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Libraries™

## LIBRARY WEBSITE GOOGLE ANALYTICS REPORT: AN EXTERNAL REVIEW FROM DIGITAL RESOURCES

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# Library Website Google Analytics Report

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An external review from Digital Resources

Le Yang and Joy Perrin

7/12/2013

We are using data from the calendar year of 2012. (Jan 1, 2012 – Dec 31, 2012). Our website does not look the same as it did in 2012 and not all the links that were there in 2012 are still available. Our choice to go with 2012 would be to have a finite set of data that we could work with for demonstration purposes.

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## Executive Summary- Recommendations

Based off the following report, the following are recommended:

- **Establish a Change log for the website.** A log that would record changes, what day they happened, and why they happened. If a new URL is created, or an old URL is removed, it should be recorded in the change log to take into consideration for analytics.
- **Establish a Website Assessment Policy-** With all the various oddities of the library website, it is recommended that a clear assessment policy be developed.
- **Dynamic News Box-** Investigate if the auto scrolling news box is causing “clicks” in Google’s “In-Page Analytics”. If it is, see if the code can be changed so that it doesn’t count as clicks. If not, make note of the anomaly to avoid it causing problems in the future.
- **Links-Out Documentation-** Make a comprehensive list of URLs that are on the main library website that we do not have Google Analytics for so that can be factored in when looking at web statistics.
- **Right Side Links-** Are underutilized. Either move the content to left or make it more noticeable. Perhaps links for students can be on the left and links for staff can be on the right. In order to verify if the right side links are a problem, an eye-tracking usability study should be considered.
- **Personal Librarians-** An eye tracking usability study might be considered to see which link to the Personal Librarians page is most easily found by students. The less of the two should be removed to simplify navigation and learnability.
- **Hours Page Link-** An eye tracking usability study might be considered to see which link to the Hours page is more visible. The less of the two should be removed to simplify navigation and learnability.
- **Employment-** Since this is such a heavily used link, and is one of the few links Google includes in the result for TTU library, it should be moved to a more prominent location higher up on the left side.
- **Home Page False Positives-** An observational study can be done to see how users on the main floor of the library handle the fact that the home page is the Main Library website. Users can be observed and statistics kept of how often they leave the page open while they are looking at other things. This could also be done in a usability study where students are asked to go to other websites. If the study shows that a certain percentage of use is passive, then that needs to be factored into assessments about performance of the library website. It could be that stats on the main page are false positives, and need to be removed from analysis. This would need to be declared in an official website assessment policy for the library.
- **Safari-** The stats from 2012 show that Safari Browser was not working well with the Library website. It is recommended that testing be done to see if the library website is not performing as quickly with some browsers or if there are other factors that are causing the Average page load time to be so high.

## Introduction

Digital Resources has been looking at assessment of digital collections using Google Analytics. Part of this assessment must include comparisons to the usage statistics of the library website. In looking at the data, we have decided to do a more complete review to get a sense of how the website functions, and

how people are using it to find information to inform us on how to design digital systems better. We are providing this report to WSST.

We also are looking to document things that we and others in the library have learned about Google Analytics so that we can help to maintain institutional memory. Just because we state something in this report doesn't mean we claim to have discovered it or take credit for it. We are treating this report as a place to document what the library knows about Google Analytics.

We would like to recommend that we or someone else do this report again for 2013 for comparison.

## **Methodology**

We are using data from the calendar year of 2012. (Jan 1, 2012 – Dec 31, 2012). This gives us a finite set of data to work with.

Something we did notice in creating this report is that the stats for 2012 changed while this report was being compiled. We do not know why it changed, but we suspect it had something to do with a change on the main website.

## **Web Analytics**

### **Homepage Analysis with “In-Page Analytics”**

A website's homepage functions as a gateway leading visitors to online resources. Thus, it is a good start for an analytics report using the “In-Page Analytics” feature to evaluate the performance of the library website homepage.

This is also a very tempting target for those new to website analytics because it is more visual and thus more approachable.

### **Limitations of “In-Page Analytics”**

“In-Page Analytics” are also seen as being inaccurate. People point out that the numbers for clicks often don't match the numbers for the pages that the clicks go to.

“In-Page Analytics” also don't distinguish links that target the same URLs. For example, if I had a link to a page on the right, and then a link to the same page on the left, “In-Page Analytics” would not be able to tell me which of those links the patrons clicked on. It could only tell me that total, that page was clicked on a certain number of times.

“In-Page Analytics” also doesn't distinguish real “clicks” compared to just number of times a URL is accessed. So, for example, our website has a cycling news feed. Each new article is a URL that the Javascript for the page is accessing. Every time it cycles, it may count as a click even though no one has clicked on the web part. Without knowing how the “In-Page Analytics” works, it can often lead to false impressions and so “In-Page Analytics” information should be viewed with scrutiny.

“In-Page Analytics” does not record what the webpage looked like in the past. It imposes past stats on the current website. This makes “In-Page Analytics” difficult to use for past data unless changes have been recorded and taken into consideration. Again, “In-Page Analytics” information should be viewed with scrutiny and hypothesis resulting from the data should be verified with other statistical information.

Google Analytics only checks the links on the domain of Texas Tech University Library unless the outbound traffic checking features are enabled. In this case this feature was not enabled while installing Google Analytics to the site, so there is no available data from 2012 calendar year on those links directing to a third-party server, such as the library catalog, our digital repositories, databases, etc.

### **Analysis with “In-Page Analytics”**

Figure 1 is a screenshot taken from In-Page Analytics and it outlines the homepage with rates of click density, showing how many clicks and percentage of total each link get from 2012 calendar year.



Figure 1: In-Page Analytics on Homepage

While designing the website, it is assumed that WSST was intending to place the mostly used resources, at the center area for the convenience of our patrons. They also wanted to build navigations that would aid the discovery of library services. By studying which sections were getting the most clicks, we could see if the frequently used resources are in the correct place.

In order to understand how well the library homepage was functioning in general, we divided the library homepage into five sections. The left section contained groups of links to various library resources. The top center section contained online discovery systems including the catalog, articles, course reserves,



and subject librarian pages. The middle center section contained a dynamic scrolling news box and a chat box. The bottom center section had address information and copyright information of the university system. The right section contained information and links for frequently used functions such as library hours, computer availability maps, FAQs, etc.

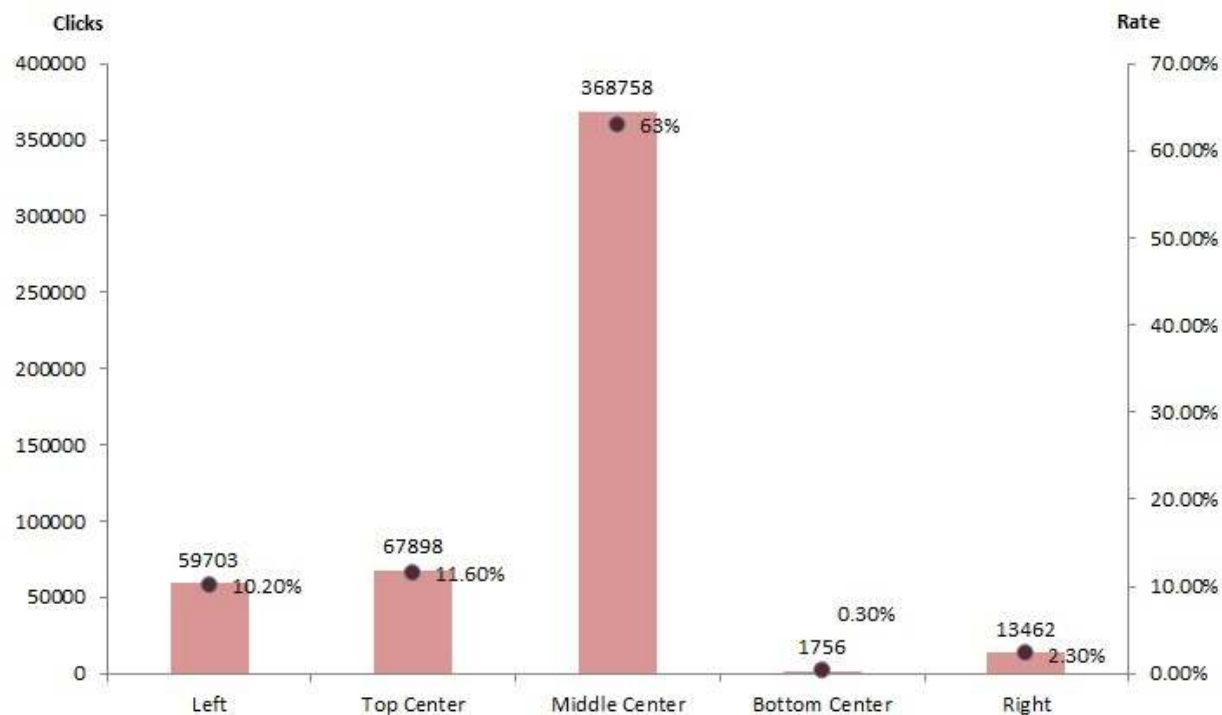


Figure 2: Section Click Rates on Homepage

### Middle Center Section

In looking at the data retrieved from the Google Analytics, we can see that the middle center section attracted 63% of total clicks. More interestingly, most of the clicks of the 63% clicks are from the “Previous” and “Next” buttons in the dynamic box, while the content itself in the box does not get many.

### *Recommendation: Dynamic Web News*

The easy assumption could be that patrons are more curious about what is showing next in the dynamic box and are tempted to click those two buttons to just browse through the box, while it turns out that they are actually not interested in the content. It is not the resources being valuable to the patrons, but just tempting enough to attract patrons to explore it. However, it seems unlikely that people would focus their attention on just scrolling through the news articles. It is possible that the way the dynamic web part is working with “In-Page Analytics” is causing it to count the automatic scrolling as clicks. This could be further investigated to

- 1) Investigate if it is causing there to be extra clicks. Ian has shown it is possible to check this by getting a dummy copy of the website and attaching it to Google Analytics. It is recommended that this method is done to check the effect of the news feed on the “In-Page Analytics”

- 2) Investigate if there is a way to re-write the web part where it is not counting as extra clicks if it turns out that is the case.

