BLACK WOMEN FACULTY, DIGITAL SOCIAL NETWORKS, AND MOBILIZING

SOCIAL CAPITAL

A Dissertation

by

PATRICE B. FRENCH

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Chair of Committee,	Mary V. Alfred
Co-Chair of Committee,	Megan Patterson
Committee Members,	Elizabeth A. Roumell
	Christine Stanley
Head of Department,	Mary V. Alfred

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ABSTRACT

The purpose of this dissertation was to examine how Black women university-level faculty develop and use informal digital social networks to facilitate social capital. Black cyberfeminism and social capital theory were two theoretical traditions utilized as a conceptual framework for this study. Using a mixed-methodology design with social network analysis and critical discourse analysis, this dissertation examined the structures and connections within the Twitter #CiteBlackWomen informal network and explored discourse around gendered and racialized experiences of Black women within the academy.

Throughout this dissertation I drew from user connections and content within the Tweets to examine and illustrate how the #CiteBlackWomen hashtag is used as an informal network for Black women faculty. Results of the social network analysis indicate a large, loosely connected network with small pockets of more densely connected clusters. The most central users in the network were likely to serve as a bridge between unconnected individuals within the loose network. Examining clusters revealed more cohesive structures and higher levels of mutual connections. Findings from the critical discourse analysis reveal an informal digital community used for a) disseminating information about work created by Black women, b) combating erasure of Black women's intellectual contributions and labor; and c) digitally mediated spaces for affirmation, accountability, and support.

Findings from this dissertation provide evidence of individual and structural social capital formation within the #CiteBlackWomen network, although questions exist about how and to what extent do network participants access social capital. This dissertation demonstrated how informal digital networks can serve as professional communities of practice through creating a space for learning and development for Black women faculty. The #CiteBlackWomen network also was situated as a digital counterpublic and by confronting, acknowledging, and re-centering Black women faculty in academic life and beyond without the existence of gatekeeping and hierarchical structures common in the academy. Findings from this study provide theoretical implications for social media and network research. Practical implications for using digital networks also exist with regard to supporting Black women faculty and others from historically marginalized backgrounds.

DEDICATION

This dissertation is dedicated to my mother, Jeanetta Marie French. She was unable to

see me through this process in person, yet her voice and push for education while living

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NOMENCLATURE

Black women include cis-gender and trans women, queer identified folk, gender non-

binary folk, and "those of us who read as Black women—despite our self-identification"

(Bailey, 2021, p. 20).

Digital social network is an Internet-based network whereby users can develop and

interact within a public semi-public bounded system (boyd & Ellison, 2007).

Social capital includes resources, information, and benefits available to individuals and

groups who share common connections or networks (Kwon & Alder, 2014; Lin, 2001;

Putnam, 1995; Schuller et al., 2001).

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INTRODUCTION

While representation of faculty of Color at post-secondary institutions has increased over the past 20 years, disparities persist for Black women faculty at each academic rank level, including of tenure-track and clinical faculty position (Hopkins et al., 2013). Table 1 outlines full-time faculty demographic data by race/ethnicity and gender from 1999 to 2018 from the U.S. Department of Education's National Center for Education Statistics (2001; 2018).

Table 1 *Full-time Faculty in Degree-granting Postsecondary Institutions by Race/Ethnicity and Sex*

	Fall 1999				Fall 2018			
	Women		Men		Women		Men	
Race/Ethnicity	N	%	N	%	N	%	N	%
Asian/Pacific Islander	10,137	1.7%	23,975	4.1%	36,528	4.4%	49,507	5.9%
American Indian /Alaskan Native	1,112	0.2%	1,449	0.2%	1,796	0.2%	1,617	0.2%
Black	14,562	2.5%	14,660	2.5%	26,397	3.2%	19,351	2.3%
Hispanic	6,876	1.2%	9,622	1.6%	20,782	2.5%	20,621	2.5%
White	181,392	30.7%	307,814	52.1%	268,577	32.3%	304,009	36.5%
Two or more Races	-	-	-	-	4,637	0.6%	3,705	0.4%
All	**219,898**	**37.2%**	**371,039**	**62.8%**	**388,530**	**46.7%**	**443,589**	**53.3%**

Note. Data for two or more races was not reported in 1999.

In 1999, Black women accounted for 2.5% of overall full-time faculty. From 1999 to 2018, Black women full-time faculty representation only increased from 2.5% to 3.2%, or less than one percent. American Indian/Alaskan women faculty representation

has remained at less than one percent for the past 19 years. This meager increase of Black women faculty and the stagnation of American Indian/Alaskan women faculty are stark when compared to Asian/Pacific Islander and Hispanic women faculty whose representation more than doubled in the same time span. While the representation of White women faculty only increased by 1.6% in the past 19 years, this population is three times the size of all women faculty of Color combined, who represented 10.9%. In 1999, women faculty of Color represented 5.6% and women accounted for 37.2% of full-time faculty, respectively. As of 2018, women of Color faculty accounted for 10.9% of all faculty and women accounted for 46% of all faculty. Overall women representation in full-time faculty increased by 9%, whereas women faculty of Color only increased by 5.6% during this same time. Women are increasingly represented in faculty life, yet disaggregating these data reveal different levels of progress among racial/ethnic groups.

Beyond statistical representation, Black women faculty also remain outsiders within the cultural and political realms of the academy (Griffin et al., 2011; Patitu & Hinton, 2003; Turner & Gonzalez, 2008). As outsiders, they are often excluded from social networks critical to their professional development. Given the disparities in representation and status in the academy, this study sought to examine how Black women faculty build informal networks in digital spaces as avenues of support and social capital. The following sections explore Black women faculty experiences in the academy in more detail. I begin with the Background of the Problem which covers challenges of Black women faculty, interpersonal, collegial, and institutional barriers to

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successfully traversing the academy, strategies and tools of success, and information on academic digital networks. Next, I define the study problem, purpose statement, and the research questions. Finally, I end this chapter with a discussion of the significance of the study, delimitations, and a brief explanation of the organization of the dissertation.

Background of the Problem

To provide a broad understanding of the problem, I begin by contextualizing the academy and how its structures effect and influence Black women faculty's experience. Next, I discuss tools, strategies, and coping mechanisms Black women faculty employ to navigate academic spaces. I end this section with reviewing faculty's use of social networks, both physical and digital, and the emergence of social media as a space for academic discourse.

Black women faculty experience the academy differently than men faculty and non-Black women faculty. The interplay of race and gender presents distinct experiences and unique challenges for Black women in various academic positions. Over the past 15 years, various literature has emerged that examines, illustrates, and reveals experiences of Black women in academe (Griffin et al., 2011, Holmes, 2008; Kelly & McCann, 2014; Logan & Dudley, 2020; Marbley et al., 2011; Patitu & Hinton, 2003; Sule, 2009). Numerous qualitative studies reveal women report sex- and race-based discrimination incivility, and bullying (Griffin et al., 2011; Holmes, 2008; Johnson-Bailey, 2015; Patitu & Hinton, 2003; Turner & Gonzalez, 2008). Marginality resulting from racialized and gendered identities also contribute to challenges in navigating academe (Alfred, 2001a; Griffin et al. 2011, 2013; Marbley et al., 2011).

Several studies also speak to the intersections of race and gender in academic politics, and how those intersections influence Black women's professional identity (Comer et al., 2017; Dancy & Jean-Marie, 2014; Mitchell & Miller, 2011). Some Black women encounter issues related to professional identity that often result in marginalization and isolation (Comer et al., 2017; Dancy & Jean-Maire, 2014; Mitchell & Miller, 2011; Patitu & Hinton, 2003; Turner & Gonzales, 2008) and challenges with social acceptance (Kelly & McCann, 2014). Encountering outsider or outlier status by being one of few women and/or people of Color within one's academic department is also a unique challenge (Collins, 1986; Mitchell & Miller, 2011). Common experiences among Black women faculty also include receiving less mentoring and support about successfully traversing the academy's visible and invisible rules (Allen & Joseph, 2018; Patitu & Hinton, 2003), which could have implications for their tenure and promotion (Holmes, 2008; Griffin et al., 2011; Turner & Gonzalez, 2008). Kelly and McCann (2014) interviewed women faculty of Color and found lack of social acceptance, isolation, tokenization, lack of role clarity, and gaps in mentoring as major reasons these women did not earn tenure at predominantly White institutions.

The 2016-2017 Higher Education Research Institute (HERI) Survey of Undergraduate Teaching Faculty also provides more detail on the differences in faculty experiences. The purpose of the survey was to capture insight into research, teaching, and administrative obligations of faculty at colleges and universities across the United States (Stolzenberg et al., 2019). This survey included 20,771 full-time undergraduate teaching faculty from 143 four-year public and private universities. The outcomes of this

survey reveal gender and race differences in faculty experiences. Over sixty-onepercent of Black women faculty reported discrimination as a source of stress, in comparison to 40.5% of Black men, 31.4% of White women, and 13.9% of White men. Black and Latina women tied for reporting the highest sources of stress and discrimination. Disaggregating the data from the HERI survey about perceived scholarly legitimacy reveal that higher proportions of women faculty of Color perceived their need to prove their scholarly legitimacy. Over eighty-Eightyone percent of Black women reported needing to work harder compared to 63.7% of Black men. Thirty-nine percent of White men and 57% of White women faculty, in contrast, reported a need to work harder, a stark contrast to Black women and men faculty. Black, Latina, and Native American women were among the top three groups who reported the need to work hard to gain legitimacy from colleagues. The outcomes of this survey reveal not only gender and racial differences in academic experiences, but also the differences in intersectional experiences across race and gender.

Finally, Black women faculty report issues of work devaluation or being held to a higher standard compared to male colleagues and White women (Dancy & Jean-Maire, 2014; Griffin et al., 2011; Patitu & Hinton, 2003). Studies document narratives where Black women faculty encounter challenges to their scholarly credibility or presumed incompetence by colleagues, evidenced through questioning their work's legitimacy and discounting their expertise (Comer et al., 2017; Griffin et al., 2011; Mitchell & Miller, 2011; Turner & Gonzalez, 2008). This devaluation of the work of Black women faculty, in and of itself, perpetuates norms about whose intellectual production and credibility are

most respected. Underrepresentation in academic life, coupled with perceived incompetence and incredibility, adversely affect the opportunities for Black women faculty. To counteract perceptions of incompetence and lower scholarly credibility, Black women faculty often feel the need to illustrate scholarly productivity in high impact journals at a rate higher than their White colleagues (Griffin et al., 2013; Turner & Gonzalez, 2008).

The perceptions and experiences of Black women faculty in academic life implicate how these scholars receive recognition, opportunities, and worth within their departments and disciplines. These implications contribute to existing disparities about how academic disciplines recognize the scholarly work by women and people of Color. Furthermore, the underrepresentation of Black women in intellectual production reinforces norms that center White masculine knowledge in the academy, even in academic disciplines such as Adult Education where women represent the majority (Johnson-Bailey & Tisdell, 2014). These gaps also perpetuate inequality in a profession where individuals gain credibility and achieve tenure and promotion through their scholarly productivity. Despite the myriad of challenges listed above, Black women faculty often develop tools and strategies for resiliency and improved success in traversing the academy.

Strategies and Tools for Successfully Navigating the Academy as Black Women

Much of the literature on Black women faculty focuses on challenges and negative experiences that exist for them at predominately and historically White institutions. However, equally important is outlining how Black women faculty identify

and implement resistance strategies to successfully traverse and negotiate institutions with a history of White hegemony. Black women push back against exclusionary practices and challenge the status quo in academic spaces to demonstrate that they belong in the academy (Allen & Joseph, 2018; Holmes, 2008).

One such way Black women faculty push back on negative experiences they may encounter is through developing safe spaces to navigate the complexities of the academy (Allen & Joseph, 2018; Griffin et al., 2013). Safe spaces exist within and outside of academia and can include colleagues, family and friends, religious groups, and other spaces of support (Alfred, 2001a). The term counter spaces as applied to higher education settings emerged in work by Soloranzo et al. (2000). These scholars define counter spaces as "sites where deficit notions of people of Color can be challenged and where a positive collegiate racial climate can be established and maintained" (Soloranzo et al., 2000, p. 70). While the conceptualization of counter spaces was initially attributed to students of Color attending higher education institutions, this concept can also apply to faculty and administrators employed in these same institutions seeking safe spaces to explore experiences unique to their identities.

Another tool often useful to Black women is creating and maintaining a positive self-identity and a strong sense of self-efficacy (Alfred, 2001a; Bass & Faircloth, 2011). Literature identifies a strong sense of self as vital in persisting and creating resiliency despite challenges Black women may encounter in presenting an authentic professional identity. Related to creating a positive self-identity is rejecting tokenism, stereotypes, and negative views of marginality (Alfred, 2001a; Bass & Faircloth, 2011). This action

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often requires making space for one's authentic experience within academic settings, finding ways to bring Black women into the space beyond the viewpoint of an outsider, addressing incorrect perceptions, and bringing to life pervasive silence around bullying and incivility.

The literature identifies informal and formal mentoring as an important and necessary tool for supporting Black women faculty (Bass & Faircloth, 2011; Griffin et al. 2011, 2013; Holmes, 2008; Stanley, 2006; Turner & Gonzalez, 2008). Mentoring takes the shape of formal on-campus programs, off-campus opportunities, and professional association-based programs in one's respective field(s). Holmes (2008) illuminates the value of mentoring further by encouraging Black women to be intentional and aggressive about seeking support. Different forms of mentoring throughout one's academic career can increase knowledge and skills to navigate the written and unwritten rules of academic life. Seeking these relationships are vital as literature indicates that Black women are often isolated in the academy (Comer et al., 2017; Dancy & Jean-Maire, 2014; Mitchell & Miller, 2011; Patitu & Hinton, 2003; Turner & Gonzales, 2008).

