Maria E. Chiochios. The Tweets Heard Around the World: Ferguson Municipal Public Library's Twitter Use Around the 2014 Civil Unrest and its Role in Supporting Community Disaster Resilience. A Master's Paper for the M.S. in L.S degree. April 2016. 102 pages. Advisor: Ericka Patillo

In 2014, Ferguson, Missouri experienced multiple waves of civil unrest in response to the fatal shooting of Michael Brown and the grand jury decision not to indict Darren Wilson, the police officer responsible for the shooting. During this time, the Ferguson Municipal Public Library served a crucial role in responding to this community crisis. The actions of this library supported Ferguson's community resilience by limiting the impact and helping residents respond, recover, and heal from the civil unrest. A content analysis of the library's tweets reveals how the library used Twitter to communicate with the public and support its resilience around both waves of civil unrest. This case study highlights the importance of library disaster planning, roles libraries can play in helping communities plan, respond, and recover from crises, and explores how a library can employ social media to communicate with patrons and support community resilience.

Headings:

       Content analysis

       Disasters

       Libraries and mass media

       Library-community relations

       Public libraries -- Case studies

       Public libraries -- Missouri

THE TWEETS HEARD AROUND THE WORLD: FERGUSON MUNICIPAL PUBLIC
LIBRARY'S TWITTER USE AROUND THE 2014 CIVIL UNREST AND ITS ROLE
IN SUPPORTING COMMUNITY DISASTER RESILIENCE

by
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**CHAPTER ONE**

INTRODUCTION

In 2014, the Ferguson Municipal Public Library and the Ferguson, Missouri community experienced an emergency disaster situation that grabbed national attention in the United States. This community experienced a tragic event when Darren Wilson, a 28-year-old white police officer, fatally shot Michael Brown, an unarmed 18-year-old black man. As a result of this shooting, multiple waves of peaceful protests and violent riots ensued, a state of emergency was declared, and the National Guard came in to help restore order (Castillo & Ford, 2014; Lowery et al., 2015). During this time, the Ferguson Municipal Public Library served a crucial role in responding to this community crisis. The library kept its doors open, acted as a safe haven for residents, provided important emergency services, and supported residents and small businesses with coping and recovering from the situation (Berry III, 2015). For its efforts during and after both waves of civil unrest, the library received many monetary, book, and equipment donations, as well as awards, including the 2015 Gale/Library Journal Library of the Year Award, a commendation from the American Library Association, and the Local Government Social Media Superstar Award from the Emerging Local Government Leaders organization (Berry III, 2015; Nickless, 2015; Wyatt, 2015).

As this case illustrates, public libraries and librarians serve as strong community anchors in times of crisis that provide valuable services, programming, and space to address unique community needs (American Library Association, 2015). The federal

government formerly recognizes libraries as safe havens and important community

organizations during emergencies, such as the civil unrest in Ferguson. The Federal

Emergency Management Agency (FEMA) and the Robert T. Stafford Disaster Relief and

Emergency Assistance Act make libraries eligible for temporary relocation assistance

following a major disaster or emergency (Pub. L. 93-288, as amended, 42 U.S.C. 5121 et

seq.). This piece of legislation describes an emergency as

> "any occasion or instance for which . . . Federal assistance is needed to
> supplement state and local efforts and capabilities to save lives and to protect
> property and public health and safety, or to lessen or avert the threat of a
> catastrophe in any part of the United States." (Robert T. Stafford Disaster Relief
> and Emergency Assistance Act)

The Stafford Act also defines a major disaster as any natural catastrophe, fire, flood, or

explosion regardless of the cause anywhere in the United States, with which the

magnitude and severity of the event causes sufficient damage to warrant disaster relief

funds be made available that supplement state and local activities to alleviate damage,

loss, hardship, or suffering (Robert T. Stafford Disaster Relief and Emergency Assistance

Act). The underlying goal of this legislation is to support a community's disaster

resilience. The concept of community resilience is defined as "the ability to anticipate

risk, limit impact, and bounce back rapidly through survival, adaptability, evolution, and

growth in the face of turbulent change" (Community and Regional Resilience Institute,

2015). To promote disaster resilience, communities need to prepare for emergencies and

disasters. Organizations within communities, like libraries, should take preventative

measures to minimize an emergency's impact on people's lives, property, and the

environment. A community's organizations should have plans for quickly restoring

essential services, reopening businesses, and returning citizens back to their every day lives (Community and Regional Resilience Institute, 2015).

While not specifically named in the Stafford Act, the impact from certain types of civil unrest activities can create an environment that falls within the definition of an emergency situation requiring federal assistance. Civil unrest, also known by other names such as civil disobedience, civil disorder, civil disturbance, civil strife, or social unrest, signifies a display of collective discontent or outrage by one or more groups against the status quo typically around environmental, technological, social, moral, political, economic, or disaster issues (Black, 2014; Gans, 2004; Maurantonio, 2009). Acts of civil unrest may involve violence, but it is not a necessity. Civil unrest can take form as, but is not limited to, demonstrations, protests, riots, strikes, parades, sit-ins, sabotage, and other forms of obstructions, destruction, and crimes. The intention behind such acts is usually to be a demonstration to the public or the government, but sometimes can escalate into general chaos and involve bringing in law enforcement officials to quiet protests, subdue rioters, and restore order (Black, 2014; Maurantonio, 2009). This breakdown in an orderly society may significantly disrupt the lives of citizens not directly involved in the civil unrest, such as preventing these people from being able to work, enjoy recreation, obtain necessities, or utilize local infrastructure (Vale & Campanella, 2005).

The events in Ferguson are one example of a long history of different types of civil unrest in the United States that can be attributed to various causes, like racial tensions and state-supported physical and structural violence in this specific case (Braha, 2012; Galtung, 1969; McAdam, 1983; Schurink, 1992). As Schurink (1992) states: "the civil unrest the state attempts to curb may in the first place be the result of violent actions

of the state, be they physical or structural." This statement applies to the situation in Ferguson during the end of 2014. The physical violence in the use of force on Michael Brown and the militarized response of the police combined with the structural violence in the racial tensions between law enforcement officers and people of color in Ferguson sparked a series of acts of civil unrest requiring federal emergency assistance and calling the Ferguson Municipal Public Library to action to support Ferguson's community resilience (Bello & Alcindor, 2014; Berry III, 2015; Civil Rights Division, 2015).

The Ferguson Municipal Public Library is one of many examples that exist of libraries taking on important roles in disaster management, recovery, and resilience. However, the current focus of emergency preparations in libraries is on protecting the library's collections, the library building, and maintaining regular services (McKnight & Zach, 2007; Zach, 2011). Even though this is the main focus of disaster planning in libraries, the Heritage Health Index 2004 Survey[1] found that around 78% of libraries do not have a written emergency plan for its collections that also includes staff members trained to carry out that plan (Heritage Preservation, 2004). Many librarians willingly and eagerly collaborate with and support local emergency response teams during a crisis. However, formal community disaster planning rarely includes libraries even though librarians possess skills and qualities that local officials envision as potentially important during a disaster (Bishop & Veil, 2013; Featherstone et al. 2008; Malizia et al., 2012; Zach, 2011). Furthermore, librarians do not receive much, if any, specific training on what to do in a crisis, which contributes to this lack of inclusion in community disaster planning. Libraries need to simultaneously advocate for their support services more broadly to emergency responders, as well as receive more training and guidance on ways

they can participate in community disaster planning, response, and recovery efforts

(Malizia et al., 2012; Zach & McKnight, 2010).

Cases like Ferguson Municipal Public Library demonstrate that public libraries

can take on a much broader role in community emergencies, such as civil unrest. Strictly

speaking, a public library is defined as

> "an entity that is *established under state enabling laws or regulators to serve a community, district, or region*, and that provides at least the following: 1) an organized collection of printed or other library materials, or a combination thereof; 2) paid staff; 3) an established schedule in which services of the staff are available to the public; 4) the facilities necessary to support such a collection, staff, and schedule; and 5) is supported in whole or in part with public funds." (American Library Association Allied Professional Association)

However, some librarians describe a more aspirational view of what a public library is

about, such as this library branch manager: "the library's mission is providing shelter and

inspiration for children and adults looking to build a better future" (May & Lerner, 2015).

Taking on this aspirational view of a public library and choosing to incorporate that into a

broader emergency management role is not an easy decision, as Ferguson Municipal

Public Library director Scott Bonner recognizes: "I think libraries step up all the time.

There is always tension between do you open to serve your public or do you play it safe"

(Berry III, 2015). These considerations are unique aspects that come into play for public

libraries dealing with civil unrest rather than a natural disaster. Unfortunately, much of

the literature on public libraries and disaster management focuses on library roles during

natural disasters exclusively. For these reasons, it is important to study the Ferguson

Municipal Public Library's role during the 2014 waves of civil unrest further.

Making the decision to broaden a library's emergency role by opening the

library's doors and serving the public can be easier if a library has a disaster plan or

policy with trained staff in place. This ensures that a library is not unprotected should a disaster strike and a process is in place for responding to both community and internal administrative issues. In an Ask Me Anything interview on reddit, Bonner addressed the impact of not having a civil unrest policy:

> "As far as I can tell, we don't have one [a civil unrest policy] . . . I know I've had to thread some needles in trying to determine things like how to pay staff when the library is closed, how to handle it when staff call in to say they won't come to work because they are scared." (Bonner, 2014)

Fortunately, Ferguson Municipal Public Library's calm, positive, and creative leadership, in navigating administrative issues, reaffirming the library's ability to be a safe haven, or coordinating communication of information and services through social media, helped to lead the Ferguson community through the civil unrest (Berry III, 2015). The library's use of social media around waves of civil unrest in Ferguson to communicate with patrons, received praise and highlights another unique aspect of this case (Wyatt, 2015).

Although the Ferguson Municipal Public Library is not the first library to use social media in this way, it is one of the more recent cases and serves as an example of the growing research area in disaster management literature of social media as an integral component in crisis communications. By embracing these social networking tools, communicators can better manage an emergency or crisis situation (Veil et al., 2011). Furthermore, emerging areas of research in this field are the use of social media to support community disaster resilience and the library's ability to enhance community resilience (Dufty, 2012; Hagar, 2011; Veil & Bishop, 2014). Yet, the well-established connections between these fields of study weaken when looking specifically at libraries as there is not a significant body of research studying library social media use during emergency situations or supporting community resilience.

This gap in the literature seems like an oversight since many public libraries enthusiastically adopted social media tools, with 86% of public libraries reporting they use social media in the *Library Journal's* 2012 survey on public library marketing methods and best practices. Of the libraries that reported, 99% of the libraries used Facebook and 56% of the libraries used Twitter mainly for promoting and marketing library services and resources (Dowd, 2013; Young & Rossmann, 2015). Moreover, it makes sense to incorporate a social media strategy in disaster planning as more people turn to social media for their news. A Pew Research Center Report on "The Evolving Role of News on Twitter and Facebook" found the number of people who turn to these two social media sites for their news continues to rise across almost every demographic. Users (63%) on both of these social platforms view them as a news source for local and global events and issues. Although, a much larger portion of these users state they follow Twitter (59%) for any breaking news over Facebook (31%) (Barthel et al., 2015).

In studying the Ferguson Municipal Public Library, the researcher hopes to highlight a library's ability to take on a broader emergency management role in the hopes that libraries in the future will continue to incorporate this broader view in their disaster planning, response, and recovery efforts. Moreover, this study hopefully adds to the groundwork for filling the gap in the literature and sparks further research and discussion through answering the following two research questions:

1. How did the Ferguson Municipal Public Library use Twitter to communicate with the public around the 2014 waves of civil unrest in Ferguson, Missouri?

2. How did the Ferguson Municipal Public Library use of Twitter support the community's disaster resilience, if at all, around the 2014 waves of civil unrest in Ferguson, Missouri?

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[1] Heritage Preservation conducted a Heritage Health Index 2014 Survey, but a report has yet to be released with the updated survey results. The researcher contacted Heritage Preservation, but received no response by the submission deadline for this paper.

**CHAPTER TWO**

LITERATURE REVIEW

To situate these research questions in the literature, the main topic of this inquiry

was finding prior research on public library social media use and public library roles in

community disasters. The particular angle of this research was the use of social media to

build community resilience, specifically during disaster planning, preparations,

management, and recovery efforts. After starting with some initial searching on the

internet and in Google Scholar, the researcher reviewed literature from several databases,

including the University of North Carolina's University Libraries Articles+ and catalog,

as well as the following databases: Library and Information Science Abstracts, Library

and Information Science Source, PsycINFO, and Sociological Abstracts. The researcher

conducted keyword searches in these databases using the different combinations of the

following search terms: library, public library, social media, social networking site, use,

engagement, communication, emergency, disaster, crisis, community resilience,

community disaster resilience, and resiliency. In addition to database searching, the

researcher also searched through a specific journal, *American Behavioral Scientist*, since

this journal had a few issues devoted specifically to emergency management, community

resilience, and social media use. Following these search methods, the researcher found

additional sources of information through mining the citations of the resources collected

from the above search methods. Resources uncovered during this search process cover a

wide range from scholarly analyses, to case studies, practitioner guides, news articles,

video news stories and press conferences, trade publications, and professional blogs. This literature review provides background information on the waves of civil unrest in Ferguson and the Ferguson Municipal Public Library's response efforts, as well as a clear picture of how this research is situated within and adds to the existing literature.

*Case Study Background Information*

The following information from news articles, video news stories and press conferences, trade publications, and professional blogs provides context and summarizes this case on the 2014 waves of civil unrest in Ferguson, Missouri, the actions of the Ferguson Municipal Public Library, and the community's response to these actions.

In Ferguson, Darren Wilson, a 28-year-old white police officer, fatally shot Michael Brown, an unarmed 18-year-old black man who was a robbery suspect, during an altercation on August 9, 2014. Starting on August 10 and lasting until August 25, 2014, this event sparked the first wave of civil unrest throughout the city. During roughly two weeks of protesting, memorials for Brown began peacefully, but soon became violent clashes between police and protesters. Protesters began to loot businesses, vandalize vehicles, and confront police officers blocking access to parts of the city. Police officers donning riot gear engaged with protesters as regular community activities experienced disruptions, which resulted in an enforcement of a curfew, the firing of bullets, use of tear gas, mace, and other smoke devices, and protester arrests (Staff, 2014; Williams, 2014). Then, on November 24, 2014, a grand jury announced its decision not to indict Officer Wilson. This launched a second wave of protests and violence involving reports of gunshots, arson, lootings, and property destruction, but the National Guard began to

restore order by December 2, 2014 (Basu et al., 2014; Branch, 2014). Additional peaceful

protests, bouts of violence, and civil disobedience occurred the following year (2015)

with the Ferguson chief of police's resignation in March, the death of Freddie Gray in

Baltimore, Maryland in April, and the anniversary of Michael Brown's fatal shooting in

August (Chappell & Katkov, 2015; McLaughlin et al., 2015; Salter, 2015).

