Loreen Henry

EPPS 6356 Data Visualization (Fall 2021)

Dr. Karl Ho

Data Visualization Project Proposal: Library Programming During a Pandemic

September 8, 2021

Research Question

What effect did the COVID-19 pandemic have on Collin County public libraries' decisions to engage in providing modified services and virtual programming and how will such refocusing support libraries in strategic planning and future sustainability?

Hypotheses

H1: Refocusing library programming and services had a positive change on user engagement.

H2: The number of virtual programs and shift in services negatively influenced library budgeting and financial support.

H3: More effective measures and strategies are needed to improve programming and services for public libraries to be sustainable in the post-pandemic.

Introduction

The recent COVID-19 pandemic of spring 2020 posed many challenges to public libraries and the services they provide. Ongoing community difficulties called on them as nonprofit institutions to fill gaps posed by inequities in technology infrastructure and availability of books and materials. As nonprofits serving diverse segments, equity and community engagement were fundamental precepts for libraries during this time.

Public libraries in the United States are a specific type of nonprofit under the umbrella of state, municipal, county, and city governments. There are over 92,000 libraries in the United States, of which 16,000 are public libraries. They all have significant community impact and are important nonprofit partners in the advancement of civic learning and equitable access to

services and citizen literacy. The U. S. Census (2019) reported that over 94 percent of Americans lived near public library service areas.

Research Statement

Public libraries have extensive population reach in the United States and are often important nonprofit partners in the advancement of community learning and equitable access to services and technology. The U. S. Census Bureau (2017) reported that over 94 percent of the American population lived in a public library service area. Libraries have always been important in underserved communities. For libraries, community engagement was a vital component of the COVID-19 lockdown.

There are 77 cities and towns in Collin County and but only sixteen public libraries. Of these only public libraries that are considered nonprofit entities will be used for this study. Excluded will be those libraries that are part of the Collin College campuses and the University of Texas at Dallas's campuses. While these libraries offer limited services to all residents of Texas, there are restrictions on lending and program attendance for non-affiliates. In the category of non-affiliates are residents of the county who are not enrolled or employed by the colleges or universities. Also excluded will be the Collin County Law Library because it is under a different category being a special, legal library that offers some of its services for a fee.

During the pandemic period, public libraries partnered with community colleges and research universities to facilitate learning and assist students who were learning from home during the time when the pandemic caused schools to be closed temporarily. Adults, also eager to learn new skills, were taking online courses and libraries collaborated to offer seamless access to textbooks through interlibrary loan services or expanding eBook access to library users within

counties. For example, Houston Public Library offered virtual library membership to all Texas residents, creating an eLibrary Card service that gave access to electronic resources such as databases, streaming media, the Overdrive audio books and eBook portal and virtual programs. In North Texas the TexShare program, a consortia lending funded and supported by the State Library of Texas, saw record numbers in enrollment as citizens looked for ways to increase access to materials that would enable them to learn from home while supporting their children's school related needs.

Another service need that public libraries fulfilled was access to technology. A large majority of local and rural households do not have broadband internet connection at home. To help those who did not have access to the Wi-Fi or internet service necessary for learning and leisure, in the early days of the pandemic public libraries extended the reach of their access to lobbies and library parking lots. They also purchased and checked out hundreds of hot-spots, enabling people to have access to technology in their homes. While public libraries launched many virtual programs and borrowed service continuity models from private corporations by incorporating such services as curbside delivery or on-demand lending, these were simply stopgaps. The pandemic brought to light the many necessary infrastructure needs that must be addressed by public policy. Public libraries assist communities by providing materials, programs, services, and access to technology for all citizens, but especially for those populations who are least served:

- Low Income
- People with Disabilities
- Youth
- Populations with high residential mobility
- Rural areas

Libraries serve their communities in multiple ways. Some libraries provide specialized programs focused on the specific needs of communities while others extend core library services to ensure they are accessible to all community residents. Others invest in technology infrastructure and staff development to prepare for the unplanned, such as a pandemic. Some do not provide any specialized programs or services but make many general material resources available. Throughout the North Dallas area there was significant imbalance in terms of library services which was similarly representative for other states. A review of the literature and the data is needed to better understand this unevenness, and how local governments can address this. Libraries, as nonprofit institutions, will always stand ready to fill gaps left by inequities but need funding.