Networks are a crucial means of support Black women utilize to garner insight into and tools for successfully traversing the academy. Allen and Joseph (2018) profiled the Sistah Network, an affinity mentoring program for Black women faculty, staff, and students affiliated with predominantly White Institutions. This example provides insights into how Black women have long created informal and formal counter spaces to acknowledge and resist racist and sexist experiences prevalent throughout predominantly

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White higher education settings. The collective means by which Black women create support for one another in academic spaces also reflect components of the Black cultural identity which prioritize community and group support over individualistic achievement (Allen & Joseph, 2018; Griffin et al., 2011). Such support among Black women academics is manifested in both physical and digital spaces.

Academics, Digital Networks, and Social Media Usage

Professional learning communities and communities of practice can also serve as useful spaces for Black women, especially early and mid-career faculty, to establish collegial relationships and build individual and collective capacity (Rees & Shaw, 2014). According to Hansman (2001), communities of practice are groups organized by individuals who share common needs, purposes, and want to learn from one another. Communities of practice are egalitarian, promote knowledge generation, and equally value members' contributions. As Hansman (2001) further asserts, these groups redefine what it means to be an expert by equally valuing contributions from individuals without regard for formal roles, titles, or positions. These communities are often environments for social and context-based adult learning by providing tools, nuanced cultural dimensions, and unique understandings of a profession (Hansman, 2001). These environments are now prevalent in the virtual environment and have expanded networking opportunities for Black women academics.

Digital communities of practice and social media are becoming increasingly common and are improving the ease by which faculty network, develop additional skills, and take part in professional identity development (King, 2011). Virtual platforms

facilitated through professional associations, virtual forums, and social media are examples of digital spaces available to academics for engagement. Technological advancements make online connections as ubiquitous as face-to-face connections. Digital connections also help Black women faculty find each other and build networks in fields or disciplines where it may be difficult to find colleagues with similar racialized and gendered experiences.

Faculty use social media for professional purposes. While there is not yet a clear scope of how many faculty members use social media for professional use, research on usage and purpose is steadily emerging. Rowlands et al. (2011) conducted a wide survey of 2,414 researchers across various academic disciplines on their use of social media for research processes. Findings from this study shows collaborative authoring tools (e.g., Google Drive or DropBox), video conferencing tools (e.g., Skype or Zoom), scheduling and meeting tools, and social networking sites (e.g., Facebook or LinkedIn) were the popular types of social media used by researchers. The least common tools were blogging, microblogging (Twitter), and social tagging and bookmarking (undefined in the study). Of respondents, nearly 80% of the researchers used one to three types of the more prevalent social media tools.

Similarly, Lupton (2014) reports findings from a survey of 711 academics–primarily from the United Kingdom, Australia/New Zealand, and the United States–about their social media usage and how it relates to their work as scholars. Ninety-seven percent of respondents reported using social media for professional use across 18 common social media sites. Among the sites, the most common were LinkedIn (60%),

Academia.edu (49%), Facebook (42%), ResearchGate (32%), personal blogging (25%),

YouTube (21%), and Google Plus (20%). Because the researchers disseminated the

survey over social media to increase participation, it is likely that the response rate is

skewed towards academics who use social media in their personal and professional life.

Literature is also now examining the perceived benefits and challenges to

faculty's use of social media. First, academic researchers now use social media for

research participation recruitment (Rowlands et al., 2011). Second, academics use social

media to promote and disseminate research and scholarship on more accessible

platforms. Disseminating on these platforms potentially expands the reach of work

within and outside of the academy, particularly for lay people who may otherwise not

have exposure and access (Lupton, 2014; Rowlands et al., 2011). Expanding one's

professional identity is a third manner by which academic researchers are making use of

social media. Common purposes include enhancing one's own self-development

(Donelan, 2016), maintaining and widening networks (Donelan, 2016), facilitating

professional communication and collaborations (Meishar-Tal & Pieterse, 2017),

improving and furthering scholarship (Veletsianos, 2013), and supporting research and

teaching (Lupton, 2014).

The fourth manner academics use social media is as an opportunity to highlight

social injustices and advocacy. Though less explored in the literature, academics also use

Twitter to serve as a space for critical discursive conversation (Brock, 2012; Hernandez,

2015; Hill, 2018). Hill (2018) examined how Twitter serves as a counterpublic, or a

space from which oppressed groups use the public sphere to share experiences, address

problems, and counter exclusionary norms. For example, Joy Melody and Shardé Davis created the hashtag #BlackIntheIvory to bring attention to microaggressions and institutional issues that affect Black students, faculty, and staff (Smith-Barrow, 2020). Twitter accounts such as @FirstGenDocs, @CiteASista, @CiteBlackWomen, and @BlackWomenPhDs situate specific underrepresented narratives in higher education as a necessary part of academic conversation and discourse. These accounts also use hashtags of the same nomenclature to facilitate group interaction and discourse around these topics. Each of these topics enhance and contextualize how Black women faculty can build support networks to counteract challenging experiences in academic environments and lead to the problem being investigated in this study.

Problem Statement

Central to the field of Adult Education is examining how adults learn and use formal and informal learning spaces for further development. Within academic life, formal and informal support networks and mentoring are programs and opportunities faculty rely on for learning and development to succeed in their roles. As discussed in the previous section, professional learning communities can exist in digital spaces and often serve as a source of networking and professional identity development for faculty. Social media is one such emerging space that facilitates opportunities for informal learning and development. Literature on academics' use of social media examines broad purposes, benefits, and barriers to usage (Lupton, 2014; Rowlands et al., 2011; Veletsianos, 2013). Scholars also examine how social media facilitates opportunities for

public discourse, connects people with similar backgrounds and experiences, and fosters social activism (Graham & Smith, 2016; Jackson et al. 2020).

While literature on social media provides multiple examples of how historically oppressed social groups contribute to public discourse and challenge dominant narratives, these phenomena within the academy remain largely unexamined. There is a gap in the literature about exploring social media use across intersectional identities in digital academic spaces. The increasing ubiquity of social media provides a unique opportunity for Black women faculty to use these platforms to share experiences, combat presumed incompetence prevalent among colleagues, and broaden the dominant narrative beyond who is traditionally associated with mainstream academic life.

Purpose and Research Questions

Given these realities, the purpose of this study was to examine how Black women faculty develop and use informal digital social networks to facilitate social capital. As explored above, literature reveals that Black women experience the academy in different ways than men faculty and non-Black women faculty due to challenges with stereotyping, discrimination, cultural taxation, presumed incompetence, and incredibility or invalidating their knowledge production. These women often employ specific strategies and tools to counteract and resist these challenges so they can successfully navigate the academy. One such way Black women garner support is through finding mentoring opportunities and creating support networks. Examining support networks in digital spaces may expand the understanding and reveal newfound information about

Black women faculty's experiences. The following research questions guided this investigation.

1. What characteristics are evident in informal digital social networks created and utilized by Black women faculty?

2. How does participation in an informal digital network facilitate the development of social capital among Black women faculty?

3. In what ways do individuals participate in an informal digital social network created for Black women faculty?

4. In what ways does an informal digital network facilitate discourse about intersectional experiences of Black women faculty?

Conceptual Framework

Two theories comprise the conceptual framework for this study: Black cyberfeminism and social capital theory. Integrating both theories into a conceptual framework provides this study with a unique lens to examine how Black women use, build, and share social capital in digital spaces. Black cyberfeminism is a theoretical lens that provides a framework for considering the intersectional experiences of women in digital spaces (Gray, 2015). Social capital contends that individuals and groups can ascertain tangible benefits through conscious or unconscious engagement in social associations (Lin, 2001). The following sections briefly describe Black cyberfeminism and social capital theory, and discuss their application in this study.

Black Cyberfeminism

Digital technologies and their influences on gendered societal relations are the focus of cyberfemininst research (Wacjman, 2004). Cyberfeminism is a field of study that connects across feminist and technocultural studies, and it broadly examines how gender socially and politically informs technology (Cockburn, 1992; Wacjman, 2004). Yet, cyberfeminism receives critiques for often centering its scholarship in dominant narratives while failing to consider how differences in identities and social positions influence how women practice and interact in digital spaces (Chun, 2009; Daniels, 2009; 2012; Fernandez, 2002). Extending beyond cyberfeminism and blending with Black Feminist Thought, Black cyberfeminism incorporates "tenets of interconnected identities, and distinct circumstances to better theorize women operating within Internet technologies and to capture their uniqueness of marginalized women" (Gray, 2015, p. 176).

Black cyberfeminism theoretically situates itself as an intersectional theoretical framework that seeks to address the distinct ways digital technologies reproduce structural oppression. Intersectionality within this framework is used as a heuristic approach to understand how layered and intersecting identities affect perceptions, experiences, and opportunities within individual, interpersonal, structural, and institutional spaces (Collins & Bilge, 2016; Crenshaw, 1989, 1991; Harris & Leonardo, 2018). Because of its attention to the politicization of how different social groups use digital technologies, Black cyberfeminism can provide a unique theoretical lens from

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which to examine how the intersection of race and gender shape how individuals interact with technology.

Black cyberfeminism serves as a unique tool to center marginalized voices. The theoretical lens provides an opportunity to examine the intersectional and politicized experiences of Black women within a professional and intellectual context. By examining Black women faculty in digital spaces, my goal is to identify how they position their own intellectual knowledge. Equally important is the self-presentation and representation in public digital spaces as Black women who hold these academic positions. The choice in digital presentation and choice to engage in public discourse about their academic work and their broader experiences as Black women makes using a theory such as Black cyberfeminism appropriate for this study.

Social Capital Theory

Social capital theory is an interdisciplinary theory that examines structures, functions, and benefits of social interactions and social networks (Lin, 2001; Schuller et al., 2000). This theory assumes people are important assets and the connections which tie them, either through formal associations (e.g., families, schools, clubs, organizations) or informal associations (e.g., neighbors, friends, networking) have tangible benefits to individuals and those groups (Putnam, 2000). Two distinct fields of thought theorize how relationships inform social capital. One field argues researchers should examine relationships' influence, effect, and social capital at an individual level (Coleman, 1998). The other field theorizes relationships inform the structure, strength, processes, and

constraints of groups and organizations (Putnam, 2000; Schuller et al., 2000). The latter

notion guides this study.

Social capital is helpful both as a concept and as a theory for this study. As a

concept, social capital offers a means to capture complex interconnections about how

people experience the world within interpersonal interactions, groups, communities, and

larger social systems (Schuller et al., 2000). It focuses on patterns among relationships

as opposed to individual behavior and challenges existing paradigms that separate those

two fields of thought. Lin et al. (2001) explicate on social capital as a theoretical

framework. In such regard, social capital provides a framework for examining how

connection patterns emerge, evolve, and how individuals and social networks gain the

resources or capital generated within a network. Social capital illustrates the

interdependency among social connections and resources. Jackson et al. (2020) speak to

the importance of considering how individuals and social systems are connected within

digital platforms. How these systems and networks make space and work together

inform individual interactions and larger structural contexts. Using social capital theory,

I examine how Black women academics use systems and networks within digital spaces.

In summary, understanding intersectionality and power dynamics is fundamental

to the critical examination of Black women's experiences. Black cyberfeminism

integrates cyberfeminism and Black Feminist Thought to consider intersectional

experiences and how interactions with digital technologies influence, effect, and center

marginalized voices. Social capital theory is deeply intertwined with the notion of social

networks and provides a theoretical basis for examining how individuals within

networks can operate collaboratively to build influence, share resources, share information, and influence one's credibility. Using both Black cyberfeminism and social capital enables an intersectional analysis for examining how structural inequalities, social positions, and power dynamics connect with and influence Black women faculty's participation and use of digital social networks. Chapter II provides a deeper examination of both theories and an integrated framework.

Significance of the Study

The fields of Adult Education and Higher Education examine learning and network experiences for women. Both fields recognize the value social capital contributes to women's development (Alfred, 2009; Alfred & Nanton, 2009; Greyerbiehl & Mitchell, 2014; Jean-Marie & Brooks, 2011). This study seeks to broaden the application of social capital theory in examining the experiences of Black women faculty in higher education. Social capital theory has been critiqued for its inattention to power dynamics and social positions in society (Schuller et al., 2000). Moreover, literature which provides an intersectional analysis on social capital and social network development among Black women remains largely unexamined. Examining how Black women faculty build networks in digital spaces provides unique insights into how intersectional identities facilitate social capital development.

Significance for Research

Grounded in a combination of Black cyberfeminism and social capital theory, this study uses social network analysis and critical discourse analysis to examine how Black women faculty develop informal social network structures on social media spaces.

Black cyberfeminism is an emergent theoretical lens used to explore how intersectional

identities are presented, interrogated, and influenced in digital spaces. Applying this

theoretical lens to examine Black women faculty in digital informal network has, to date,

been unexamined. The unique features of Black cyberfeminism, discussed in the

previous section, provides a framework for parsing Black women's intersectional

identities when present in digital spaces. This study also seeks to contribute to a

broadening theoretical understanding of Black cyberfeminism, as the research by which

the theory has been used has primarily taken place within the fields of sociology and

communication. Additionally, the theory has not yet been applied to research on digital

professional contexts. Using Black cyberfeminism to examine the power structures and

inequalities across social locations within digital spaces can be extended to academic

professional settings.

Social capital theory is well established in social science literature (Schuller et

al., 2000). However, social capital seldom is theoretically applied to examine

intersectional experiences, especially among Black women (Greyerbiehl & Mitchell,

2014). This study seeks to expand upon the limited literature on Black women's social

capital development. Additionally, this study attempts to move beyond exploring how

individuals gain, benefit from, or contribute to social capital by examining the formation

and growth of social capital from a structural perspective.