Around the waves of civil unrest, the Ferguson Municipal Public Library helped

to support its communities' disaster resilience. The library acted as an anchor for the

community, created a safe haven, and established a sense of normalcy by staying open

throughout the crisis when other businesses and organizations closed. In addition, the

library helped to promote a sense of normalcy by providing an "ad hoc school on the fly,"

when schools delayed their start dates (Berry III, 2015). The library had the space for

teachers, volunteers, and students to convene and do fun and educational activities based

on a defined grade-appropriate curriculum, which continued to operate after schools

reopened. This type of service not only helped the children in Ferguson, but also the

families that depended on the ability to send their children to school (Berry III, 2015).

Throughout the civil unrest, the library became an icon of constructive engagement and

calm leadership, as well as a center for community support that expressed its desire for a

peaceful resolution, an upholding of citizen rights, and other positive and helpful

messages through social media and street signage outside the library (Berry III, 2015;

Curry & Grimes, 2014). Shortly after the civil unrest in Ferguson, the public library

partnered with college students to create emotional healing kits for patrons to check out.

These kits contained a backpack with the library logo, books and worksheets on coping,

civil rights history information sheets, a list of nearby free or inexpensive mental health

resources, and a teddy bear. The library also partnered with federal and local agencies to offer a variety of recovery services. These services included talking with social workers, showcasing local artists' work in response to Brown's killing, and providing small business emergency loans, guidance on insurance claims, and listening sessions for small businesses who suffered damage (Berry III, 2015).

*Foundations of Librarianship*

Reviewing the foundations of librarianship, the motivations and reasoning behind the actions of the Ferguson Municipal Public Library around the waves of civil unrest become much clearer and more logical. Librarianship is founded on a strong sense of purpose and dedication to the idea of serving society and bringing a body of intellectual knowledge to a community (Shera, 1970). Libraries are agencies of communication and social capital in their commitment to transferring and advancing human knowledge on multiple levels: to individual users, the community as a whole, and a larger set of actors beyond the community (Lingel, 2013; Shera, 1970). Libraries are considered trusted community institutions that promote life-long learning of patrons, are situated within strong local networks, and reflect community values and norms (Bishop & Veil, 2013; Shera, 1970). As strong social and democratic institutions, libraries sustain intellectual freedom, promote equitable access to information, serve both existing and new populations, and build a community's social capital. Librarians help to (1) connect people to ideas, library resources, and government and health information, (2) enrich learning, skill development, leisure, and recreation, (3) facilitate positive social interactions by providing a safe and central gathering space, (4) develop a community identity, and (5)

create and promote strong and vibrant communities (American Library Association; Bishop & Veil, 2013). In essence, librarians not only conduct their professional duties (e.g. collection development, reference, instruction, event programming, and outreach), but also care for their communities by providing mental, social, emotional, and psychological support in a variety of ways (Phillips, 2015; Shaper & Streatfield, 2012).

*Disaster Management and the Role of Libraries*

It is important to note that published research on library actions in response to community emergencies mainly falls within the past ten years. Following the 2004 and 2005 Gulf Coast Hurricanes, researchers stressed the importance for libraries to have a disaster plan in place and assert their importance as a community resource in disaster preparations. Repeatedly, researchers call for libraries to develop a disaster plan or modify their current disaster plan that moves beyond preserving library collections, but also incorporates serving patrons, supporting the efforts of other relief organizations, and assisting in a community's recovery following a disaster (Bishop & Veil, 2013; Jaeger et al., 2006; Zach & McKnight, 2010).

The literature discusses in length a number of possible roles that libraries could fill during and post-emergency. Jaeger et al. (2006) outlines seven evolving roles for public libraries to carry out: (1) helping communities prepare, (2) providing emergency information, (3) giving shelter, (4) providing physical aid, (5) caring for community members in need, (6) working with relief organizations, and (7) cleaning up disaster damage. In addition, a National Library of Medicine oral history project outlined its roles for librarians in disaster response and recovery efforts. This project identified eight broad

categories for librarian roles: (1) institutional supporters, (2) collection managers, (3) information disseminators, (4) internal planners, (5) community supporters, (6) government partners, (7) educators and trainers, and (8) information community builders (Featherstone et al., 2008). The literature also highlights the important role that state libraries can play in supporting public library activities. State libraries can ensure public libraries are prepared for disasters through awareness of good disaster plans, training opportunities, and modeling coordination efforts with state and local agencies. In addition, state libraries can provide follow-up assistance after an emergency situation, as well as document and collect data on the role of public libraries during an emergency (Jaeger et al., 2006).

Historical evidence demonstrates that libraries have filled many of the roles outlined above, as well as others, and can continue to make significant contributions in times of crisis. The following examples exhibit some of the important emergency management roles various libraries have played in the past:

- Supporting troops during and after World War I and II with book drives, educational services, the provision of therapeutic resources, music, and local tourist information, and a connection to people back home (Weeks, 2015)
- Advocating for the desegregation of public libraries and library management during the Civil Rights Movement (Graham, 2001)
- Acting as crisis centers, serving their communities with critical information, and managing victim databases after the September 11, 2011 terrorist attacks (Featherstone et al., 2008; Will, 2001)

- Providing risk-related information about the Severe Acute Respiratory Syndrome outbreak (2003) and H1N1 virus information (2009), as well as links to the Center for Disease Control and Prevention or similar resources (Featherstone et al., 2008; Zach, 2011)

- Being a safe haven for the community as evacuation centers, offering electricity, entertainment, internet access, and news updates, and serving as a staging ground for disaster relief organizations during 2004 and 2005 Gulf Coast hurricanes and Hurricane Sandy in 2012 (Featherstone, 2012; Jaeger et al, 2006; Lingel, 2013; Bayliss et al., 2012)

This list is not exhaustive, but exemplifies the history of library disaster management roles and validates that this is a role that libraries can continue to take on in the future.

Although libraries have been taking on these disaster management roles, libraries continue to be overlooked and not included in training and planning for emergencies, and need to take steps to broaden emergency managers' understanding of the roles librarians can fill (Featherstone, 2012). Jaeger et al. (2006) call for librarians to ready themselves to help communities survive and recover from an emergency situation without relying on immediate support. This means having a plan in place before an emergency occurs that addresses library service continuity and additional disaster response roles. Librarians must maintain updated emergency contact records, collaborate and plan with community emergency response managers, and document their efforts to provide evidence of the role they served (Bishop & Veil, 2013; Zach, 2011). To accomplish these tasks, Zach and McKnight (2010) and Zach (2011) argue for the provision of additional professional education, training, and guidance to prepare librarians in planning for and responding to

patron information needs in emergency situations, as well as leverage their position as trustworthy community institutions to collaborate with other organizations and become more active participants in community emergency management.

*Emergency Situation Statistics*

Given the following data showing the unprecedented scale of natural disasters, public mass shootings, and domestic conflicts occurring in the United States, it is especially important for libraries to consider and plan for the larger role they can play in emergencies. FEMA provides a Disaster Declarations Summary dataset,[2] which lists the number of federally declared disasters each year in the United States. These disasters range from chemical, coastal storm, dam/levee breaks, drought, earthquake, fire, fishing losses, flood, freezing, human cause, hurricane, mud/landslide, severe ice storm, severe storm, snow, terrorist, tornado, toxic substances, tsunami, typhoon, and volcano incidents, and other types of disasters. The number of declared disasters in the past 50 years (1966 to 2015) totals to 44,533. The data shows a growing occurrence of federally declared disasters, especially when comparing the last 25 years to the first 25 years in the timeframe (Figure 2.1). From 1966 to 1990, FEMA declared 9,475 disasters, which is 21.24% of the total number of disasters declared in the 50-year timespan, with an average of 379 disaster declarations each year for the first 25 years. Conversely, from 1991 to 2015, FEMA declared 35,058 disasters, which is 78.72% of the total number of disasters declared in the 50-year timespan, with an average of 1,402.32 declarations issued each year in the last 25 years (Federal Emergency Management Agency, 2016).
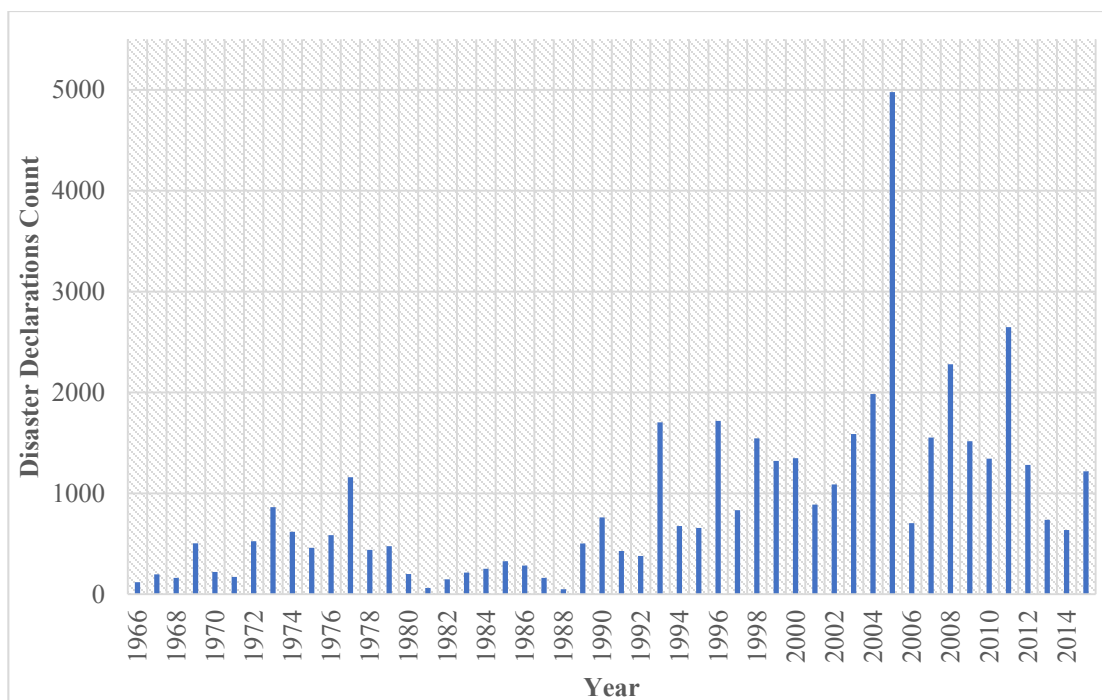
*Figure 2.1*. FEMA Disaster Declarations (1966–2015). This figure illustrates trends in the number of disaster declarations made over a 50-year period.

In addition, many studies demonstrate the growing prevalence and increasing deadliness of mass public shootings from year to year and decade to decade (Krouse & Richardson, 2015). *Mother Jones*, a nonprofit news outlet, conducted an ongoing investigation of public mass shootings spanning from 1982 to the present, but only data from 1982 to 2015 was explored for this analysis. According to research done by the *Mother Jones* principal investigators, no official definition for a mass shooting exists. However, certain criteria are used for identifying mass shooting cases: (1) the shooter killed four or more people, not including the shooter's life, (2) the shootings primarily occurred in a single, public location with some exceptions made for shootings fitting the other criteria and occurring in multiple locations over a short time period, and (3) a lone shooter carried out the killings except in a few cases that fit the other criteria (Follman et al., 2012).

From 1982 to 2015, *Mother Jones* investigators identified a total of 73 mass shootings in the United States during this 34-year period with a total 1,138 victims (595 fatalities and 543 injuries) (Figure 2.2). As for the venue of these shootings, the combination of various public settings that do not have a specified category (e.g., shopping center, restaurant, coffee shop, street, other commercial and open spaces) make up the biggest percentage at 41.10%. However, when looking at specific locations, these shootings primarily occurred in a workplace setting 28.77% of time, followed by a school setting 19.18% of the time (Figure 2.3). A mass shooting did not occur in only three years during this time: 1983, 1985, and 2002. A total of 26 mass shootings, or 35.62% of the mass shootings, occurred during the first 17 years (1982 to 1998) with 423 victims (196 fatalities and 227 injuries). In comparison, the number of mass shootings in the second half of this timespan (1999 to 2015) almost doubled (47 shootings), which represents 64.38% of the total public mass shootings. In addition, the deadliness of these attacks during this latter 17-year stretch saw almost a 69.03% increase with 793 victims (399 fatalities and 316 injuries) (Follman et al., 2016).
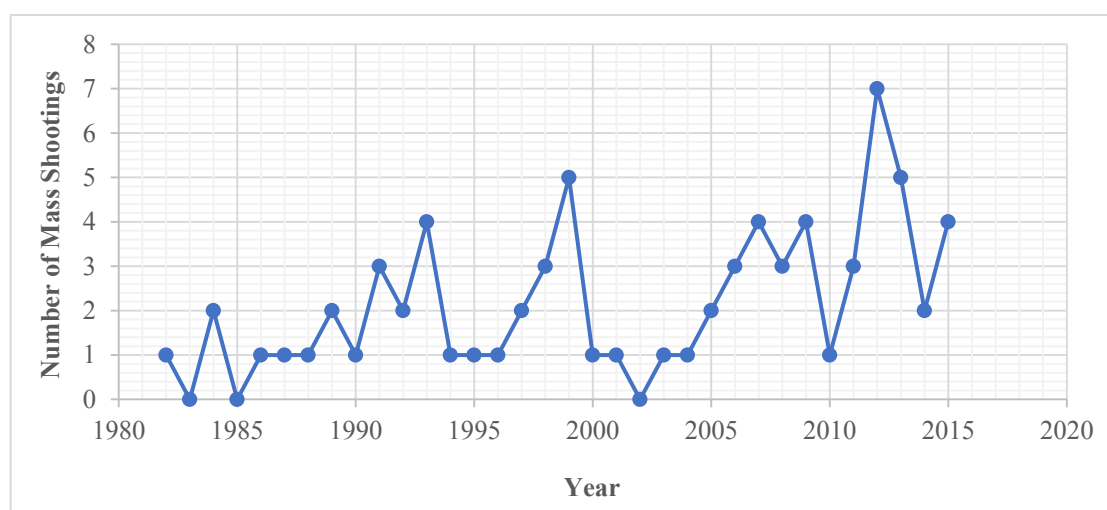


*Figure 2.2*. *Mother Jones'* Mass Shooting Data (1982–2015). This figure illustrates trends in the occurrence of mass shootings over a 34-year period.
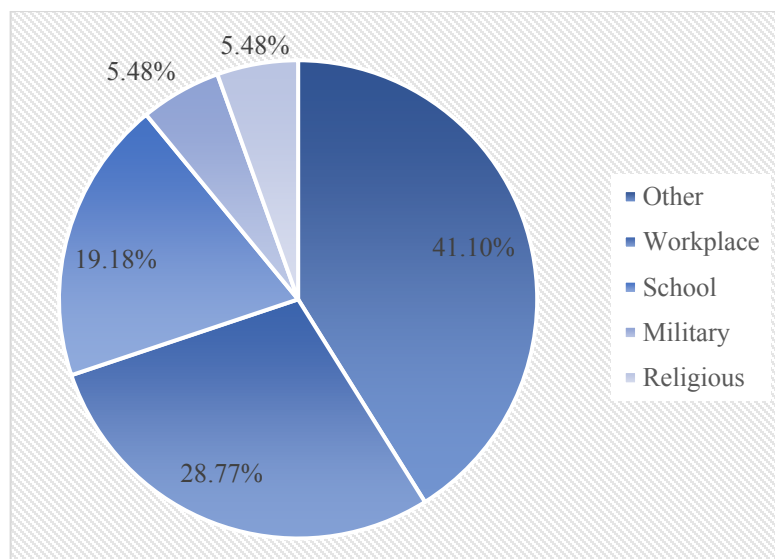
*Figure 2.3. Mother Jones'* Mass Shooting Venue Data (1982–2015). This figure illustrates trends in the venues of mass shootings over a 34-year period.