Data

Data will be used from the Institute of Museum and Library Services (IMLS) https://www.imls.gov/search-compare/ and the Texas State Library & Archives Commission (TSL) https://www.tsl.texas.gov/ldn/statistics to investigate the ways in which public libraries in the North Texas area modified services and programming during the COVID-19 pandemic months from March 2020 to March 2021. Library users will be the variable through their engagement with library services and materials. The study will examine public library services within the DFW region focusing on public libraries within Collin, and county.

Institute of Museum and Library Services: https://www.imls.gov/research-evaluation/data-collection/public-libraries-survey.

Texas State Library and Archives: Public Library Accreditation and Statistics https://www.tsl.texas.gov/ldn/statistics

Method

The study will examine Frisco and Allen public libraries. The independent variable will be library users; measuring their engagement with programming; and the dependent variables will be services and funding through their engagement with library services and materials. The study will use quantitative methods to select those areas related to service and collection development financials; population demography; library services, collections, and programming; to analyze for trends related to strategic management and sustainable practices.

T-tests will be used to compare two or more variables such as library hours, funding, visits by library users per month (often used to judge library user engagement with borrowing, program attendance, and type of activities during visits. Additionally, t-tests could be used to test differences between two groups of users such as children and young adults (YA's)or children and adults' attendance to library programs or use of library services: often measures of library engagement. Such comparisons would show variance, whether the differences are significant, is there the presence of skewness or are the difference significant enough compared to similar sample size.

Visualization Design

This research project will use data from the Institute of Museum and Library Services (IMLS) and the Texas State Library and Archives: Public Library Accreditation and Statistics to investigate the ways in which two public libraries in the North Texas area, specifically Collin County, modified book lending and programming during the COVID-19 pandemic months from March 2020 to March 2021. Library users will be the variable through their engagement with library services and materials. The study will examine public library services within the DFW

region and will examine public libraries for the study by extracting the information using the two

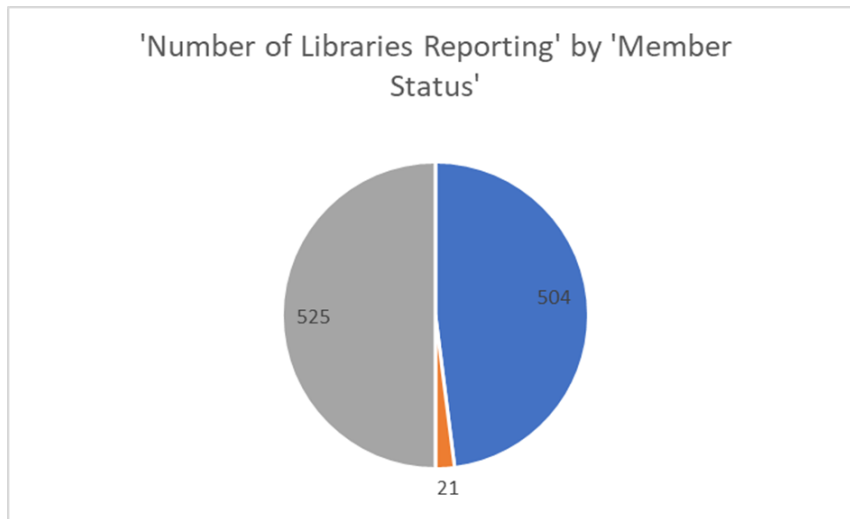local libraries.