Significance for Practice

This study has potential significance for Black women interested in transitioning

into the academy, current Black women faculty, and for faculty developers. Formal and

informal support networks have demonstrated value for Black women faculty (Allen & Joseph; 2018; Griffin et al., 2011). Because some social media platforms such as Twitter are public, it changes the nature of these networks from being just a space to find connections, share best practices, and network to sharing unique racialized and gendered experiences to others who may be unfamiliar. The public nature of some social media platforms may also influence how Black women show up, share, and engage within the networks. Because social media platforms popularized through the Internet are becoming so ubiquitous, it is essential to understand how Black women faculty can use these platforms for professional purposes. Finally, exploring how Black women use this platform may illuminate unique manners by which other historically underrepresented groups within the academy can use similar platforms as informal networks to build social capital.

Significance for Policy

This study has potential significance for policy within institutions of higher education regarding the professional development of Black women faculty. The outcomes of this study, coupled with the current representational status of Black women faculty in higher education, may influence higher education institutions to consider more deliberate approaches to targeted faculty development and retention efforts. These institutions could use the outcomes of this study to consider ways to create a positive cultural environment by addressing bias, incivility, and devaluation, which allows Black women and other marginalized faculty to succeed.

Delimitations

Researching within social media platforms presents unique delimitations, advantages, and disadvantages. While the focus of this study is on Black women faculty, the nature of the data used in this study limit the ability to explicitly identify content as created by those who identify as such. Twitter, the social media platform whereby the data will be collected, does not gather racial/ethnic demographic information from its users. However, one can surmise that the content is made by Black women based on the Twitter account profiles and corresponding websites, which state its purpose. The Cite Black Women online collective, the topic of this study, exists to acknowledge and center "Black women's ideas and intellectual contributions inside and outside of the academy through citation" (CiteBlackWomenCollective, n.d., n.p.). The purpose of this collective as stated above provides evidence that Black women are the creators and primary users of these accounts.

Organization of the Dissertation

The purpose of this study is to investigate how Black women faculty develop and utilize informal digital social networks. This dissertation is organized in a conventional five-chapter format. A brief description of each chapter follows.

In Chapter I, I provide background information on the experience of Black women in the academy and explore how the intersection of race and gender presents distinct experiences and unique challenges for this population. Next. I examine how academics use communities of practice, digital networks, and social media. The background information is used to establish a problem, rationale, purpose, and guiding

research questions for the study. Chapter I ends with a brief overview of the conceptual framework, significance of study, and delimitations.

Chapter II explores the nature and functions of social networking sites. I then discuss public spheres, networked publics, counterpublics, and to underscore and situate the nature of publics to social networking sites. Chapter II ends with a detailed exploration of intersectionality, Black cyberfeminism, and social capital theory, which comprise the study's conceptual framework.

This study applies a mixed methodology, comprising of quantitative and qualitative approaches, which are covered in Chapter III. I provide a background and overview of social network analysis, the quantitative approach, and critical discourse analysis, the qualitative approach. Also included is the researcher's reflexivity, the research process and design, methods of analysis, and important ethical considerations. Chapter IV presents the quantitative and qualitative results of the study. Finally, I conclude with Chapter V, which includes a discussion of findings, implications for research, practice, and policy, recommendations for further research, limitations, and the study's conclusions.

CHAPTER II

LITERATURE REVIEW

As discussed in the introduction, Black women are disproportionately underrepresented in full-time faculty positions (NCES, 2018) and are likely to encounter gendered and racialized experiences that adversely affect their professional lives (Griffin et al., 2011, Holmes, 2008; Kelly & McCann, 2014; Logan & Dudley, 2020; Marbley et al., 2011; Patitu & Hinton, 2003; Sule, 2009). In response to these challenges, Black women faculty often employ several strategies to succeed in the academy (Alfred, 2001a; Allen & Joseph, 2018; Griffin et al., 2013; Holmes, 2008). One such strategy is creating informal and formal support networks (Allen & Joseph; 2018; Griffin et al., 2011). Many of these support networks are emerging on social networking sites. The body of literature on how and why faculty use social networking sites is relatively new (Lupton, 2014; Rowlands et al., 2011; Veletsianos, 2013). Literature has yet to explore the impact of intersectional identities in developing digital social networks within academe. Therefore, the purpose of this study is to examine how Black women faculty develop and use informal digital social networks to facilitate social capital.

Chapter II begins with a discussion of social networking sites and social media. I explore features and functions of social media and examine the intersection of gender and race in digital spaces. Next, I discuss public spheres, counterpublics, and networked publics. These concepts contextualize, frame, and deconstruct the nuances of public interaction, subordinated groups' access to and participation in publics, and digitally

networked societies. Finally, I present the conceptual framework which comprise Black

cyberfeminism and social capital theory. I describe the foundations of each theory,

explore empirical applications within the literature, and integrate selected tenets within

each framework to illustrate their utility in this study.

Social Networking Sites and Social Media

In this section, I outline social networking sites (SNS), including definitions,

functions, and features. Next, I explore the role of SNS in forming communities. I

conclude by examining the intersections of race and gender within social media.

Throughout this dissertation, the reader will see the terms social networking sites, social

media, and digital social networks used interchangeably based on the context referenced

within the literature.

Over the past 20 years, SNS have increasingly been used to interact,

communicate, network, and build community (boyd & Ellison, 2007). boyd and Ellison

(2007) frame SNS through both an individual and systems-based lens, and define it as:

> web-based services that allow individuals to (1) construct a public or semi-public
> profile within a bounded system, (2) articulate a list of other users with whom
> they share a connection, and (3) view and traverse their list of connections and
> those made by others within a system. (p. 211)

According to McCay-Peet and Quan-Haase (2017), SNS was a common term in the

literature between 2003 and 2008, but a shift occurred in 2009. Since then, more papers

now use social media and online social networks as a common term. The authors argue

social media is a broader term because it is inclusive of platforms with a primary

purpose that may not be for social interaction, such as blogging or sharing information,

and because many typically associate the term SNS with specific sites such as Facebook.

Carr and Hayes (2015) define social media as "internet-based channels that allow users to opportunistically interact and selectively self-present, either in real-time or asynchronously, with both broad and narrow audiences who derive value from user-generated content and the perception of interaction with others" (p. 50). While many definitions of social media exist, the definition provided by Carr and Hayes guides this study as it embodies the technological and functional purposes of social media with theoretical communicative elements about users, audience, and interaction.

Social media falls within a broader conceptualization of media, digital technology, and mobile technology; it now extends beyond the internet and is ubiquitous to everyday life for many individuals (Gregory et al., 2017). It follows three key themes: "(a) what activities social media enables, (b) how it enables these activities, and (c) the content it contains" (McCay-Peet & Quan-Haase, 2017, p. 15). Some scholars situate social media within a broader conceptualization of Web 2.0. Anderson (2007) defines Web 2.0 as "a group of technologies which have become deeply associated with the terms: blogs, wikis, podcasts, RSS feeds etc., which facilitate a more socially connected Web where everyone is able to add to and edit the information space" (p. 5). The term Web 2.0 emerges out of business canon and thus includes more complex integration with business development and innovation. However, Web 2.0 terminology is less present in today's literature.

Social media sites provide networked interaction elements as primary features on the platforms (boyd & Ellison, 2007; Christakis & Fowler, 2009). Popular examples of social media sites include Facebook, Instagram, Google+, YouTube, Tumblr, Snapchat,

LinkedIn, and Twitter. According to the Pew Research Center (2019), about seven-in-ten

people in the United States use social media for connection, to get news, share

information, and for entertainment. While the 18-29 age group are the most frequent

users of social media at 90% who use at least one site, since 2010, social media usage

has readily increased by each age group. YouTube, Facebook, Instagram, Pinterest,

Snapchat, LinkedIn, and Twitter are the top seven most popular social media sites used

by adults (Pew, 2019). These digital technologies provide a virtual space for individuals

to build groups, organize, and collaborate on common interests (Carr & Hayes, 2015).

Features and Functions of Social Media

Most social media platforms share a common set of features. According to boyd

and Ellison (2007), within SNS individuals should be able to

> 1) construct a public or semi-public profile within a bounded system, 2) articulate
> a list of other users with whom they share a connection, and 3) view and traverse
> their list of connections and those made by others within a system. (p. 211)

Within the first feature, users craft profiles as part of a public or semi-public presentation

of self. These profiles are often the means of interaction between users (boyd, 2010).

Users can control access to profiles to certain audiences.

Friends and Followers lists are a second key feature of social media. These lists

illustrate mutually agreed upon connections and often requires mutual approval by both

users before one can display or access another's information. Social media platforms

blur traditional conceptualizations of communities and redefine notions of 'friendship'

(Johnston, 2013). 'Friends' in social media do not denote the same meaning in physical

environments, as these platforms often do not comprise lists that only include people

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with whom users are closest. Instead, users often apply social and political decisions to who is accepted and rejected among social media friend lists (boyd, 2010; McCay & Quan, 2017). Hence, users may have peripheral ties to other users whom they consider older friends, current friends, and people that they do not know well or at all. Deciding who to accept as Friends or Followers could have repercussions on what the user posts within the social media platforms.

The third feature of social media includes how users connect with others within a defined system. A user intentionally constrains their audience to a list of Friends of Followers. Thus, these followers exist as an "intended public" and not an actual public that is accessible to everyone (boyd, 2010, p. 44). This intended public allows for users to curate and adjust their self-presentation based on the defined public's norms. Carr and Hayes (2015) explore online connections within systems and delineate modes of connection and interaction among users. Interaction on social media sites is heightened in novel ways, such as by using algorithms, which are "programs with enhanced response capabilities that mimic true interactivity by adapting to stimuli and messages" (Carr & Hayes, 2015, p. 51). These algorithms, along with other types of digital mechanisms, create interactive elements that are inherently social as it allows users to connect with others with whom they may not have an existing relationship or deep connection. An example of nuanced interaction is the access users have to celebrities on social media. What celebrities choose to post can create a perceived feeling of interaction and connectedness, even though direct interaction with their follows may not occur.

Carr and Hayes (2015) delineate additional features of social media that are worth noting. Social media exists as asynchronous channels of communication that do not require simultaneous, temporal interaction. Most platforms integrate real-time synchronous communication, but "a defining feature of social media is that the channel is persistently available whether a user is active or not" (Carr & Hayes, 2015, p. 50). Additionally, users can generate the primary content on the platforms. User-centered content creation facilitates more opportunities for social connections and can generate value since the other users can decide to broadcast posts (Correa & Jeong, 2010). Finally, many forms of social media facilitate mass personal communication because they allow users to broadcast information to (potentially) large audiences, while facilitating interpersonal communications among individuals.

Social Media and Notions of Community

Advances in digital media technologies triggered evolutions in social network formation, engagement, and interaction. Digital social networks, in comparison to offline networks, are vaster in scale, user, and audience. The scale by which individuals share and contribute collectively on given topics has increased, as has the specificity in the reason for the connections; as well, people can adapt and transform their identities in digital space in ways that are not reproduced offline (Christaki & Fowler, 2009). Scholars articulated initial fears regarding how Internet and digital technologies would affect communities. These fears involved the weakening of interpersonal interactions (Christaki & Fowler, 2009), the decline of the public community, meaning gatherings, activities, and civic involvement, and overall disengagement with the community

(Hampton & Wellman, 2003). The hypervisibility of everyday life is now as ubiquitous in online settings than it has been in face-to-face interactions.

However, research has shown that social media can mirror physical modes of communication in the digital space together "in ways that resemble traditional feelings of connection, belonging, loosely defined memberships, exchange of feelings and ideas, and the reporting of experiences and actions (Davis et al., 2012, p. 2). Blanchard and Horan (1998) and Johnston (2013) argue that social media has redefined the traditional notions of community. Unlike physical communities, space and time do not bound online communities. Instead, online communities connect individuals based on interests or specific topics (Blanchard & Horan, 1998). Interaction within online communities "is at least partially supported and/or mediated by technology and guided by some protocols or norms" (Porter, 2004, para. 10). Hampton and Wellman (2003) argue that Internet technology does not weaken nor strengthen community ties; instead, it expands existing networks and provides an opportunity for increased interaction. The initial fears of the role the Internet plays on the community could be somewhat quelled based on how ubiquitous social media now is in public, personal, and professional life.

Intersection of Race and Gender in Social Media

Advancements in social media have also redefined how individuals build and connect to communities based on shared characteristics, identities, and experiences. Black Twitter is one example of how users are connecting and building community around racial identity within digital spaces. Brock (2020) is a communication scholar who specializes in Black Twitter and defines the concept as "Twitter's mediation of

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Black cultural identity, expressed through digital practices and informed by cultural discourses about Black everyday life" (p. 80). Throughout his work, Brock (2012; 2020) argues that digital practitioners use technologies through lenses of cultural and social identity and not through neutral, cultural-free perspectives, as others assume. He explores the intersection of race and technological identity to inform how Black folk take part in Twitter as an online communal and discursive practice. Brock (2020) further distinguishes social media use for social activism and defines the intersections of digital and Black culture as Black cyberculture to reimagine how users utilize the Internet as a function and extension of the everyday Black experience.

Emergent research is beginning to illustrate differences in social media usage by race, gender, and intersectionality across multiple identities. Correa and Jeong (2010) find that historically subordinated college students, particularly African Americans, Latinx Americans and Asian Americans, are more likely to create online content for connecting and for self-expression. Charmaraman et al. (2015) conducted a multinational mixed-methods study with nearly 2,300 adolescents and young adults to examine differences in social media uses by women of Color, White women, White men, and men of Color. The study revealed that women of Color were more likely to use social media for stress relief, for distraction, and to build or enhance social networks. Specifically, Charmaraman et al. (2015) found that Tumblr and Twitter were safe spaces for women of Color to share experiences, receive affirmations, and cultivate social capital. Women of Color were also more likely to use social media platforms for sociopolitical discourse, which include raising awareness about important issues,

addressing specific social justice topics, or welcoming and challenging people in online spaces.