Furthermore, the Cross-National Time-Series Data Archive provides data on domestic conflict events in the United States dating back to 1919 through 2014, although six years of data (1940 to 1945) are missing from this dataset, which coincides with World War II. The domestic conflict event category includes variables on anti-government demonstrations, assassinations, general strikes, guerrilla warfare, major government crises, purges, revolutions, riots, and a weighted conflict index.[3] Newspaper and online news reports form the basis of the domestic conflict event data so somewhat of a geographic bias and limited comprehensiveness exists. It is important to note that this data does not include venues not clearly deemed domestic, such as international terrorist attacks on domestic soil (Banks & Wilson, 2015).

Overall, this dataset demonstrates a somewhat cyclical nature of domestic conflicts in the United States, rather than a growing trend, with multiple rises and falls in the occurrence of domestic conflict events over 90 years of data. Out of the 1,007 domestic conflict events identified, anti-government demonstrations and riots were by the

far the most common occurrences in the United States, with 607 anti-government

demonstrations (60.28%) and 328 riots (32.57%) occurring from 1919 to 2014. Almost

52% of anti-government demonstrations (51.57%) and roughly 17% of riots (16.77%)

occurred in the 46-year period following the end of the Civil Rights Movement in 1968.

In a range of zero to 21,000, the weighted conflict index averaged at 2,545.80 from the

most recent 15-year period (2000 to 2014) comes the closest to the average weighted

conflict index of 6,795.73 during the height of the Civil Rights Movement (1954 to 1968)

(Figure 2.5) (Banks & Wilson, 2015). The currency and growing trends in number and

location of domestic conflict events, natural disasters, and public mass shootings

demonstrate an aspect of our society that needs addressing and all communities and

commercial, business, and educational organizations, which includes public libraries,

need to develop an emergency plan and train for the possibility of these events.
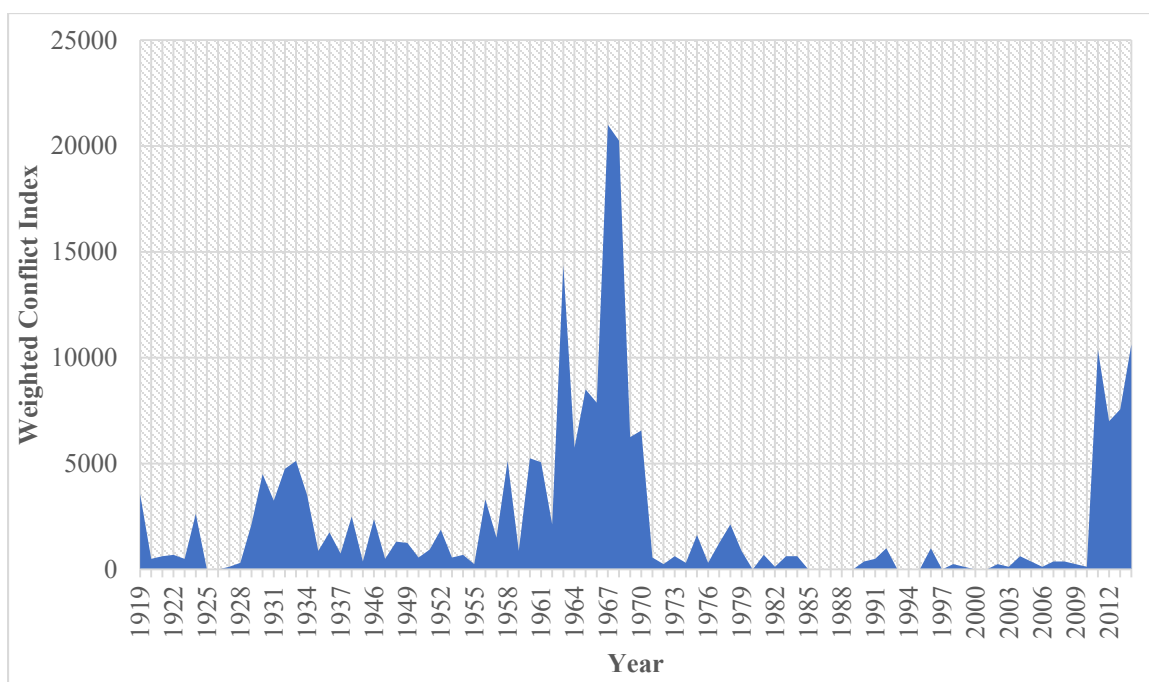


*Figure 2.4*. Cross-National Time-Series Weighted Conflict Index Data (1919–2014). This figure illustrates trends in the weighted occurrence of domestic conflict events over a 90-year period since data from 1940 to 1945 is not available.

*Community Resilience and the Role of Libraries*

Since the 1980s, disaster management literature has included the concept of community resilience (Wildavsky, 1988). In the aftermath of the September 11, 2001 terrorist attacks and Hurricane Katrina in 2005, community resilience became the ultimate goal in disaster management as a strategy for recovering and achieving sustainability (Dovers, 2004; Boin et al., 2010). Disaster risk reduction and emergency management are not enough on their own to build disaster resilient communities. Paton (2006) and Dufty (2012) argue there must also be a community development component to form a resilience-building triumvirate. Community development activities that incorporate social competencies and interactions are critical in achieving disaster resilience. Often the concept of community resilience is thought of in terms of natural disasters, but it can also be applied to other emergency issues, such as climate change, cyber-attacks, unemployment, and civil unrest (Houston et al., 2015; Norris et al., 2008).

In the seminal work by Norris et al. (2008), the authors' theory of community resilience is drawn from literature on stress, adaptation, wellness, and resource dynamics and defined as "a process linking a network of adaptive capacities (resources with dynamic attributes) to adaptation after a disturbance or adversity." Norris et al. identified four sets of adaptive capacities from which a strategy of disaster readiness and community resilience emerges: (1) economic development, (2) social capital, (3) information and communication, and (4) community competence. White et al. (2015) add to this theory of community resilience in their discussion about coming to an understanding that change is an inevitable part of life. However, if that change is harnessed, it can become a positive and powerful force within a community on a daily

basis. Increasing community resilience does not only lessen the impact of a disaster through anticipation, preparation, and reaction, but it also enables communities to better recognize and take advantage of opportunities whenever they present themselves.

To build community resilience, a whole community approach must be embedded as an ethic in core services and infrastructures. It necessitates the involvement of all community sectors and leverages all publicly available resources to effectively and efficiently address all aspects of resilience building (White et al., 2015). This requires the emergency managers to create organizational linkages, establish new partnerships, encourage ongoing conversations with diverse stakeholders, empower communities to participate throughout all phases of emergencies, and promote information sharing across all sectors (Federal Emergency Management Agency, 2012; Norris et al., 2008).

Literature examining library roles in supporting community resiliency during and outside emergency situations is an emerging topic of study. Building community resilience is about being resourceful with local capacities and knowledge to complement existing emergency services, which requires flexibility, decision making skills, and trusted information sources (Norris et al., 2008; United Kingdom Cabinet Office, 2014). Hagar (2015) argues that libraries are well situated as community, information, and knowledge hubs to engage in and strengthen community resiliency efforts. Hagar lists several possible ways library resources and services can support community resilience:

- Understanding of how to meet diverse community information needs
- Adopting and providing new types of information services to local residents, disaster victims, and emergency response workers

- Bridging information gaps and promoting information sharing between emergency relief workers, healthcare providers, and disaster victims

- Collaborating with local organizations and disaster relief agencies to plan, prepare, respond, and recover from emergencies

- Partaking in ongoing conversations with emergency management stakeholders

- Serving as a technology center and point of access for electricity, computers, and the internet to connect with family and friends, charge electronic devices, use e-government services, complete relief funds paperwork, and file insurance claims

- Providing a physical gathering space outside of the home or work that is informal, versatile, dynamic, and centralized for disaster victims to receive assistance

- Enable emergency relief workers and volunteers to convene and coordinate response and recovery efforts in a temporary, central command environment

Veil and Bishop (2014) concur with many of these possible library contributions to community resilience in their article on the opportunities and challenges libraries face in enhancing community resilience efforts. Drawing on the adaptive capacities from Norris et al. (2008), Veil and Bishop divide these opportunities and challenges among economic development, social capital, information and communication, and community competence categories. Opportunities under these categories include access to technology resources, provision of a centralized physical meeting space for both community members and emergency management workers, an offering of a sense of normalcy and stability, service as an additional communication channel, central information source, and repository of the community's experience, as well as adaptability in meeting community needs. However, taking on roles in enhancing community resiliency does come with

obstacles. Challenges include the temptation to overcommit library resources and capabilities outside of the library's mission, the use of library space for emergency use without an established reimbursement plan, the lack of a long-term disaster plan in place, and the absence of coordination with emergency response organizations.

The following examples serve as evidence of the library's ability to play an important role in supporting community disaster resiliency. In response to the September 11, 2001 terrorist attacks, library programming invited residents to make sense of and discuss issues surrounding this tragedy. Libraries also compiled book lists for adults and children to read with the intention that these resources would help people cope with the tragedy (Kniffel, 2011). During the 2007 to 2009 economic depression in the United States, librarians met the growing demand for training sessions, workshops, and reference services. Libraries provided additional services that were specifically geared towards re-entering the job market, applying for unemployment benefits, or generally helping community members survive the recession. Not only were community members attracted by the free resources and educational services offered by public libraries, but they also enjoyed visiting a space that allowed them to get out of the house and encouraged thought and reflection (Rooney-Browne, 2009). After Hurricane Sandy in 2012, libraries provided many different services that assisted community members in adapting to the disaster and recovering from it. Librarians served as information connectors and collectors of ethnographic documentation of the crisis. They compiled reading lists that focused on communicating with children and young adults about disasters, publicized government and insurance relief assistance resources, assisted patrons with filling out FEMA and insurance claims, and gathered ethnographic accounts of people's experiences

with Hurricane Sandy (Lingel 2013; Bayliss et al., 2012). These examples not only demonstrate that libraries can effectively conduct activities that support disaster response and recovery, as well as community resilience, but also reaffirm the relevancy and value of libraries in the present day (Dudley, 2013; Featherstone et al., 2008; Hagar, 2011).

*Crisis Communication and Social Media*

Social media and other collaborative, crowdsourcing technologies have transformed how emergency responders and disaster victims disseminate, access, and interact with information (Simon et al., 2015; Veil et al., 2011). These online and mobile technologies are becoming an increasingly critical component for a communication strategy throughout all emergency phases: planning, preparedness, response, and recovery (Simon et al., 2015; Virtual Social Media Working Group & DHS First Responders Group, 2013). As people's access to, understanding, and use of these online and mobile technologies grows, so too has an individual's ability to not only consume information from these technologies, but also freely contribute information in the form of ideas, opinions, experiences, pictures, and videos from anywhere and at any time (Colley & Collier, 2009; Simon et al., 2015; Virtual Social Media Working Group & DHS First Responders Group, 2013; Veil et al., 2011). Social media and other collaborative, crowdsourcing technologies offer more opportunities for crisis communication and outreach in a low cost or free forum (Wright & Hinson, 2009).

The use of social media as a crisis communication tool to share information and connect disaster victims, emergency responders, and government officials is well documented in recent disasters, from the 2007 and 2008 California wildfires, to the 2008

Mumbai massacre, 2009 crash of US Airways Flight 1549, 2010 Haiti earthquake, 2011 Tunisian uprising, 2011 Queensland floods, 2011 Japan earthquake, and 2012 Hurricane Sandy (Beaumont, 2008; Lenhart & Fox, 2009; Liu et al., 2010; Palen et al., 2009; Ghazi, 2011; Queensland Police Service, 2011; Robinson, 2010; Smith, 2010; Sutton et al., 2008; Virtual Social Media Working Group & DHS First Responders Group, 2013; White, 2012). In fact, citizens have come to expect emergency response agencies to use social media as a communication and data gathering tool during crises (American Red Cross, 2010). This is not so surprising considering 65% of adults in 2015 use at least one social networking site, a 7% increase from social media usage in 2005 (Perrin, 2015). While the other 35% of adults who do not use a social networking site should not be forgotten in library disaster planning and response efforts, research suggests that "disaster response may be the ideal environment for 'proving the worth' of social media as a serious knowledge management platform" (Yates and Paquette, 2011).

In each of these disasters, social media served a variety of beneficial functions in communicating throughout crises. Some of the benefits of using social media are that it usually worked when other modes of communication failed, served as a central hub of information, enabled multi-way information sharing and partnerships, highlighted useful collaborations during disasters, managed rumors through engaging in daily conversations, and identified risk and crisis bearer concerns (Shankar, 2008; Virtual Social Media Working Group & DHS First Responders Group, 2013; Veil et al., 2011). In addition, other benefits of social media use in crisis communication were that it created trust, credibility, and relationships directly with the community, provided situational awareness about emergency events and partnership opportunities, served as an additional method to

disseminate accurate and honest emergency public information, evaluated public information, allowed the community to engage in problem solving, and met public expectations (Johnson, 2009; Sutton et al., 2008; Sweetser & Metzgar, 2007; Virtual Social Media Working Group, 2012).

