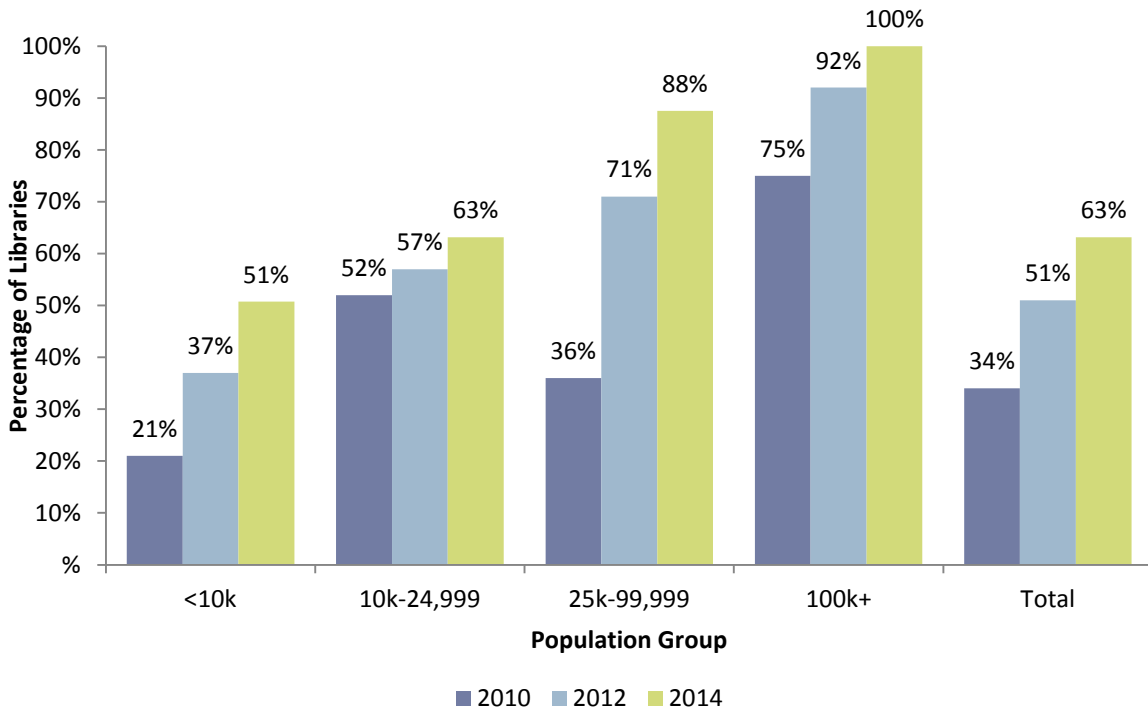
Percentage of Colorado Public Libraries with Various Social Media Accounts, 2014, by Population Group



Percentage of Colorado Public Libraries with Various Social Media Accounts, 2014, by Population Group

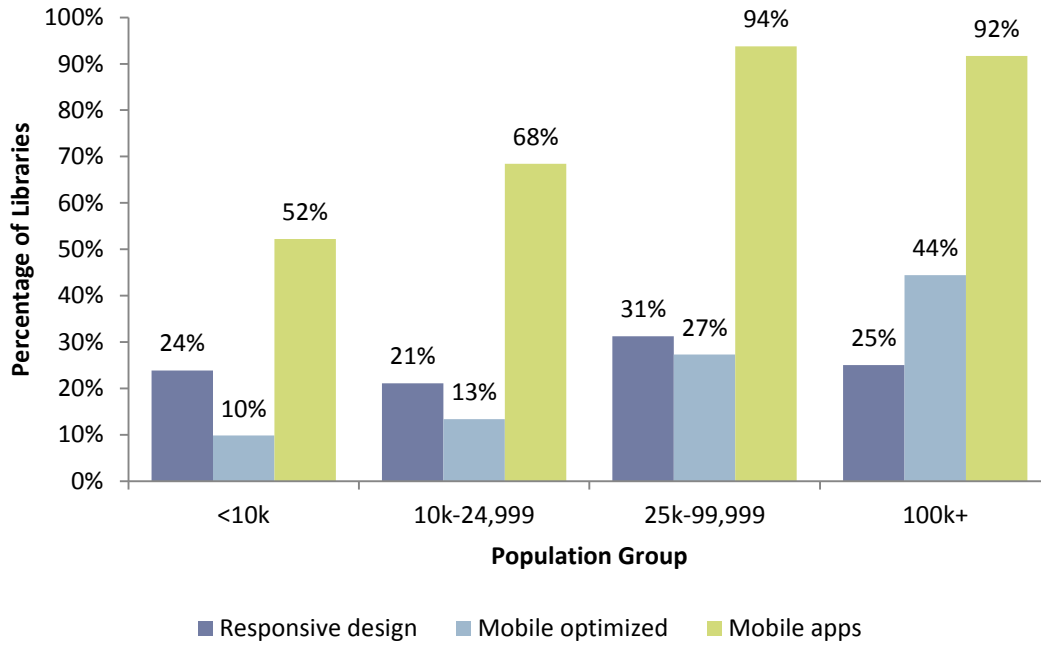


Percentage of Colorado Public Libraries Using Facebook Over Time, by Population Group