Gunn (2015) explores the various ways women, and women of Color in particular, use Twitter to take part in feminist public discourse through sharing lived experiences, participating in hashtag activism, mobilizing toward offline action, and facilitating consciousness raising. Consciousness raising and community building are not new to feminist discourse. However, these concepts are necessary for examining how women of Color specifically use online spaces like Twitter to contextualize their experiences in ways that may expound upon mainstream feminist narratives that have previously excluded and silenced those attempting to garner consciousness raising (Gunn, 2015).

Academic literature is emerging on the role hashtag activism plays in public discourse (Gunn, 2015; Jackson et al., 2020; Williams, 2015). User-created hashtags emerged as a Twitter feature in 2007 to aggregate information around similar topics and interests (Jackson et al., 2020; Williams, 2015). Users signify hashtags in social media platforms by placing a pound sign (#) before a string of text within a post. Posts with hashtags provides search mechanisms for other users to find this information. Since then, most social media platforms have adopted the feature. Hashtag activism as a concept first emerged in 2011 (Jackson et al., 2020) and refers to "an act of fighting for or supporting a cause with the use of hashtags as primary channel to raise awareness of an issue and encourage debate via social media" (Tombleson & Wolf, 2017, p. 17). People around the word use hashtag activism across a plethora of topics, including the

#OccupyWallstreet movement that protested economic inequality in the United States and during the #ArabSpring, which was an anti-corruption protest against governments in the Middle East (History.com, 2022). The #BlackLivesMatter movement which is a response to the persistent killing of Black people at the hands of police officers, the #MeToo movement that bring attention to the prevalence of sexual assault among women, and the #BringBackOurGirls campaign, which highlighted abduction of hundreds of girls in Nigeria, are other popular examples of hashtag activism.

Scholars such as Jackson et al. (2020) who published *#HashtagActivism: Networks of Race and Gender Justice* are shedding light on how intersectional voices from the margins are now becoming centers of public discourse. Hashtag activism is one method by which women of Color contribute to consciousness raising. Many women of Color develop viral hashtags that are now ubiquitous in online and offline public discourse (Gunn, 2015). Jackson (2016) argues that Black women across a plethora of intersectional experiences "have played an outsized role in shaping recent national conversations about everything from police brutality to gender identity to popular culture, with the creation of hashtags like #BlackLivesMatter, #GirlsLikeUs, and #OscarsSoWhite" (p. 377). For example, Alicia Garza, Patrisse Cullors and Opal Tometi are three Black women who created hashtags such as #BlackLivesMatter, #Ferguson, #HandsUpDontShoot and #ICantBreathe. These hashtags have and continue to be instrumental in social movements to shed light on disparate experiences of marginalized groups, to increase awareness, and to advocate for reform.

Feminists use hashtags to illustrate issues with gender violence within Twitter networks. While the proliferation of hashtags has led to increased awareness of feminist issues, mainstream commentary surrounding hashtags often leaves women of Color—who often contribute to the labor of hashtag development and discourse—out of the conversations. As noted by Jackon et al. (2020), this exclusion and erasure have led women of Color to create their own hashtags that distinctly reflect their own experiences. Creating hashtags is revelatory for Black women, where intersectionality and distinct forms of misogyny and misogynoir inform their lived experiences.

Black women provide significant contributions to feminist praxis on social media, especially in challenging mainstream narratives about feminism, gender, race, class and intersecting identities that exist within. Jackson (2016) contends that hashtags created by black feminist discourse serve two functions: "reflect the experiences and needs of a marginalized community and call on mainstream politics to listen and respond" (p. 378). Hashtags such as #YouOKSis, #SayHerName (hashtag created by Kimberlee Crenshaw through her policy center, to center Black women's existence within discourse about the police-involved killings of Black people), and #FastTailedGirls (a hashtag created by Mikki Kendall that challenges the narrative used to describe the sexualization of young Black women) are illustrative examples of Black feminist politics within digital spaces (Jackson et al., 2020). In creating these hashtags, Black women are using Twitter and other social media platforms a) to call out and challenge existing narratives, b) as praxis and catharsis, c) as education, and d) to

connect and expand existing conversations about social justice issues and sexism that effect Black girls and women in specific ways (Jackson et al., 2020).

Even within higher education, women of Color have contributed to public discourse through creating hashtags such as #BlackintheIvory, #CiteASista, and #CiteBlackWomen. Hernandez (2015) argues that Twitter can as serve as a counter space for Latina doctoral students due to its accessibility, popularity, and potential source of community among Latinxs. Yet, there exists a gap in the literature about the exploration of social media use across intersectional identities in digital academic spaces. The emergence of social media provides a unique opportunity for Black women faculty to use the platforms both as a public means of discourse to share intersectional experiences and to broaden the narrative beyond what and who are traditionally associated with mainstream academic life.

Public Spheres, Counterpublics, and Networked Publics

Public spheres, counterpublics, digital counterpublics, and networked publics provide context and framing to deconstruct the nuances of public interaction, subordinated groups' access to and participation in publics, and digitally networked societies. I first begin by discussing the public sphere and its groundwork in shaping modern notions of public discourse and participation. Next, I explore counterpublics as a response to noted gaps in public spheres regarding who has access to participation and what topics they define as public discourse. I then examine how digital media and online social networks are evolving counterpublics. I conclude by describing networked publics

for its specific attention to how digital media technologies inform the construction of a networked society.

Before moving onto discussions of publics, it is important to contextualize the terms public and private. Papacharissi (2013) characterizes publicity as

> that which does not remain private and thus can be shared in common; is associated with the greater public good; can serve as a mask of fiction for private desires for power and position; can suggest a way for members of a public to become associated and effect action; and can exist within or outside the realm of the state. (p. 148)

Papacharissi (2013) does not define privacy as the opposite of public, as it is reductive and places public and private spaces onto a binary. Privacy, instead, is informed by a) visibility regarding what is hidden or inaccessible, and b) collectivity, meaning the extent to which interests pertain to an individual versus a greater collective (Papacharissi, 2013). This study is guided by the assumption that notions of publicity and privacy are embedded within and intersect various social, political, cultural, and economic systems.

Public Spheres

In 1962 Jürgen Habermas, a German philosopher and sociologist, published *The Structural Transformation of the Public Sphere,* a body of work that poses questions about the nature of a democratic society (Calhoun, 1992). This text was influential in identifying and examining modern ideals and formal components of democratic participation. Habermas (1989) examined changes in political European state structures in the 18th century that point to shifts in how individuals within states engage in public discourse. He categorized key structures of public life within society and analyzed how

notions of public life evolved over the next two centuries. Habermas also extended

existing notions of Marxian critical theory beyond the ills of capitalism to an

"intersubjective communicative process and their emancipatory potential in place of any

philosophy (or politics) of the subject" (Calhoun, 1992, pp. 5-6). What emerges is the

notion of a public sphere, the unrestricted freedom for individuals to assemble in public

settings and form public opinions without oversight or control by the state. Habermas

idealized the vision of the public sphere in contemporary democratic societies whereby

citizens can contribute to public discourse.

Calhoun (1992) contends that the public sphere is an important concept because

it attempts to integrate public discourse between segregated groups, and it presents a

modern notion of a civil society. Four foundational principles guide the notion of the

public sphere: a) general assembly, b) egalitarian participation devoid of privileging one

individual over another, c) general interest in rational and objective discourse, and d) a

clear separation from public society and the state (Habermas, 1989). These principles

assume that the public sphere is inherently egalitarian in nature, bestowing on

individuals an equal chance to assemble and form public opinion. Habermas (1989)

defines public opinion as "tasks of criticisms and control which a public body of citizens

informally—and, in periodic elections, formally as well—practices vis-à-vis the ruling

structure organized in the form of a state" (p. 73). He embeds the notion of public

participation from a perspective of rational-critical discourse and theorizes societal

structures that facilitate public spheres should allow individuals to participate without

the influence of special interests that can distort or derail the discourse.

The characterization of the public sphere is not without its critiques, and two are worth noting. First, the public sphere is inattentive to culture and identity (e.g., nationalism, religion, gender, ethnicity) (Calhoun, 1992). Habermas (1989) argues identities are part of the private world and he did not fully consider them in the formulation of the public sphere. Instead, Habermas prioritizes objective rationality in public spheres, which supersede cultural and identity motivations. However, without acknowledging the influence of culture and identity, crucial parts of attitudes, motivations, and ideologies are missing from public discourse. For example, feminist critiques of Habermas's work point out his inattention to the social and political nature of gender in the public sphere (Fraser, 1990). I will expound upon this critique in more detail in the next section.

The second critique challenges the public sphere and its theory of egalitarian and fully democratic participation. Habermas (1989) emphasized the validity of the public sphere based on the assumption that one can participate regardless of one's social location in society. Habermas largely bases this assumption on differences among social class standings between elitist aristocrats and working class bourgeoises. Hence, he challenged a longstanding elitist notion that perpetuated ideological politics for many centuries. However, his assumptions of an egalitarian public sphere, coupled with an inattention to culture and identity, negates the complex realities of status and social position in public life. One only has freedom to take part in and influence public opinion to the extent the society and the state allow for those liberties. Thus, individuals who are members of subordinated groups (e.g., women and racial minorities) do not have the

same access to influence over public opinion. While many lauded Habermas for indispensable contributions to critical social theory and democratic political thought through the concept of the public sphere, the critiques outlined above serve as a foundation for the notion of a counterpublic.

Counterpublics

Scholars have largely critiqued the public sphere for its exclusivity because it serves as a primary space for dominant groups. Arguments made by Nancy Fraser (1990) explore this critique in detail. Through providing an alternate, revisionist account, Fraser identifies how the positions of subordinated groups (due to race and gender, as examples) could not be fully represented in the public sphere. Habermas (1989) argued the aim of public spheres is to represent the general interest of a public society whereby people could use discursive interaction in an egalitarian structure to account to and for other citizens. However, Habermas continues to create an egalitarian structure that preferences the common interest, and excluded private (e.g., cultural, and identity-based) interests from broader forming of public opinion. Thus, this utopian ideal of full public participation could never be realized in action.

Fraser (1990) identified key examples of how Habermas excluded gender and how "masculinist gender constructs" (p. 59) connected to the ethos of the public sphere in ways that contradict its overall aims. For instance, distinct social class formations contributed to defining gender norms and femininity in ways to establish separation from the public and private spheres. It is through contradictions like the points made above that Fraser (1990) also illustrates competing publics such as "nationalist publics, popular

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peasant publics, elite women's publics, and working-class publics" (p. 61) that have

existed along with the dominant public. These competing publics challenge the exclusive

norms of the dominant public and provide alternative norms of public discourse. Fraser

(1990) further contends that "in stratified societies, arrangements that accommodate

contestation among a plurality of competing publics better promote the ideal of

participatory parity than does a single, comprehensive, overarching public" (p. 66). The

existence of competing publics calls into question the utility of the foundational

principles that frame the public sphere. That is, the public sphere is not accessible to all,

does not allow for egalitarian participation, and does not promote social equality.

This revisionist account of the public sphere illustrates how and to what extent

social inequalities affect discursiveness in the public sphere, particularly in relation to

how social identities construct, inform, and shape public life. In response, Fraser (1990)

calls for *subaltern counterpublics* as an alternative that exists along with dominant

publics (e.g., the public sphere). These counterpublics are defined as parallel

environments to publics that produce counter discourses and form "oppositional

interpretations of their identities, interests, and needs" (p. 67). Fraser presented the

subaltern counterpublic as an alternative conception of the public sphere, particularly in

stratified societies, where those excluded from dominant political discourse could exist

and take part in different publics, depending upon the individual's connection and access

to power within publics. She also delineated public matters away from Habermas's

(1989) common publics' interests from that of concerns by the publics' participants. This

distinction shifted the exclusionary boundary of common public interests and allowed

participants to decide what topics were more relevant for their own needs. Fraser

furthers her argument for counterpublics by stating public plurality, cultural diversity,

and social equality must exist to have a fully participatory democracy. A singular public,

in contrast, will cause the participatory democracy to collapse.

Similarly, Gregory (1994) challenges the notion of the public sphere. Gregory

(1994) contends that its narrow focus on class decontextualizes the public sphere, and it

needs specific attention to race, culture, and institutional structures that influence one's

full participation in public life. His work restructured the public sphere within the Black

community as tied to political and social action to push the narrative beyond narrow and

reductionists claims about the effects racial inequalities and poverty have on Black civil

society. Gregory (1994) further argues that heterogeneity and plasticity exist within

Black communities and informs the existence of multiple public spheres, all of which are

informed by history and social power. The development of counterpublics has also led to

examining its existence in digital environments.

Digital Counterpublics

The emergence and evolution of digital technologies have also paved way for the

digital counterpublics. Jackson et al. (2020) study digital activism and argue that digital

platforms serve as counterpublics because communication is public and when mediated

in public spaces it "informs, misinforms, expands, limits, bolsters, or undermines the

way we understand and in turn respond to and engage with politics" (pp. xxxii-xxxiiii).

These authors describe hashtag activism as a networked activity in online spaces that

leads to effects in both digital and offline spheres. Digital counterpublics exist spatially

and materially as an environment to engage in everyday discourse and public pedagogy
(Hill, 2018). While scholars are examining digital counterpublics, to date, literature has
yet to explore the existence of digital counterpublics within academic social media
environments.