However, social media use in crisis communication does not come without its drawbacks. When using social media during emergencies, there are concerns around the public setting the agenda, as well as potential issues revolving around misinformation, technology failures, hackers, stalkers, viruses, flaming, and violations of trust and privacy in describing personal events and circumstances (Dufty, 2012; González-Herrero & Smith, 2008; Keim & Noji, 2011; White et al., 2009). In addition, the amount of information coming through social media can be overwhelming, intensive and time consuming to sort through, and more than emergency responders can manage so it is important to set realistic expectations among the public beforehand on emergency response times through this tool (American Red Cross, 2010; Veil et al., 2011). To counteract most of these drawbacks, it is crucial for emergency response professionals to be given adequate training for using online and mobile technologies as a communication tool during a crisis situation (Veil et al., 2011).

*Community Resilience and Social Media*

As described in the previous section, social media's usefulness in emergency management as a crisis communication tool has been demonstrated repeatedly. In addition, the use of social media can also play a potentially important role in disaster risk reduction and community development. The combination of these uses of social media

completes Dufty's (2012) resilience-building triumvirate and contributes to the four
adaptive capacities of economic development, social capital, information and
communication, and community competence discussed by Norris et al. (2008).

Social media can serve an economic and community development, disaster risk
reduction, community competence, information and communication, and social capital
purpose. Use of social media during crisis recovery provides an online space for both
community members and emergency management workers to meet and exchange
information. Its use can also promote a sense of normalcy and stability if disaster victims
usually access social media to share their daily lives (Keim & Noji, 2011; Veil & Bishop,
2014). Communities of practice can easily form across the resilience-building triumvirate
and adaptive capacities that foster community competence before, during, and after an
emergency (Dufty, 2012). Furthermore, social media platforms can easily adapt to a
particular emergency and identify potential areas at risk of a disaster (Keim & Noji,
2011; Veil et al., 2011). In addition, social media usage represents human communication
and information sharing through its characteristics of participation, conversation,
openness, connection, and community, as well as its ability to collect and aggregate
information (Mayfield, 2008; Virtual Social Media Working Group & DHS First
Responders Group, 2013). Moreover, social media platforms can contribute extensively
to social capital through its promotion of social interactions. These platforms provide
affected populations, who often feel the need to contribute to the conversation, with an
opportunity to replace feelings of helplessness and loss with a sense of dignity, control,
and personal and collective responsibility (Keim & Noji, 2011). New social systems
emerge before, during, and after disasters and these social networks become important

resources through the relationships established and ability to initiate recovery on one's own terms (Coleman, 1988; Haines et al., 1996; Schellong, 2007).

Based on the disaster resilience-building theory and framework developed by Norris et al. (2008) and Dufty (2012), social media can be used in several ways to enhance community disaster resilience. Social media can be used to

- Establish social capital networks, leadership, support systems for learning purposes

- Discuss disaster risks in the community, the plan for reducing these risks, and any actions individuals can take

- Engage with community members to help them prepare for a disaster

- Provide crowdsourced intelligence to emergency managers and the public before, during, and after a disaster

- Communicate warnings and other information to communities during a disaster

- Provide support to the community during and after a disaster

- Coordinate community response and recovery efforts

- Evaluate best practices and lessons learned post-emergency to further build community resilience

Thus, based on these examples, an argument is easily made in favor of social media's ability to be used as a tool for enhancing community resilience.

*Social Media in Libraries*

The literature on library use of social media during emergency situations or to build community resilience is sparse, and usually not the main focus of a study, despite it

being a major area of research outside of libraries. Hagar (2015) argues that libraries are well situated for engaging in and supporting community disaster resilience efforts. Libraries can do this through an increase in communication and the effective deployment of digital technologies that are customized to a particular situation and population in order to reach a target group and help them navigate a complex information environment (Hagar, 2015). In addition, Lingel (2013) also discusses the library's unique position within a community to support those impacted by a disaster. In these instances, libraries have a responsibility to not only provide physical resources and support, but also act as "sites of communication between local members of the community and wider audiences" (Lingel, 2013). Neither researcher specifically names social media in these articles, but an argument can be made for its inclusion as a communication tool and digital technology for libraries to communicate through during a disaster or to build community resilience.

In an earlier article, Hagar (2011) does reference social media as an important information dissemination tool during disasters and cites an example of its use by the Princeton Public Library during Hurricane Irene when tweeting storm updates and collaborating with bloggers, who had local community connections (Dowd, 2011). There is also mention of the possibility for libraries to play an important role with big data during disasters by serving as a hub for volunteers to aggregate information being posted to social media and participating in activities to catalog, validate, and vet this information (Hagar, 2011). The other mention of social media use by a library during a crisis comes from a study of public library roles during a potential 2009 H1N1 virus pandemic. Zach (2011) found that although public libraries have adopted digital technologies and social media tools, there was not a proactive use of either of these to provide quick and easy

access to information, such as real-time alerts or health and emergency information, to their patrons. Rather than engaging and interacting with patrons through digital technologies and social media tools during this time, public libraries stuck to a more traditional use of these technologies and tools as a unilateral broadcasting system about general library information, resources, and events (Zach, 2011).

While research on library use of social media during emergency situations is lacking, there is plenty of published literature to draw from on general library use of social media. The literature in this area is dominated by usage assessments, case studies of particular sites or methods implemented, and how-to manuals on best practices (Anderson, 2015; Chen et al., 2012; Phillips, 2015; Solomon, 2012; Young & Rossmann, 2015). The common element tying most library social media research together is its use as an inexpensive and innovative outreach tool to broadcast, market, and advocate for library resources, services, and events (Phillips, 2015; Vassilakaki & Garoufallou, 2015; Young & Rossmann, 2015). Various researchers argue for additional uses of library social media in community building, listening to and engaging with patrons, gathering feedback from patrons, delivering mental, social, emotional, and psychological support, and communicating the importance of libraries (Bell, 2012; Cuddy et al., 2010; Phillips, 2015; Sewell, 2013; Valenzuela et al., 2009; Vassilakaki & Garoufallou, 2015; Young & Rossmann, 2015).

Of course, research on the value, purpose, and use of social media in libraries does not come without its critics, who view social media as ill-defined, confusing, and a costly distraction (Glazer, 2012; Li & Li, 2013). Some researchers also argue that the value of social media is elusive and difficult to evaluate its impact (Vucovich et al.,

2013). Although arguments have been made for library social media sites to be used more than just as a public relations and outreach tool, a significant body of research outside of this focus has yet to develop (Saw et al., 2013; Young & Rossmann, 2015). Shiri and Rathi (2013) point out that research must continue to evaluate library social media usage on a regular basis as membership and use grows in order to continue contributing to this research area. However, new research focusing beyond social media usage is beginning to be published. Vassilakaki and Garoufallou (2015) argue for librarians to adopt new roles on social media to better meet patron expectations through innovative communication methods and information access. Young and Rossmann (2015) discuss the importance of establishing an intentional and interactive social media strategy that incorporates principles of personality and interactivity to generate new connections with library users and increase user engagement through social media. When engaging in quality social media interactions, Oh, Ozkaya, and LaRose (2014) discovered that user perception of life satisfaction and sense of community is enhanced. Along similar lines to these newer focus areas, the intention of this study is to examine library social media use from another perspective as a largely untapped tool for communicating in an emergency and supporting community disaster resiliency within a public library context.

*Steps Going Forward*

After examining the above literature pertaining to and outside of libraries, distinct related fields of study emerge between emergency management, community resiliency, crisis communication, and social media. Through published research, clear connections can be drawn between all of these fields of study. However, when the population of

interest is narrowed down to a library these connections become somewhat tenuous due to the sparse amount of literature on library social media use during emergencies and as a tool to support community resilience. Furthermore, the actions of the Ferguson Municipal Public Library in Ferguson, Missouri have yet to be examined in scholarly research, but it is perhaps still too soon after these events for there to be any published scholarly literature. By exploring Ferguson Municipal Public Library's tweets during the 2014 waves of civil unrest, the researcher seeks to add to this emerging body of literature and lay the groundwork for expanding the types of emergencies and possible roles and tools that libraries consider during disaster planning and preparation. Rather than making any proclamations for how libraries can best use social media during a disaster, the hopes for this exploratory study are to strengthen the connections between emergency management, community resiliency, crisis communication, and social media fields in relation to public libraries. It is also the researcher's desire to spark further discussion and research on the important potential that library use of social media can have during emergencies and supporting community resilience.

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[2] Disclaimer: FEMA and the Federal Government cannot vouch for the data or analyses derived from these data after the data have been retrieved from the Agency's website(s) and/or Data.gov.

[3] The weighted conflict index is calculated using the following formula: "The specific weights are variable. As of October 2007 the values entered were: Assassinations (25), Strikes (20), Guerrilla Warfare (100), Government Crises (20), Purges (20), Riots (25), Revolutions (150), and Anti-Government Demonstrations (10). Multiply the value for each variable times the specific weights; multiply that sum of products by 100 and divide the result by 8" (Banks & Wilson, 2015).

**CHAPTER THREE**

METHODOLOGY

As addressed above, this research revolves around the intersection of disaster management, community disaster resilience, crisis communication, and social media use in public libraries. The researcher used the literature, as well as textbooks and articles on research and statistical methodology, to inform her methodology for a mixed method case study answering the following research questions:

1. How did the Ferguson Municipal Public Library use Twitter to communicate with the public around the 2014 waves of civil unrest in Ferguson, Missouri?

2. How did the Ferguson Municipal Public Library use of Twitter support the community's disaster resilience, if at all, around the 2014 waves of civil unrest in Ferguson, Missouri?

Case study research examines one or a few entities, focuses on contemporary events, and is useful in exploring "how" and "why" questions that involve determining operational links over time (Benbasat et al., 1987). The population of interest for this case study research is a public library, specifically the Ferguson Municipal Public Library. The reason for selecting this public library is its involvement in the waves of civil unrest occurring in 2014 in Ferguson, Missouri. In this case study, the researcher explores two "how" questions that investigate the operation of Twitter by the Ferguson Municipal Public Library and the links between social media, public libraries, and community resilience support around the waves of civil unrest in Ferguson.

*Data Collection*

Case studies examine entities in their natural setting with no experimental controls or manipulations and collect data by multiple means (Benbasat et al., 1987). For this study, the researcher used existing documents, in the form of social media posts, as the data. Scott (1990) defines a document as "an artefact which has as its central feature an inscribed text." A document must exist, comes in a variety of formats (e.g., a public record, official reports, images, or video recordings), carries an intentional message, fulfills the creator's purpose, and is not created to support a research study. These existing documents are useful to a study as they allow researchers to collect data from them in their natural context without any manipulation of the documents or use of experimental or controls groups (Platt, 1981; Wildemuth, 2009).

The tweets from Ferguson Municipal Public Library fulfill the criteria for a document. The library has an active Twitter account and used it extensively around the 2014 waves of civil unrest. State public records laws usually categorize social media posts created by governmental agencies as computerized records and electronic transmissions and thus consider social media posts as public records (Archive Social, 2015; Mo. Rev. Stat § 610). Social media posts, like tweets, innately carry a type of intentional message in the form of text, a hyperlink, image, or video. Public libraries often use social media posts as a communication, engagement, and marketing tool for the purpose of interacting with patrons and the general public and raising awareness about services, programs, and resources (Young & Rossmann, 2015). The Ferguson Municipal Public Library's tweets were created independently from this research study and are freely and publicly available online. The posts require no special handling and can be

collected from the public library's Twitter webpage[4] and searched for by the applicable

timeframe (Table 3.1).[5] Data collection efforts focused on posts around the two waves of

civil unrest in Ferguson, as well as four weeks before and four weeks after each wave.

From December 8, 2015 through January 24, 2016, the researcher collected 718 tweets

from Ferguson Municipal Public Library using Twitter's well-documented application

program interface (API).[6] This API electronically retrieved tweets from the library that

fell in the prescribed timeframe below (Twitter). It is important to note a possibility exists

for the data collected through an API to not be entirely complete, for tweets to have been

deleted prior to data collection, or for engagement with the tweets (likes, retweets, and

replies) to have changed before, during, and after data collection. All of these possibilities

could potentially affect the validity of the results obtained in this study.

Table 3.1
*Data Collection Timeframe for Ferguson Municipal Public Library's Tweets*

| Timeframe | First Wave of the Civil Unrest | Second Wave of the Civil Unrest |
|-----------|--------------------------------|----------------------------------|
| Before | July 13 – August 9, 2014 | October 27 – November 23, 2014 |
| During | August 10 – August 25, 2014 | November 24 – December 2, 2014 |
| After | August 26 – September 22, 2014 | December 3 – December 30, 2014 |

*Data Analysis*

After collecting the data, the researcher employed two types of content analyses: a

descriptive, quantitative content analysis and a thematic, qualitative content analysis. The

quantitative content analysis provides a systematic and objective analysis of document

characteristics in the sampling unit of tweets (Neuendorf, 2002; Riffe et al., 2005). Since

quantitative content analyses have been criticized for not including semantic information

contained in the text, the researcher supplemented the study with a qualitative content

analysis (Weber, 1990). This type of analysis allows for interpreting the content of the

text in tweets through a systematic classification process of coding the raw text data for

themes (Hsieh & Shannon, 2005; Zhang & Wildemuth, 2009).

In a quantitative content analysis, it is important to identify the critical content

elements to be coded (Neuendorf, 2002; Riffe et al, 2005). Likewise, in a qualitative

content analysis, it is important to establish the reasoning process for generating the

coding categories (Hsieh & Shannon, 2005). The researcher used both deductive

reasoning and coding categories from previous studies to generate the coding elements

for this study (Berg, 2001; Patton, 2002). Shiri and Rathi's (2013) content categorization

scheme for Twitter was one study to inform the coding variables for this study, as it

specifically focused on information services and knowledge management practices in

public libraries. Dufty's (2012) disaster resilience-building framework was the second

study to inform the coding variables for this research. While not specific to libraries, this

study outlines disaster risk reduction, emergency management, and community

development goals as crisis communication areas for social media to help build

community disaster resilience (Dufty, 2012). Based on this prior research, the researcher

established several identifying, quantitative, and qualitative variables[7] for coding each

tweet (Table 3.2). Variable coding occurred between January 31, 2016 to March 13,

2016. For the Public Library Content Categories and Community Disaster Resilience

Categories, the researcher applied exclusively only one main category and one sub-

category variable per tweet. The results produced from this quantitative and qualitative

content analysis of the Ferguson Municipal Public Library's tweets are presented in the

form of descriptive statistics, frequency tables, and a thematic discussion with textual

examples.