### **The Top Center Section**

The top center section which contained the discovery systems and search boxes received 11.6% of total clicks. The click rate is relatively low in comparison with the dynamic box, but it does not mean that these tools are only used by 11.60% of total actions that the patron performed. As we pointed out previously, the data for outbound traffics is not available at this point and the resources that the discovery systems navigate are all on a third-party server. Whenever a patron performs a search on those search boxes, or clicks the links to database pages, the action is not tracked by Google Analytics.

### ***Recommendation: Links out- Analytics***

With the various parts of the webpage that have links to areas we cannot get web stats on, there are two recommendations.

- 1) Make a list of URLs that are connected to the main website but that we have no Web Analytics for. Maintain that list so that website assessment can take them into consideration.
- 2) Attempt to try to get website analytics on as many of these sites as possible.

### **The Bottom Center Section**

Unsurprisingly, the bottom center section only received 0.3% of total clicks because it was not a content rich area and just contained regular footer information.

### **The Right Section**

The right section received 2.30% of total clicks. Those links at the upper area, such as “Ask a Librarian,” “FAQs,” “Document Delivery,” etc. only received less than 0.3%; while 2.0% of total clicks were from the lower place which held “All Library Hours” and “Computer Availability Maps.” It is worth noting here that “Computer Availability Map” feature was only available for a few months in 2012.

The right section gets the next lowest amount of traffic. This can be because of three reasons. Either 1) the content is not things that our users want, or 2) they are not seeing the content there, or 3) there is content there that people are getting to but is not counting in web statistics. There is strong support for option 2 and option 3. According to Nielsen Normal Group (Nielsen, 2006), people tend to view any website in a “F” shape, with the left side getting more attention than the right. This indicates that instead of the information not being useful to our patrons, they are instead not seeing the information. Some people are seeing the Computer Availability map, and that might be because it is closer to the middle section of the “F” pattern. Figure 1.a shows the assumed “F” pattern on the library website.

0.8% TEXAS TECH UNIVERSITY Libraries

Search Library Website

ARCHITECTURE LIBRARY

SOUTHWEST COLLECTION

SEARCH TOOLS:

Library Catalog

Electronic Resources

theses and Dissertations

Digital Collections

SERVICES:

Circulation

Course Reserves

Document Delivery/ILLiad

Personal Librarians

Technology

Library Instruction

Scholarly Communications

Disability Resources

ABOUT THE LIBRARIES:

Collections

Facility

Administration

Employment

Off-campus Libraries

GIVE TO THE LIBRARIES

TTU HOME

OneSearch Articles Course Reserves Personal Librarians

Find Books and More

What am I searching? Everything (but databases) Search

Popular Destinations: EBSCO | FirstSearch | JSTOR | Lexis-Nexis | Scopus | Web of Knowledge

Success Awaits

Find the tools you need

Personal Librarians, e-journals, databases, latest software and much more at your Library.

Ask a Librarian

A librarian is not available. Please use the online form to submit your question.

Enter your email address

Your Question/Message

Send

Computer Availability:

| Location       | Open | In Use |
|----------------|------|--------|
| Main Floor     | 90   | 44     |
| Mezzanine      | 28   | 11     |
| DMS and 3D Lab | 35   | 5      |
| Total          | 153  | 60     |

Help: Ask a Librarian Frequently Asked Questions

My Account/Library Card: Check Status/Renew Items Document Delivery/ILLiad Off-campus login

Alerts: There are no messages or known problems at this time.

Hours: 04.05.13 | Close at 11pm View All Library Hours

Connect: Facebook YouTube

0.0% Tech University Library | 18th and Boston | Box 40002 | Lubbock, TX 79402

Site Map | P: 806.742.2265 | F: 806.742.0737 | Webmaster: Libraries Development | Comments

Texas Homeland Security | Texas Public Information Act | Texas Energy Conservation Report | Texas Digital Library | General Policy Information

Recommended Web Site Viewing Requirements | TTU Home | TTU System | TTU Health Sciences Center | Angelo State University

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Figure 1.a: Assumed F pattern on web page

### Recommendation Based on Option 2.

- 1) Either make the help section larger and more noticeable, or put it somewhere on the tabs or somewhere on the left side. Left side is preferable. The Tabs would be second best position because it is close to the top of the “F” pattern.
- 2) The “F” pattern can be considered when adding links to the webpage. Links that are vital for students should be included somewhere in the “F”, while links that are mostly for staff could be put on the right.

### Recommendation Based on Option 3

Do an Eye Tracking study to see if people are noticing the right side. Center the usability study around the further links on the right side (e.g. looking at hours for another day, looking at computer availability on the map, and getting to the Frequently Asked Questions section). An Eye tracking study will be the only way to determine if the problem is caused by option 2 or 3.

### The Left Navigation Bar

The left navigation bar, which contained other library services and information besides links of discovery tools, received 10.20% of total clicks, including clicks from the sub-links in the drop down menu. Because of various links and sub-links in the navigation bar, it is necessary to look at the data of each link for real details.

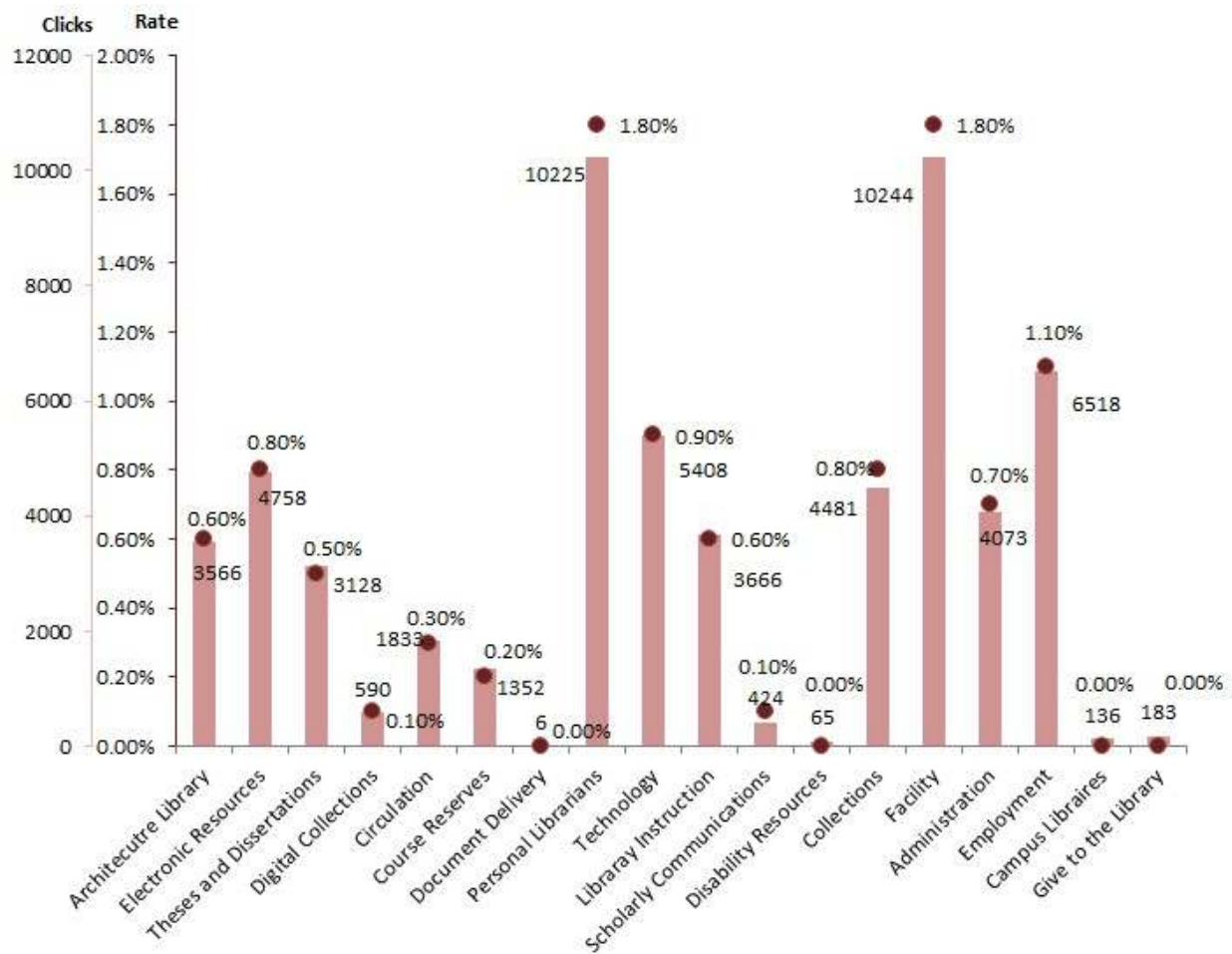


Figure 3: Click Rates on Left Navigation Bar

### Southwest Collection

Among those links, Southwest Collection page is a different domain from the library website so there's no available data for this link. However, when we switched to the separate Google Analytics account of Southwest Collection website, we found that 25.76% of its referral traffics were from the library homepage. The link of Architecture Library received 0.6%, 3566 clicks from the whole calendar year.

From the Architecture Library main page, we found that it received 6,285 pageviews, which means more than 50% of visits to Architecture Library were through the library main page.

### **The search tools section**

The search tools section occupied the first category in the navigation bar and received 1.4% and 8,476 clicks, not including the access to the catalog and our digital collections due to the unavailable data for third-party servers. When we looked at the top content pages of referral traffics, we found that the library catalog received the most visits and the main referral source was the library homepage. In order to understand the performance of Digital Collection link in this section, we switched to the Google Analytics account of DSpace, and we found that its top referral traffic source was from the library main page.

### **Document Delivery**

In the secondary category of the navigation bar, Document Delivery only received 6 clicks through the whole calendar year. However, we found from the “Content Drilldown” feature that the Document Delivery page actually received 39,921 page views and a 4 minutes 33 seconds average time on page. This contrasting data told us the fact that library homepage was not the main referral source for document delivery service; assumingly because library patron navigated to document delivery service via pages of database, catalog, and course reserves.