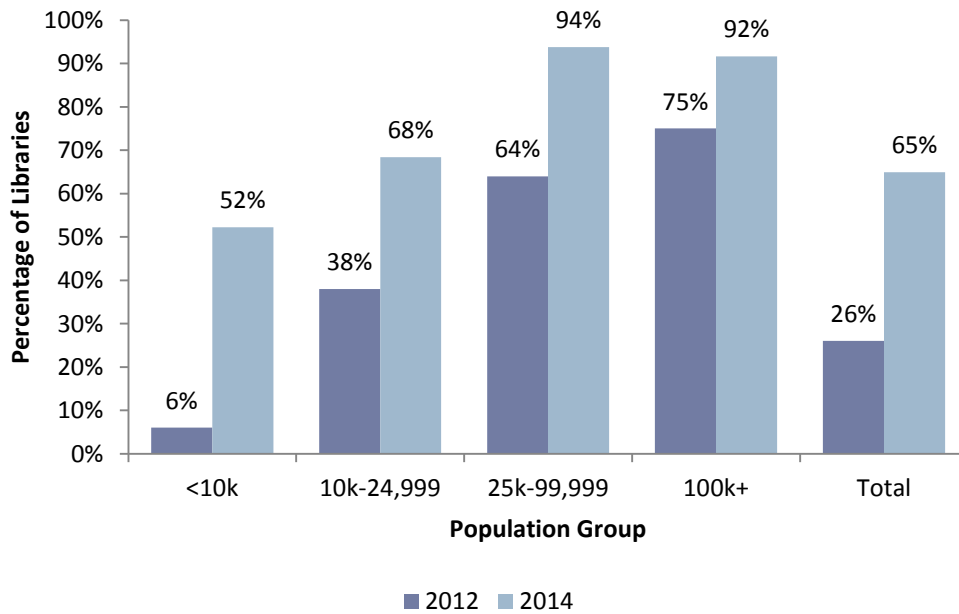


Mobile

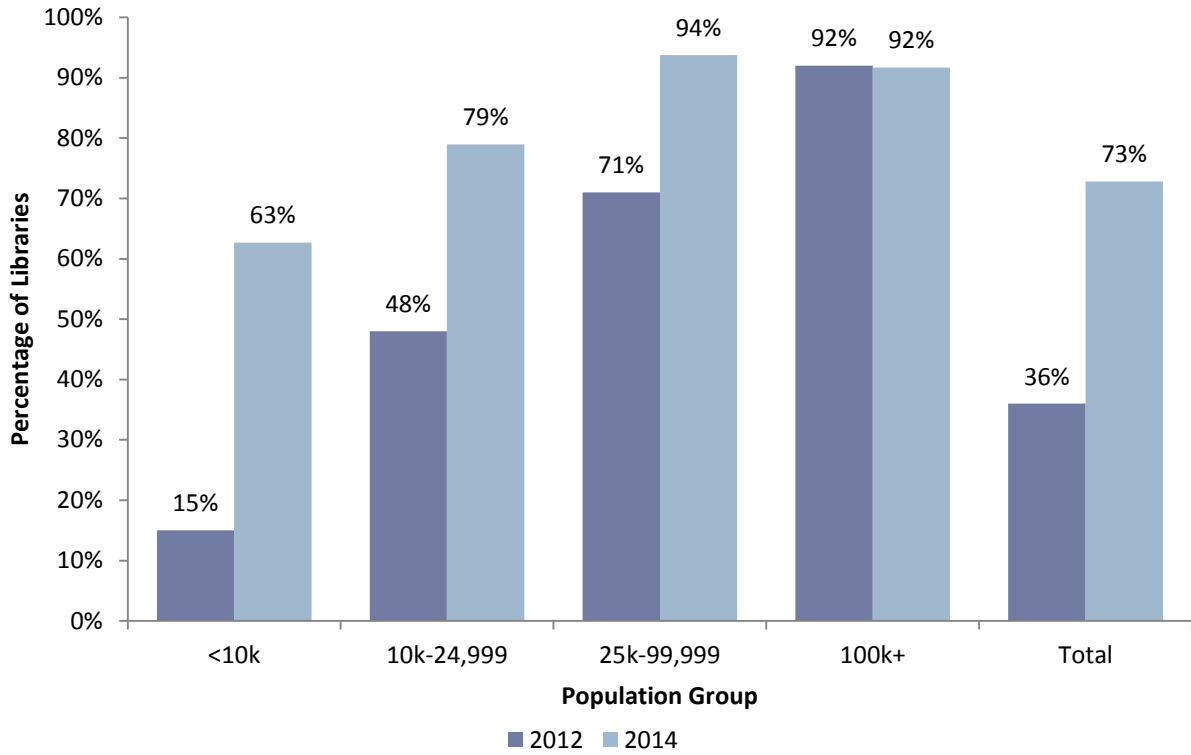
Percentage of Colorado Public Libraries Offering Various Mobile-Friendly Features, 2014, by Population Group



Percentage of Colorado Public Libraries Offering Mobile Apps Over Time, by Population Group

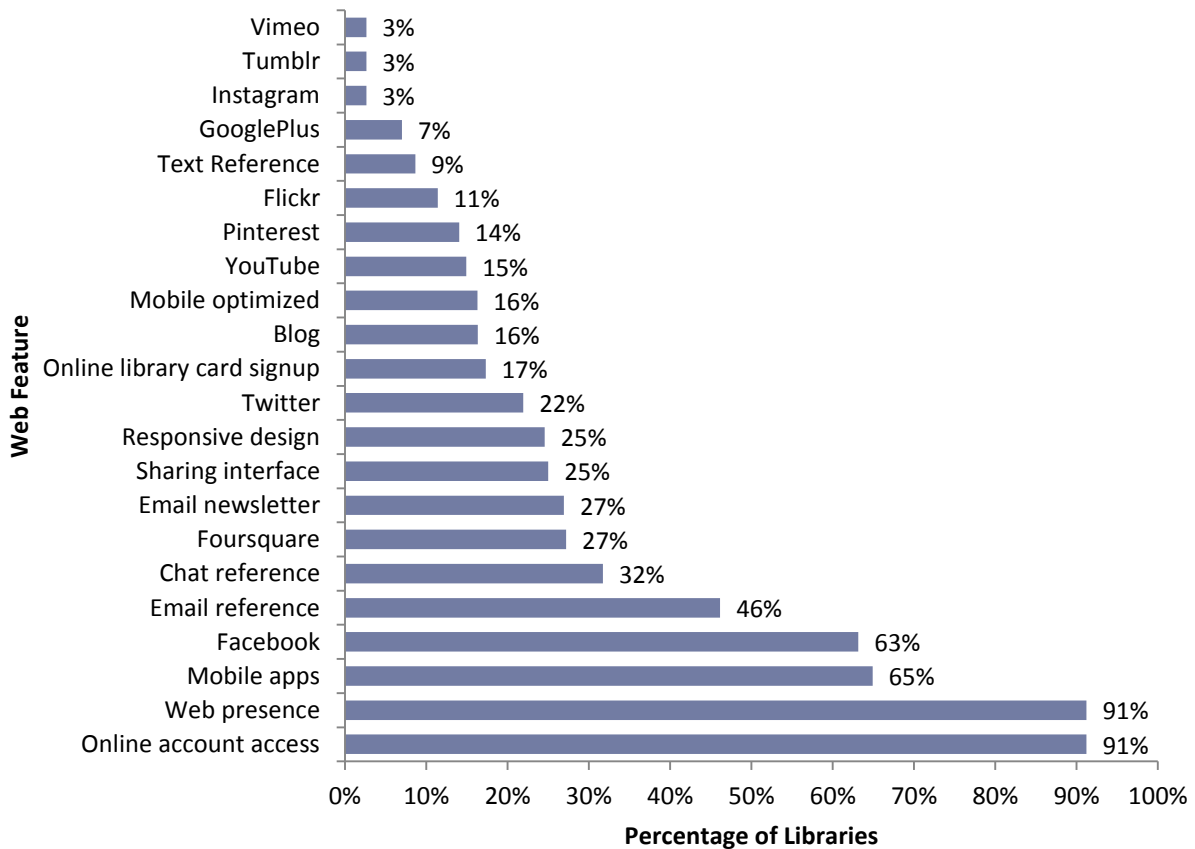


Percentage of Colorado Public Libraries with Any Mobile-Friendly Feature Over Time, by Population Group