Several scholars have explored the emergence and existence of digital
counterpublics (Graham & Smith, 2016; Hill, 2018; Jackson et al., 2020; Penney &
Dadas, 2014). Graham and Smith (2016) empirically examined how Black Twitter is a
counterpublic through pattern and thematic content analysis of Tweets across three
separate hashtags, #BlackTwitter, #TCOT (Top Conservatives on Twitter) and #BCOT
(Black Conservatives on Twitter). The authors revealed the Tweets associated with
Black Twitter displayed more signs of a counterpublic based on the interactions (e.g.,
Favoriting, Replies, Retweets) from users with Tweets within the hashtag. The
interactions provided evidence that digital technologies can provide a space to voice
concerns and address racial inequalities online and offline. Not only were different
perspectives discussed, but different issues arose within Tweets associated with Black
Twitter than the other hashtags. Findings also revealed unique ways Black Twitter
functioned as a networked public, a term that I will describe in the next section.

Hill (2018) examines Twitter as a digital counterpublic whereby people from
subordinated groups use public, digitally networked spaces to share experiences, address
problems, and surveil State power. Throughout the piece, Hill (2018) illustrates how
Black folk existed as a digital counterpublic Twitter in three major ways. First, Black
Twitter challenged and rejected dangerous narratives of respectability. Second, it

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provided additional context to experiences involving the state that are often excluded from mainstream narratives, as evidenced through the events surrounding the death of Michael Brown, an unarmed Black male teenager that was killed by police in Ferguson, Missouri in 2016. Third, Black Twitter worked as a community to bring the death of Sandra Bland, a Black woman who died while in police custody in Waller, Texas, into the national spotlight. This online public discourse also brought to light female-centered narratives about state violence commonly erased from mainstream and Black discourse on police violence towards the Black community.

In a case study, Penney and Dadas (2014) examined emerging practices of online forms of protest and how the platform Twitter created "internetworked, peer-to-peer communication" (p. 76) for members of the Occupy Wallstreet movement. These scholars found circulation of information and content through Twitter created networked counterpublics that challenged dominant structures of power and dominant narratives common in mainstream media. They also found that online participation allowed for greater engagement with people involved in the movement because time, space, and geography did not limit individuals. Using nuanced approaches, each of these studies illustrates how counterpublics exist as parallels to dominant public spheres for expounding upon, contesting, opposing, and challenging existing public discourse.

Networked Publics

Networked publics emerged from communication studies and are defined by boyd (2010) as "(1) the space constructed through networked technologies and (2) the imagined collective that emerges as a result of the intersection of people, technology,

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and practice" (p. 39). While networked publics share similar functions as public spheres and counterpublics, they are distinct in relation to how technological structures inform and shape how people engage within these publics. Papacharissi (2013) argues that to use a public sphere as a term to describe digital networked interactions is to fail to fully encompass unique considerations for how social media platforms inform and influence interaction, and segment traditional notions of public. Instead, networked publics provide framing to move beyond the model of the public sphere and to consider the complex relationship of how technologies influence engagement.

Social networking sites structures and features heavily inform the functions and properties of networked publics. As stated above, SNS are web-based tool and services that digitally connects users and allows for making connections throughout a bounded network system (boyd & Ellison, 2007). Varnelis (2012) argues that networked publics account for a more complex network where the public can be "reactors, (re)makers, and (re)distributors, engaging in shared culture and knowledge through discourse and social exchange" (p. 3). boyd (2010) contends that persistence, replicability, scalability, and searchability are four structured affordances of social networks that shape how individuals and how publics broaden, record, and circulate information. SNS are *persistent* through the automatic recording and archiving of content. This content often stays around, is difficult to delete, and has asynchronous access. Because the content persists, it could lose meaning beyond the original context for which it was created and outside of the intended public or audience. *Replicability* is the second structure affordance of SNS and it refers to how users can reproduce and share content.

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Third, *scalability* refers to the visibility of content within networked publics. Depending upon the bounded on SNS by the platforms, individuals can limit which audiences has access to their content. Advancements in algorithms now regularly tap into potential audiences to scale. However, just because there is a greater potential to access a wider audience through scaling, this does not mean that one will achieve an increased audience. Scalability is possible but comes with complications as networked publics encounter social structures that often reproduce biases and social inequalities that exist in the physical world. The fourth structural affordance is *searchability* and centers on how and to what lengths users can access content. While these four affordances outline how SNS function as networked publics, the social structures of networked publics still have an enormous influence on how users access, disseminate, and scale information.

boyd (2010) identifies three dynamics central to shaping networked publics: (a) "invisible audiences," (b) "collapsed contexts," and (c) the "blurring of public and private" (p. 48). The nature of networked publics changes how one conceptualizes audiences. SNS are searchable and persistence properties and allow users to access content from networks across space and time, which may cause invisible audiences. There also exists a performance aspect to the presence and invisibility of audiences in terms of how users present and contextualize information. As a result, it is difficult to determine every member of the audience and the extent to which a networked public is accessible. Collapsed contexts refers to the intended and unintended environment within a networked public. Networked publics "lack of spatial, social, and temporal boundaries

makes it difficult to maintain distinct social contexts" (boyd, 2010, p. 48). As a result,

users can access information posted in SNS and miss or shift the context of the posted

content's original meaning. Content creators may deem it necessary to provide audiences

with more information about what is and what is not said within content to reduce the

likelihood of changing the intent of the message. However, content creators cannot fully

control the public space, and thus users can share and replicate virtually anything outside

of the intended space and beyond the control of many users.

Finally, networked publics put into question the boundaries of public and private.

boyd (2010) contends that these publics are "restructured by networked technologies

[and] are simultaneously a space and a collection of people" (p. 40). Networked publics

are constructed by digital networked technologies, which extend to and complicate

publics in all forms. These technologies redefine how people disseminate information

and interact with each other.

Networked publics indicate an increasingly complex relationship between

technology and its influences on the way individuals exist within society. These complex

changes have not come without challenges. One such challenge is the blurred lines

between the public and private (boyd, 2010; Papacharissi, 2013). Many SNS have

redefined how users identify and bound audiences and how information becomes

(de)contextualized given the replicability of social media. SNS platforms influence and

controls how users interact through the design and application of networked

infrastructures. Papacharissi (2013) goes further to argue that these sites are brands that

represent specific interpretations of applied network structures. As such, creating

boundaries may be difficult for networked publics because it is difficult to control access and visibility. These actions shift the existence of networked publics from publics as defined above because these technologies, especially through algorithms, influence how these publics access information, mutually communicate, and even commercialize spaces (Papacharissi, 2013).

Some scholars maintain that networked publics tend to perpetuate social insularity or homophily (boyd, 2010; Ito, 2008; Papacharissi, 2013). Homophily is "the tendency for people to affiliate and associate with others like themselves" (Valente, 2010, p. 13). Digital social networks tend to create and reinforce publics that reflect oneself. Beyond homophily, which primarily describes individual behavior, changes made through advancements in networked technologies shapes how users interact in these publics. For example, algorithms learn and predict user interests and may reinforce interactions with those who share similar values, interests, and ideologies (boyd, 2010; Ito, 2008). Abidin (2021) examines how social media influencers' strategy is to use algorithms to amplify their posts to broader audiences.

I have covered different conceptualizations of publics. First, public spheres were the first conceptualization of publics explored. Public spheres as defined by Habermas (1989) framed publics an egalitarian space where citizens can provide input and inform public opinion on common interests to the whole. Next, the counterpublic, which exists as competing and oppositional to the dominant public, is outlined through the public sphere. These counterpublics attend to a multiplicity of group interests based on social location, culture, and identity and facilitates participation as defined by the publics' own

needs and interests, rather than common, and therefore, exclusionary interests. Finally, I turned to networked publics, which focus on the publics created through the advancement of digital media technologies.

Conceptual Framework

The purpose of this study was to investigate how Black women faculty develop and use informal digital social networks. I apply two frameworks to examine the experiences of Black women faculty in digital informal spaces: (a) Black cyberfeminism and (b) social capital theory. I posit that these two frameworks help further the understanding of intersectional experiences of Black women in digital spaces and contribute to the literature on how networks can be used as a space for facilitating social capital. This section discusses the foundational and operational components of Black cyberfeminism (BCF) and social capital theory (SCT). A synthesized overview of empirical literature from which these frameworks have been applied follows. I end the section with rationale for how BCF and SCT was used in tandem for this study.

Black Cyberfeminism

As discussed in chapter I, BCF is an intellectual paradigm that extends cyberfeminism (Gray, 2015, 2017) and blends with Black feminist thought (BFT) (Collins, 2000), incorporating "the tenets of interconnected identities, and distinct circumstances to better theorize women operating within internet technologies and to capture their uniqueness of marginalized women" (Gray, 2015, p. 176). Because of its attention to the politicization of how different social groups use digital technologies, BCF can provide a unique theoretical lens from which to examine how race and gender

shape how we interact with technology. BCF is an emerging theoretical lens and thus it is necessary to briefly explicate on its foundational origins. I begin by describing cyberfeminism, of which BCF is based. Next, I briefly explore the concept of intersectionality, for its attention to multidimensional and aspects of social identity. I then discuss BFT and its key features. I finish the section by describing the key tenets of BCF and discussing its utility for this study.

Cyberfeminism

Cyberfeminism emerged in the 1990s from feminist work on gender, technology, cybernetics, and digital technologies (Wacjman, 2004). Like variations of feminism, cyberfeminism is a polylith, has several theoretical iterations, and is devoid of a singular coherent framework (Daniels, 2009; Paasonen, 2011). Many cyberfeminist scholars view their work as an analysis of gendered communication users, gendered uses of information technology, analysis of digital media, and interrogation of hierarchical divisions that exist within its structures (Balsamo, 1996; Daniels, 2009; Wacjman, 2004).

From a feminist perspective, the internet was initially perceived as a solution to solve gender disparities and sexism because the removal of the physical body and thus unequal power dynamics that exist within and across social patterns in society (Gray, 2015; Wacjman, 2004). However, advances in technology did not inherently improve women's experiences largely due the contemporary and historical constructions of gender and unequal power dynamics that reinforced patterns of patriarchy (Balsamo, 1996; Gray, 2015; Wacjman, 2004). Scholars such as Fernandez (2002), Daniels (2009,

2012), and Chun (2009) critiqued earlier positions of cyberfeminism as based in White, middle-class dominant frames; it fails to consider that race exists and how race mitigates power relations, practices, and interactions in digital spaces. These scholars call out the racism and essentialism that exists in cyberfeminism, investigates the interlinkages between race and technology (Chun, 2009), examines how digital spaces embody racism (Fernandez, 2002), and explores how individuals can use the Internet in complex ways to reinforce, subvert, or resist race and gender hierarchies (Daniels, 2012). BCF pushes back on gender-centric notions of cyberfeminism which fail to acknowledge and forefront intersectional experiences (Richard & Gray, 2018).

BCF argues that unlike cyberfeminism; it recognizes the White, masculine, hegemonic oppressive structures that exist in the physical world, calling for an interrogation of how social dominance is mediated in digital forms (Gray, 2015; 2017). Gray (2015) urges scholars not to approach digital spaces from a disembodied space, arguing that scholars must understand the sociopolitical aspects of society and its relationship to both physical and digital spaces. In essence, seeing the influence of intersecting identities such as race and gender cannot be separated and ignored when examining how technologies uphold White and masculine hegemonic ideologies that exist in the physical world. Black cyberfeminism is intersectional and inclusive in the categorization of Black women, which includes cis-gender and trans women, queer identified folk, gender non-binary folk, and "those of us who read as Black women— despite our self-identification" (Bailey, 2021, p. 20).

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Intersectionality

Intersectionality as a heuristic tool is useful for considering historical and contemporary dynamics inform Black women's experiences (Collins & Bilge; 2016; Crenshaw, 1989). Intersectionality pushes for the examination of social inequality beyond unidimensional race-based, class-based, or gender-based lenses. Ideological origins of concept intersectionality date back to the 19th century, including Sojourner Truth's *Ain't I A Woman*, and point to the phenomena of a multilayered identity in understanding, exploring, and addressing various social issues (Collins & Bilge; 2016; Harris & Leonardo, 2018). As well, Black women activists in the 1960s and 1970s explored complex dimensions of discrimination as being Black and female. Crenshaw (1989) is widely credited for developing the concept intersectionality. The concept originated through legal academic research to provide a multi-dimensional framework from which to examine the intersections of race and gender within legal contexts. She critiqued the failure of anti-racist and feminist movements to treat those social identities as separate and not interrelated within. These movements used a unidimensional and unidirectional approach to address social issues, prioritizing those with the most privilege within those social groups (i.e., Black men and White women). Crenshaw (1989) argued that liberation of all marginalized people in society was only possible when social justice movements include a situational and ideological understanding across race and gender.

Collins (2000) a foundational scholar on Black Feminist Thought, argues that Black women historically and contemporarily face oppression in ways unique to their

own individual and collective experience. Collins's earlier work speaks to this notion of intersecting oppressions across race and gender, which requires seeing and understanding how these intersecting constructs uniquely situate the social position of Black women. Intersectionality has evolved and expanded over the past few decades. The concept is now understood as a heuristic or analytical tool that gives "a way of understanding and analyzing the complexity of the world, in people, and in human experiences" (Collins & Bilge, 2016, p. 1).

Intersectionality as a mode of inquiry is useful for exploring the experiences of Black women faculty. To date, several scholars have used intersectionality in combination with other theories to contextualize experiences unique to individual Black women and as a collective (Davis et al., 2011; Griffin et al., 2011; 2013; Jain & Turner, 2012; Logan & Dudly, 2019; Marbley et al., 2011; Sulé, 2009). For example. Jain and Turner (2012) used intersectionality along with critical race theory to explore the experiences of non-White women faculty in higher education. Turner (2002) explores how women of Color experience multiple marginalities within higher education through recounting various conversations and interviews with other faculty women of Color. The author's presentation continually examines intersecting experiences across race and gender in how she presents information. In much of the research examining the experiences of Black women, intersectionality is used to inform and extend existing theoretical frameworks. Griffin et al. (2011; 2013) examines gender differences among Black faculty in relation to marginalization and tenure advancement. Logan and Dudley (2019) examine challenges unique to Black women in higher education leadership

positions and explores how race and gender inform leadership development. Social

power dynamics and how they shape experiences also informs intersectionality. These

elements are critical to contextualizing and unpacking the unique experiences of Black

women faculty.