The link to the Personal Librarian pages got one of the highest usage rate (1.8% and 10,225 clicks) in the navigation bar, although the library homepage contained various access points for this service.

### ***Recommendation: Personal Librarian Page***

An eye tracking study should be done to determine which link to Personal Librarian’s is more visible to patrons. Then the less visible link should be removed to make the navigation structure of the website more clear.

### **Facility**

The link of “Facility” also received the highest usage rate (1.8% and 10,244 clicks), but 1.6% of clicks were from its sub-link “Library Hours.” This could be because of the hours link on the right of the screen.

### ***Recommendation: Hours page Link***

An eye tracking study should be done to see which Hours link is more visible. A simple usability study might do the job as well. This is a difficult one because the link on the right is so low on the page that it might not be considered part of the “F” pattern, and the link on the right is too far to the right to be considered part of the “F” pattern. It might be worth investigating if there is a more visible place on the website to put that information.

### **Employment**

In the third category of the navigation bar, the library patrons were mostly interested in “Employment,” because the employment link received the third highest usage rate in the navigation bar, which is 1.10% (6,518 clicks).

### **Recommendation: Employment**

Because this is such a heavily used link that students are interested in, WSST might consider moving the link higher on the left side.

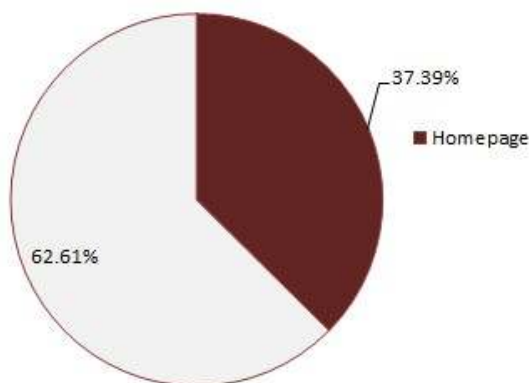
### **Other statistics**

Besides the click density analysis on the library homepage, there are some more statistics that help in understanding how the library homepage performed. Table 1 tells that the library homepage received 1,525,133 pageviews and 1,070,815 unique pageviews from 2012 calendar year, which shared 37.39% and 37.05% of total usage on the site (Figure 4 & Figure 5).

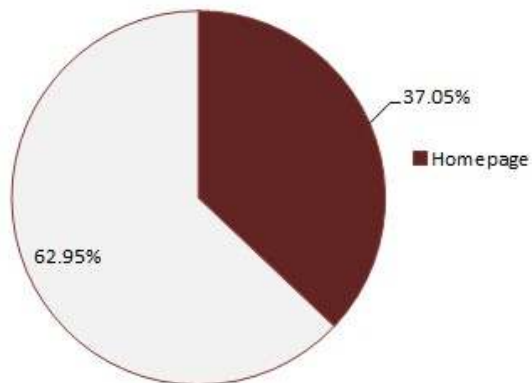
|            | Pageviews | Unique Pageviews | Avg. Time on Page | Avg. Pag Load Time | Bounce Rate | % Exit |
|------------|-----------|------------------|-------------------|--------------------|-------------|--------|
| Homepage   | 1,525,133 | 1,070,815        | 0:04:48           | 1.89 sec           | 68.62%      | 60.96% |
| Site Total | 4,078,831 | 2,890,525        | 0:03:33           | 1.56 sec           | 63.42%      | 36.16% |

**Table 1: Data on the Library Homepage**

Comparing to the numbers of two main population groups the library was serving, the enrolled 32,611 students and 2,554 faculty members as of Fall 2012, the usage data of the library website revealed some success, demonstrating the fact that the library website had been utilized heavily.



**Figure 4: Pageviews Percentage of Homepage**



**Figure 5: Unique Pageviews Percentage of Homepage**

The bounce rate on the library homepage was 68.62%, which was relatively high comparing to the data Batra (2008) gathered from varied industries (Figure 6). If a web page has a high bounce rate, according to Morgan (2010), it often means that the user landed, realized they would not find what they wanted or had difficulty in finding what they wanted, then left the page immediately. However, there are two important exceptions Morgan pointed out (p.17).

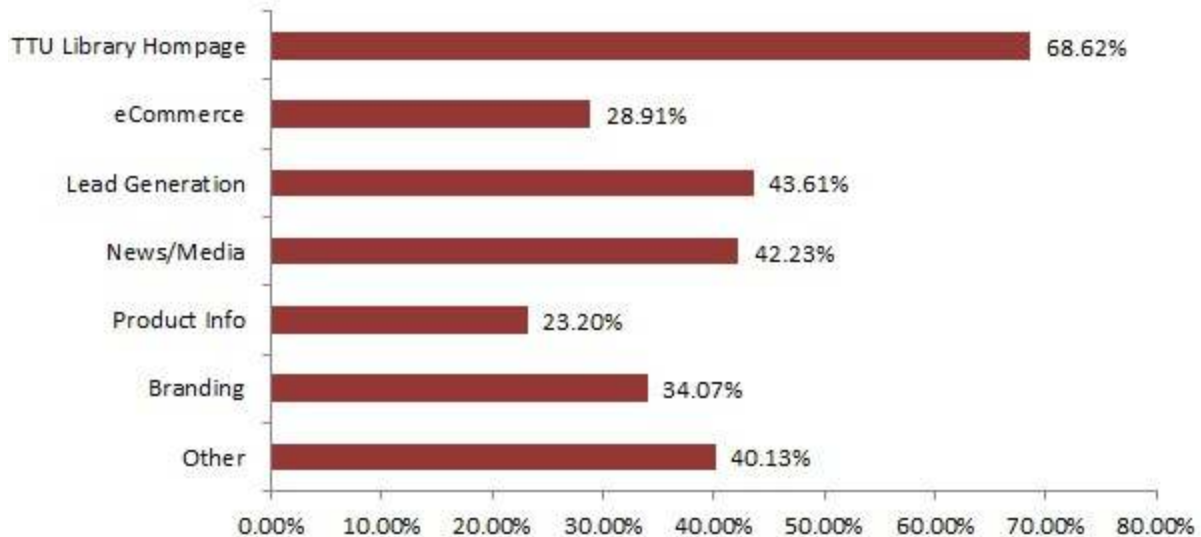


Figure 6: Typical Bounce Rate on the Homepage

When a high bounce rate combines with a high exist rate, it can sometimes be interpreted that users get exactly what they are looking for and exit the page completely by being directed to other sources, especially when the library homepage contains some links to varied third-party resources, such as the catalog, the digital collections, or the databases. In this case, the exit rate is 60.96% (Table 1), which suggests that 60.96% of website exits occurred from the library homepage. Among these 60.96% of visits, visitor could have exited the library homepage because they were directed to a third party server like the catalog, digital collections, or the databases.

The other exception could be a high bounce rate combining with a high average time on page. This combination suggests that users may have been reading content on the page and leave the page because they complete reading what they are seeking for. In this case the average time on page is 4 minutes 48 seconds, which is a longer stay comparing to the site average 3 minutes 33 seconds.

So we know the main library webpage has a high bounce rate, a high average time on page, and is the most accessed page on our website. We also know that the relationship between the website and links out is complicated. It must be considered that the main library webpage is the default page for all the computers in the library and its possible people are opening a browser and leaving the library website up while they use tabs to browse other websites.

### ***Recommendation: Main Webpage usage***

We can assume that there is probably not enough content on our webpage to take 4 minutes to read. This seems to indicate a lot of the stats of the main library webpage use is passive use.

- 1) An observational study can be done to see how users on the main floor of the library handle the fact that the home page is the Main Library website. Users can be observed and statistics kept of how often they leave the page open while they are looking at other things. This could also be done in a usability study where students are asked to go to other websites.

- 2) If the study shows that a certain percentage of use is passive, then that needs to be factored into assessments about performance of the library website. It could be that stats on the main page are false positives, and need to be removed from analysis. This would need to be declared in an assessment policy.

## Audience - Demographics

According to the data that Google Analytics provides (Table 2), the library website received totally 1,474,821 visits from 167 countries/territories, among which 52.20% of them were new visits. Per single visit, our patrons spent 6 minutes 15 seconds on 2.77 web pages on average. As Morgan notes in his article (p.14), that between 1-5 minutes can be estimated on a site with exception of social network like the Facebook, the library website was doing quite a good job in keeping the visitors spend a considerable time on it. It is encouraging to some extent, it can also reveal, however, that our website hid targeted content so well that patrons spent extra time to get what they want or that some of the statistics is passive use (see the Recommendations for Main Webpage usage).

|            | Visits    | Pages/Visit | Avg. Visit Duration | % New Visits | Bounce Rate |
|------------|-----------|-------------|---------------------|--------------|-------------|
| Site Total | 1,474,821 | 2.77        | 00:06:15            | 52.20%       | 63.42%      |

Table 2: Audience-Demographics Overview

## Country and Territory

98.71% of the total 1,474,821 visits were from United States locations, while the rest 1.29% were from other countries and territories (Figure 7). Another three English-speaking countries, India, Canada, and U.K. sent 0.11% (1,638 visits), 0.10% (1,428 visits), and 0.08% (1,127 visits) respectively occupying the secondary group. Among the top 10 countries, except for 834 visits were unidentifiable, South Korea sent 938 visits, China 758, Mexico 748, Spain 719, and Taiwan 631.

In order to better analyze and interpret the data of different metrics, the statistics is included in Table 3 as below.