Table 3.2
*Coding Variables for Ferguson Municipal Public Library's Tweets*

| General Categories | Public Library Content Categories | | Community Disaster Resilience Categories |
|---|---|---|---|
| | Main Categories | Sub-Categories | |
| • Tweet Text<br>• Tweet Permalink<br>• Date<br>• Timeframe<br>• Post Type<br>• Content Type<br>• Likes<br>• Retweets<br>• Replies | • Acknowledgement<br>• Advisory Services<br>• Announcement<br>• Event<br>• Feedback Seeking<br>• Informal Conversation<br>• Information Sharing<br>• Library Operations<br>• News<br>• Opinion<br>• Query<br>• Recommendation or Suggestions<br>• Request | • About Library<br>• Library Materials<br>• Culture<br>• E-Services<br>• Programs<br>• Membership<br>• General Library Services<br>• Library Catalog<br>• Miscellaneous | • Disaster Risk Reduction<br>• Emergency Management<br>• Community Development |

*Study Validity and Limitations*

      The researcher took steps to ensure that this study's results are unbiased, objective, reliable, and replicable by taking a random sample of the dataset and having an additional person code this dataset sample using the coding scheme. This study used two coders to code only the variables under the public library content and community disaster resilience categories, which are more subjective in nature.[8] On the other hand, only one coder determined the general category variables as these are more objective codes and are not being tested for intercoder agreement at this time. To determine the extent of agreement among the two coders, the researcher compared both coded datasets and calculated a numerical index (Lombard et al., 2002; Singletary, 1994). Referencing Riffe et al. (2005) on simple random samples and using a sample size calculator[9] and a random integer set generator,[10] the research took a random sample of 196 tweets out of 718 total

tweets with a 90% confidence level and 5% margin of error that this is a representative sample. This dataset subsample is a sufficient amount of data for another coder to code and test the intercoder agreement of this study's coding scheme. While many variations exist on the process for determining intercoder reliability, the researcher chose to employ Cohen's Kappa with a minimum value of 0.21 (McHugh, 2012; Viera, A. J., & Garrett).

To calculate the intercoder agreement, the researcher converted the two subsample Excel files with text codes into a combined Comma Separated Values (CSV) file with corresponding nominal codes. This combined CSV file was then uploaded to the Reliability Calculator, which is an online tool that calculates interrater reliability coefficients specifically for nominal content analysis data with only two coders (Freelon, 2013). Deen Freelon, now an Assistant Professor in the School of Communication at American University, developed this tool as a doctoral student in the Department of Communication at the University of Washington coders (Freelon, 2010). For an exact match between both coders' applications of main and sub-categories, the Reliability Calculator for two coders (ReCal2) computed a kappa value of 0.205 for the public library content codes and 0.199 for the community disaster resilience codes. These kappa values fall below, but are relatively close to the minimum value set by the researcher. However, in reexamining the level agreement between the two coders for just the main categories, ReCal2 computed an improved kappa value of 0.499 for the public library content codes and 0.280 for the community disaster resilience codes. These kappa values demonstrate a slight to fair level of agreement between the two coders, but time constraints made it difficult to fully reevaluate the coding scheme and make any necessary adjustments to improve interrater reliability. Furthermore, the focus of this

study resides in the thematic exploration outlined in the literature review. The coding

scheme is primarily a tool to accomplish this endeavor rather than attempting to declare

any statistical significance with the results from the coding scheme.

As previously stated, data collection done through an API over a year after the

events presents a limitation on the study. Collected posts are not an archival record of the

Ferguson Municipal Public Library's tweets at the time of the 2014 civil unrest in

Ferguson. This raises the possibility that the library's tweets and public engagement with

tweets (likes, retweets, and replies) recorded by the researcher may be incomplete or

inaccurate due to deletions or changes in counts prior to, during, and after data collection.

In addition, with this being a case study, the results are not necessarily generalizable nor

a prescription of best practices. However, the researcher reasons that the large size of the

dataset allows for major trends to emerge, regardless of possible missing tweets, changes

in public engagements, and subjectivity in the variable coding. With that said, these

results are an exploration of the intersection of disaster management, community

resilience support, crisis communication, and social media use in a public library setting.

This study strives to build knowledge by adding to the literature and emphasizing a

communication area for public libraries to consider in their community resilience and

disaster planning, management, and recovery efforts. Furthermore, rather than provide

statistically significant results, the literature review and study discussion aim to highlight

a valuable role and service that a public library can provide to support its community's

resilience.

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[4] Ferguson Municipal Public Library's Twitter webpage URL: https://twitter.com/fergusonlibrary
[5] Search phrase: from:fergusonlibrary since:YYYY-MM-DD until: YYYY-MM-DD
[6] Twitter's API: https://twitter.com/search-home#
[7] Refer to Appendix A for this study's codebook with the definitions of each coding variable.

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[8] Refer to Appendix B for this study's coding protocol of the Ferguson Municipal Public Library's tweets from around the 2014 waves of civil unrest.

[9] SurveyMonkey, a provider of web-based survey solutions, offers the free Sample Size Calculator used in this study, which is available here: https://www.surveymonkey.com/mp/sample-size-calculator.

[10] RANDOM.ORG, a producer of a true random number service, offers the free Random Integer Set Generator used in this study, which generates unique numbers in each set and is available here: https://www.random.org/integer-sets/.

**CHAPTER FOUR**

RESULTS

The researcher performed a content analysis of Ferguson Municipal Public Library's tweets from during the first and second waves of civil unrest, 16 and nine days respectively, along with the four weeks before and after these events. To arrive at the following findings, the researcher applied several identifying, quantitative, and qualitative variable codes to each tweet. After applying the coding scheme to the library's tweets, the researcher calculated frequency tables and descriptive statistics, as well as identified themes among the public library content and community disaster resilience categories. The results of this analysis are presented under the corresponding research question combined with a few charts and tables for data visualization purposes.

*Question 1: How did the Ferguson Municipal Public Library use Twitter to communicate with the public around the 2014 waves of civil unrest in Ferguson, Missouri?*

Around the 2014 waves of civil unrest, the Ferguson Municipal Public Library posted 718 tweets, 137 tweets (19.08%) in the first wave and 581 tweets (80.92%) in the second wave. During both waves, a majority of the library's tweets overall occurred during (n=362; 50.42%) and after (n=314; 43.73%) the civil unrest. In the four weeks leading up to both waves of civil unrest, the library tweeted only 42 times (5.85% of total tweets) and most of these tweets (n=37) occurred in the days before the second wave. On

average, the library overall posted less than one tweet per day (n=0.75) before, 14.48

tweets per day during, and 5.61 tweets per day after the civil unrest.

The library drastically increased its number of posts between the two waves of

civil unrest by 324.09%. This is further evidenced by changes in the average number of

tweets per day in the three phases around each wave of civil unrest. Around the first

wave, the Ferguson Municipal Public Library tweeted on average 0.18, 5.19, and 1.75

times per day before, during, and after the civil unrest respectively. However, these

averages increased across the board in a smaller timeframe around the second wave to

1.32, 31.00, and 9.46 posts per day before, during, and after the civil unrest respectively.

In both cases, the library used Twitter the most to communicate during both waves of

civil unrest followed by the days after, while the days leading up to the civil unrest saw

the fewest number of posts.
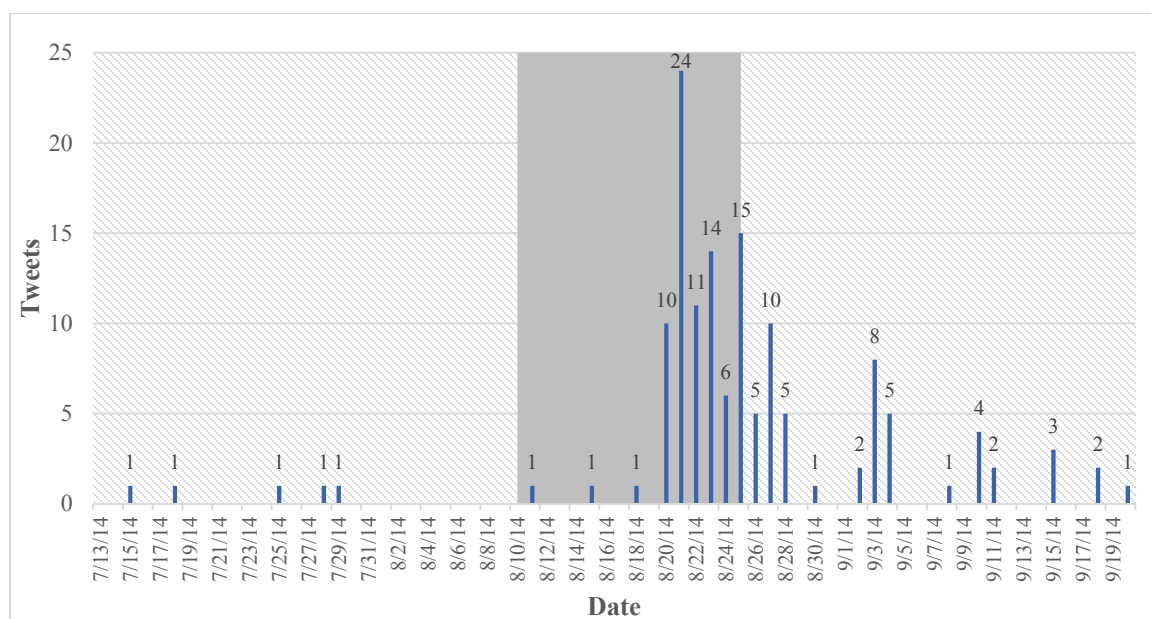


*Figure 4.1*. Ferguson Municipal Public Library's Tweet Activity (First Wave). This figure illustrates trends in the number of tweets posted around the first wave of civil unrest from July 13, 2014 through September 22, 2014. The gray area highlights the tweets posted during the civil unrest from August 10 through August 25, 2014.

Figure 4.1 and Figure 4.2 of the Ferguson Municipal Public Library's tweet

counts on individual days around the first and second waves of civil unrest corroborate

this trend. These figures also demonstrate that Ferguson Municipal Public Library's use

of Twitter as a communication tool was sporadic leading up to and during most of the

first wave of civil unrest. The library communicated via Twitter between zero to 24 times

each day throughout the 16 days of the first wave of civil unrest. Moreover, Figure 4.1

reveals the largest concentration of tweets occurred in the last six days and a few days

after the first wave of civil unrest before returning to a much lower quantity of posts per

day albeit less sporadic than before.
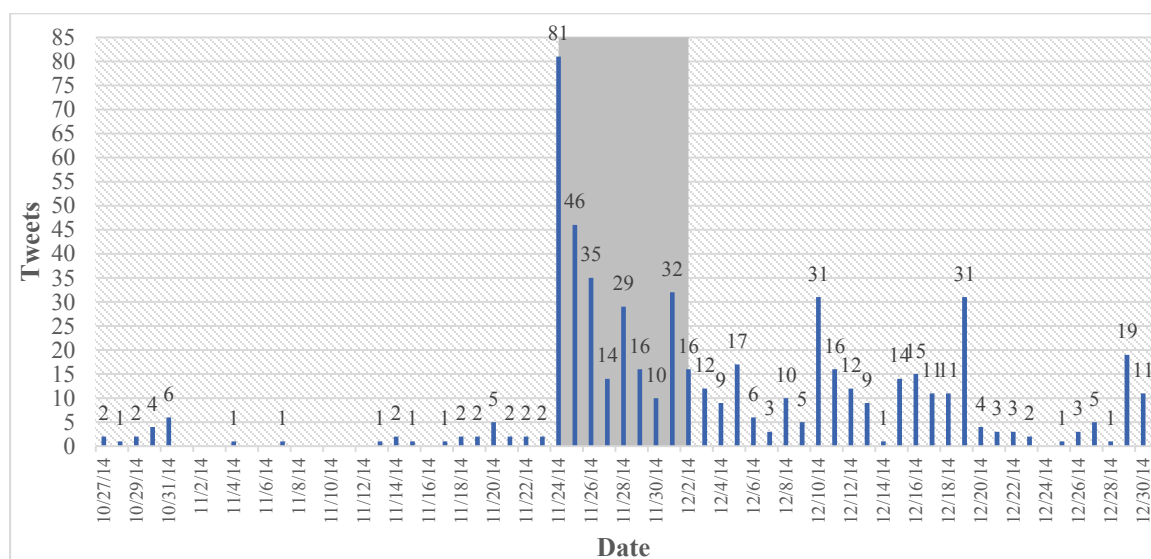


*Figure 4.2*. Ferguson Municipal Public Library's Tweet Activity (Second Wave). This
figure illustrates trends in the number of tweets posted around the second wave of civil
unrest from October 27, 2014 through December 30, 2014. The gray area highlights the
tweets posted during the civil unrest from November 24 through December 2, 2014.

Figure 4.2 shows the slightly sporadic and lower quantity of posts per day

continued before the second wave of civil unrest. However, this changes when Ferguson

Municipal Public Library began communicating via Twitter extensively (between 10 to

81 times each day) throughout the nine days of the second wave of civil unrest. This is

especially apparent when the library tweeted 81 times on the first day the civil unrest

began (November 24, 2014), which was the day the grand jury announced its decision not

to indict Officer Wilson. After this wave of civil unrest, the library maintained a higher

level of communication than prior to the events. This second time around the library

posted at least once a day if not several times a day (between one to 31 times each day) in

the four weeks following the civil unrest, with the exception of Christmas Eve which had

no tweets.

For both waves of civil unrest, the type of posts tweeted by the Ferguson

Municipal Public Library were categorized mainly as text only posts, followed by posts

with an attached image, and lastly posts with an attached video. A vast majority of the

library's tweets appeared as text only posts (n=651; 90.67%). Text only posts included

tweets with no attachments or tweets with a logo or empty placeholder image from a

website link. Tweets with an attached image (n=59; 8.22%) made up most of the

remaining posts with the library posting very few tweets with an attached video (n=8;

1.11%). Posts classified as image tweets contained an attached graphic from a website

link other than a logo or empty placeholder that was visible on Twitter or had a direct

link to a photo, piece of artwork, or image on an image sharing site (e.g., Instagram).

Similarly, posts considered as video tweets contained an attached video or a piece of

audio viewable and listenable on Twitter or had a direct link to a video, song, or

interview on a video or audio sharing site (e.g., YouTube or SoundCloud).