Black Feminist Thought

Black feminist thought (BFT) is a feminist standpoint theory which seeks to

examine the imbalanced power relations between U.S. Black women who historically

and contemporarily face oppression (Collins, 2000). Standpoint research emerged in the

1970s and 1980s as a "feminist critical theory about relations between the production of

knowledge and practices of power" (Harding, 2004, p. 1). This form of research

challenges assumptions about the valid voices within political and scientific thought and

argues that knowledge is socially situated. Socially situating knowledge allows for

people, particularly those from privileged groups, to determine distinct areas of

knowledge that differs from dominant groups and thus shifts from an essentialist,

universal view of group experiences (Harding, 2004). BFT aims to provide Black

women with emancipatory ways to survive, resist, and oppose those social inequalities

by infusing Black women's experiences and consciousness. According to Collins (2004),

this theoretical framework asserts that Black women share certain commonalities across

experiences as a group, but the diversity of experiences means that different effects and

influences of these commonalities on their lives. Key characteristics of Black feminist

thought are (a) the notion of a Black women's unique standpoint, (b) independent self-

definition and self-evaluation, (c) the dialectical nature of oppression, (d) the embrace of

Black women's intellectual thought and political activism, and (e) the importance of culture (Collins, 2000).

Aligned with the first characteristic of Black feminist thought, a Black woman's unique standpoint, is the concept 'outsider within' status, which reflects a distinctive standpoint of Black women in society (Collins, 1986). Outsider within describes a position of Black women in society who are situated within spaces not made for them (i.e., a domestic worker to a White family) while still being seen and treated as a Black woman, the outsider. Collins (1986) examines this distinctive standpoint of Black women within sociology and identifies valuable and insightful views of having an outsider within status regarding anomalies and mismatches in dominant norms and assumptions within the discipline. The assumptions and worldview of academic life are often created under a dominant White male view. Those with a background that does not neatly align with or is less familiar with academic life are more likely to identify taken-for-granted assumptions tied to 'normal' practices practices'.

Next, the outsider within status connects with two BFT characteristics: self-definition and self-evaluation, and embracing Black women's intellectual thought and political activism. Being able to identify anomalies or mismatches in mainstream thoughts allows for identifying ways that Black women have been omitted from intellectual thought or how their experiences have been distorted (Collins, 1986). According to Collins (2000), when Black women are clear in their own experiences, especially when occupying spaces not made for them, they are sensitized to patterns that others who are more familiar with the mainstream may not see, and thus can use their

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own personal and cultural experiences as sources of knowledge. This source of knowledge is not just in relation to formalized knowledge production held traditionally by intellectuals, but also the sources of knowledge by voices along the margins that provide significant insight (Harding, 2004). BFT aims also to correct erasure and repair distortions by producing more accurate presentations and centering the voices of Black women previously omitted from research and knowledge production. While each theory and mode inquiry offer necessary insight into the theoretical understanding of Black women and their identity development, each has its limitations, particularly in relation to the study of Black women in digital spaces.

Analytical Themes of Black Cyberfeminism

Gray (2015) modified key aims within BFT (as outlined above) and interrogated how women understand their realities of their marginalized gendered and racial identities within the digital realm. BFT examines the notion of intellectual production of people in traditional fields where knowledge production is accepted, while valuing the everyday voices of marginalized folks who are not seen as knowledge producers in society. Using elements of BFT, BCF represents an opportunity for women to develop their own narratives, centering work on how marginalized race, gender, and class users utilize and interact with digital technologies. There are three core themes guide Black cyberfeminism. The first theme is the social structural oppression of technology and digital spaces. The Internet and digital spaces preferences a White masculine norm and does not transcend social categories, as previously hoped for. Gray (2017) illustrates this notion in her examination of Black gamers who, when resisting hegemonic Whiteness in

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online streaming games, often encounter racism and harassment. Gray (2017) applies BCF to show how Black gamers empower themselves and establish discursive practices within the online streaming game to push back on racist language.

Intersecting oppressions in digital spaces is the second theme of Black cyberfeminism. Digitization reproduces structural oppression across race, class, and gender both at individual and group levels. Because of this reality, feminists cannot apply a one-size-fits-all approach to the experiences of oppressed people. It is important to recognize how women experience oppression differently, valuing and privileging perspectives across a multitude of women's experiences to "liberate women from the confines of hegemonic notions deeming these identities unworthy" (Gray, 2015, p. 186). Only by attending to the structural power differences across social groups can women work to dismantle intersecting systems of oppression.

The third theme of BCF is the distinctness of the feminist digital community. Women use digital technology such as social media for many reasons, including community, activism, advancing feminism, and individual empowerment. *#Hashtag Activism: Networks of Race and Gender Justice* illustrates multiple examples of how women, particularly women of Color, use technology as a tool for intra- and intercommunity building, public discourse, political awareness, critiquing and expanding narratives of mainstream feminist and racial justice movements that continue to exclude intersectional perspectives, and for education (Jackson et al., 2020). Black Twitter is another example of how Black folks have "co-opted traditional digital spaces for their own means to communicate and empower their communities" (Gray, 2015, p. 188). Hill

(2012) and Brock (2012) are two such examples of how Black Twitter users repurpose the platform for displacing the hegemonic establishment by challenging mainstream narratives and by considering different ways of knowing and meaning in highlighting the #BlackTwitter experience. In this sense, the personal and the structural or political is interconnected and cannot be separated in Black cyberfeminism.

Utility of Black Cyberfeminism

BCF is a newer theoretical framework in comparison to BFT. As explained, BCF extends beyond existing themes of BFT to specifically examine and understand "the experience of Black female users of online networking sites, games, or dating platforms," while acknowledging the impact digitized social interaction has on gendered and racialized treatment of women (Board, 2020, p. 72). The scant literature that uses this theory has been applied within the communication and sociology disciplines. Gray (2017) examined inequalities within online gaming communities with Black gamers. Analyzing online forum comments through Twitcher, a gaming social media platform, Gray illustrated how digital spaces can mirror racism and oppressive experiences in physical spaces. Her work also examined cultural production within these digital communities, how content generated by users is informed by their social locations, and thus contributes to how other users interact and respond. Richard and Gray (2018) examined how digital gaming communities could also exist as discursive communities of practice. Using BCF and inclusive communities of practice framework, the authors reviewed form posts and interrogated how marginalized players considered racialized and gendered elements within digital spaces.

Within sociology, Cottom (2017) presents case studies of intersectionality within digital spaces to provide evidence for using BCF to critically understand contemporary social inequalities in digital platforms as mirrored offline in everyday parts of life. The author discusses the unique circumstances of using social media as a site for data collection because it provides unique opportunities for analysis across time and interaction, is completely voluntary, and unmitigated with issues of performance under the gaze of researchers. These criteria are important because researchers are more likely to ascertain accurate representations of how people choose to present themselves that would be more difficult when using traditional data collection methods such as surveys and interviews. Cottom asserts BCF can serve as a useful argument for articulating the mechanisms by which social groups and inequalities are established and formed specifically within digital spaces. The theoretical framework actively attends to the political factors that informal social power relations within digital spaces and helps shape how researchers ask questions that involve the use of the internet and digital technologies.

Gray (2015) argues that activist and feminist mechanisms within the digital space is distinctive from other forms of feminism. Board (2020) asserts that "Black cyberfeminism, as an extension of digital feminisms and Black feminist thought, incorporates the tenets of interconnected identities, interconnected social forces, and distinct circumstances to better theorise the lives and realities of Black women" (p. #). Gray further uses #BlackLivesMatter as an example that aligns with Black Cyberfeminism. The Black Lives Matters (BLM) hashtag was created by a group of

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Black women who organize using digital technologies to illuminate and address disparities and structural issues of oppression. BLM is an extension through a mediated platform, given particular contemporary and historical understandings, to inform Black women's experiences and facilitate a more nuanced approach towards social justice. Aside from the studies mentioned above, there is no evidence in the literature that this theoretical lens has been used to examine Black women faculty within digital academic spaces. Hence, this study provides an opportunity to test the theoretical application of BCF from an educational context. Given that Gray (2015; 2017) discusses Black women's use of social media to organize and have public discourse in digital spaces, there is a novel opportunity to explore how Black women faculty use social media in academic digital spaces to contribute to that unique political and professional discourse.

Social Capital Theory

Social capital theory (SCT) is an interdisciplinary theory with applications in economics, sociology, anthropology, business, political science, and education (Schuller et al., 2000). While social capital has many definitions, it can generally be defined as resources, information, and benefits available to individuals and groups who share common connections or networks (Kwon & Alder, 2014; Lin, 2001; Putnam, 1995; Schuller et al., 2001). Early research on SCT attended to its theoretical, conceptual, and structural foundations (Coleman, 1988; Lin, 2001; Schuller et al., 2000). Lin (2001) expanded theoretical development, measures, and models of SCT. Work by Putnam (1995; 2000) shifted away from foundational theoretical literature and towards an examination of how social capital economically, culturally, relationally, and structurally

impacts U.S. society. Kwon and Alder (2014), who examined the theoretical maturation of SCT, contends that literature on the concept within social science is successful at providing evidence to support the general thesis within social science disciplines. While scholarship among various disciplines has provided evidence for the existence and benefits of social capital, what remains largely unexamined is how marginalized groups build and maintain social capital within social networks (Greyerbiehl & Mitchell, 2014; Known & Alder, 2014; Yang et al., 2021). In this section, I examine the origins of SCT then discuss developments in research. Research trends center on the application of SCT within digital academic environments and its formation within networks for Black women.

Origins of Social Capital Theory

Social capital and other related concepts such as social ties and group connections have existed throughout much of the 20th century (Putnam, 2000; Schuller et al., 2000). Three scholars, Bourdieu, Coleman, and Putnam are credited for producing foundational work on social capital (Alfred, 2009; Lin, 2001; Schuller et al. 2000). James Bourdieu (1986), a French sociologist, is among the first to develop conceptual work that is later known as social capital. Earlier theoretical iterations of SCT began in the 1970s and examined cultural and social reproduction within economic class structures. It is in the 1980s where Bourdieu shifted beyond social class and centered work on cultural, economic, and social capital (Schuller et al., 2000). In *Foundations of Social Theory,* Bourdieu (1986) defines social capital as:

> the aggregate of the actual or potential resources which are linked to possession of a durable network of more or less institutionalized relationships of mutual

acquaintance and recognition-or in other words, to membership in a group--
which provides each of its members with the backing of the collectively-owned
capital, a "credential" which entitles them to credit, in the various senses of the
word. (p. 21)

SCT within this context is examined from a perspective of gain and economic privilege.

For Bourdieu, social networks must be intentionally constructed to produce economic

and cultural resources and individuals must deliberately participate within said network

and adhere to the norms to benefit from its membership (Porte, 1998). Bourdieu situates

SCT as somewhat dependent and interdependent of economic and cultural capital,

though its roots firmly lie in economic capital since his work focuses on attempts to

determine how social class relations are reproduced (Schuller et al., 2000).

James Coleman is the second seminal contributor to SCT. Coleman (1988) came

to SCT from other theoretical perspectives, as he sought to integrate economic and

sociological fields of thought. Coleman (1998) refines the definition of social capital as a

function, which

is not a single entity but a variety of different entities, with two elements in
common: they all consist of those aspects of social structures, and they facilitate
certain actions of actors--whether persons or corporate actors--within the
structure. (p. s98)

Coleman (1988) theorizes that the economic tradition examined an individual, or an

actor's, activity from a perspective of independence, rationality, and self-interest.

However, it fails to consider how social context influences, shapes, and determines an

actor's actions. The sociological tradition, in contrast, acknowledges the contextual,

environmental, and social elements that inform an actor's actions without attending to a

purpose or an "engine of action" (p. s96). Thus, social capital is a function that exists in

multiple forms all with two commonalities: a) existence within social structures (sociology) and b) facilitation of certain actions by actors, or individuals or groups (economics). Coleman is also instrumental in providing operationalization to the concept: obligations, expectations and trustworthiness of structures, information challenges, and social norms. These forms emerged from a critique of human capital theory (Schuller et al., 2000).

While both Bourdieu and Coleman examined how SCT produces educational advantages, Bourdieu, focused on social capital among the elite, while Coleman examined inequality of achievement among the non-elite. Another important contribution from Coleman was the framing of networks in relation to the openness and closedness of the ties. He argues that social capital is only able to develop and expand within social networks when social structures are tightly bounded because it allows the networks to form and reinforce their own norms. Additionally, having closed networks is essential for building trustworthiness in social capital.

The third stream of SCT research, and arguably the most prominent, is that of Putnam (1995; 2000), who frames SCT as a civic and political dimension vital to public life and social institutions in the United States. Using Coleman's (1988) framing of social capital, Putnam (2000) contends that social networks have individual and collective value. Putnam (1995) defines social capital as "the features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit" (p. 67). The initial essay by Putnam (1995) framed SCT in its relation to civic engagement, that is, formal and active group participation through

areas such as churches, labor unions, civic clubs, educational organizations, and the like. Putnam (1995) contends that social capital within communities' results is more community engagement, better education, economic, and social outcomes. By 2000, Putnam expanded his framing of social capital to includes several forms: a) episodic, single-time participation, b) formally organized, c) informally organized, d) public purposed, and e) private or leisurely enjoyment. Overall, social capital, according to Putnam (2000), seems to be tightly linked, and is at times synonymous with civic engagement or community involvement.