Analysis and Visualization

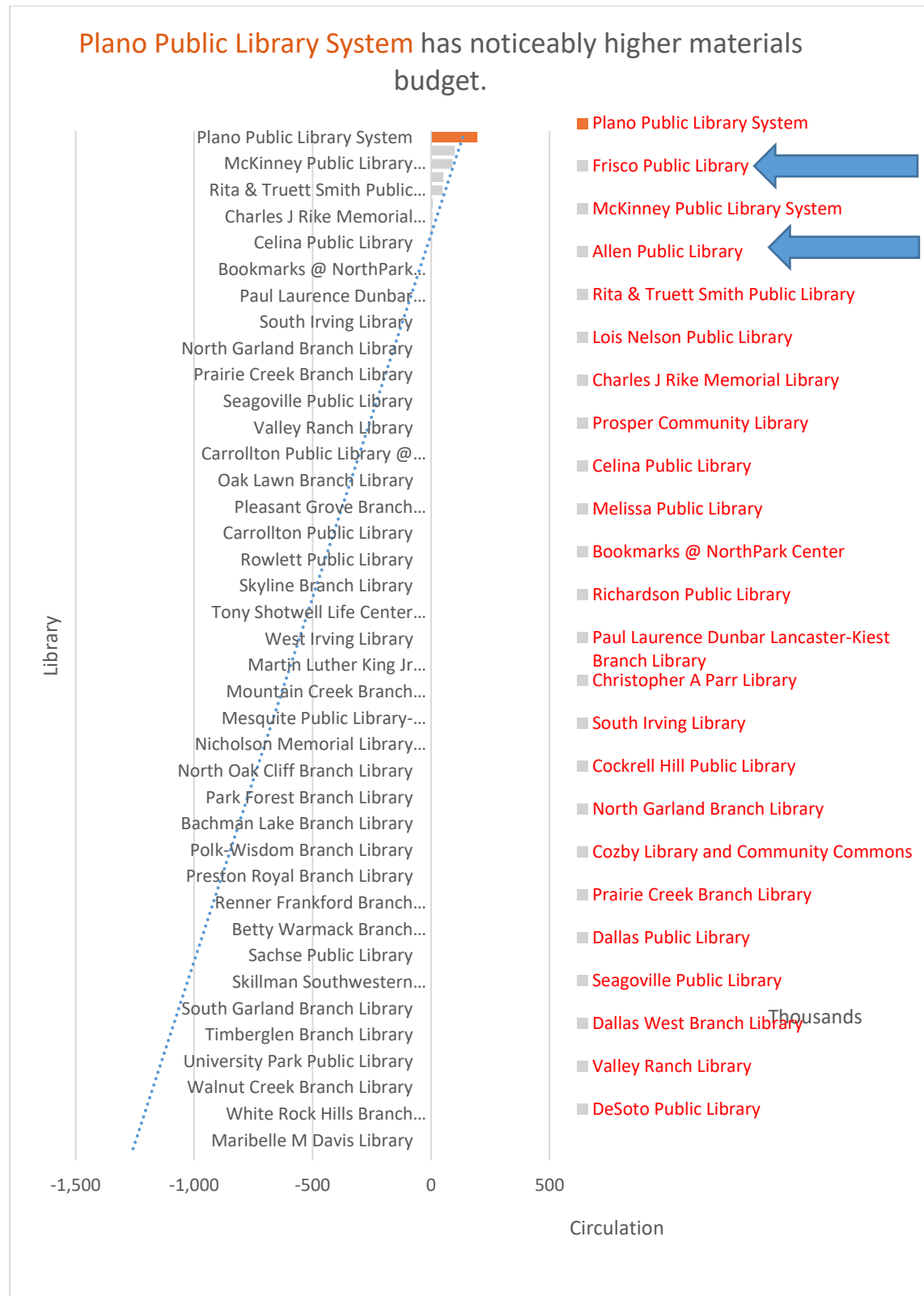**Table 1. Number of Texas public libraries reporting by type of member.**

Table 2. North Texas public libraries by budget.