When analyzing how the library hyperlinked tweets to other sources (i.e., Twitter

handle, hashtag, website URL, or a combination of these links), it is apparent that the

Ferguson Municipal Public Library linked a vast majority of its tweets (n=598; 83.29%)

versus not including any sort of link in the post (n=120; 16.71%). Out of the 598 linked

tweets, the library mostly linked posts with a Twitter handle (n=369; 61.71%). This type

of linked tweet only contained at least one valid, hyperlinked handle to another Twitter

user account (e.g., @OPFoodSearch). The second most common type of linked tweet was

posts containing multiple types of links to other sources (n=110; 18.39%). Following

these types of linked tweets, the library included only hashtags (e.g., #whatlibrariesdo) in

the tweet text 13.55% of the time (n=81) and incorporated only a website URL (e.g.,

http://ferguson.lib.mo.us) in its tweets 6.35% of the time (n=38).

In terms of Twitter users engaging with library tweets, the library experienced a

huge jump in the number of likes, retweets, and replies to its tweets during both waves of

civil unrest. When adding together these three types of public engagements for each

tweet, the library received 22,939 engagements with its 718 posts.[11] Of these

engagements, 20,409 (88.97%) occurred during both waves of civil unrest and 85.93% of

those engagements (n=17,537) occurred during the second wave of civil unrest. The

overall number of engagements for both waves decreased after the civil unrest (n=2,295;

10.00%), however these numbers are more prolific than the 1.02% of overall

engagements (n=235) that occurred before both waves of civil unrest. Of the overall

engagements before and after each wave of civil unrest, 88.93% (n=2,041) occurred after

and 97.02% (n=228) occurred before the second wave of civil unrest.

The library experienced a drastic increase in its overall tweet engagements

between the first and second waves of civil unrest by 532.17%. Comparing all

engagements before to during both waves of civil unrest, there was an 8,584.68%

increase in tweet engagement. Subsequently, only an 88.75% reduction in engagement

occurred from during to after both waves of civil unrest. Twitter users' overall public engagement with library tweets primarily took the form of retweets (n=11,647; 50.77%) closely followed by likes (n=10,349; 45.13%). The library also received 943 total replies (n=104 in the first wave; n=839 in the second wave) to its tweets, which was 4.11% of overall user engagement.

Table 4.1

*Ferguson Municipal Public Library's Twitter Content*

| Main Categories | Sub-Categories | | | | | | General Library Services | Library Catalog | Misc. |
|---|---|---|---|---|---|---|---|---|---|
| | About Library | Library Materials | Culture | E-Services | Programs | Memberships | | | |
| Acknowledgement | 63 | 34 | 68 | 1 | 19 | 0 | 1 | 2 | 4 |
| Advisory Services | 8 | 14 | 19 | 0 | 1 | 0 | 1 | 5 | 3 |
| Announcement | 12 | 0 | 25 | 0 | 10 | 0 | 13 | 0 | 0 |
| Event | 0 | 0 | 17 | 0 | 20 | 0 | 0 | 0 | 0 |
| Feedback Seeking | 2 | 0 | 0 | 1 | 2 | 0 | 0 | 0 | 0 |
| Informal Conversation | 32 | 19 | 75 | 6 | 8 | 0 | 2 | 1 | 13 |
| Information Sharing | 19 | 4 | 33 | 1 | 25 | 0 | 5 | 2 | 1 |
| Library Operations | 3 | 0 | 3 | 0 | 4 | 0 | 3 | 0 | 5 |
| News | 14 | 1 | 13 | 0 | 0 | 0 | 1 | 0 | 0 |
| Opinion | 8 | 1 | 13 | 0 | 3 | 0 | 2 | 0 | 0 |
| Query | 1 | 2 | 9 | 0 | 0 | 0 | 1 | 0 | 1 |
| Recommendations | 0 | 3 | 6 | 0 | 0 | 0 | 0 | 0 | 0 |
| Request | 11 | 1 | 15 | 0 | 3 | 0 | 0 | 0 | 0 |

Lastly, the Ferguson Municipal Public Library's tweets covered a wide variety of topics according to the public library content categories established by Shiri and Rathi (2013) (Table 4.1). Library tweets fell into all 13 of the main categories, but only eight of the nine sub-categories. The top three main categories that the library's tweets fell into are Acknowledgement (n=192; 26.74%), Informal Conversation (n=156; 21.73%), and Information Sharing (n=90; 12.53%) tweets. Conversely, the library's bottom three main categories are Query (n=14; 1.95%), Recommendation (n=9; 1.25%), Feedback Seeking

(n=5; 0.70%) tweets. For the sub-categories, Ferguson Municipal Public Library's top

three tweet categories employed included Culture (n=296; 41.23%), About Library

(n=173; 24.09%), and Programs (n=95; 13.23%) tweets. On the other hand, the bottom

three tweet sub-categories employed by the library included Library Catalog (n=10;

1.39%), E-Services (n=9; 1.25%), and Membership (n=0; 0.00%) tweets.

*Question 2: How did the Ferguson Municipal Public Library use of Twitter support the community's disaster resilience, if at all, around the 2014 waves of civil unrest in Ferguson, Missouri?*

Based on Dufty's (2012) community disaster resilience categories, a portion of

the Ferguson Municipal Public Library's tweets supported Ferguson's community

resilience (Table 4.2). While the majority of the library's tweets (n=523; 72.84%) did not

relate to community resilience efforts, over a quarter of Ferguson Municipal Public

Library's tweets (n=195; 27.16%) did support Ferguson's community disaster resilience.

Within these 195 community resilience tweets, 62 tweets (31.79%) occurred around the

first wave and 133 tweets (68.21%) occurred around the second wave of civil unrest.

Moreover, the Ferguson Municipal Public Library primarily posted community resilience

tweets during (n=101; 51.79%) and after (n=80; 41.03%) both waves of civil unrest with

only a small portion (n=14; 7.18%) occurring before both waves of civil unrest. The data

reveals a 114.52% increase in the number of community resilience tweets between the

two waves of civil unrest and a 621.43% increase from before to during both waves of

civil unrest with only a 20.79% decrease after both waves of civil unrest.

Of the 195 community resilience tweets, the Ferguson Municipal Public Library

posted mainly community development related tweets (n=157; 80.51%), followed by

emergency management tweets (n= 36; 18.46%) and only a couple disaster risk reduction

Table 4.2
*Ferguson Municipal Public Library's Community Resilience Tweets*

|  | First Wave of Civil Unrest | | | Second Wave of Civil Unrest | | |
|---|---|---|---|---|---|---|
|  | Before | During | After | Before | During | After |
| Disaster Risk Reduction | 0 | 0 | 0 | 1 | 1 | 0 |
| Emergency Management | 0 | 12 | 0 | 0 | 21 | 3 |
| Community Development | 1 | 31 | 18 | 12 | 36 | 59 |
| Not Applicable | 4 | 40 | 31 | 24 | 221 | 203 |

tweets (n=2; 1.03%). Major themes exist across these three community resilience

categories. Community resilience tweets fell into the Announcement and Information

Sharing main categories and Programs, Culture, and About Library sub-categories.

Content themes found in individual community resilience categories consisted of

Advisory Services for disaster risk reduction tweets, Library Operations for emergency

management tweets, and Events for community development tweets. The library's 523

non-community resilience tweets shared some of the content themes with the 195

community resilience tweets relating to Information Sharing, Culture, and About Library

tweets. Other major content themes within the non-community resilience tweets included

Acknowledgement, Informal Conversation, and Library Materials tweets.

Furthermore, out of the Ferguson Municipal Public Library's 718 tweets around

the 2014 waves of civil unrest, the six tweets that received the most public engagements

(likes, retweets, and replies added together) occurred during both waves of civil unrest

and all supported Ferguson's community resilience. These six tweets individually earned

between 389 and 1,782 likes, 493 and 2,026 retweets, and 19 and 64 replies. They

addressed either library operations in general (n=3; 50.00%), the operations of a library

program (n=1; 16.67%), an announcement about library services (n=1; 16.67%), or an

announcement about supporting the library (n=1; 16.67%). The top public engagement

tweets were mainly text only tweets (n=5; 83.33%) from the second wave of civil unrest

along with one image tweet (16.67%) from the first wave of civil unrest. These six posts

were evenly split between being linked by a website URL, linked by a hashtag, and not

linked to any other sources. All of the six top public engagement tweets supported

Ferguson's community resilience through mainly supplementing emergency management

efforts (n=5; 83.33%) during the second wave of civil unrest or promoting community

development efforts (n=1; 16.67%) during the first wave of civil unrest.

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[11] The researcher acknowledges other performance measures exist for social media engagement. However, the researcher only had access to the publically available measures of likes, retweets, and replies.

**CHAPTER FIVE**

DISCUSSION AND CONCLUSION

*The Library's Response to the 2014 Civil Unrest*

The Ferguson Municipal Public Library proved to be well situated to support those impacted by the 2014 waves of civil unrest and engaged in community resilience efforts. The library leveraged its position as a trusted community institution in its disaster response and recovery activities (Bishop & Veil, 2013; Shera, 1970). The library provided a sense of normalcy and service continuity for the community (e.g., staying open throughout the civil unrest and offering emergency school classes for children). It also supported response and recovering efforts through community and government partnerships (e.g., local teachers, First Baptist Church, Alliance of Black Art Galleries, and US Small Business Administration) (Bishop & Veil, 2013; Jaeger et al., 2006; Veil & Bishop, 2014; Zach & McKnight, 2010). The library not only provided helpful physical resources (e.g., a peaceful, safe, and welcoming community space or library materials and healing kits for check out), but also acted as a site of communication for a variety of audiences (e.g., "Hands Up" art exhibit reflection opportunities, Readings on Race Book Club, Twitter discussions, Reddit Ask Me Anything) (Hagar, 2015; Lingel, 2013). As part of the library's disaster response, an intriguing aspect of this case study was the library's use of Twitter as more than a public relations and outreach tool (Saw et al., 2013; Young & Rossmann, 2015). Some researchers view social media as ill-defined, confusing, a costly distraction, and difficult to evaluate its value and impact (Glazer,

2012; Li & Li, 2013; Vucovich et al., 2013). However, the Ferguson Municipal Public Library's use of Twitter to communicate with the public and support community resilience during the 2014 civil unrest in Ferguson is a prime example actually "proving the worth" of social media (Yates and Paquette, 2011).

In an effort to combine traditional and newer technologies (e.g., sandwich boards on the sidewalk and Twitter), the Ferguson Municipal Public library embraced digital technologies. The library used social media as an additional way to build community, listen to and engage with the public, gather feedback, deliver support, and communicate the importance of libraries (Bell, 2012; Cuddy et al., 2010; Phillips, 2015; Sewell, 2013; Shaper & Streatfield, 2012; Valenzuela et al., 2009; Vassilakaki & Garoufallou, 2015; Young & Rossmann, 2015; Zach, 2011). The library embraced the public's access to, understanding, and use of social media to consume information about disaster response and recovery efforts (e.g., emergency school classes, financial and insurance assistance, the "Hands Up" art exhibit, Readings on Race Book Club, or healing kits). Moreover, the library's use of social media allowed the public to contribute information as well (e.g., Twitter discussions with #Fribrary, #whatlibrariesdo, or #Ferguson) (Colley & Collier, 2009; Simon et al., 2015; Virtual Social Media Working Group & DHS First Responders Group, 2013; Veil et al., 2011).

Although researchers call for libraries to develop disaster plans and provide adequate training and guidance on implementing these plans, it is unclear whether the Ferguson Municipal Public Library had such a plan or the recommended training prior to the 2014 waves of civil unrest (Bishop & Veil, 2013; Jaeger et al., 2006; Zach & McKnight, 2010). Further research is required to determine if the library developed

and/or trained staff to implement a disaster or crisis communication plan before the events in Ferguson or if the library has done so since the civil unrest. With the library's low Twitter activity prior to the first wave of civil unrest in Ferguson, it seems apparent that the library adopted this new role on social media for emergency communication and community resiliency purposes. Starting with the first wave of civil unrest, the researcher observed large increases in use and public engagement throughout and after the events. This change in activity and engagement suggests the library tapped into social media as a tool to provide the public with access to information and enhance the sense of community (Oh, Ozkaya, & LaRose 2014; Vassilakaki and Garoufallou, 2015). Whether the Ferguson Municipal Public Library established an intentional, interactive, and effective social media strategy prior to the events in Ferguson or not, the library's Twitter use incorporated personality, interacted and generated connections with the public, and increased user engagement (Young and Rossmann, 2015).

Furthermore, the Ferguson Municipal Public Library's disaster response and use of Twitter around the waves of civil unrest enabled the library to support Ferguson's community resilience at the time, as well as harness the situation and turn it into a positive and powerful force within the Ferguson community (White et al., 2015). The library especially succeeded in using Twitter to serve both existing and new populations, comprehend the needs of its community to try and reduce the impact of the disaster, provide emergency management and information, and build the community's social capital through community development events (American Library Association; Bishop & Veil, 2013; Dufty, 2012; Paton, 2006). To respond to Ferguson's civil unrest, participate in recovery efforts, and support the community's resilience, the Ferguson

Municipal Public Library took on many of the potential disaster and community resilience roles outlined in the literature.

The library gave shelter to the Ferguson community and the public by creating a safe haven in the physical building and online through Twitter. Library staff utilized these centralized spaces informally and versatilely for people to gather protected from the civil unrest, positively and socially interact with each other, meet with financial and insurance representatives or social workers, access technology, use e-government services, complete relief fund paperwork, and file insurance claims (Hagar, 2015; Jaeger et al., 2006, Veil & Bishop, 2014). The library also cared for its community members by adapting to community needs, creating a sense of normalcy and stability, collaborating and partnering with government, relief, and community organizations, promoting a strong and vibrant community identity, and serving as a repository of the community's experience. Ferguson Municipal Public Library demonstrated this care for the community by offering and coordinating emergency services, recovery resources, community events and programming, and discussion and reflection opportunities (Bishop & Veil, 2013; Keim & Noji, 2011; Phillips, 2015; Shaper & Streatfield, 2012; Veil & Bishop, 2014).

In addition, the library established trust, credibility, and relationships directly with the community, provided community support during and after the civil unrest, and contributed extensively to promoting social interactions and networks online and in the library (Dufty, 2012; Johnson, 2009; Keim & Noji, 2011; Norris et al., 2008; Sutton et al., 2008; Sweetser & Metzgar, 2007; Virtual Social Media Working Group, 2012). Moreover, the Ferguson Municipal Public Library acted as an information disseminator by providing emergency intelligence, connecting people with ideas, library resources, and

government and health information, and adopting and providing new types of information

services (Bishop & Veil, 2013; Featherstone et al., 2008; Hagar, 2015; Jaeger et al.,

2006). Through its use of social media, the library enabled multi-way information sharing

and partnerships, provided an online space to coordinate community response and

recovery and manage rumors, as well as allowed the community to participate in problem

solving through engaging in daily conversations on Twitter and presenting different ways

to get involved (e.g., volunteer and donations) (Dufty, 2012; Hagar, 2015; Keim & Noji,

2011; Norris et al., 2008; Shankar, 2008; Virtual Social Media Working Group & DHS

First Responders Group, 2013; Veil & Bishop, 2014; Veil et al., 2011). Evidence of these

roles in the Ferguson Municipal Public Library's tweets clearly demonstrated to the



*Figure 5.1*. Ferguson Municipal Public Library's Twitter Overview. This figure provides an overview of the library's tweets in relation to key points raised in the literature around disaster planning, community resilience, and social media use (Ferguson Library, 2014a, f, o, r, v, aa, ac, ae, af, & al).

public the library's commitment to serving the community, valuing transparency, acting

as an agency of communication, and caring for the community (Lingel, 2013; Phillips,

2015; Shaper & Streatfield, 2012; Shera, 1970) (Figure 5.1).