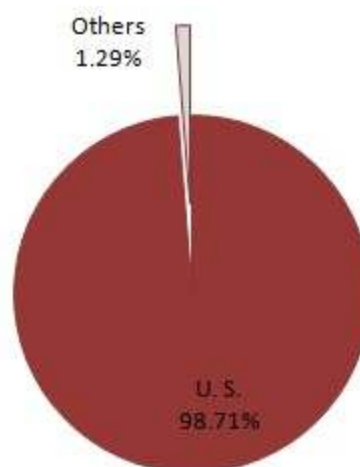


Figure 7: Location Demographic



| Country/Territory | Visits    | Pages/Visit | Avg. Visit Duration | % New Visits | Bounce Rate |
|-------------------|-----------|-------------|---------------------|--------------|-------------|
| United States     | 1,455,864 | 2.77        | 00:06:18            | 52.16%       | 63.44%      |
| India             | 1,638     | 2.11        | 00:02:09            | 55.43%       | 63.43%      |
| Canada            | 1,428     | 2.28        | 00:03:00            | 57.84%       | 47.20%      |
| United Kingdom    | 1,127     | 1.90        | 00:01:53            | 56.97%       | 70.45%      |
| South Korea       | 938       | 2.04        | 00:05:34            | 42.22%       | 56.93%      |
| (not set)         | 834       | 2.36        | 00:03:20            | 60.91%       | 59.47%      |
| China             | 758       | 2.29        | 00:04:06            | 65.57%       | 58.84%      |
| Mexico            | 748       | 2.61        | 00:07:45            | 62.43%       | 49.06%      |
| Spain             | 719       | 2.39        | 00:03:27            | 35.47%       | 56.61%      |
| Taiwan            | 631       | 2.05        | 00:03:09            | 40.25%       | 58.64%      |

Table 3: Metrics by Countries

From Table 3, it is clear to see that visitors from Mexico spent the longest time on the library website, which was 7 minutes 45 seconds on 2.61 pages per visit, and the bounce rate was also the second lowest, 49.06%. It could be interpreted that visitors from Mexico spent time on reading our content-rich website and did not tend to leave. Visitors from United Kingdom spent the shortest time on the site, which was 1 minute 53 seconds on 1.9 pages per visit. They also seemed tending to leave the website as soon as they could, which resulted into a highest 70.45% bounce rate. China sent the most percentage of new visitors, which was 65.57%, while the Spanish appeared the most loyal group to our website since only 35.47% of visits were new.

Looking at the “Visitor Flow” section of Google Analytics Audience, we see that many people from other countries are going to our Databases, articles, and Document Delivery pages. This makes sense if they are affiliated but away from the country.

### ***Recommendation: Country/territory***

More research will have to be done to see if the website is supporting those trying to access it from areas outside the US. What content is available to people not affiliated with Texas Tech, and is that content easy for them to find?

### **Language**

Language is another valuable metric that can profile the demographic information. In Table 4, it shows that 1,441,144 visits were from operating systems using en-us which was 14,720 fewer than the United States visits in Table 3. Also, zh-cn language setting was listed the third mostly used language, which was 6,394, while in Table 3 only 758 visits were directed from China.

| Language | Visits    | Pages/Visit | Avg. Visit Duration | % New Visits | Bounce Rate |
|----------|-----------|-------------|---------------------|--------------|-------------|
| en-us    | 1,441,144 | 2.77        | 00:06:17            | 52.51%       | 63.54%      |
| en       | 12,306    | 2.30        | 00:03:58            | 43.72%       | 61.71%      |
| zh-cn    | 6,394     | 2.61        | 00:04:09            | 36.94%       | 59.54%      |
| en-gb    | 1,977     | 3.16        | 00:08:14            | 47.90%       | 56.70%      |
| es-es    | 1,552     | 2.39        | 00:03:28            | 33.25%       | 60.89%      |
| zh-tw    | 1,496     | 2.78        | 00:06:44            | 30.95%       | 49.80%      |
| ko       | 1,290     | 2.68        | 00:06:35            | 35.50%       | 47.44%      |
| es       | 1,144     | 2.99        | 00:07:31            | 60.58%       | 44.06%      |
| pt-br    | 653       | 2.51        | 00:04:56            | 60.03%       | 57.58%      |
| ja       | 638       | 2.55        | 00:05:55            | 21.16%       | 50.31%      |

Table 4: Metrics by Languages

Situations of other language settings were very similar to zh-cn language which reflected a fact that a considerable amount of international students and scholars were looking for information on Texas Tech University Library website through U.S. geological locations.

From Table 4, it is interesting to find the visitors using en-gb language setting spent the longest time on the website (8 minutes 14 seconds) and visited the most pages (3.16 pages/visit), while in Table 3 the statistics showed the fact that visitors from United Kingdom spent the shortest time (1 minute 53 seconds), viewed the fewest pages (1.9 pages/visit), and tended to leave the site as soon as possible.

We cannot assume much about someone based on their browser language setting. However, it is an indication that people who use those languages are using our site.

### ***Recommendations: Language***

While there is not much we can use this information for, it is valuable to make content providers aware that our site does serve people for whom English might be a second language. Words that can have multiple meanings should be avoided in favor of more precise word choices. Library specific terms should be avoided in favor of more common terms, which should help new library patrons as well. An analysis should be done about whether or not the words used on the library website can be searched in an online dictionary. If, for example, "Digital Collections" is not available in a dictionary, then it might be difficult for people to understand its meaning.

### **Audience-Behavior**

The library website seemed to be more appealing to new visitors and it attracted 771,148 new visits within the calendar year of 2012, proportionating share of 52.29%; while the amount of returning visits was a little smaller, which was 703,673 and shared 47.71%. (Figure 8 & Table 5)

However, Table 5 shows that although returning visitors were fewer than new visitors they tended to stay at the library website twice as long and visited more pages than new visitors do. The bounce rate also indicates that new visitors were more prone to leave the library website.

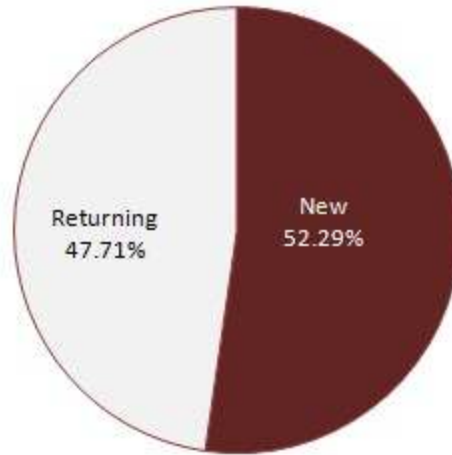


Figure 2 Figure 8: New vs. Returning

| Visitor Type      | Percentage | Visits  | Pages/Visit | Avg. Visit Duration | Bounce Rate |
|-------------------|------------|---------|-------------|---------------------|-------------|
| New Visitor       | 52.29%     | 771,148 | 2.27        | 00:04:05            | 69.52%      |
| Returning Visitor | 47.71%     | 703,673 | 3.30        | 00:08:38            | 56.73%      |

Table 5: Metrics by New vs. Returning

The trends of new and returning visits through 2012 were very similar as shown in Figure 9. Both lines peak at February when semester started and drops a little bit at March because of the Spring Break. They then go up again before a significant decline happens during the summer. Both lines move up again starting at August and reach the peaks at October and eventually move downward as the academic semester ended.

Most of time the website received more new visits than returning visits except for the summer. We can guess that not as many new students are registered classes at summer sections while at spring and fall semesters newly enrolled students filled up the gap.

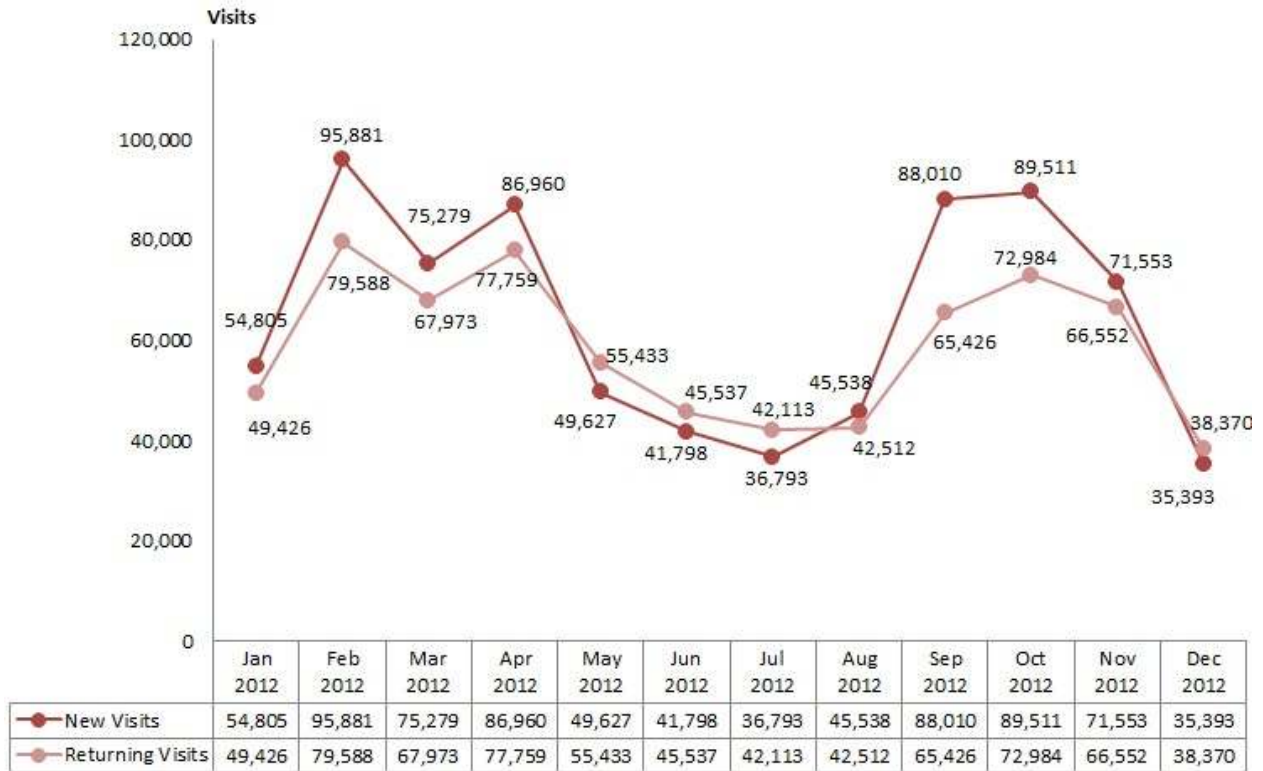


Figure 9: New vs. Returning by Month

Figure 10 shows that 52.29% of total visits, which is 771,148 visits, came to the library website just once and viewed 1,793,950 pages; another 47.71% of visits came to the website at least twice during 2012. It's also encouraging to see that the site received stable visit rates from those frequent visitors.