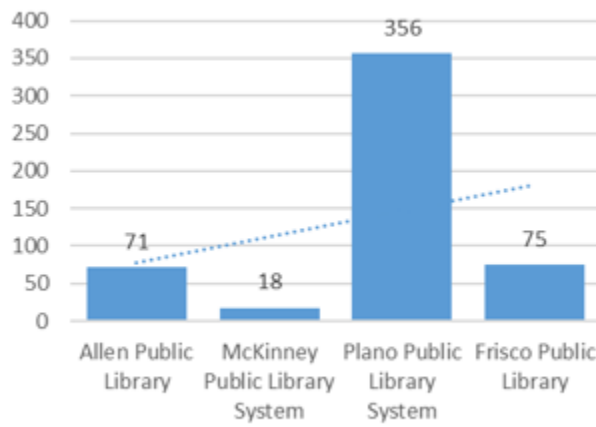## Public Libraries by Monthly Hours Open During the Pandemic

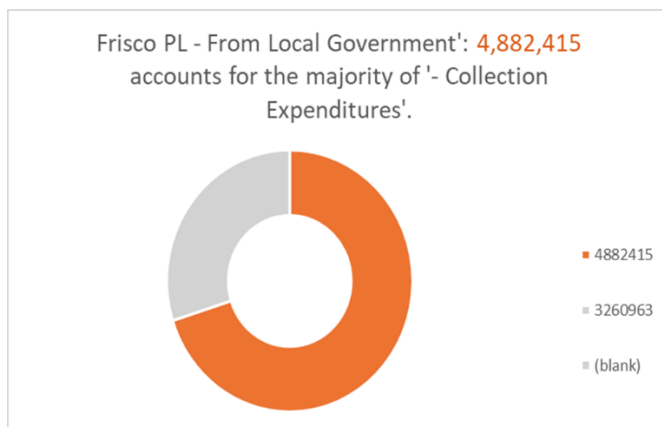**Table 3. Public Libraries by Monthly Hours Open During the Pandemic**
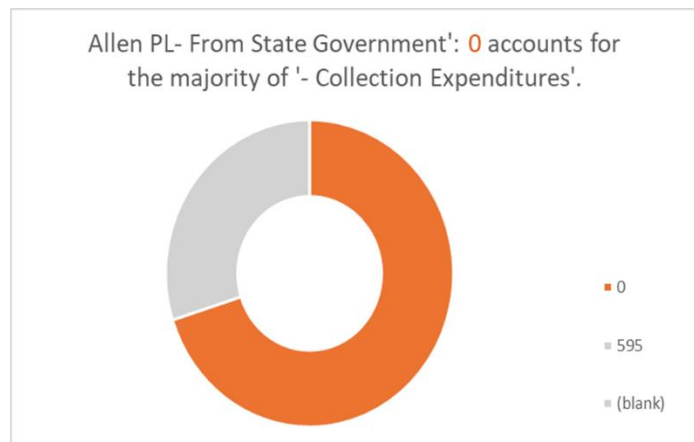

Table 4. Frisco Public Library Municipal Budget

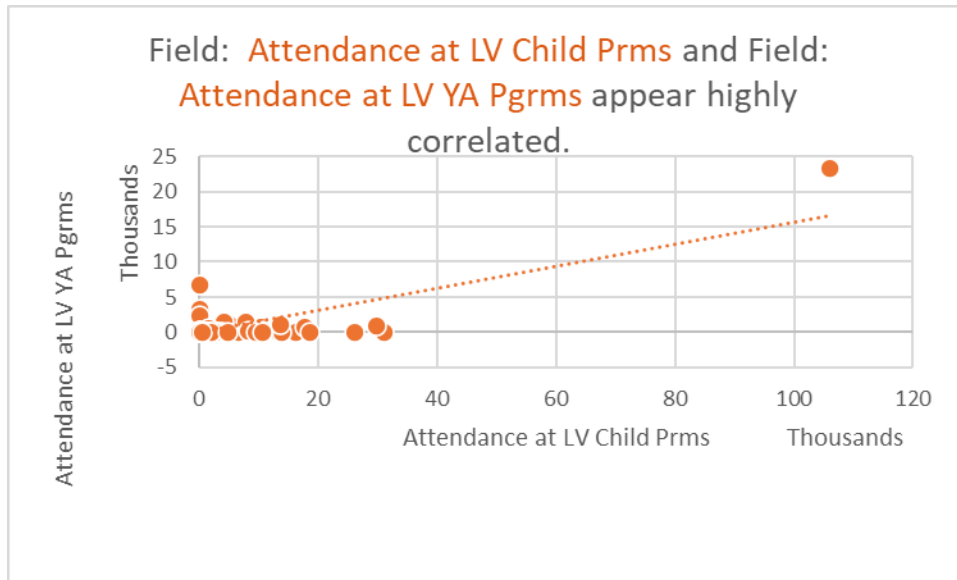**Table 5. Allen Public Library Municipal Budget**