Colorado Results: All Libraries

Percentage of Colorado Public Libraries Using Various Web Technologies, 2014

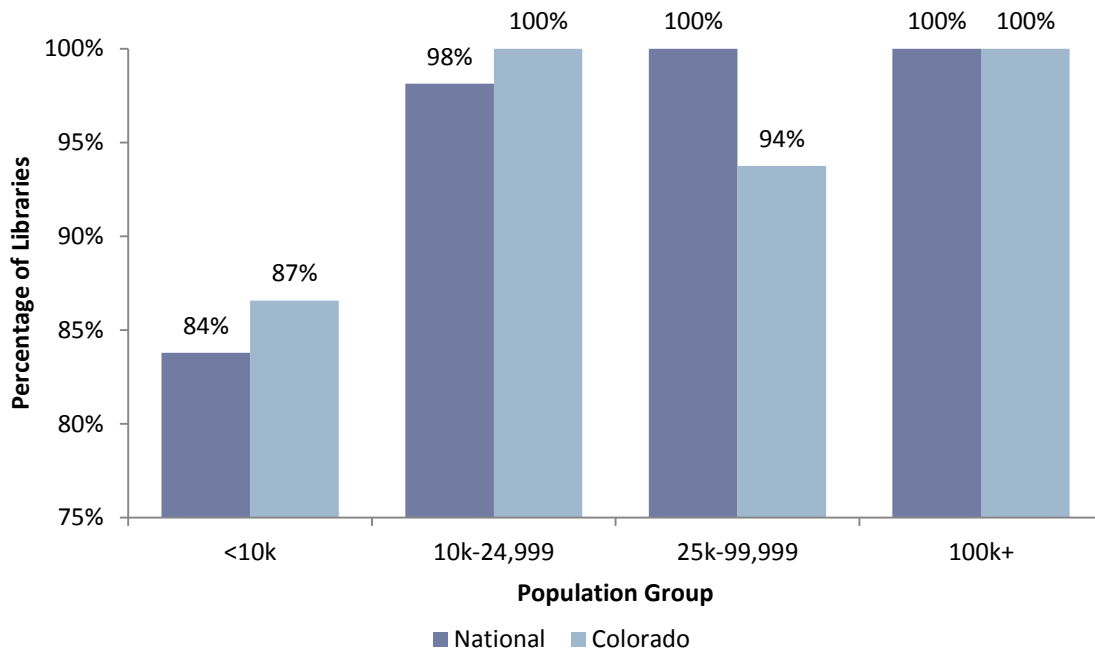


National and Colorado Results Comparison

This section compares the rate of adoption of various web technologies in Colorado's public libraries with the nationally representative sample. Findings are presented based on the size of the libraries' LSA population.

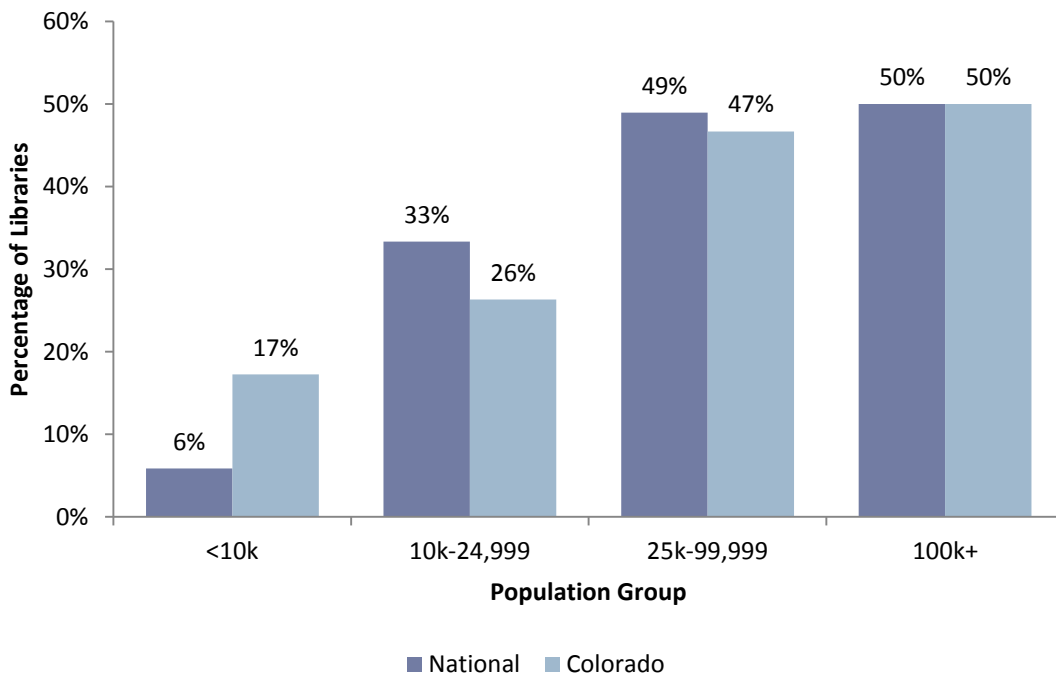
Web Presence

Percentage of Colorado and U.S. Public Libraries with a Web Presence, 2014, by Population Group



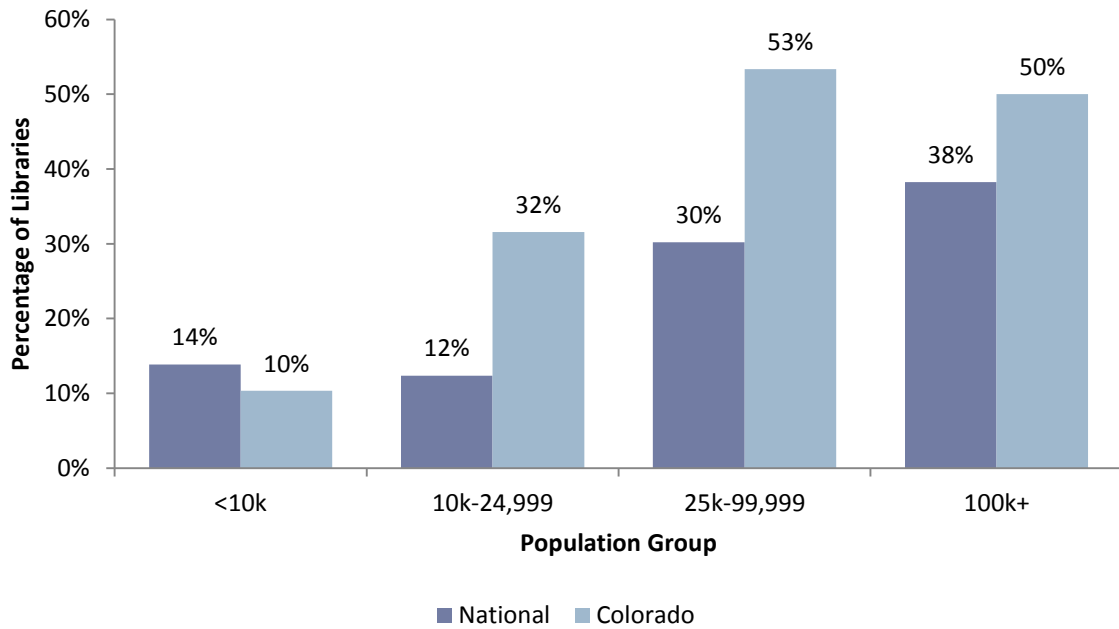
Newsletter

Percentage of Colorado and U.S. Public Libraries with an Email Newsletter, 2014, by Population Group