| Count of Visits | Visits  | 1,474,821 | Pageviews | 4,078,831 |
|-----------------|---------|-----------|-----------|-----------|
| 1               | 771,148 | 52.29%    | 1,753,950 | 43.00%    |
| 2               | 143,791 | 9.75%     | 406,466   | 9.97%     |
| 3               | 61,928  | 4.20%     | 206,350   | 5.06%     |
| 4               | 39,370  | 2.67%     | 137,072   | 3.36%     |
| 5               | 28,984  | 1.97%     | 102,849   | 2.52%     |
| 6               | 23,277  | 1.58%     | 82,543    | 2.02%     |
| 7               | 33,449  | 2.27%     | 87,930    | 2.16%     |
| 8               | 19,733  | 1.34%     | 63,274    | 1.55%     |
| 9-14            | 68,444  | 4.64%     | 244,313   | 5.99%     |
| 15-25           | 63,056  | 4.28%     | 232,311   | 5.70%     |
| 26-50           | 66,288  | 4.49%     | 243,959   | 5.98%     |
| 51-100          | 53,958  | 3.66%     | 207,525   | 5.09%     |
| 101-200         | 42,049  | 2.85%     | 147,293   | 3.61%     |
| 201+            | 59,346  | 4.01%     | 162,996   | 3.99%     |

Figure 10: Frequency of Visits

Most pageviews were made by those visits that have small counts according to Figure 10, and it could be because the small counts of visits were made by the largest group of people. Another reason behind this could be those frequent visitors were more familiar with the website so they did not need to go through as many pages to find what they were looking for. They could have also bookmarked the specific page they had been frequently using so that every time visitors went to the targeted page only 1 pageview got counted.

From Figure 11, we see that most of visitors tended to visit the website constantly in the same day. Although the same-day visit data, 78.41% and 1,156,338 visits, include those 1 count of visits (which is 771,148 shown in Figure 10), it still had 26.12% and 385,190 visits (minus 771,148 from 1,156,338) occurred in the same day since last visit. 94.2% of visits were made in the same calendar year while only 0.58% visited the website the second time since more than 365 days ago.

Data of pageviews in this metric has the same tendency where large amount of pageview counts gather at the shorter day gaps. Those people who did not visit the website as often also tended not to view as many pages.

| Days Since Last Visit | Visits    | 1,474,821 | Pageviews | 4,078,831 |
|-----------------------|-----------|-----------|-----------|-----------|
| <0                    | 3         | 0.00%     | 3         | 0.00%     |
| 0                     | 1,156,338 | 78.41%    | 2,895,851 | 71.00%    |
| 1                     | 54,843    | 3.72%     | 247,388   | 6.07%     |
| 2                     | 32,721    | 2.22%     | 141,651   | 3.47%     |
| 3                     | 22,865    | 1.55%     | 97,967    | 2.40%     |
| 4                     | 17,851    | 1.21%     | 66,561    | 1.63%     |
| 5                     | 14,694    | 1.00%     | 49,623    | 1.22%     |
| 6                     | 14,583    | 1.00%     | 50,238    | 1.23%     |
| 7                     | 11,112    | 0.75%     | 36,991    | 0.91%     |
| 8-14                  | 40,962    | 2.78%     | 143,766   | 3.52%     |
| 15-30                 | 37,901    | 2.57%     | 135,235   | 3.32%     |
| 31-60                 | 24,522    | 1.66%     | 84,802    | 2.08%     |
| 61-120                | 16,710    | 1.13%     | 58,847    | 1.44%     |
| 121-364               | 20,907    | 1.42%     | 52,960    | 1.30%     |
| 365+                  | 8,809     | 0.58%     | 16,948    | 0.41%     |

Figure 11: Recency of Visits

| Visit Duration   | Visits    | 1,474,821 | Pageviews | 4,078,831 |
|------------------|-----------|-----------|-----------|-----------|
| 0-10 seconds     | 1,016,862 | 68.95%    | 1,109,694 | 27.21%    |
| 11-30 seconds    | 54,890    | 3.72%     | 143,268   | 3.51%     |
| 31-60 seconds    | 43,920    | 2.98%     | 137,828   | 3.38%     |
| 61-180 seconds   | 80,805    | 5.48%     | 322,046   | 7.90%     |
| 181-600 seconds  | 102,747   | 6.97%     | 510,758   | 12.52%    |
| 601-1800 seconds | 118,942   | 8.06%     | 673,915   | 16.52%    |
| 1801+ seconds    | 56,655    | 3.84%     | 1,181,322 | 28.96%    |

Figure 12: Engagement-Visit Duration

Figure 12 shows the data about how long visitors spent on the site and how many pages they viewed. The majority of visits stay on the site only for less than 10 seconds, while this also echoes the high bounce rate of the website (shown in Table 2). 3.72% of visits (54,890) stayed on the website from 11 to 30 seconds, 2.98% (43,920) stayed for 30 to 60 seconds. From 60 seconds to 1800 seconds, however, the visits constantly increased which means that the second majority of visitors indeed spent longer time on the library website.

As for data of pageviews, the shortest duration group (0-10 seconds) contributed second most pageviews due to the majority of visits sitting in the same duration group. We can also see that starting from the duration group of 11-30 seconds number of pageviews gets a stable increase and exceeds the shortest duration group eventually. This could be well reasoned, because the longer visitors spend on the site, the more pages they tended to flip and more content they tried to explore.

| Page Depth | Visits  | 1,474,821 | Pageviews | 4,078,831 |
|------------|---------|-----------|-----------|-----------|
| 1          | 935,302 | 63.42%    | 935,302   | 22.93%    |
| 2          | 243,881 | 16.54%    | 487,762   | 11.96%    |
| 3          | 96,643  | 6.55%     | 289,929   | 7.11%     |
| 4          | 52,454  | 3.56%     | 209,816   | 5.14%     |
| 5          | 31,477  | 2.13%     | 157,385   | 3.86%     |
| 6          | 21,609  | 1.47%     | 129,654   | 3.18%     |
| 7          | 15,293  | 1.04%     | 107,051   | 2.62%     |
| 8          | 11,316  | 0.77%     | 90,528    | 2.22%     |
| 9          | 8,903   | 0.60%     | 80,127    | 1.96%     |
| 10         | 6,951   | 0.47%     | 69,510    | 1.70%     |
| 11         | 5,631   | 0.38%     | 61,941    | 1.52%     |
| 12         | 4,645   | 0.31%     | 55,740    | 1.37%     |
| 13         | 3,982   | 0.27%     | 51,766    | 1.27%     |
| 14         | 3,458   | 0.23%     | 48,412    | 1.19%     |
| 15         | 2,908   | 0.20%     | 43,620    | 1.07%     |
| 16         | 2,437   | 0.17%     | 38,992    | 0.96%     |
| 17         | 2,158   | 0.15%     | 36,686    | 0.90%     |
| 18         | 1,955   | 0.13%     | 35,190    | 0.86%     |
| 19         | 1,662   | 0.11%     | 31,578    | 0.77%     |
| 20+        | 22,156  | 1.50%     | 1,117,842 | 27.41%    |

Figure 13 Engagement-Page Depth

Most visitors went through only one page during a single visit on the library website. The trend declines constantly as the number of page depth goes up. The statistics can be interpreted that most visitors (86.51% of total) tended to leave the site after clicking two links. Thus it becomes important for the library to organize useful information into a reasonable navigation system. This is especially true on the landing page with the library homepage getting 760,299 landing visits (Table 11).

### Audience-Technology

According to Table 6, Internet Explorer was the most popular web browser and the library website received 41.32% of visits sent through Internet Explorer. Firefox was the second most popular and owned 31.10% usage. Safari and Google Chrome were not as popular as Internet Explorer and Firefox but they still gained 15.24% and 10.44% respectively.

|            | IE      | Firefox | Safari  | Chrome  | Others |
|------------|---------|---------|---------|---------|--------|
| Percentage | 41.32%  | 31.10%  | 15.24%  | 10.44%  | 1.90%  |
| Visits     | 609,370 | 458,701 | 224,722 | 154,039 | 27,989 |

Table 6

Most of library website visitors were Windows users which shares 78.45% of total visits. Macintosh users, who sent 17.26% of visits, occupy the secondary group among operating systems. The rest of

operating systems, including Linux and various mobile operating systems, shares the remaining 4.29% of visits. (Figure 14 & Table 7)

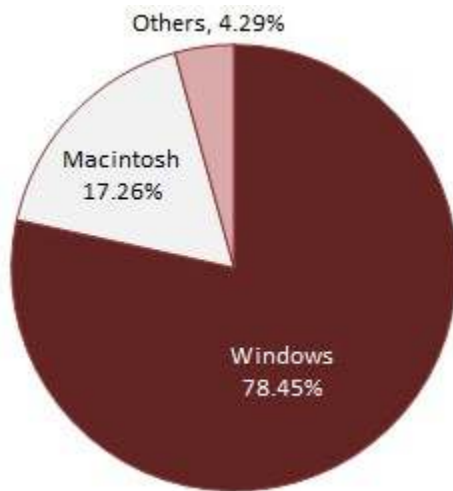


Figure 14

| Operating System | Percentage | Visits    |
|------------------|------------|-----------|
| Windows          | 78.45%     | 1,157,046 |
| Macintosh        | 17.26%     | 254,592   |
| iOS              | 1.87%      | 27,609    |
| iPhone           | 0.88%      | 12,983    |
| Android          | 0.75%      | 11,042    |
| iPad             | 0.29%      | 4,296     |
| Linux            | 0.26%      | 3,883     |
| (not set)        | 0.11%      | 1,561     |
| iPod             | 0.06%      | 891       |
| BlackBerry       | 0.03%      | 414       |

Table 7

Up to 99.56% of visitors were using 24-bit and 32-bit screen colors. This means that most of computer screens the visitors were using were able to display the colors and the themes that the library website was using. (Table 8)

| Screen Colors        | Percentage | Visits  |
|----------------------|------------|---------|
| 32-bit               | 54.17%     | 798,929 |
| 24-bit               | 45.39%     | 669,372 |
| 16-bit               | 0.42%      | 6,163   |
| 4-bit, lower, others | 0.02%      | 357     |