Table 6. Attendance to in-person children's and young adult programs.
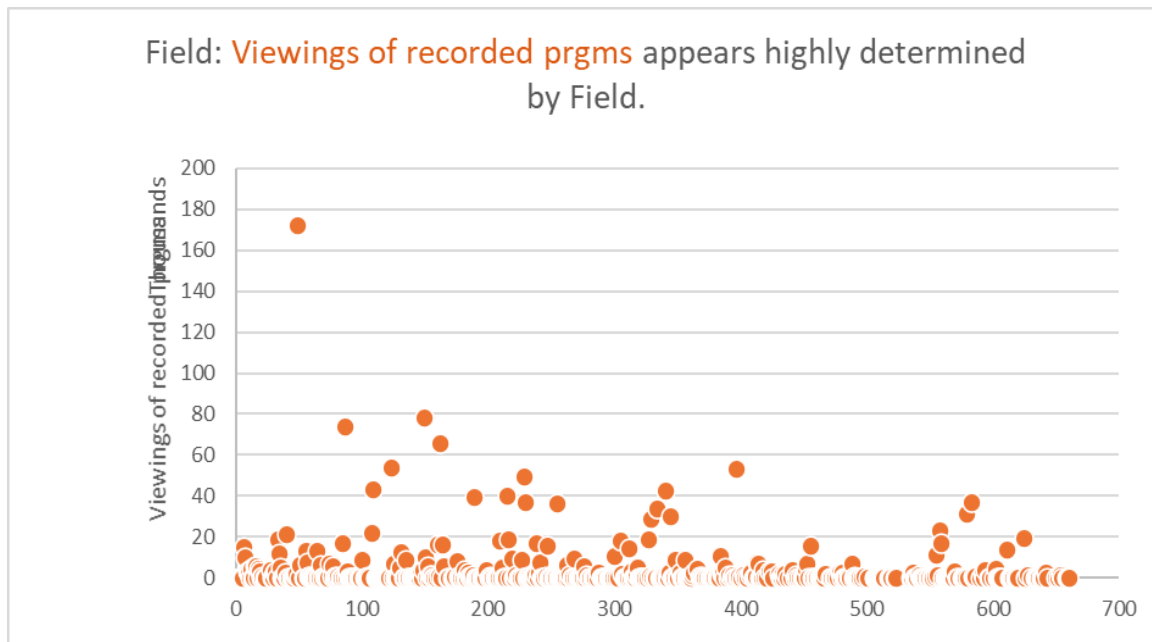

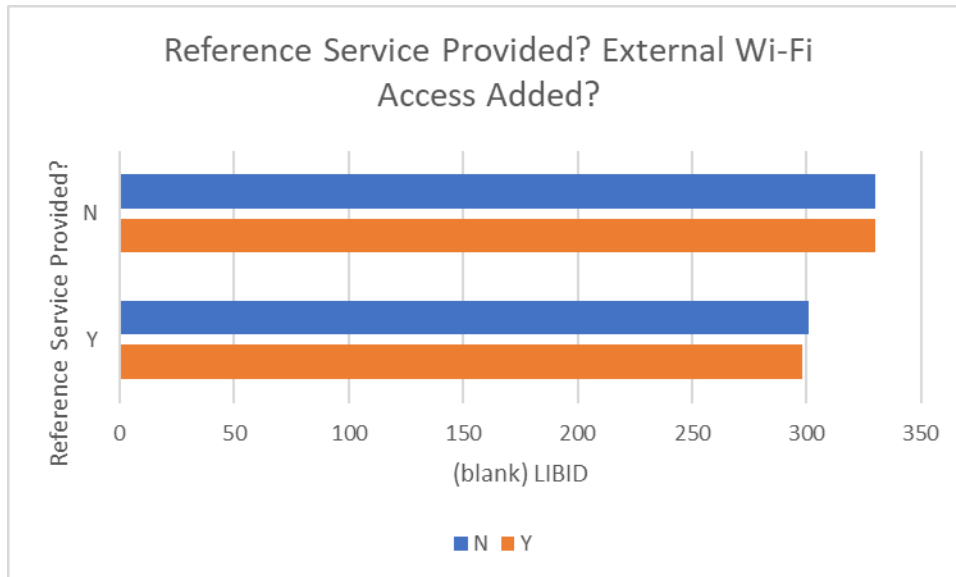**Table 7. Total viewing of library recorded programs.**