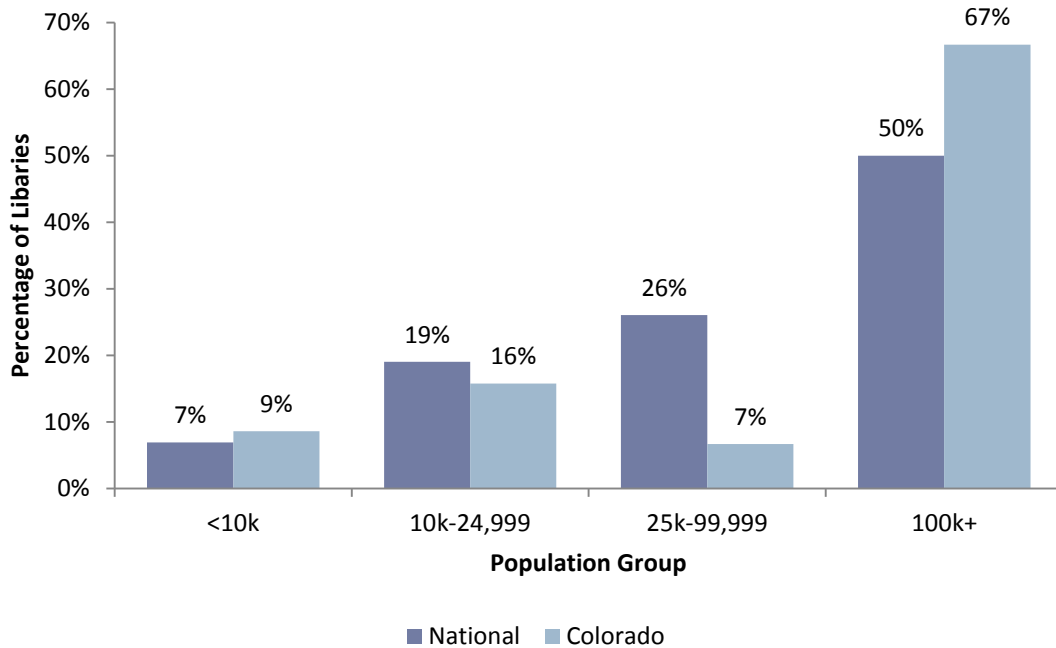
Sharing Interface

Percentage of Colorado and U.S. Public Libraries with a Sharing Interface, 2014, by Population Group



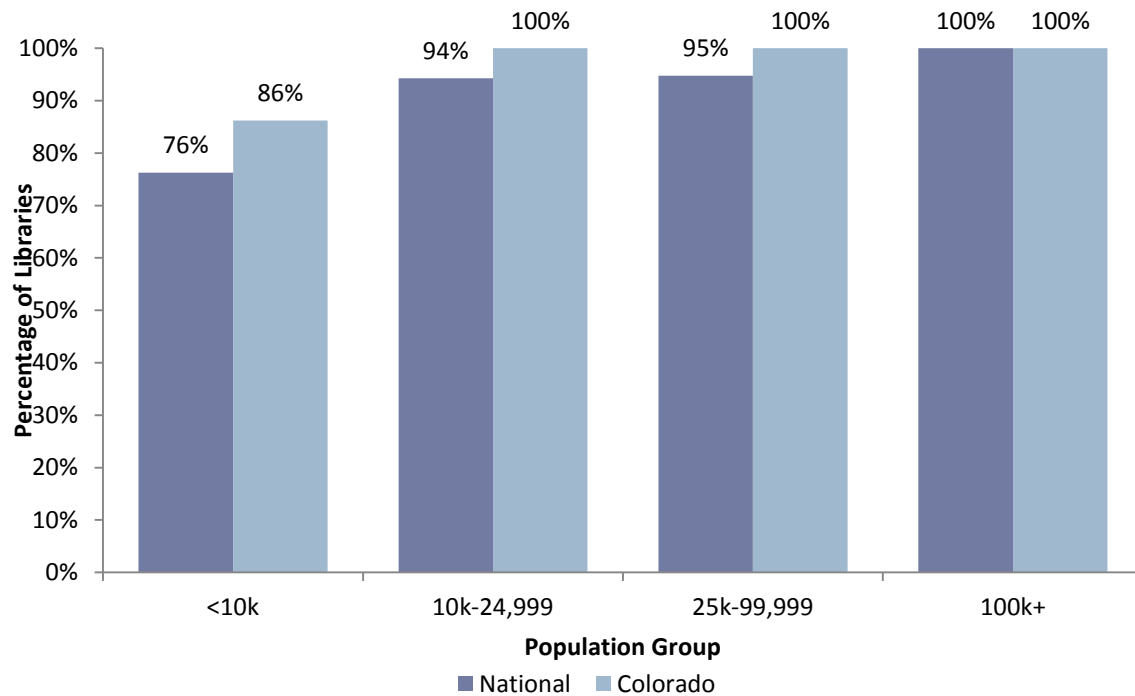
Blogs

Percentage of Colorado and U.S. Public Libraries with a Blog, 2014, by Population Group



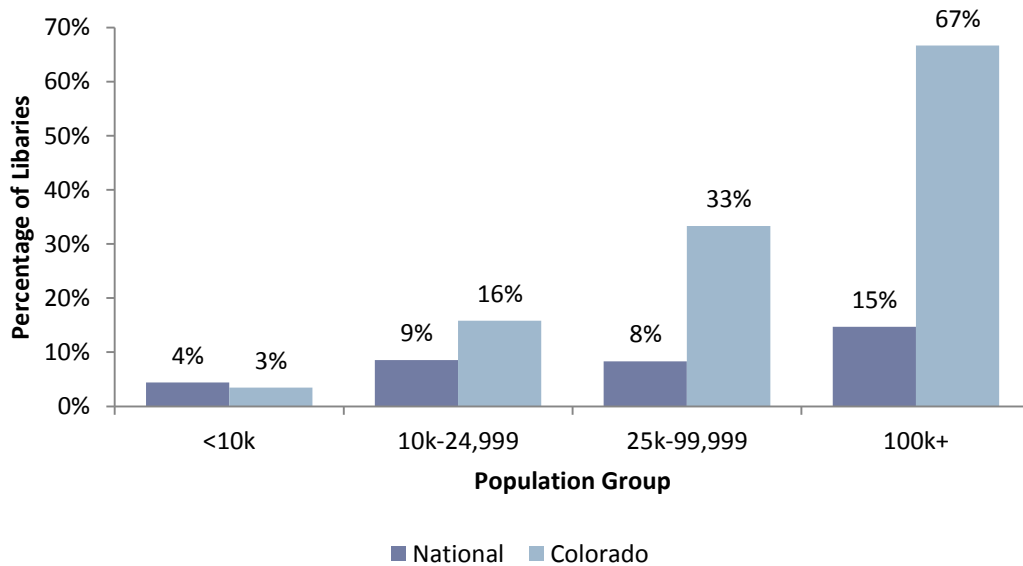
Account Access

Percentage of Colorado and U.S. Public Libraries with Online Account Access, 2014, by Population Group