Table 8

The main area (Figure 1) of the library website is approximately 900 pixels by 950 pixels, which means most of visitors do not really need to scroll down to reach the bottom area based on the data shown in Table 9. Except for the resolution of 320 x 480, which should be of some type of mobile devices, the least width of screen resolution is 1024 pixels and the least length is 768 pixels.



| Screen Resolution | Percentage | Visits  |
|-------------------|------------|---------|
| 1280 x 1024       | 43.64%     | 643,685 |
| 1280 x 800        | 10.97%     | 161,837 |
| 1366 x 768        | 8.69%      | 128,197 |
| 1440 x 900        | 5.33%      | 78,569  |
| 1600 x 1200       | 4.22%      | 62,195  |
| 1920 x 1200       | 3.13%      | 46,233  |
| 1920 x 1080       | 3.07%      | 45,347  |
| 1680 x 1050       | 2.68%      | 39,509  |
| 320 x 480         | 2.35%      | 34,662  |
| 1024 x 768        | 2.19%      | 32,317  |
| others            | 13.73%     | 202,270 |

Table 9

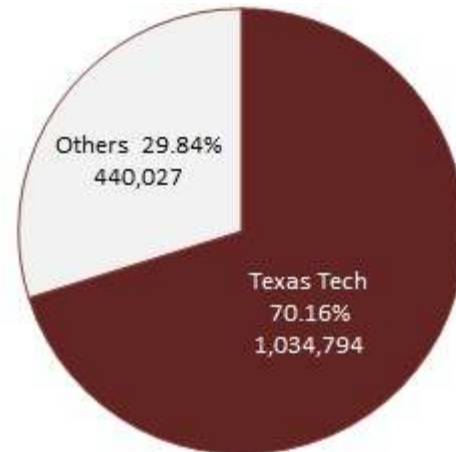


Figure 15

70.16% percent of visits were using a Texas Tech IP range accessing the library website. These visitors should be the main user group including Texas Tech employees and students, because visitors should have a Texas Tech user name and password to access Texas Tech internet service. These visitors shared an average duration of 6 minutes 15 seconds on site with a relatively high 66.44% bounce rate, and 2.74 pages per visit.

Another 29.84% of visits came through another 8,431 different service providers and it is interesting to find that some visitors spent a very long time on our library website. For example, the Art Institute of Chicago sent only 5 visits to our library website but each visit stayed on the site as long as 4 hours on average. Visits from State of Oregon, City of Greenville, and Walla Walla University also stay on the library more than 2 hours per visit on average.

#### ***Recommendation: Compatibility issues***

The library needs to consider compatibility issues between the codes and browsers when developing the website. When the marketing department is publishing animations that require plug-in applications, or the IT department tries to implement some new toolkits, they also need to include the browsers compatibility into consideration.

#### ***Recommendation: Screen resolution***

What the library really needs to be concerned about while developing the website should be the screen resolution issues. According to the data in Table 9, the visitors use various types of computer monitors and screen resolutions, some of which may not well fit into the website main frame scale. The people to worry about are people who are accessing the library website from a mobile device and not using the mobile site. This could be because the mobile site doesn't have all the same information that the main website does. This can either be fixed by looking at the behavior of the users with the smaller resolution and see what they are accessing and see if that information can be added to the mobile site, or by making the main website work better with these mobile devices at lower screen resolutions.

## Audience-Mobile

Only 3.9% of visits were made through mobile devices and 96.1% of them were through regular laptop and desktop computers (Figure 16).

Data in Table 10 shows that visits through regular computers stayed almost 3 times longer than those through mobile devices. Visits through regular computer also viewed more pages per visit than mobile devices.

Regular computers sent a higher percentage of new visits and a higher bounce rate. However, as we pointed out previously in the article, a high average time on site combining with a high bounce rate does not entail a problem.

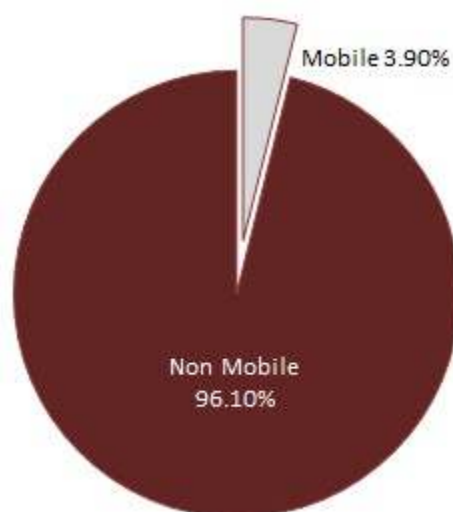


Figure 16

| Mobile (including tablet) | Visits    | Pages/Visit | Avg. Visit Duration | % New Visits | Bounce Rate |
|---------------------------|-----------|-------------|---------------------|--------------|-------------|
| No                        | 1,417,329 | 2.78        | 00:06:25            | 52.49%       | 63.65%      |
| Yes                       | 57,492    | 2.42        | 00:02:19            | 47.33%       | 57.63%      |

Table 10

### Recommendation: Mobile

3.9% is a very low percentage. There seems to be a lot of hype about how all college students are going mobile, but at least in 2012, it didn't seem many of them were accessing the library website. We will have to compare the stats from 2012 to 2013 to see if the percentage is increasing. It is possible that students prefer interacting with Apps on their phone than websites. A library App might be more appropriate. Or, we could do a usability study on the mobile site to see if it is getting people what they want.

## Traffic Sources - Overview

55.30% of visits were made by direct traffic, which means these direct visitors should have bookmarked the library website pages or typed in the URL in the browsers.

26.60% of visits were made through referral sources. This type of visitors accessed the library website through links on third party servers, which could be other university division websites or completely different organizations.

18.10% of visits were made from search engines, such as Google, Yahoo, Bing, etc.

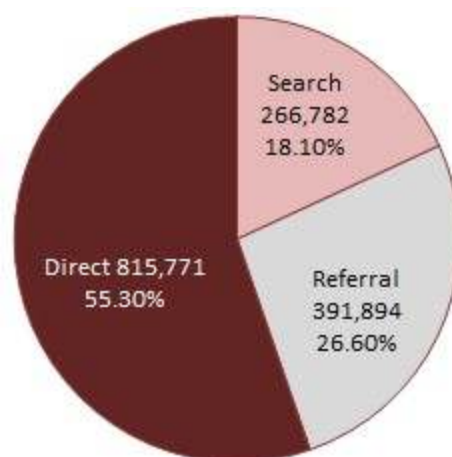


Figure 17

### Discussion

This is an indication that people are aware of the website, and are bookmarking it. The low search engine traffic sources should not be a bad thing. People do not have to discover the site. This means we shouldn't worry about Search Engine Optimization for the main website.

### Traffic Sources - Direct

The top landing page from the direct traffic is the library homepage, which received 760,299 visits. Each visit spent almost 3 minutes on the library homepage and 71.7% of them were made by new visitors. The mobile version of homepage received the second most landing visits but the average time duration is a lot shorter than the former one. We can see that library homepages were functioning as the gateway for the visitors and the library patron tended to land the homepage when they visited the library website.

| Landing Page                           | Visits  | Pages/Visit | Avg. Visit Duration | % New Visits | Bounce Rate |
|--|---------|-------------|---------------------|--------------|-------------|
| /                                      | 760,299 | 1.62        | 00:02:58            | 71.70%       | 74.55%      |
| /m/                                    | 18,112  | 1.93        | 00:01:02            | 53.24%       | 61.66%      |
| /databases.php                         | 4,635   | 1.97        | 00:02:05            | 47.25%       | 67.98%      |
| /F                                     | 3,018   | 7.83        | 01:03:00            | 66.24%       | 45.00%      |
| /docdel/                               | 2,974   | 1.46        | 00:02:13            | 33.93%       | 74.92%      |
| /index.php                             | 2,330   | 3.03        | 00:03:44            | 46.70%       | 40.52%      |
| /services/technology/3dlab/contact.php | 2,084   | 1.77        | 00:02:51            | 24.90%       | 75.19%      |
| /lynda/                                | 1,603   | 1.29        | 00:01:07            | 52.34%       | 84.09%      |
| /about/facility/hours.php              | 1,246   | 1.49        | 00:00:57            | 47.67%       | 72.79%      |
| /articles.php                          | 1,142   | 2.56        | 00:03:55            | 38.09%       | 56.13%      |

Table 11

## Traffic Sources – Referrals

The top three referral sources to the library website were the library catalog page, the library homepage itself, and the Texas Tech University homepage.

The Blackboard platform sent 20,502 visits to the library website. Blackboard is the course management system that Texas Tech has been using and the library links were usually provided in the course page for students' convenience.

| Referral Source                          | Percentage | Visits  |
|--|------------|---------|
| iris.ttu.edu                             | 29.67%     | 116,273 |
| library.ttu.edu                          | 28.64%     | 112,235 |
| ttu.edu                                  | 14.85%     | 58,194  |
| blackboard.ttu.edu                       | 5.23%      | 20,502  |
| sfxhosted.exlibrisgroup.com              | 2.42%      | 9,492   |
| lib-web2.tosm.ttu.edu                    | 1.95%      | 7,648   |
| lib-sfx1.tosm.ttu.edu:3210               | 1.71%      | 6,705   |
| worldcat.org                             | 1.18%      | 4,605   |
| newfirstsearch.oclc.org                  | 1.09%      | 4,284   |
| texastech-aleph.hosted.exlibrisgroup.com | 0.94%      | 3,669   |
| others                                   | 12.32%     | 48,287  |

Table 12

Among the referral sources, social referral sent 2,364 visits to the library website, which is 0.60% of total referrals.

The library maintains a public portal on the main social networking media Facebook and it sent 797 visits. WordPress, the blog publishing platform, sent 750 visits to the library website. Reddit, a social news and entertainment website, also sent 382 visits.