*Case Study Discussion and Implications*

The data in this case study demonstrates that Ferguson Municipal Public Library

used Twitter to communicate with the public and support the community's disaster

resilience around the 2014 waves of civil unrest in Ferguson, Missouri. Moreover, the

data also highlights several areas of consideration for a library choosing to engage in

crisis communication via social media, specifically Twitter. While the Ferguson

Municipal Public Library clearly used Twitter around both waves of civil unrest, the data

shows use was more sporadic throughout the first wave and in general before either wave

of civil unrest. In contrast, the library tweeted much more extensively and consistently

throughout the second wave and posted a higher volume of tweets in general during, and

to a degree after, both waves as compared to before both waves of civil unrest. These

conclusions are evidenced by the library's tweet counts for each day, overall number of

posts and posting averages per day in each phase (before, during, and after) and wave of

civil unrest, and percentage changes between phases and waves of civil unrest.

Similarly, the public's engagement with Ferguson Municipal Public Library's

tweets follows a parallel trend to the library's activity on Twitter. The public engaged

much more significantly with the library's tweets throughout the second wave compared

to the first wave of civil unrest. In general, the library also experienced a greater volume

of public engagement during, and to a degree after, both waves as compared to the

minimal engagement before both waves of civil unrest. Public engagement mainly took the form of likes and retweets, which do not necessarily require much further action on the part of the library. However, this form of engagement serves as an indication that the public is viewing the content the library posts and spreading that information to other Twitter users. Comparatively, the data reveals replies as the lowest type of engagement compared to the likes and retweets. However, the replies still signify an important form of public engagement. In contrast to receiving likes and retweets, responding to replies, as the Ferguson Municipal Public Library did for many of the ones it received, requires a time, resource, and energy commitment on the library's part. Responding to replies is a crucial opportunity to maintain a two-way conversation with its community and cultivate relationships in general and during a crisis. These conclusions are evidenced by frequency and descriptive statistics of public engagements with library tweets and percentage changes between phases and waves of civil unrest.

To use Twitter as a communication tool around a crisis, as the Ferguson Municipal Public Library did, it is important for a library to have a presence on the social media site beforehand, as well as some sort of established followership. Prior establishment and use of a social media site allows a library to develop relationships with its followers, gain experience using the platform as a two-way communication tool, and cultivate its posts as a reliable news source for issues pertaining to the library and its patrons. Although the Ferguson Municipal Public Library had only minimal and sporadic activity on Twitter prior to the first wave of civil unrest, the library at least had the account already set up, a small followership, and familiarity with using the platform to communicate with the Twitter community.

The Ferguson Municipal Public Library used Twitter throughout the first wave of civil unrest and its actions during this time became well known and widely reported in the news before the start of the second wave (Chandross, 2014; Curry & Grimes, 2014; Goldberg, 2014; Miller, 2014). The library also established a precedent for using Twitter as a communication tool around the first wave of civil unrest, which fell in line with the library's apparent goals of supporting its community's needs and being transparent with its actions. Given these goals and prior experience, it is logical that an increase in communication and engagement is present around the second wave of civil unrest, even though the second wave occurred over a slightly shorter time. It is not surprising that the library continued building upon its use of Twitter as a communication tool throughout the second wave of civil unrest, and likewise more people turned to the library's Twitter account to consume and engage with the presented content.

While the level of public engagement can be unpredictable and does not always correspond with increased Twitter activity, it is an important consideration for a library in developing a crisis communication plan involving social media. A library using social media as a communication tool should reflect on how it would establish its presence on social media platforms, promote public engagement with its social media accounts, and manage receiving large levels of engagement. As people turn to the library's social media platforms to find information, engage in conversations, and look for a way to plan, respond, and recover from a crisis, it is ideal that a library would have an established plan and the training to effectively conduct outreach and achieve crisis communication goals.

In terms of how the Ferguson Municipal Public Library used Twitter to communicate with patrons and support the community's disaster resilience around the

2014 waves of civil unrest, the researcher used multiple approaches to examine tweets to better understand the library's use of Twitter as a communication tool. These different approaches included analyzing the types of content posted, the types of hyperlinks to other sources incorporated, and the actual message included in the tweets. The following conclusions are evidenced by the frequency and descriptive statistics for post type, link type, and content type codes applied to the Ferguson Municipal Public Library's tweets. An analysis of these codes allowed the researcher to determine what type of tweets were posted, how the library linked tweets to other sources, and what types of messages the library tweeted about in general and in relation to community resilience.

Overall, the Ferguson Municipal Public Library relied overwhelmingly on simple text only posts versus tweets that incorporated images or videos. In addition, the library preferred to include some type of link in the form of a Twitter handle, hashtag, website URL, or a combination of these links rather than not including any link in the post text. Primarily, the Ferguson Municipal Public Library linked its tweets with the handles of other Twitter users. After Twitter handles, the library more commonly linked its tweets with a combination of different types of linked information, followed by linking tweets with hashtags, and then with website URLs.

It is important to consider one's crisis messaging as the types of text, visual, or audio content posted could change depending on the library's purpose behind using Twitter as a communication tool. In this case study, it is apparent the library desired to share information and engage in conversations with the public quickly, often in real time, to support the community in managing and recovering from the situation, as well as to be transparent with its actions. As such, Ferguson Municipal Public Library's text only posts

of 140 characters or less are often the most efficient method for communicating information quickly and maintaining a dialogue with people. While an image, video, or piece of audio can evoke powerful emotions and statements, these types of posts usually take more time to coordinate for social media when quick and accurate communication is key in a time of crisis.

Furthermore, the multiple ways of hyperlinking to other sources in tweets is another indication of the library's drive behind using Twitter as a communication tool. The primary inclusion of Twitter handles by the Ferguson Municipal Public Library is indicative of the large number of conversation and information exchanges that occurred between the library and Twitter users. Twitter handles allowed the library to direct information at and acknowledge the actions of specific people, while also being open and transparent with the public in communicating about activities occurring outside of Twitter. Use of hashtags enabled the library to not only promote certain ideas, emotions, or philosophies like #WEAREFAMILY, #heroteachers, and #whatlibrariesdo, but also group library and user tweets in one place around particular topics like #Ferguson or #Fribrary. Lastly, including website URLs in tweets allowed the Ferguson Municipal Public Library to provide the public with detailed information outside of the 140-character limit for each tweet about library services or operations and other relevant community information from outside sources (e.g., insurance claim information, donation book lists, or interviews with the library director). Thus, the type of messaging and multiple ways of hyperlinking to other sources are another important consideration in crisis communication planning as the main mode selected can help the library achieve its purposes in using Twitter as a communication tool.

In addition to planning for the types of tweets and hyperlinks used, the most important part of social media crisis communication is the actual messaging or content shared. To analyze the library's Twitter content, the researcher examined the library's theme frequency and descriptive statistics in relation to performing general outreach and supporting community resilience. For general outreach around the waves of civil unrest, the Ferguson Municipal Public Library's tweets centered primarily on acknowledging others, having informal conversations, and sharing information, secondarily on communicating about culture, libraries, and library programs, and tertiarily on events and library materials (Figure 5.2).



*Figure 5.2.* Ferguson Municipal Public Library's Twitter Content. This figure exemplifies the top three main and sub-content categories for the library's tweets around both waves of the 2014 civil unrest (Ferguson Library, 2014c, d, e, i, p, q, x, ab, & ag).

First, acknowledgement tweets referenced culture and the libraries in general, as well as library materials quite a bit. These tweets mainly expressed thanks or recognition for local teachers, volunteers, community partners, book and monetary donations, and the positive actions of other organizations and people. Second, informal conversation tweets also particularly referenced culture, libraries, and library materials. A wide range of conversational topics existed within this category (e.g., greetings, well wishes, hobbies and reading habits, and questions and answers), but the key aspect of these tweets was the back and forth exchange between the library and Twitter users as a way to make individual connections and cultivate relationships with Twitter users. These tweets specifically included conversations around the mood in Ferguson, ways to offer support, reaction statements about local events (e.g., news articles and the "Hands Up" art exhibit), library values (e.g., public service, the community, #whatlibrariesdo), general information about the library (e.g. goals, staff, and building tour), donated materials (e.g., books and equipment), and the library's collection (e.g., graphic novels and comic books).

Third, the focus of information sharing tweets also covered a wide range of topics, but revolved around culture, libraries, and library programs mainly. These tweets shared information about the state and environment within the library, local organizations in need of support, ways of supporting the library, emergency response and recovery programs and procedures (e.g., emergency school classes, the Alliance of Black Art Galleries' exhibit, and loan and insurance assistance for businesses), volunteer opportunities, upcoming events (e.g., teen council meeting and a holiday book trade), and event turnout. In addition, information sharing tweets presented donation statistics and

reactions, future plans for donations (e.g. hire a new librarian and catalog the Unity

Collection created from donated items), news articles about the library, library values

(e.g., serving patrons, bringing knowledge, being the heart of the community, and being

more than just books), and various ways of discussing and celebrating libraries, library

materials, and services with #Fribrary. Fourth, events related tweets went hand-in-hand

with relating to cultural activities or library programs. These tweets announced and

communicated the logistical details to the public about different events or programs at the

library or in the community (e.g., adult and child summer reading, author talks, a

financial literacy series, arts and crafts, book clubs and trades, and the US Small Business

Administration Disaster Loan Outreach Center).

Focusing on community resilience, the Ferguson Municipal Public Library's use

of Twitter supported Ferguson's disaster resilience around both waves of civil unrest.

Over a quarter of the library's tweets supported Ferguson's community resilience efforts

around disaster risk reduction, emergency management, and community development.

Community resilience tweets followed similar trends as seen with the library's Twitter

activity and public engagement with tweets. The library posted community resilience

tweets at a much higher volume throughout the second wave and in general, more so

during and after both waves, as compared to before both waves of civil unrest. In fact, the

tweets receiving the largest number of total public engagements all helped to support

Ferguson's community resilience (Figure 5.3).

The main category that the library's community resilience tweets fell into is

community development, with a much smaller amount falling into the emergency

management and disaster risk reduction categories. Major content themes for the library's

*Figure 5.3*. Ferguson Municipal Public Library's Top Engagement Tweets. This figure illustrates the top six library tweets that received the largest number of public engagements added together (Ferguson Library, 2014b, l, m, t, u, & y).

community resilience tweets included informing the public about library operations, sharing information, making announcements, promoting community and library events, and advising the public on library services related to the topics of culture, libraries, and library programs (Figure 5.4). First, the two disaster risk reduction tweets communicated the library's support for the community, available emergency programs in the event that schools closed, and expectations for any safety issues to arise for library operations. Second, several of the emergency management tweets focused on communicating about library operations (e.g., library hours, the state of the library, availability of Wi-Fi and library materials, and a safe place to bring children, rest, and be with other community members). Emergency management tweets also shared information about local emergency programs and procedures, coordinated volunteer efforts at the library,

provided intelligence on local crisis relief efforts (e.g., insurance claim assistance for

businesses), and delivered up-to-date information from government sources.



*Figure 5.4.* Ferguson Municipal Public Library's Community Resilience Tweets. This figure exemplifies library tweets that supported community disaster resilience around both waves of the 2014 civil unrest (Ferguson Library, 2014g, h, j, k, n, s, w, ah, ai, & am).

Third, Ferguson Municipal Public Library's community development tweets

expressed support for community partners, teachers, volunteers, and the Ferguson

community, promoted community and library events (e.g., Ask Me Anything reddit event with the library director, book clubs, and the "Hands Up" art exhibit), celebrated positive community and library accomplishments, and prompted discussions using #Fribrary or #whatlibrariesdo. In addition, community development tweets fostered a welcoming and peaceful library space, provided information about mental health and business recovery programs, looked for volunteers to spearhead library programming, and announced different ways for the community to respond to the events (e.g., healing kits for check out, "Hands Up" art exhibit reflection opportunities, and Readings on Race Book Club discussions). Overall, Ferguson Municipal Public Library's community development tweets focused on building social capital, increasing and improving social networks, and providing support to people around both waves of civil unrest.

However, the data revealed a majority of Ferguson Municipal Public Library's individual tweets did not directly relate to community resilience efforts in the areas of disaster risk reduction, emergency management, and community development. While a greater amount of individual tweets could not be classified as supporting community resilience, the researcher argues that the data tells a different story if one looks at the library's non-community resilience tweets in large groupings. Examined as a collection, the researcher contends that these tweets do in fact support community resilience efforts. These non-community resilience tweets did not occur in a vacuum, but are implicitly related to the civil unrest events and share many of the main content themes found in the community resilience tweets. Major content themes included acknowledging others, having informal conversations, and sharing information related to the topics of culture, libraries, and library materials (Figure 5.5).

*Figure 5.5*. Ferguson Municipal Public Library's Non-Community Resilience Tweets. This figure exemplifies library tweets that did not support community disaster resilience around both waves of the 2014 civil unrest (Ferguson Library, 2014z, ad, aj, & ak).

Individual acknowledgement, informal conversation, and information sharing tweets around a variety of topics do not necessarily support community resilience. However, each acknowledgement, conversation, question asked and answered, or fact shared cultivates a transparent, caring, and authentic relationship between the library and a Twitter user. As the library participates in these two-way engagements with individual Twitter users and the public as a whole, it creates a social network and feelings of connection to a much larger community. Through these interactions on Twitter, the Ferguson Municipal Public Library is able to communicate relevant or interesting pieces of knowledge, provide opportunities for the public to give feedback, coordinate and manage tasks, which increase and improve the connections between other users, and ultimately, foster a large online community support system.