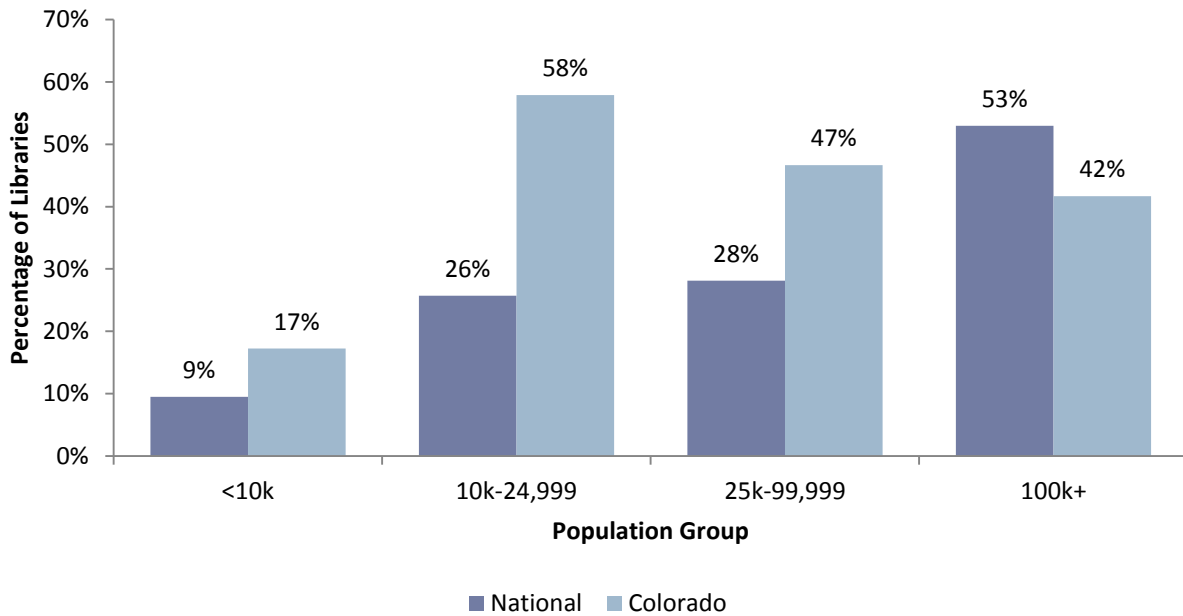
Account Signup

Percentage of Colorado and U.S. Public Libraries with Online Library Card Signup, 2014, by Population Group



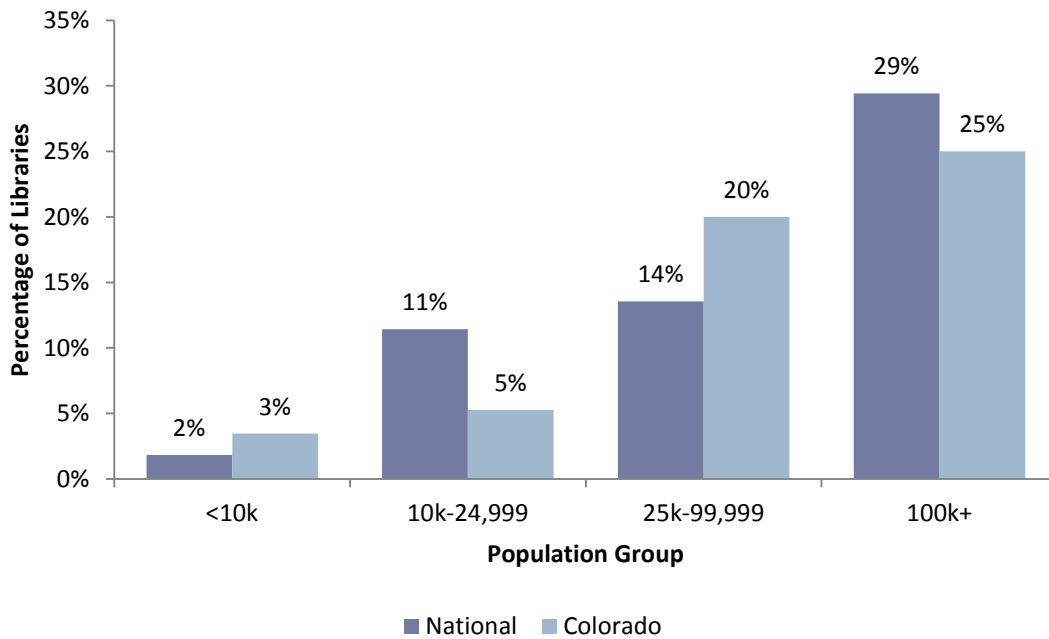
Chat Reference

Percentage of Colorado and U.S. Public Libraries with Chat Reference, 2014, by Population Group



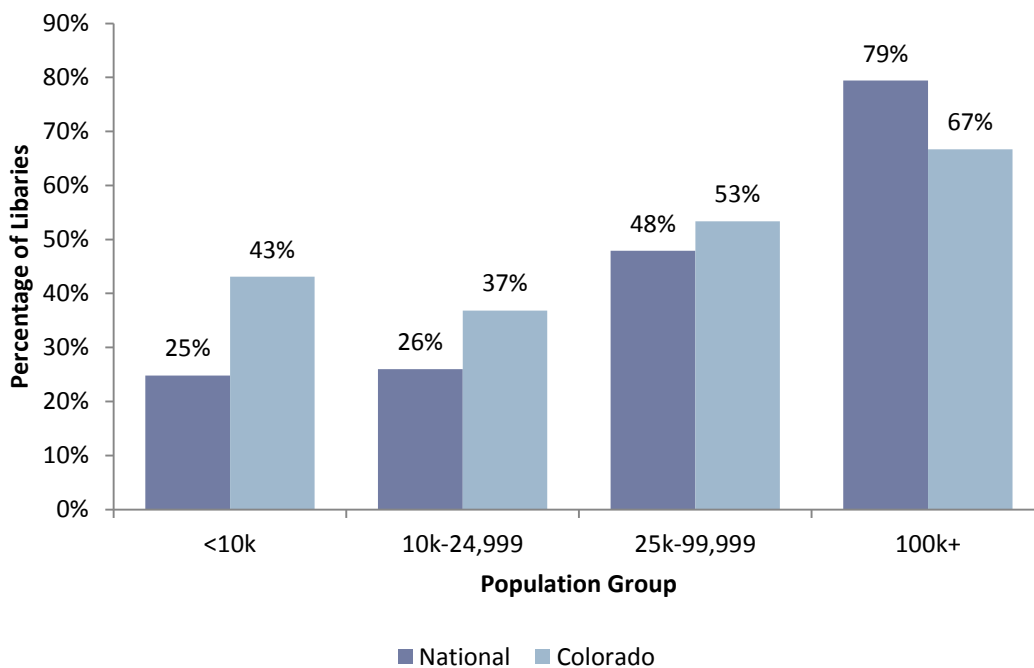
Text Reference

Percentage of Colorado and U.S. Public Libraries with Text Reference, 2014, by Population Group



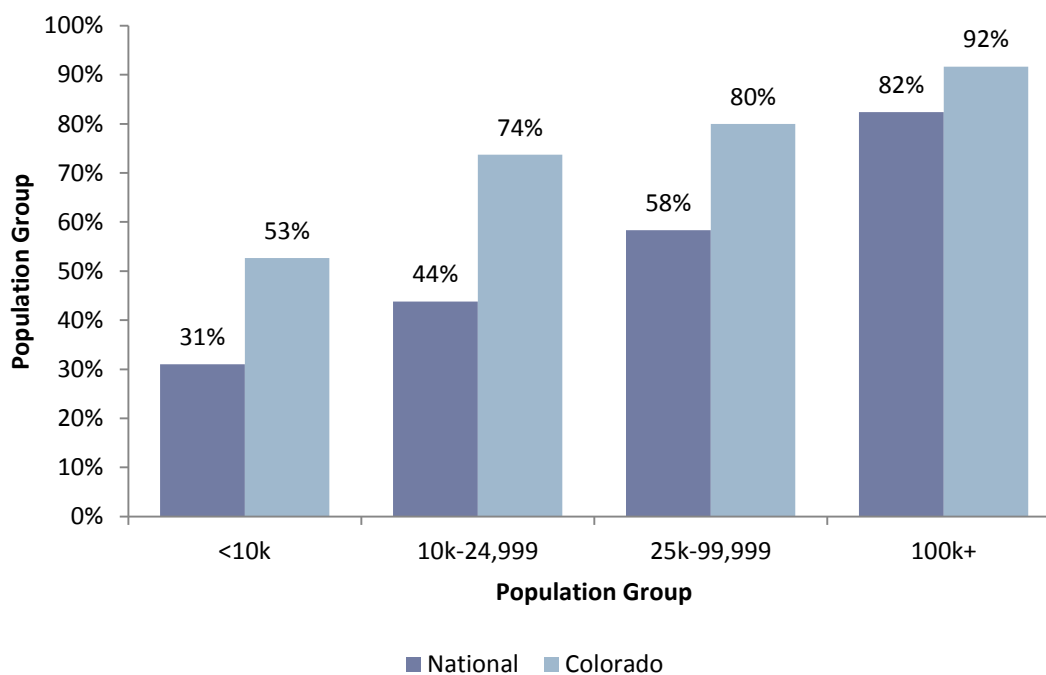
Email Reference

Percentage of Colorado and U.S. Public Libraries with Email Reference, 2014, by Population Group