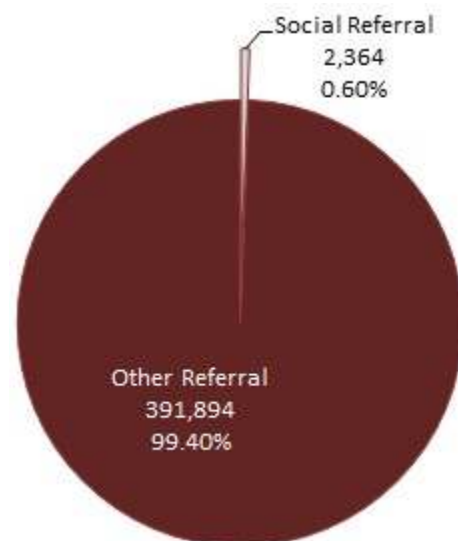


Figure 18

| Social Referral Network | Percentage | Visits |
|-------------------------|------------|--------|
| Facebook                | 33.74%     | 797    |
| WordPress               | 31.73%     | 750    |
| reddit                  | 16.16%     | 382    |
| Twitter                 | 7.57%      | 179    |
| Blogger                 | 6.09%      | 144    |
| Renren                  | 1.18%      | 28     |
| Flickr                  | 0.63%      | 15     |
| LinkedIn                | 0.38%      | 9      |
| Netvibes                | 0.38%      | 9      |
| tinyURL                 | 0.34%      | 8      |
| others                  | 1.80%      | 43     |

Table 13

### Discussion

The referrals from library.ttu.edu are actually not referrals. We suspect that those 112,235 visits are actually people who were already on the site, and clicked on something that took them to library.ttu.edu/index. If you click on any of the tabs, it might count toward this stat. More research would have to be done to prove that. Discounting that stat, it seems that at least in 2012, Blackboard was a big referral site. A few questions come to mind. How many courses in Blackboard link to the library? Can we increase student use of the library by increasing the links to the library in Blackboard?

### Traffic Sources – Search Engine

Among the search engine traffic sources, Google was the main search engine product visitors used, sending 94.81% of visits to the site. Bing sent 2.84% of visits and Yahoo sent 1.75%, while other search engines shared the rest of 0.60% usage.

Except for the not-provided keywords, the top four keywords that visitors used in search engine website include “ttu library,” “texas tech library,” “library ttu,” and “library.”

2.95% of visitors were interested in the operating hours of the library, and they used two main queries “ttu library hours” and “texas tech library hours” in the search engine website.

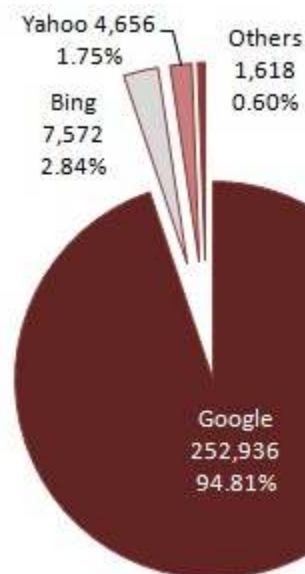


Figure 19

| Keywords                      | Percentage | Visits  |
|-------------------------------|------------|---------|
| (not provided)                | 21.47%     | 57,269  |
| ttu library                   | 18.57%     | 49,529  |
| texas tech library            | 7.47%      | 19,920  |
| library ttu                   | 3.60%      | 9,615   |
| library                       | 3.23%      | 8,619   |
| ttu library hours             | 1.64%      | 4,375   |
| texas tech library hours      | 1.31%      | 3,493   |
| lynda                         | 0.81%      | 2,155   |
| library.ttu.edu               | 0.77%      | 2,053   |
| texas tech university library | 0.75%      | 2,014   |
| others                        | 40.38%     | 107,740 |

Table 14

## Content – All Pages

The page category (25 sub-pages) with the title “Texas Tech University Libraries Home” received 1,814,463 pageviews and 1,251,987 unique pageviews. Sub-pages belonging to this category include database page, article page, ejournal page, librarians pages, service page, etc., providing targeted content that library patrons were looking for. Visitors spent 4 minutes 17 seconds on the pages and 57.55% of them exit the site from this page category.

| Page Title   | Pageviews | Unique Pageviews | Avg. Time on Page | Entrances | Bounce Rate | % Exit |
|--|-----------|------------------|-------------------|-----------|-------------|--------|
| Texas Tech University Libraries Home                 | 1,814,463 | 1,251,987        | 00:04:17          | 1,093,578 | 68.27%      | 57.44% |
| TTU Online Catalog - Basic Search                    | 466,631   | 230,815          | 00:09:46          | 73,762    | 44.42%      | 15.51% |
| TTU Online Catalog - Search Results                  | 324,775   | 248,552          | 00:01:33          | 64,735    | 43.07%      | 19.29% |
| TTU Online Catalog - Full View                       | 183,016   | 163,052          | 00:01:37          | 14,926    | 26.28%      | 9.73%  |
| TTU Online Catalog - Browse List                     | 158,367   | 134,721          | 00:00:32          | 7,888     | 7.05%       | 2.37%  |
| TTU Online Catalog - List of Records                 | 100,486   | 87,646           | 00:00:46          | 276       | 27.17%      | 3.27%  |
| TTU Online Catalog - Advanced Search                 | 93,352    | 78,705           | 00:00:37          | 14,064    | 31.69%      | 8.42%  |
| TTU Online Catalog - Holdings                        | 85,310    | 80,708           | 00:03:12          | 2,505     | 48.90%      | 8.92%  |
| TTU Online Catalog - Permete Search                  | 85,102    | 62,731           | 00:01:04          | 20,460    | 42.94%      | 21.49% |
| Texas Tech University Libraries - Student Employment | 56,950    | 7,532            | 00:01:06          | 1,775     | 68.62%      | 6.70%  |

Table 15

The pages that were having “TTU Online Catalog” title received the second most pageviews. Visitors spent the longest time (9 minutes 46 seconds) on the “Basic Search” page. From the low exit rates on these pages, we can tell that although visitors spent much shorter time on the rest, they did tend to exit the library website after visiting these pages.

The page for student employments was counted in the top 10 popular pages which means that, except for library resources, visitors were mostly interested in the student employment information. A certain amount of people could have bookmarked this page because the page received 1,775 entrance visits.

### Discussion

This shows that in 2012, there were two main reasons people came to the website and they were to find things and to get jobs. This combined with the knowledge that library hours were searched for most often directly, might mean that most people are either looking to study here, trying to find resources, or find a job.

### Content – Content Drilldown

The feature “Content Drilldown” provides more details about each page. It is important to note that in Table 16, the slash at the end of page path represents the folder containing sub-pages and that the statistics are about all page levels belonging to the path.

According to Table 16, the library homepage received the most pageviews but it also received a high bounce rate and exit rate. The library catalog category (/F/) received the second most pageviews and the most unique pageviews and occupied the second position in the table. The catalog category did not keep visitors very long on the pages but it also received a low bounce rate and exit rate which means that patrons did not tend to leave the catalog category. The catalog page itself (/F) stayed at the third place receiving 283,098 pageviews and it kept library patrons to spend longest time on the page which was 16 minutes and 7 seconds.

In Table 16, we can see that library resources pages were the most popular pages including the catalog, articles, databases, and document delivery received the most usage in total. The library regular homepage and the mobile category also received a considerable amount of usage. Information pages that introduce the library such as “/about/” and “/services/” were also important and they received quite a lot of visits.

| Page path level 1 | Pageviews | Unique Pageviews | Avg. Time on Page | Bounce Rate | % Exit |
|-------------------|-----------|------------------|-------------------|-------------|--------|
| /                 | 1,525,133 | 1,070,815        | 00:04:48          | 68.62%      | 60.96% |
| /F/               | 1,304,033 | 1,111,038        | 00:01:18          | 28.43%      | 8.68%  |
| /F                | 283,098   | 70,683           | 00:16:07          | 57.55%      | 20.85% |
| /about/           | 175,059   | 82,553           | 00:01:19          | 68.81%      | 28.74% |
| /services/        | 124,708   | 90,186           | 00:01:44          | 60.37%      | 33.00% |
| /articles.php     | 107,485   | 59,227           | 00:02:52          | 60.69%      | 36.96% |
| /databases.php    | 81,594    | 56,878           | 00:03:18          | 59.99%      | 50.56% |
| /m/               | 42,821    | 34,098           | 00:01:04          | 55.95%      | 51.34% |
| /index.php        | 41,845    | 25,256           | 00:01:54          | 42.86%      | 29.23% |
| /docdel/          | 39,804    | 29,223           | 00:04:34          | 74.64%      | 59.31% |

Table 16

## Content – Landing Page

Most visits, either by referral or direct traffics, entered the library website by landing the library homepage and more than half of them were new visits. Visits landing at the catalog page spent the longest time which is quite reasonable because the catalog page is the main library book resources interface.

| Landing Page   | Visits    | Pages/Visit | Avg. Visit Duration | % New Visits | Bounce Rate |
|--|-----------|-------------|---------------------|--------------|-------------|
| /  | 1,060,027 | 1.84        | 00:03:17            | 55.99%       | 68.62%      |
| /F   | 43,873    | 4.45        | 00:22:53            | 34.41%       | 57.55%      |
| /m/  | 30,374    | 2.12        | 00:01:14            | 49.60%       | 55.87%      |
| /databases.php   | 18,496    | 2.18        | 00:02:28            | 28.74%       | 59.99%      |
| /about/facility/hours.php                                    | 11,628    | 1.48        | 00:00:43            | 40.67%       | 81.06%      |
| /docdel/   | 9,800     | 1.47        | 00:02:15            | 14.26%       | 74.64%      |
| /F?func=file&file_name=find-b&local_base=TTUCRS              | 7,065     | 1.38        | 00:01:38            | 41.57%       | 79.12%      |
| /about/employment/employment.php                             | 6,831     | 5.09        | 00:04:28            | 56.57%       | 50.37%      |
| /F/?func=BOR-LOGIN&func_option=login-bor&file_name=login-bor | 6,406     | 1.25        | 00:00:59            | 44.60%       | 83.92%      |
| /index.php   | 5,224     | 3.06        | 00:03:48            | 30.86%       | 42.86%      |

Table 17

There were also quite a lot of visits landing at the page of library operating hours. It can be well explained because “library hours” related keywords were used widely by patrons in search engines. Clicking into the hour page we found that more than 90% of traffics were referred by Google. Visitors did not tend to stay on this page long, however, and this could be interpreted that people tended to leave the page as soon as they know operating hours.