Putnam's landmark work on SCT is widely cited, as he effectively brought the concept into mainstream discourse (Alfred, 2009; Schuller et al., 2000). The primary goal of Putnam (1995; 2000) was not to contribute to the conceptual or theoretical development of social capital as he contends it has been well outlined by Coleman (1988) and other work under different names. Instead, Putnam (2000) illustrated how, since the 1950s, social capital has eroded within U.S. society; the consequences of the decline threaten the quality of public life, and it is imperative to restore, recreate, and reinvent social capital. To iterate his argument Putnam (2000) pulls empirical work from various disciplines—political science, economics, and education to provide evidence for the decline of social capital in the community. In summary, social capital, as framed by Putnam, (2000) has individual and collective value and is undergirded by elements of trustworthiness, networks, and norms.

Dimensions and Functions of Social Capital

Extant literature exists on the dimensions and functions of SCT. For the purpose of this study, I explicate social capital functions as defined by the work of Lin (2001; 2008). I also examine the bonding and bridging functions that exist within social capital.

Social Capital Functions

Work by Lin (2001; 2008) furthered the theoretical development of social capital and identified specific methodological techniques aimed at measuring positions within networks, inequality, and linkages between social institutions and social stratification. Lin (2008) theorizes that social capital exists in two forms: accessibility and mobilization of resources. Accessed social capital is defined by its capacity and the existing resources pooled within a social network. In contrast, mobilized social capital refers to the usage or extraction of resources from a network. Both accessibility and mobilization are necessary to facilitate social capital within an individual's social network (Pena-Lopez & Sanchez-Santos, 2011).

Work by Lin (2001; 2008) primarily theorizes individual formation of SCT. According to Lin (2001), information, influence, social credentials, and reinforcement serve as key functions of social capital. First, it facilitates *information* flow among and between ties (connections). Ties illustrate how actors (an individual or organization) are connected within a network. The actors within a network coupled with what is shared among those actors can impact what actors do, gain, and experience. Second, social capital examines how actors can exercise *influence* over their ties. Influence involves determining how central a role an actor(s) has exerting position, power, and control for

how another actor gains access to and benefits from social capital. Third, social ties created through association serve as a means of validation and *social credentialing* for actors. That is, an actor's formal ties to a network can certify the actor and thus give them access to social capital because of the network to which they belong. Finally, an actor's social relation to a network *reinforces* value, worthiness, and recognition of social capital (Lin, 2008).

I illustrate Lin's (2001) functions of social capital by using the example of a private support group on a social media platform. Because the group is private, members can access *information* that is not be available to those outside of the group. Thus, social capital can be facilitated within the group by nature of accessing privy information that benefits those directly within the group. While actors within the group have access to resources and each other, their positions in the group may not be egalitarian. This group may be comprised of central members with the *influence,* social positioning, and power to control the group's direction, when and how often informed is shared, decision making processes, and group resources. The central member's role in the group holds a stronger position in comparison to a general member. This position allows the central member more influence on the actions and behavior of other members. How a central member interacts within the network may also influence the production of social capital. Additionally, an actor's affiliation with a private social media group may give them *social credence* within networks where that group is popular and has a lot of influence. The actor's association with the private group may give them access to social capital and thus strengthen the utility of the private group. Finally, the private network's benefits are

reinforced through the information sharing, influence, and social credentials to maintain

the value of the group and an actor's right to its resources.

Bonding and Bridging Capital

Putnam (2000) theorizes that SCT serves two wide-ranging functions, including

"bridging (or inclusive) and bonding (or exclusive)" (p. 22). Bridging and bonding

within social capital examines structural elements within networks. Bonding social

networks, or network closure, tend to be more exclusive to common traits, values,

characteristics, interests, trust, and social support (Alfred, 2009; Cao et al., 2013; Phua et

al. 2017). Common examples of bonding networks include religious groups, gender-

specific organizations, school interest clubs, and other groups that reinforce

homogeneity around common characteristics. Okoli and Oh (2007) argue that bonded

social capital has the following benefits: "knowledge sharing, complementarity, quality

control, and conflict resolution" (p. 243).

Lin (2001) theorizes that social capital functions as a source of information.

Okoli and Oh (2007) define *knowledge sharing* as how actors share information within a

network. Bonded networks are more likely to share homogenous characteristics, and thus

the actors within networks may promote and trust through *complimentary* skills and

traits. *Quality control* is a benefit of bonded networks as it allows the actors to reinforce

social structures. Bonded networks are at their strongest with a closed network structure

as they allow for increased trustworthiness and reinforced norms (Cao et al., 2013;

Coleman, 1998). When actors are connected within a closed network, they can create

sanctions and safeguards to reinforce norms within structures. Finally, bonded networks,

especially within dense networks, can encourage the quick and harmonious resolve of interpersonal conflict. While bonded networks have benefits in mobilizing networks and ensuring actors can access resources, critiques exist about the exclusivity created by these networks (Lin, 2001; Schuller et al., 2000). Overall, bonding social capital is advantageous for the collective network, as its strengths depend upon how well the network maintains its ties.

Social capital with bridging or brokering as its primary function have weaker, distant ties among actors (Granovetter, 1973; Phua et al., 2017). These actors are often outward looking and rely on linkages outside of the network to acquire social capital (Putnam, 2000). Bridging functions are tied to social network research on the strength and value of weak ties (Burt, 2002; Cao et al., 2013; Granovetter, 1973). Burt (2002) defines networks with gaps among ties as structural holes, and are advantageous to individuals because they can serve as "an opportunity to broker the flow of information between people, and control the projects that bring together people from opposite sides of the hole" (Burt, 2002, p. 208). According to Burt (2002), the structural holes are necessary as they help individuals within networks prevent redundancy in information access common within closed networks; structural holes can facilitate brokering among disconnected users.

The concept of bridging within network structures with structural holes is called brokerage. Brokerage is an important concept within social capital because it examines the means of facilitating indirect connections among disconnected users (Burt, 2001).

Brokering is an opportunity within structural hole networks for individuals to use existing gaps as a means for connecting individuals without existing ties (Gould & Fernandez, 1989). Bridging groups bring value for social reciprocity, support, and solidarity. Putnam (2000) contends that social movements, service groups, and networking groups are common examples of those with a bridging function. For example, Penney and Dadas (2014) found evidence on the value of bridging social networks in growing participation and capacity of the Occupy Wallstreet Movement in online and offline contexts. Bonding and bridging functions are not mutually exclusive, and groups can function as both depending on the purpose and structure.

Social Capital in Online Academic Spaces

Literature is steadily emerging on how faculty and academics use SNS and online networks to create social capital. Evidence of social capital formation in academics online SNS is apparent in usage for self-promotion (Donelan, 2016; Meishar-Tal & Pieterse, 2017), to maintain and widen networks (Donelan, 2016), to engage with colleagues (Meishar-Tal & Pieterse, 2017), for knowledge acquisition (Ranieri, 2019), and to support research and teaching (Lupton, 2014). Ranieri (2019) conducted a systematic review of academic professional development opportunities in digital spaces. The review revealed that online professional communities can facilitate social structures that enable collaboration, knowledge exchange, mutual support, new connections, and deepened existing connections within digital spaces. The purposes listed above align with bridging capital, in relation to facilitating information sharing, reducing information

redundancy that is more likely to occur in bonded social capital networks, and diversifying existing networks (Burt, 2001; Putnam, 2000).

Research on Twitter-based social networks also indicate the evidence for social capital. Jordan (2016; 2019) found that academic SNS such as Academia.edu and ResearchGate reinforced network structures traditionally linked to bonding social capital due to denser networks with more cohesive structures. In contrast, they found that networks formed on Twitter provided evidence of bridging social capital due to more diverse communities with different linkages. Specifically, Twitter does not mirror the existing hierarchical structures within academic positions (e.g., rank), and the platform is more social in nature, which eases the means by which users create connections (Jordan, 2019). Twitter networks were more disperse and less hierarchical, which allow for more information circulation and increased opportunity for connection. There are also fewer constraints on less established academics in building a sizable network. These means can help early career academics and Ph.D. students facilitate meaningful connections and build social capital without the need to have an established career.

Social Capital and Black Women

Research points to deficits in social capital for historically marginalized groups (Parks-Yancy, 2006; Smith, 2013; Yang et al., 2021). Little research to date has contributed to understanding Black women's experiences mobilizing and accessing social capital. Greyerbiehl and Mitchell (2014) used an intersectional social capital framework to examine Black women in historically Black sororities at predominantly White institutions. Through interviews, the participants identified evidence on social

capital through the support garnered and by sharing common experiences as Black

women. In a mixed-methods study, Charmaraman et al. (2015) found intersectional

differences in the usage of digital social networks among women, namely in stronger

community connections and involvement among women of Color. The authors further

argue that women of Color balance multiple identities in their online interactions and by

doing so facilitate instances of social capital. Lastly, Brock et al. (2010) utilized

Bourdieu's definitions of technical and cultural capital, along with Black feminist

thought, to investigate how Black women accumulate these forms of capital in online

space through examining blog posts and corresponding comments. The authors contend

that Black women employ cultural capital in online spaces in nuanced ways and account

for interlocking oppressions that exist with intersectional identities. These nuances also

inform how Black women use unique cultural capital to participate as authors and view

discourse about Black womanhood.

Few studies examine how Black women faculty facilitate social capital within

academic settings. Esnard et al. (2015) and Jean-Marie and Brooks (2011) found

evidence of social capital formation among women of Color through participation in

mentoring networks. Esnard et al. argue that SCT is necessary to examine the impact of

peer mentoring within cross-cultural informal networks. The networks provided women

faculty of Color with support for their professions and access to social and cultural

information and other resources, amid somewhat tenuous cross-cultural interactions.

Using social network theory, Jean-Marie and Brooks theorized how strategically

constructed mentoring networks could facilitate social capital for women faculty of

Color. The authors found evidence that forging relationships within mentoring networks could facilitate social capital for women of Color, although mixed evidence exists to the effectiveness of cross-race mentoring. Adversely, they found that failure to utilize? strategic communication and interaction tools within mentoring networks could lead to a loss of social capital. In other words, social capital was attainable to mentees within networks who were willing to intentionally invest in mentoring relationships. Both studies provide evidence that, through effort, Black woman can facilitate social capital for emotional support and knowledge sharing, and to provide a safe space to examine experiences unique to them in the academic community.

Summary of Chapter

This literature review outlined research on definitions, features, functions, and applications of social networking and social media sites. These sites provide users with channels to connect with others, traverse connections within bonded systems without regard for physical space or time, generate content, and facilitate personal and mass communication. Research also shows that users across various intersectional identities are using SNS for affinity spaces, for group-based support, and to find connection with others who share similar experiences among and across social identities. Public spheres, counterpublics, and networked publics were concepts explored to deconstruct and examine participation in public life across space and platform. While evidence exists about the benefit and utility of digital platforms as discursive spaces, review of the literature revealed that Black women faculty use public academic spaces as informal digital networks remains largely unexamined.

This study used elements of BCF and SCT to explore how Black women develop social capital in digital spaces. BCF is presented theoretically and analytically as an extension of BFT. This theoretical lens is most useful in its interrogation of intersectional identities within digital spaces. SCT argues that individual actors can access and mobilize network resources for individual return and as a collective asset that enhances the full network. Both theoretical traditions outlined above unite around three common elements: a) Black women's experience must be contextualized to intersecting social structural oppressions, which uniquely inform their presence and interactions within digital academic spaces; b) information, influence, social credentials, and reinforcement are functions of social capital and are present within digital networks, and; c) bridging and bonding social capital are vital to understanding how social network structures impact Black women faculty. BCF intentionally attends to the savvy ways in which Black women repurpose digital technology to center their own voices and widen exposure of their unique experiences. This widened exposure also facilitates opportunities to create new ties among networks with Black women who may be less aware or less knowledgeable about common intersectional experiences present in academic life.

CHAPTER III

METHODOLOGY

The purpose of this study was to examine how Black women faculty develop and use informal digital social networks to facilitate social capital. Given the disparity in representation and challenges Black women encounter in academia, it is important that they develop strategies for navigating and finding success in their respective disciplines. Informal support networks in digital spaces is one such strategy for responding to these challenges. The frameworks guiding this study are Black cyberfeminism and social capital theory. Together, these frameworks contribute to a broader understanding of how Black women faculty use informal networks to facilitate social capital. Three research questions guide this study:

1. What characteristics are evident in informal digital social networks created and utilized by Black women faculty?

2. How does participation in an informal digital network facilitate the development of social capital among Black women faculty?

3. In what ways do individuals participate in an informal digital social network created for Black women faculty?

4. In what ways does an informal digital network facilitate discourse about intersectional experiences of Black women faculty?

This study applied qualitative and quantitative methodologies to answer the research questions. Social network analysis (SNA) is both a theoretical perspective and a

methodological approach for understanding how individuals, groups, and organizations are connected (Valente, 2010). Because of its consideration for how network structure affects behavior, relationships, and access, SNA is a useful quantitative approach for answering research question one and two for this study. Critical discourse analysis, a form of content analysis, is a qualitative methodological approach I use to answer research questions three and four. Critical discourse analysis describes phenomena and explores and uncovers meaning specific to the intersectional gender and racial experiences of participants (van Dijk, 1993). This method of analysis also allows for a deeper examination of how Black women faculty use digital platforms as a counterpublic. As examined in Chapter II, counterpublics are parallel environments to publics that produce counter and revisionist discourses for those groups often excluded from dominant public interests and needs (Fraser, 1990).

This chapter begins by situating this study within a mixed-methods methodological framework. I then provide a detailed overview of SNA and critical discourse analysis. Next, I examine applications of the methods by providing a description of and rationale for the research design, methodology, and planned analysis. Within this section, I describe Twitter as a site for data collection and explore the unique ethical considerations for collecting data from social networking sites.