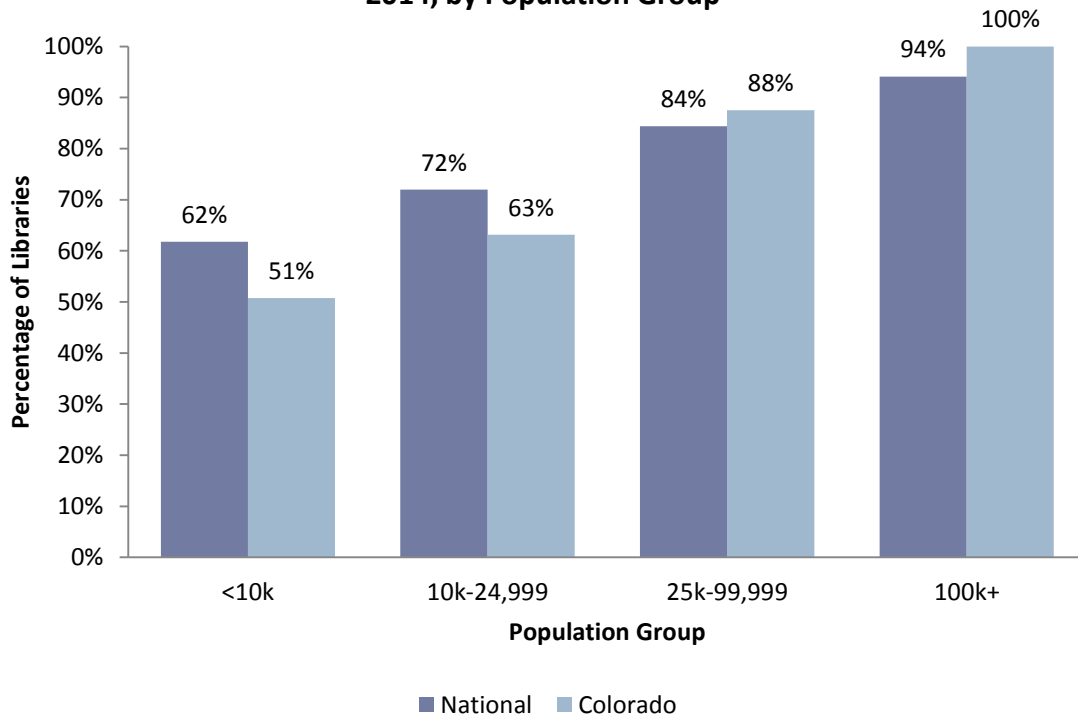
Any E-Reference

Percentage of Colorado and U.S. Public Libraries with Any E-Reference, 2014, by Population Group



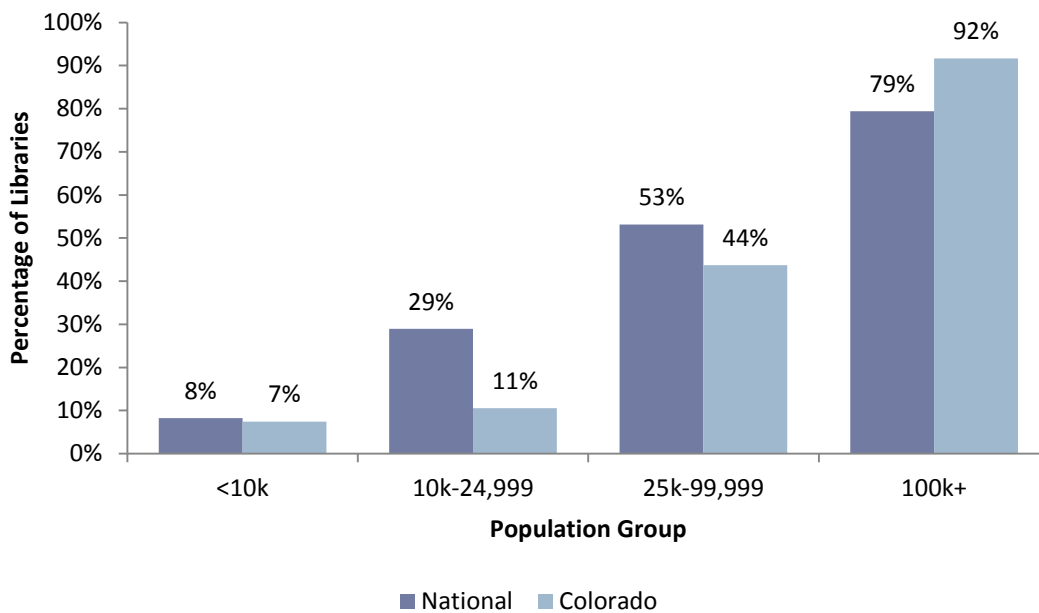
Facebook

Percentage of Colorado and U.S. Public Libraries Using Facebook, 2014, by Population Group



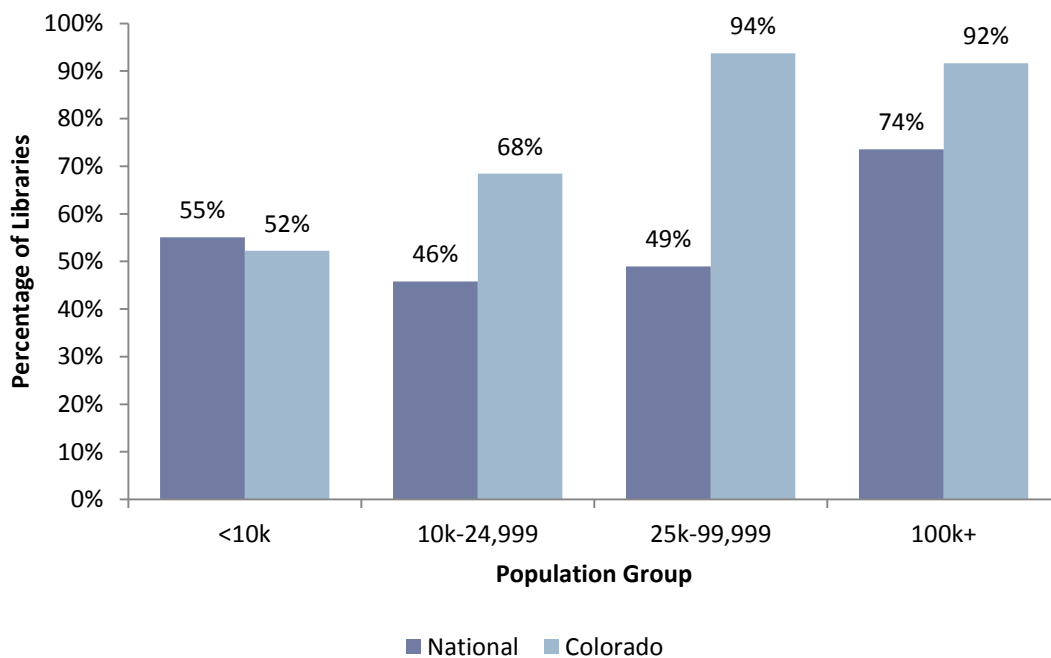
Twitter

Percentage of Colorado and U.S. Public Libraries Using Twitter, 2014, by Population Group