Table 8. Use of reference assistance and WIFI.

These data show that both Allen and Frisco Public Libraries offered many kinds of services and programs during the pandemic from March 2020 to March 2021 when North Dallas public libraries (Table 2) went back to begin open to the public. While many public libraries have not gone back to being fully open and continue to have abridged hours, many people in the public have been happy with this familiar service being available again.

Libraries serve communities in multiple ways. They provide specialized programs focused on the specific needs of communities while others extend core library services to ensure they are accessible to all community residents. Others invest in technology infrastructure and staff development to prepare for the unplanned, such as a pandemic. Some do not provide any specialized programs or services but make many general material resources available. Throughout the North Dallas area there was significant imbalance in terms of library services which was similarly representative for other states.

Bibliography

Abumandour, El-Shaimaa Talaat. 2020 "Public Libraries' Role in Supporting e-Learning and Spreading Lifelong Education: A Case Study." *Journal of Research in Innovative Teaching & Learning* 14 (2): 178–217. doi:10.1108/JRIT-06-2019-0063.

Ayre, Lori. 2020. "What More Can We Do to Address Broadband Inequity and Digital Poverty?" *Information Technology & Libraries* 39 (3): 1–6. doi:10.6017/ITAL.V39I3.12619.

Chase, Stephanie. 2021. "Innovative Lessons from Our Small and Rural Public Libraries." *Journal of Library Administration* 61 (2): 237–243. doi:10.1080/01930826.2020.1853473.

Fruehan, Parker, and Diana Hellyar. 2021. "Expanding and Improving Our Library's Virtual Chat Service: Discovering Best Practices When Demand Increases." *Information Technology & Libraries* 40 (3): 1–9. doi:10.6017/ital. v40i3.13117.
Institute of Museum and Library Services. 2020. "Public Libraries Data." September 6, 2021, https://www.imls.gov/research-evaluation/data-collection/public-libraries-survey/.

Lenstra, Noah, Fatih Oguz, and Courtnay S. Duvall. 2020. "Library Services to an Aging Population: A Nation-Wide Study in the United States." *Journal of Librarianship and Information Science* 52 (3): 738–748. doi:10.1177/0961000619871596.

Lenstra, Noah, and Christine D'Arpa. 2021. "Reimagining Public Library Programming During a Pandemic." *IFLA Journal* (June): 1 -6. https://doi:10.1177/03400352211023076.

Mannion, Caitlin MacKenzie. 2021 "From Face-to-face to Flipped: Strategic Adaptation of Library Instruction During a Pandemic." *Public Services Quarterly* 17 (2): 73-86. doi:10.1080/15228959.2020.1859428.

National Foundation on the Arts and the Humanities. 2020. Public Libraries in the U.S.: FY2017. Volume I. September 6, 2021. https://statistical.proquest.com/statisticalinsight/result/pqpresultpage.previewtitle?docType=PQSI&titleUri=%2Fcontent%2F2020%2F9564-21.xml&accountid=7120.

Collin County Public Library. 2021. http://www.usa.com/collin-county-tx-public-library.htm#:~:text=USA.com%20%2F%20Texas%20%2F%20Collin%20County%20%2F%20Public,or%20near%20Collin%20County.%20List%20View%20Map%20View. (November 10, 2021).