## Content – Exit Page

Table 18 shows the top pages from where visitors exit the website completely. The significance of exits varies according to each page. For example, it should be very common for visitors to exit the website after getting what they were seeking for.

The highest exit rate is the last one in the table with 75.39%, which should be a functioning intermediate page of the process of patrons searching books in the library catalog. The page that had the second highest exit rate is the mobile category, which was 73.33%. We are not able to assume reasons why mobile users tended to exit the library application but it is also difficult for mobile users to explore library resources such as a book or an article and read them or download them on their mobile devices.



| Exit Page                                       | Exits   | Pageviews | % Exit |
|---|---------|-----------|--------|
| /   | 913,849 | 1,337,587 | 68.32% |
| /F  | 61,861  | 525,784   | 11.77% |
| /articles.php                                   | 42,049  | 157,484   | 26.70% |
| /databases.php                                  | 40,468  | 120,478   | 33.59% |
| /docdel/  | 27,356  | 66,951    | 40.86% |
| /m/   | 20,844  | 28,424    | 73.33% |
| /about/facility/hours.php                       | 19,411  | 38,327    | 50.65% |
| /ejournals.php                                  | 14,026  | 45,806    | 30.62% |
| /index.php                                      | 12,257  | 56,352    | 21.75% |
| /F?func=file&file_name=find-b&local_base=TTUCRS | 8,169   | 10,835    | 75.39% |

Table 18

## Content – Site Speed

The average load time for the whole site was 1.56 seconds. Internet Explorer needed the fewest time, 1.27 seconds, to complete content loading. Firefox was the second fastest and it took 1.75 seconds, which was still acceptable.

However, it seemed that Safari was not functioning normally with the library website. It took 7.05 seconds on average for Safari browser to complete the content loading.

| Browser            | Avg. Page Load Time (sec) |
|--------------------|---------------------------|
| [Average]          | 1.56                      |
| Internet Explorer  | 1.27                      |
| Firefox            | 1.75                      |
| Android Browser    | 2.50                      |
| Chrome             | 2.57                      |
| Mozilla Compatible | 5.42                      |
| Safari             | 7.05                      |

Table 19

| Page   | Avg. Page Load Time (sec) |
|--|---------------------------|
| [Average]                                      | 1.56                      |
| /  | 1.89                      |
| /F   | 1.39                      |
| [other]  | 1.03                      |
| /articles.php                                  | 0.92                      |
| /databases.php                                 | 2.68                      |
| /index.php                                     | 0.85                      |
| /docdel/                                       | 1.11                      |
| /m/  | 0.76                      |
| /ejournals.php                                 | 0.80                      |
| /about/employment/application/sa_positions.php | 0.84                      |

Table 20

| Country/Territory | Avg. Page Load Time (sec) |
|-------------------|---------------------------|
| [Average]         | 1.56                      |
| Columbia          | 1.14                      |
| United States     | 1.61                      |
| Norway            | 2.32                      |
| Netherlands       | 4.07                      |
| Mexico            | 4.30                      |
| Saudi Arabia      | 5.27                      |
| Sri Lanka         | 8.60                      |
| France            | 8.96                      |
| Pakistan          | 9.93                      |

Table 21

In Table 20, we can see that the mobile site only needed 0.76 seconds to finish loading, while the database page needed 2.68 seconds, even longer than the content-rich library homepage which needed 1.89 seconds.

As for the site speed measured by countries and territories only 9 countries had data available which were all included in Table 21. It is interesting to see that the fastest Internet speed to load our library website in the world was not from the country where the website is based. Instead, it was Columbia, which needed 1.14 seconds on average. Internet service in the United States required 1.61 seconds to complete the site loading. People from Sri Lanka and France needed to wait more than 8 seconds on average to load the page while Pakistani needed to wait almost 10 seconds which was also the longest waiting time.

### ***Recommendation: Safari***

It is recommended that we investigate how to make the website work better with Safari.

## **Works Cited**

- Batra, A. (2008). *Typical bounce rates: Survey results*. Retrieved July 12, 2013, from <http://webanalysis.blogspot.com/2008/03/typical-bounce-rates-survey-results.html/>
- Breeding, M. (2008). An analytical approach to assessing the effectiveness of web-based resources. *Computers in Libraries*, 28(1), 20-22.
- Clifton, B. (2012). *Advanced web metrics with Google Analytics*. (3rd ed.). Indianapolis, IN: John Wiley & Sons, Inc.
- Clow, D. (2009). *Google Analytics on library websites*. Retrieved July 12, 2013, from <http://douglow.wordpress.com/2009/01/14/google-analytics-on-library-websites/>
- Fang, W. (2007). Using Google Analytics for improving library website content and design: A case study. *Library Philosophy & Practice*, 9(3), 1-17.
- Kaushik, A. (2007). *Web analytics: An hour a day*. Indianapolis, IN: Wiley Publishing.
- Kaushik, A. (2010). *Web analytics 2.0*. Indianapolis, IN: Wiley Publishing.
- Marek, K. (2011a). Chapter 1: Web analytics overview. *Library Technology Reports*, 47(5), 5-10.
- Marek, K. (2011b). Chapter 3: Installing and configuring Google Analytics. *Library Technology Reports*, 47(5), 17-25.
- Marek, K. (2011c). Chapter 4: Reporting and analysis. *Library Technology Reports*, 47(5), 26-32.
- Marek, K. (2011d). Chapter 5: Case studies. *Library Technology Reports*, 47(5), 33-54.

Morgan, J. (2010). *Google Analytics for Libraries*. Retrieved July 12, 2013, from <http://josephsandersmorgan.com/home/web-analytics/>

Nielsen, J. (2006, April 17). *F-Shaped Pattern For Reading Web Content*. Retrieved July 11, 2013, from <http://www.nngroup.com/articles/f-shaped-pattern-reading-web-content/>

Turner, S. J. (2010). Web statistics 2.0: Using Google Analytics to measure library website effectiveness. *Technical Services Quarterly*, 27, 261-278.

## Appendix A: Glossary

There are three main categories in Google Analytics that can help us gain a thorough interpretation on the statistics on library websites, which includes Audience, Traffic Sources, and Content. Under each category there are various metrics this report will be using, which are defined as below.

- Audience
  - Demographics
    - Language: Provides information about visitor behavior (site usage) distributed by language, which is determined by the language settings of a visitor's browser.
    - Location: Visualizes other metrics (e.g. visits) by geographic region, provides a direct view of geographic distribution, which is derived by IP addresses.
  - Behavior
    - New vs Returning: Provides information about behavior (site usage) for new (first-time) visitors and returning visitors.
    - Frequency & Recency: Provides statistics about the number of visits and pageviews, how frequently visitors return, and how recently (in days) those visits have occurred
    - Engagement: Provides statistics about the number of visits and pageviews, how much time (in seconds) visitors spent on the site, and how many pages they viewed per visit.
  - Technology
    - Browser & OS: Provides a breakdown of site visitors by browser, operating system, screen resolution, and screen colors.
    - Network: Provides information about visitor behavior based on ISP networks visitors use.
  - Mobile
    - Overview: Provides information about visitor behavior based on whether or not visitors use mobile devices
    - Devices: Provides information about visitor behavior based on the mobile devices visitors use and the region from which their visits originate, which determined by IP addresses.
- Traffic Sources
  - Overview: Provides overview about how visitors visit the website by showing ratios of types of traffic sources.

- Sources
  - All Traffic: Provides information of how (direct landing or by referral) visitors land the website and details about through which sources visitors are referred to the site.
  - Direct: Provides information about what URLs on the website are the most popular destinations for direct traffic.
  - Referrals: Provides information about which domains (and pages in those domains) are referring traffic to the site, how much traffic they are referring, which landing pages are the most popular referral destinations.
  - Search Overview: Provides information about visitor behavior based on search engine traffic to the site.
  - Search Organic: Provides information about visitor behavior based on organic search-engine traffic to the site.
- Search Engine Optimization (Not enabled)
  - Queries: (Not enabled)
  - Landing Pages: (Not enabled)
  - Geographical Summary: (Not enabled)
- Social
  - Overview: Provides a glance at how much conversion value is generated from social channels. Also provides a general overview of how much traffics are directed from social channels.
  - Network Referrals: Shows engagement metrics (pageviews, average visits duration, pages/visit) for traffic from each social network.
  - Data Hub Activity: Shows how people are talking about and engaging with the site content on social networks. Provides information about the most recent URLs people shared, how and where they shared (e.g. Google+), and what they said.
  - Landing Pages: Shows engagement metrics (pageviews, average visit duration, pages/visit) for each URL.
  - Trackbacks: Shows which websites are linking to our site content and in which context.
  - Conversions: (Not enabled)
  - Plugins: (Not enabled)
- Advertising (Not enabled)
  - AdWords: (Not enabled)
- Content
  - Overview: Provides an at-a-glance overview of the key pageview metrics for the site, including pageviews, unique pageviews, average time on page, bounce rate, and exit rate.
  - Site Content
    - All Pages: Provides statistics information about key metrics for all pages of the site.
    - Content Drilldown: Provides information about key metrics for pages and site folders
    - Landing Pages: Provides number of entrances for those pages that were the first page in the visit.

- Exit Pages: Provides number of exits for those pages that were the last page in the visit.
- Site Speed
  - Overview: Provides average domain lookup time, average page download time, average page load time, and other metrics.
  - Page Timings: Provide information about average page load time, page load sample, pageviews, and other visualized metrics such as distribution and map overlay for pages of the site.
  - User Timings: (Not enabled)
- Site Search (Not enabled)
  - Overview: (Not enabled)
  - Usage: (Not enabled)
  - Search Terms: (Not enabled)
  - Pages: (Not enabled)
- Events (Not enabled)
  - Overview: (Not enabled)
  - Top Events: (Not enabled)
  - Pages: (Not enabled)
  - Events Flow: (Not enabled)
- AdSense (Not enabled)
  - Overview (Not enabled)
  - AdSense Pages (Not enabled)
  - AdSense Referrers (Not enabled)
- In-Page Analytics: Shows how users interact with the web pages. Provides percentage of total clicks that occurred on the links.