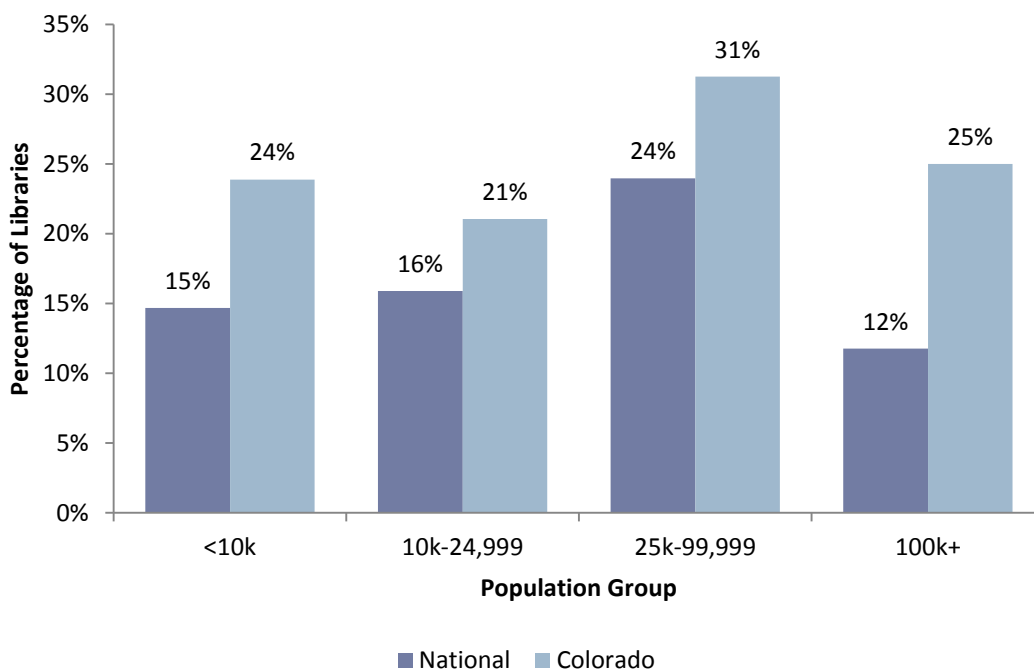
Mobile Apps

Percentage of Colorado and U.S. Public Libraries Offering Mobile Apps, 2014, by Population Group



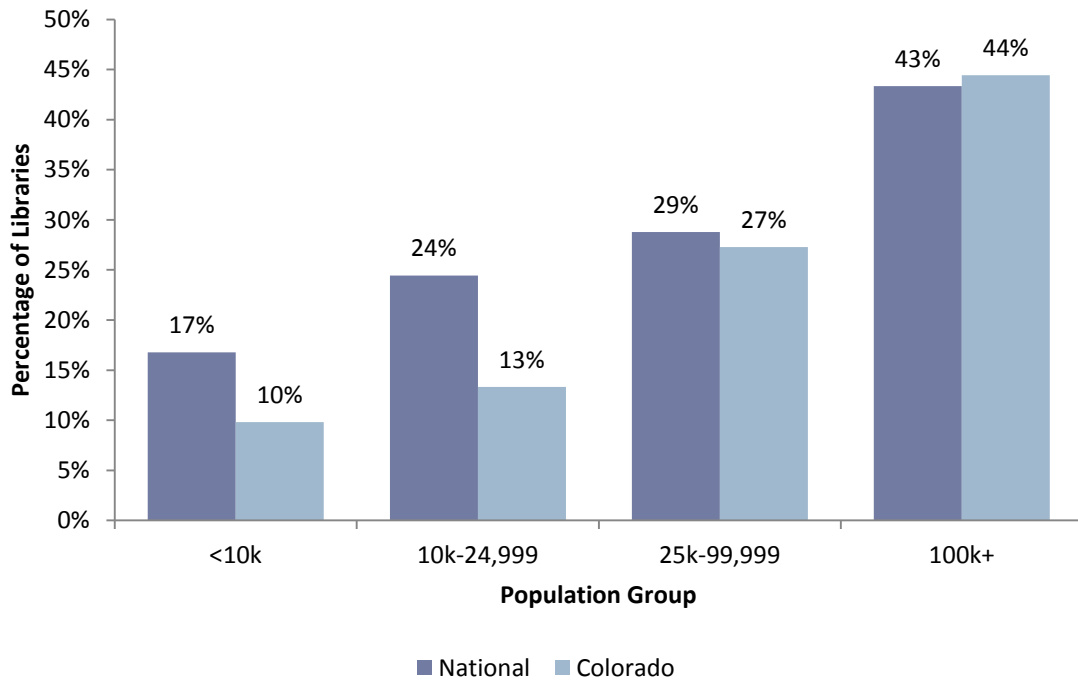
Responsive Design

Percentage of Colorado and U.S. Public Libraries with Responsive Websites, 2014, by Population Group



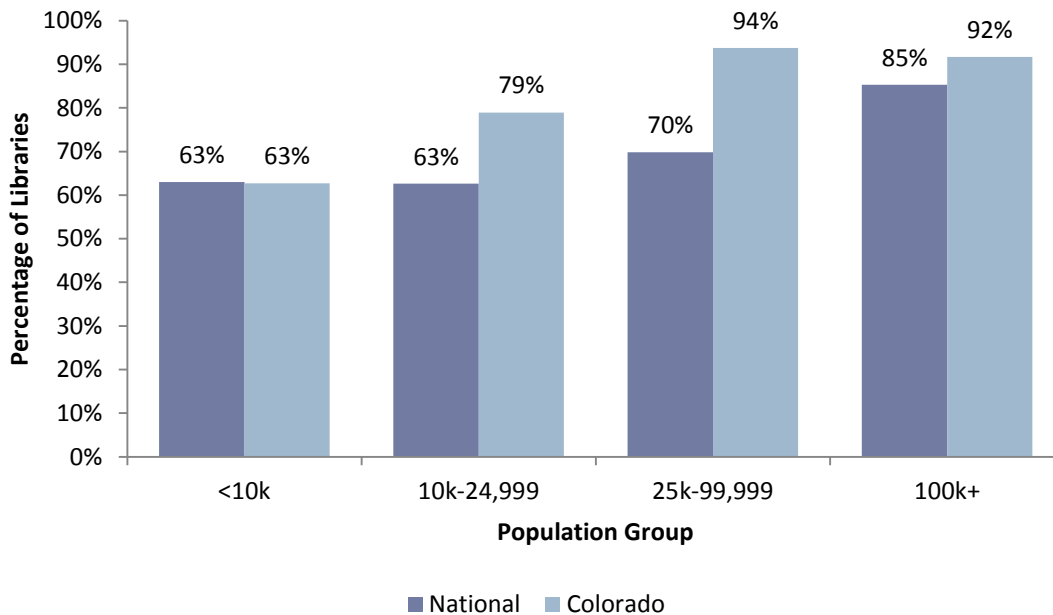
Mobile Optimization

Percentage of Colorado and U.S. Public Libraries with Mobile-Optimized Websites, 2014, by Population Group