*Conclusion and Future Research*

This case study of the Ferguson Municipal Public Library explored how the library's disaster response fit within the literature and how it used Twitter to

communicate with the public and support community resilience around the 2014 waves of civil unrest in Ferguson, Missouri. The researcher collected Twitter data and performed a content analysis on the library's tweets from during the two waves of civil unrest, as well as four weeks before and after each wave of civil unrest to answer these research questions. The content analysis revealed that the Ferguson Municipal Public Library used Twitter as a communication tool around the 2014 waves of civil unrest in Ferguson, some of the library's tweets supported community resilience, and the public significantly engaged with the library's tweets at the time. Overall, the Ferguson Municipal Public Library tweeted extensively during, and to a degree after, both waves of civil unrest, but especially during the second wave of civil unrest. The library's tweets mainly took the form of text only posts and were hyperlinked with a Twitter handle, hashtag, website URL, or some combination of the three links. In relation to general outreach purposes, the content of the Ferguson Municipal Public Library's tweets centered primarily on acknowledging others, having informal conversations, and sharing information, secondarily on communicating about culture, libraries, and library programs, and tertiarily on events and library materials.

While a greater amount of individual tweets could not be classified as supporting community resilience, over a quarter of the library's tweets did support Ferguson's community resiliency. However, if the library's non-community resilience tweets were examined as a collection, the researcher contends that these tweets do in fact support community resilience efforts. Regardless, community resilience related tweets received some of the largest public engagement and primarily fell into the community development category, with a much smaller amount categorized as emergency

management and disaster risk reduction tweets. The major content of Ferguson Municipal

Public Library's community resilience tweets included informing the public about library

operations, sharing information, making announcements, promoting community and

library events, and advising the public on library services related to the topics of culture,

libraries, and library programs.

Several themes and implications emerged from the data. First, the content analysis

clearly revealed a library could use Twitter as one type of crisis communication tool for

preparing, informing, and responding to library patrons, community members, and the

public at large. However, it is important for a library to already have a presence on a

social media site and some sort of established follower group, in order to use social media

as a crisis communication tool. Second, the literature and results suggest that if a library

wants to use a social media site as a communication tool in general and around a crisis, it

needs to establish and maintain a communication strategy with someone trained to

implement that strategy. This is especially important during a disaster when a library may

experience a significant increase in views and public engagement with the library's social

media account. Having a plan and social media manager prior to the events could help

ease the influx of outside information and public attention. Third, a library's social media

communication strategy should incorporate the goal for using this tool, the persona to

present online, the types of posts and information to relay, the messaging or content of

the posts, the time required and persons responsible for accomplishing these tasks, and

the considerations for how this might change during a crisis. Fourth, supporting

community resilience is a valuable role that a library is uniquely well positioned to play.

Reflecting on, incorporating, and documenting the impact of the library's community

resilience support activities in strategic planning, daily operations, and outreach enables libraries to demonstrate one of the many ways they serve and add value to a community.

In critically inquiring into these research questions, this study strived to build knowledge by adding to an emerging body of literature and strengthening the connections between disaster management, community resilience support, crisis communication, and social media use in a public library setting. Through a review of the literature and discussion of this study's results, the researcher intended to encourage public libraries to develop a disaster and crisis communication plan, as well as expand the types of emergencies considered, possible disaster roles taken, and crisis communication tools employed. Furthermore, the researched wanted to demonstrate that libraries can be of significant value to their communities by supporting community disaster resilience and social media is one way to accomplish that task.

The researcher hopes this study sparks further research on library social media use during different types of emergencies and roles libraries can play in supporting community resilience. This cases study only focused on the Ferguson Municipal Public Library's Twitter account from around the 2014 waves of civil unrest, but it would also be interesting to analyze the library's Facebook feed from the same time to discover similarities and differences in use between the two social media platforms. Moreover, this study fixated on the library's tweets only, but it would be intriguing to examine the Twitter community engaging with the Ferguson Municipal Public Library's around the 2014 waves of civil unrest, and possibly determine geographical information to know how many Ferguson residents engaged with library tweets around this time. Furthermore, while this content analysis highlighted several themes and implications, a follow-up

interview with the Ferguson Municipal Public Library staff could reveal other pertinent information. Interviews with library staff might allow us to understand the library's disaster planning and communication strategy at the time and changes made after the 2014 civil unrest, as well as reflections or recommendations for best practices on library disaster preparation, management, and communication. Finally, it would be fascinating to conduct similar studies in other libraries, such as the Enoch Pratt Free Library and the Baltimore, Maryland 2015 civil unrest or the Flint Public Library and the ongoing Flint, Michigan water crisis. These future research ideas would continue to strengthen this growing body of literature, demonstrate the value libraries bring to their communities, and better prepare libraries to support the disaster resilience of their communities.

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# APPENDIX A

## CODEBOOK

*Codebook for Ferguson Municipal Public Library's Tweets During the 2014 Civil Unrest*

| Variable | Code | Definition |
|---|---|---|
| General Coding Categories | | |
| Tweet Text | Text | The textual message including any links or hashtags posted to Twitter |
| Tweet Permalink | Permalink | The unique URL web address for each tweet |
| Date | Date | The month, day, and year a message was posted to Twitter. Entries represented as MM/DD/YY |
| Timeframe | TIMEFRAME:before TIMEFRAME:during TIMEFRAME:after | The point in time when the tweet was posted in relation to the waves of civil unrest either before (TIMEFRAME:before), during (TIMEFRAME:during), or after (TIMEFRAME:after) the civil unrest |
| Post Type | POST:text POST:image POST:video | The type of tweet, based on whether it contains only text content (POST:text) or an image (POST:image) or video (POST:video) is attached |
| Content Type | LINKED:handle LINKED:hashtag LINKED:website LINKED:multiple LINKED:not | The type of tweet, based on whether it is linked to another website by a Twitter user handle (LINKED:handle), a hashtag (LINKED:hashtag), a website (LINKED:webstite), any combination of the above (LINKED:multiple), or not linked to linked to another website (LINKED:not) |

| | | |
|---|---|---|
| Likes | Likes | The number of public engagements or interactions with a tweet in the form of how many times other users clicked the like button (heart button) on a particular tweet |
| Retweets | Retweets | The number of public engagements or interactions with a tweet in the form of how many times other users clicked the retweet button (button with two arrows forming a box) on a particular tweet |
| Replies | Replies | The number of public engagements or interactions with a tweet in the form of how many times other users clicked the reply button (single arrow button) on a particular tweet |

| Variable | Code | Definition |
|---|---|---|
| Public Library Content Categories – Main Coding Categories | | |
| Acknowledgement | ACKNOWLEDGE | "An example of a tweet categorised under this category has to be a direct acknowledgment, usually of thanks, to another tweet and contain within the tweet the @ reply acknowledging the recipient" |
| Advisory Services | ADVISORY | "Tweets categorised in this category must be a reply to a services related query from a patron to a [library] staff, as revealed in the context of the tweet itself, and usually take the form of using an @ reply format" |
| Announcement | ANNOUNCE | "An announcement tweet is from either [library] staff or another party to the general public announcing a related activity or news piece pertaining to or associated with [the library] that may or may not take the form of a social event" |
| Event | EVENT | "Similar to an announcement tweet, but pertaining to a specific event with a specific time and date contained within the tweet itself" |

| | | |
|---|---|---|
| Feedback Seeking | FEEDBACK | "Tweets under this category are general inquiries presented to a general audience, either by [the library], or by another party, that present a query worded to receive a direct answer. They can take the form of general inquires or formal surveys" |
| Informal Conversation | CONVO | "Informal Conversation, as based on context, is an ongoing conversation taking place between either staff and patron, or patron and patron. Informal conversations are usually denoted by use of the @ reply and the RT function" |
| Information Sharing | INFOSHARE | "Composed of tweets where the identity of the sharer is unclear but where the focus is centered on sharing specific information with others, either publicly or to specific recipients, on any number of subjects" |
| Library Operations | OPERATIONS | "Library Operations encompass tweets relaying information about library hours, changes in library hours, library closures due to any number of reason, or anything else pertaining to the operations of the library. These tweets can take the form of an announcement but must be related to operations." |
| News | NEWS | "These tweets must report on a newsworthy item of interest that does not originate within the [library] cultural framework, though is still pertinent to [the library] and its clientele" |
| Opinion | OPINION | "An opinion consists solely of expressing a personal opinion on a matter, be it a book, film, event, news item, or anything else. It can be directed to the general public or in a specific @ reply" |

| Query | QUERY | "Tweets that fall into this category directly ask a question with an expectation of a specific answer. The question can be to the general public or to specific respondent" |
| --- | --- | --- |
| Recommendation or Suggestions | RECS | "Tweets in this category consist mainly of suggestions, presumably by [library] staff to the general public, designed to lead the reader to the [library] catalogue. They almost always include catchy and creative introduction and an URL Pointer to the page in the catalogue where one can then access and borrow the suggested material. With that said, this category can also consist of recommendations or suggestions either from [the library] to the public or from the public to [the library] regarding any matter" |
| Request | REQUEST | "Requests include Tweets that directly demand something. The request is different from a query in that it is not specifically seeking an answer, but giving a directive" |

| Variable | Code | Definition |
| --- | --- | --- |
| Public Library Content Categories – Sub-Coding Category Examples | | |
| About Library | library | "[American] Library Association, [Ferguson Municipal] Public Library, Librarians, Branches, Philosophy" |
| Library Materials | materials | "Books, Audio Books, Newspapers, Magazines, CDs, DVDs, Video Games, Biography, Autobiography" |
| Culture | culture | "[American] Content, Surveys, Cinema, Film, Art, Dance, Music, Radio, Novels, Photos, Reading, Writing, Stories, Poetry, Authors, Sports, Television, Movies, … Contests, Fundraising, Family" |
| E-Services | eservices | "E-content, E-books, E-readers, iPad, Apps, Tags, iPhone, Freegal, Freading" |

| | | |
|---|---|---|
| Programs | programs | "Freedom to Read, Spread the Words, Writer in Residence, Writer in Exile, Leader in Residence, Summer Reading Club, The Great Library Read-In, Books to Film, Books into Movies, Food for Fines, Teen Tech Week, Book Sale/Books2Buy, Family Day, Family Literacy Day" |
| Membership | memberships | "Accounts, Passwords, Library Cards, Benefits" |
| General Library Services | services | "Genealogy, Library Guides, Requests/Holds, Interlibrary Loans, Press Display, Study Guides, Newsletters, Tutorial" |
| Library Catalog | catalog | "Bibliocommons" |
| Miscellaneous | misc | "Temporary Closure, Construction, Power Outage, Water Main Break, Branch Opening, Opening Hours" |

| Variable | Code | Definition |
|---|---|---|
| Community Disaster Resilience Categories | | |
| Disaster Risk Reduction | COMRES:riskreduce | The goal of tweets in this category is a minimization of residual risk. These tweets cover "informing others of disaster risks, discussing and planning ways to minimize risk, coordinating and managing tasks, and conducting post-event learning to improve." |
| Emergency Management | COMRES:emgmt | The goal of tweets in this category is a safe community through shared responsibility. These tweets cover "providing emergency intelligence through crowdsourcing, helping people prepare for disasters, communicating warnings to others, coordinating community response and recovery, and conducting post-event learning to improve." |

| Community Development | COMRES:comdev | The goal of tweets in this category is a formation of social capital for disasters. These tweets cover "increasing and improving social networks, leadership, and support systems, providing support to people during and after a disaster, and conducting post-event learning to improve." |
| Not Community Disaster Resilience Related | COMRES:not | These tweets do not fall in any of the community resilience contexts listed in the above variables. |

*Note.* The Public Library Content Category and the Community Disaster Resilience Category variables are meant to be categorized by one main category and one subcategory linked by a colon in between the two. The variables and definitions for the Public Library Content Category all come directly from Shiri & Rathi's (2013) article. The variables and definitions for the Community Disaster Resilience Category all come directly from Dufty's (2012) article.

# APPENDIX B

## CODING PROTOCOL

*Directions*
The purpose of this study is to answer the following research questions
1.  How did the Ferguson Municipal Public Library use Twitter to communicate with the public around the 2014 waves of civil unrest in Ferguson, Missouri?
2.  How did the Ferguson Municipal Public Library use of Twitter support the community's disaster resilience, if at all, around the 2014 waves of civil unrest in Ferguson, Missouri?

For testing the coding scheme applied to Ferguson Municipal Public Library tweets in the data collection timeframe, multiple coders will code the same sample dataset. This randomly selected sample includes 196 tweets out of 718 to ensure a 90% confidence level with a 5% margin of error. Multiple coders will code only for the variables under the public library content and community disaster resilience categories, which are subjective variables. Determining the general variables is more objective and is not being tested for intercoder agreement at this time.

*Coding Variables for Ferguson Municipal Public Library's Tweets*

| General Categories | Public Library Content Categories | | Community Disaster Resilience Categories |
|---|---|---|---|
| | Main Categories | Sub-Categories | |
| • Tweet Text <br> • Tweet Permalink <br> • Date <br> • Timeframe <br> • Post Type <br> • Content Type <br> • Likes <br> • Retweets <br> • Replies | • Acknowledgement <br> • Advisory Services <br> • Announcement <br> • Event <br> • Feedback Seeking <br> • Informal Conversation <br> • Information Sharing <br> • Library Operations <br> • News <br> • Opinion <br> • Query <br> • Recommendation or Suggestions <br> • Request | • About Library <br> • Library Materials <br> • Culture <br> • E-Services <br> • Programs <br> • Membership <br> • General Library Services <br> • Library Catalog <br> • Miscellaneous | • Disaster Risk Reduction <br> • Emergency Management <br> • Community Development |

*Steps*
1. Open the Excel file of the sample tweets from Ferguson Municipal Public Library

2. Copy and paste the permalink for each tweet into a web browser of your choice
   i.   Do not rely solely on the tweet text in the Excel file as you will miss important information needed to code the tweet

3. Read each individual tweet and briefly examine any attached files (images or videos) or links (Twitter handle, hashtags, and URLs)
   i.   If the tweet is part of a back-and-forth conversation, you should also consider the context of the tweet within that dialogue exchange

4. Code the tweet for the public library content that it is communicating
   i.    Refer to the codebook for public library content variable definitions
   ii.   Pick one variable from the main category and one variable from the sub-category
   iii.  In Excel, enter these variables in the PublicLibrary column
   iv.   Capitalize the main variable, use lowercase letters for the sub-variable, and link these two variables by a colon in the middle (e.g., MAIN:sub)

5. Code the tweet for the community resilience content that it is or is not communicating
   i.    Refer to the codebook for community resilience content variable definitions
   ii.   Use the main category label of COMRES
   iii.  Pick one variable from the sub-category
   iv.   In Excel, enter these variables in the CommunityResilience column
   v.    Capitalize the main variable, use lowercase letters for the sub-variable, and link these two variables by a colon in the middle (e.g., MAIN:sub)

6. Save Excel file frequently throughout coding and send the completed file back to the researcher