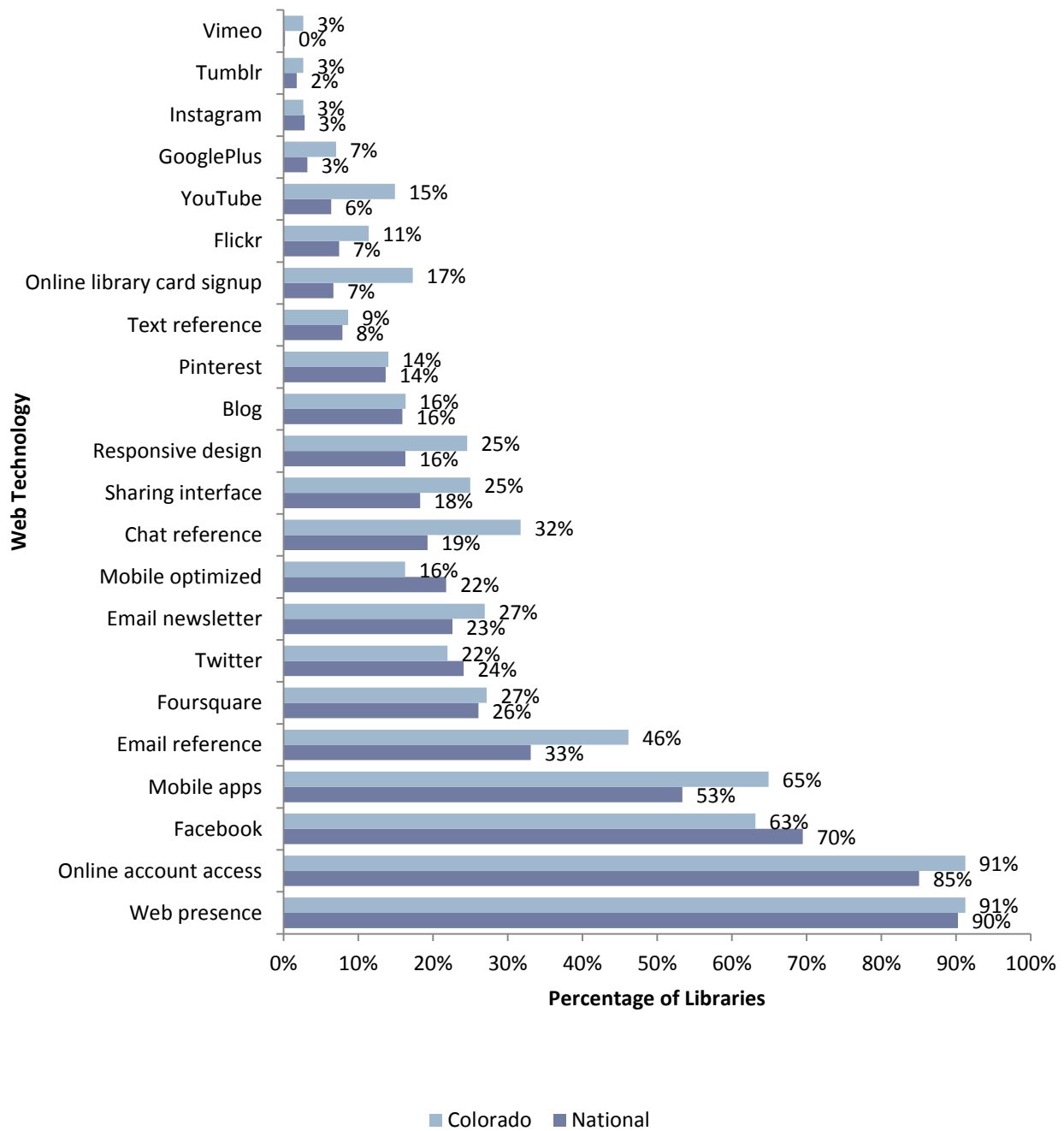
Mobile Friendliness

Percentage of Colorado and U.S. Public Libraries Offering Any Mobile-Friendly Features, 2014, by Population Group



Overall Web Technology Usage

Percentage of Colorado and U.S. Public Libraries Offering Various Web Technologies, 2014, by Population Group



Appendix – Survey Instrument

Web Tech 2014—Public Libraries

1. Researcher's name:
2. What is the library's FSCS key?
3. Today's date:

Basic Website

4. Does this library have a web presence? Yes (go to #5) No (go to #14)
5. What is the library's web address? _____

Features

6. Does the library offer an email newsletter? Yes No
7. Does the library's website offer a sharing interface? Yes No
8. Does the library have at least one blog that you can find? Yes No
9. What is the date of the most recent blog post you can find?
10. What is the date of the most recent blog comment that you can find? Only go back as far as the 10 most recent posts. N/A—comments off

Patron Account

11. Does the library offer online access to the patron's account? Yes No
12. Can you sign up for a library account online? Yes No

Virtual Reference

13. Which of the following types of reference services does the library provide?
 - Chat
 - Text
 - Email
 - None

Social Networking

14. Describe the library's presence in the following:

Facebook: Yes	No		
Number of likes:			
Date of most recent post by the library:			
Date joined (see "about" page or check the dates in the top right corner and scroll back to "joined Facebook"):			
Twitter: Yes-linked from library website	Yes-not linked from library website	No	
Number of followers:			
Number following:			
Date of most recent tweet:			
Number of tweets:			
Date joined (http://twbirthday.com/):			
YouTube: Yes-linked from library website	Yes-not linked from library website	No	
Number of subscribers:			
Video views (under "about"):			
Date of most recent video upload:			
Date joined (under "about"):			
Instagram: Yes-linked from library website	Yes-not linked from library website	No	
Number of followers:			
Number following:			
Number of posts:			
Date of most recent post:			
Date joined:			
Flickr: Yes-linked from library website	Yes-not linked from library website	No	
Number of photos:			
Date of most recent photo upload:			
Member since:			
Foursquare: Yes-linked from library website	Yes-not linked from library website	No	
Total visitors:			
Total check-ins:			
Tumblr: Yes-linked from library website	Yes-not linked from library website	No	
Date of most recent post:			
Date joined (archive>jump to month):			
Pinterest: Yes-linked from library website	Yes-not linked from library website	No	

Number of followers:
Number following:
Number of pins:

Vimeo: Yes-linked from library website	Yes-not linked from library website	No
Number of videos:		

Google+: Yes-linked from library website	Yes-not linked from library website	No
Number of followers:		
Number of views:		

Responsive Design/Mobile

15. Does the library offer mobile apps? Yes No

16. Does the library website use responsive design? Yes No

17. When viewed on a mobile device, does the library website redirect to a mobile-optimized URL (e.g., "m.denverlibrary.org")? (if #16 is "no")

- Yes
- No
- Can't determine