Mixed-Methods Research Design

As the world has become increasingly complex and multi-faceted, so has the nature of scientific research. This increasing complexity calls for research rich in both qualitative and quantitative traditions to advance research and contribute to knowledge

in novel ways (Onwuegbuzie & Leech, 2005; Teddlie & Tashakkori, 2010). While there may be some variations in definitions, a general definition of mixed-methods research is a broad inquiry where researchers use an integration of both quantitative and qualitative methods to answer research questions (Mertens, 2005; Teddlie & Tashakkori, 2010). Mixed methods are complex as they require researchers to equip themselves with the knowledge and expertise in both qualitative and quantitative methodological approaches (Mertens, 2005; Reio & Werner, 2017). Scholars who support mixed methods research designs argue that the combination of both approaches provides a better understanding of research phenomenon than by using either qualitative or quantitative methodology by itself (Creswell, 2008; Onwuegbuzie & Leech, 2005). Some schools of thought argue that qualitative and quantitative research are complementary and should not exist independently of one another (Gall et al., 2007; Onwuegbuzie & Leech, 2005). These arguments are important in education and social science research, as problems and issues are becoming increasingly complex and thus are requiring sophisticated investigation methods.

Teddlie and Tashakkori (2010) outline several key characteristics of mixed methods research. First, mixed methods research is of utility in social science and education because it prioritizes an integrative approach to selecting techniques across qualitative and quantitative approaches, allowing for the most thorough investigation of phenomena. Second, paradigms are not fixed stances. Teddlie and Tashakkori (2010) move beyond a dichotomy between quantitative and qualitative research approaches and attempt to create interlocking epistemological, axiological, ontological, and

methodological assumptions from which to guide mixed methods research. Third, there is an emphasis on addressing an array of research approaches from broad conceptual research to more defined empirical ones. The fourth characteristic is the view that research approaches exist on a spectrum instead of two set dichotomies. Fifth, research is cyclical and moves through several stages and designs throughout the process (e.g., from more abstract conceptualizations to deductive, grounded results). The sixth characteristic prioritizes the focus of the research problem and research questions in identifying the appropriate methods, thus moving beyond obstinate, paradigmatic assumptions that are viewed to limit the exploration of phenomena. Seven, set research design and processes guide mixed methods research (Teddlie & Tashakkori, 2010).

The utility of qualitative and quantitative methodological approaches is still divisive and contested in social and behavioral sciences and in education (Onwuegbuzie & Leech, 2005). Lincoln and Guba (1985) argue that positivism, and thus quantitative research, is inadequate to fully describe science, is often reductionist, and falls short of allowing for conceptual or empirical foundations to emerge. Others critique qualitative approaches to research as too subjective and thus not a form of empirical, scientific research (Frey, 2018). While mixed methods research is not appropriate in every field of inquiry, I believe using the approach provided the most comprehensive response to the research questions of this study.

A mixed methods research design providesprovided a means for examining nuanced and complex phenomena found on social media. Jackson and Foucault Welles (2015), Jackson et al. (2018), and Trott et al. (2020) are recent examples of research that

has employed mixed methods that combine SNA and qualitative thematic or discourse analysis in the examination of Twitter data. Jackson et al. (2020) contend that using hashtags for activism and public discourse is as much a networked activity as it is an individual activity. The aspect of the network is important to consider within academic research because it allows researchers "to consider the nonadditive and intersectional nature of attributes, relationships, and entire social systems in producing outcomes of interest" (Jackson et al., 2020, p. xxxv). In addition, studying the networks that exist within social media can be useful in understanding how social media-based communities build relationships, exist, and interact (Hansen, 2011). For instance, research by Jackson et al. (2018) utilized SNA and discourse analysis to examine #GirlsLikeUs, a hashtag that centers the experience of transgender women. The researchers found evidence of network and community building, discourse on the experiences and history of marginalization and misrepresentation of trans people, and intersectional networked counterpublics. Analyzing hashtag data as networks within the existence of a counterpublic helps with exploring interdependent, dynamic properties in manageable ways.

To this point, I have summarized mixed methods researched and a rationale for why it a useful design for this study. The next sections outline SNA and content analysis, the two methods chosen for this study.

Social Network Analysis

Social Network Analysis (SNA) is a set of interdisciplinary theoretical, methodological, and analytical approaches to studying connections within social

structures (Carolan, 2013; Freeman, 2004; Valente, 2010). Researchers argue that applying a networked approach accounts for the role relationships play in shaping behavior, influence, and outcomes beyond the focus on individual attributes (e.g., race, gender, socioeconomic status, education) common in social science research (Carolan, 2013; Freeman, 2004; Wasserman & Faust, 1994). Wasserman and Faust (1994) identify four key principles that guide SNA: a) individuals or groups, called actors, and corresponding actions are interdependent within a network; b) connections and relations between actors serve as channels from which resources flow; c) network modeling that targets individuals considers the network's structural elements to inform influence of an individual's actions; and d) network modeling at a structural level provides necessary context to understanding a network's relational influence on an actor's behavior.

As articulated above, SNA functions as both a method and a theory. SNA methods arose from a series of computational analytical approaches social scientists developed to make sense of empirical data on social groups and social relationships (Wasserman & Faust, 1994). The nature and importance of these relationships fueled theoretical development through defining various concepts and models to understand the properties and features of social structures (Carolan, 2013; Wasserman & Faust, 1994). Combining the theory and methodological procedures with the principles of SNA as presented above produce a social science framework whereby researchers can test theories about the nature and structure of social relationships by examining the interdependent nature of relationships, linkages that produces resource access, and the nature of networks. Freeman (2004), who analyzed the history and evolution of SNA

from the 1930s to present, identifies structural intuition, systematic relational data, visual illustration, and mathematical and/or computational models as four common features that illustrate SNA's utility as an integrated social science research paradigm. In the present day, SNA brings together a range of disciplines, including sociology, psychology, anthropology, mathematics, economics, computer science, and others connected with a common goal of using structural approaches to examine networks.

The following sections provide an overview on the history of SNA by considering its theoretical, methodological, and empirical developments across a range of social science disciplines. Next, I describe egocentric networks and whole networks, the primary network approaches. Key terms are also presented. I conclude by presenting a synopsis of relevant empirical research which employs SNA.

History of Social Network Analysis

Many scholars credit Jacob Levy Moreno, whose work first emerged in the 1930s, for setting the groundwork for what researchers contemporarily know as network analysis (Carolan, 2013; Freeman, 2004; Wasserman & Faust, 1994). As recounted by Freeman (2004), Moreno is known for developing the concept sociometry, a form of psychological mapping of individuals' and groups' perceptions and feelings of one another. Freeman says that Helen Hall Jennings, a graduate student of Moreno's, likely also heavily influenced and contributed to the development of sociometry, though she is not widely credited. Wasserman and Faust (1994) attribute the development of the concept social network to John Arundel Barnes, an Australian anthropologist and sociologist, who utilized the concept in a 1954 publication which studied social class and

network structures of a Norwegian Island parish. Around the same time, research groups emerged in the United States (from the University of Michigan and Harvard University) that began training researchers on sociometry and graph theory to understand social networks (Freeman, 2004; Valente, 2010). In the 1960s, network centers emerged in Manchester, UK and at Harvard University to study social networks and network structures. A group of scholars from Harvard and the University of Michigan defined themselves as structuralists because of their attention to using advanced mathematical skills to examine network structure (Freeman, 2004; Valente, 2010).

By the 1970s, collaboration of SNA was flourishing, particularly in sociology and anthropology, with the emergence of associations such as the International Network for Social Network Analysis, national and international meetings, conferences, and journals. *Social Networks* and *Connections* are the two earliest and well-known journals launched to specialize in the study and application of SNA (Freeman, 2004; Valente, 2010). Methods also became more sophisticated with the evolution of computer technology (Freeman, 2004). The creation of associations coupled with the development of computer programs, which allow for more sophisticated mathematical analysis and data visualization techniques, created a microcosm to mature SNA methods, theories, and applications into a cogent research approach.

Today, SNA applies to many disciplines and now has an established body of work. It examines phenomena and answers complex research questions with methods that move beyond traditional forms of social science research (Freeman, 2004; Valente, 2010). SNA moves beyond the limitations of random sampling, which fails to consider

how social content influences and impacts individuals. It attends to social and relational aspects from individuals, pairs, small groups, and larger systems and the interconnections within to understand human behavior. Finally, advancements in statistical modeling software allow researchers to examine new types of data and larger, more complex networks, such as networks created on social media platforms.

While SNA is well established in social science disciplines such as sociology, anthropology, and economics, its application within higher education was relatively scant until the early 2000s. Biancani and McFarland (2013) reviewed literature on the existence of social network research in higher education and found that research primarily centers on student networks, faculty networks, or universities as networks. The authors also found some SNA-based literature on research collaboration groups and citation analyses among faculty. However, literature within higher education is still very discipline specific, an interdisciplinary community of scholars who work together on higher education network research does not yet exist, and sparse literature exists on higher education social networks within digital networks.

Defining Networks

While many types of social networks exist, most fall into two broad categories: egocentric networks and whole networks. The aim of studying egocentric networks is to describe an actor's social environment in relation to their direct ties or alters. Networks are labeled as 'egocentric' because of their attention to participants at the individual level (Carolan, 2013). Valente (2010) argues that egocentric network research is useful in social and behavioral sciences for its examination of four relational aspects: a) access

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and opportunity; b) social capital; c) role modeling of behavior; and d) social support, particularly for those experiencing difficulty. Because an egocentric network focuses on individuals and their personal network ties, and because these data are typically collected from a sample of independent participants, data does not usually characterize a whole network (Carolan, 2013).

Whole networks, in comparison, refer to a complete set of actors and ties within a bounded population (Carolan, 2013; Valente, 2010). Studying whole networks provides researchers with a complete picture of a network to measure communication and the flow of information and behavior (Valente, 2010). It is important for researchers to create bounded specifications for a network population, which may vary depending upon what actors' attributes are boundary criteria (Carolan, 2013). Sociometric data require that researchers collect network data on connections and ties among all actors within a defined network. As such, researchers can graph network structure using sociometric surveys, also known as census data, or through collecting archival data (Valente, 2010). Archival sources of data are readily accessible to researchers, do not require contact with actors, and allow for different networks reconstructions (Carolan, 2013). Both egocentric and whole networks inform social network research in different ways.

<center>*Social Network Analysis Measures*</center>

Multiple measures exist in SNA that researchers can apply to egocentric and whole networks. Valente (2010) disperses network measurement concepts into two categories: relational and structural. Relational variables measure the connectedness and

reach within a network and are more commonly measured in egocentric networks (Wasserman & Faust, 1994; Valente, 2010). Structural variables are measures that examine formation and hierarchies within networks (Valente, 2010). Researchers can apply both relational and structural measures to the study of networks at the individual-level, group-level, and whole, or network-levels. The following section will briefly describe specific relational and structural measures used for this study. Refer to Table 2 for various computational and descriptive measures as defined by Carolan (2013) and Valente (2010).

Table 2 *Social Network Measure Terminology*

Measure Type	Term	Explanation
Descriptive	Node	A social actor in a network
	Edge/Tie	A relationship or link between two nodes
	Relation	Ties and structures within a network
	Attributes	Node characteristics
	Isolate	A node not connected to anyone.
Centrality	Degree	The number of ties coming and going to a node.
	In-degree	A centrality measure in a directional network that measures how many ties an actor receives
	Out-degree	A centrality measures in a directional network that measures how many ties are sent out of the network
	Betweenness	The extent to which an actor lies on the shortest path connecting others in the network
	Closeness	The average distance that an actor is located from everyone else in the network
Groups	Group	A collection of three or more nodes that are tied to one another and other nodes in a larger network.
	Component	The presence of disconnected groups in the network.
	Triads	A set of three actors within a network.
	Cores	A highly cohesive sub-group defined by setting minimum criteria for a minimum number of nodes connected to one another
	Girvan-Newman Subgroup	A group detection technique whereby ties are removed to change the group structure
Network-level Measures	Size	The total amount of nodes within a network
	Density	A score that falls between 0 and 1 that measures the extent to which members are connected.
	Clustering	The extent to which the nodes within a network "group together" into dense pockets
	Reciprocity	The proportion of mutual ties in a network
	Centralization	A measure that determines the extent to which a hierarchy exists within a network.
	Average Path length	The mean distance between all of nodes in a network.

Centrality

Centrality is a common structural network measure that computes the visibility and popularity of a node(s) (e.g., individual, actors, organization) to a defined network (Freeman, 1979; Valente, 2010). Measures of centrality are typically applied as an

individual or node-level network measure, meaning a measure of centrality can be computed for each actor in a defined network. Freeman (1979) developed degree, betweenness, and closeness, which are three of the most common centrality measures utilized in social network research. These measures indicate patterns and frequency of interaction among nodes and will show which nodes within networks are the most popular or critical to the network, the distance of nodes relative to the rest of the members of a network, how reachable a given node may be, or if nodes are completely disconnected (referred to as an isolate). Centrality can be measured on directed and undirected networks. Within undirected networks one calculates the degree of every node based on the total connections; when data are directional, one measures in-degree and out-degree centrality, or the incoming or outgoing ties for a given node.

Groups

Group measures fall within both relational and structural network measures and are useful for uncovering and examining sub network structures (Valente, 2010). Group measures can be understood in terms of how nodes are clumped together within a network (Carolan, 2013). Components, cores, and cliques (defined above in Table 2) are relational group detection measures used by researchers to understand how nodes are connected to one another within groups and how those groups inform the larger network (Valente, 2010). These measures allow researchers to specify criterion for how groups are defined; doing so changes the structure and positions of critical nodes within a network.

Triads provide a means for measuring the presence of embedded groups within a network by evaluating the presence of ties between three actors (Carolan, 2013). There are 16 possible triad configurations, which are calculated based on the number of mutual ties, asymmetric ties, and null ties that make up the trio (Valente, 2010). Triads can illustrate different network structures, namely network closure and brokerage. Burt (2011) defines network closure as densely connected and cohesive networks, whereby the most, if not all, actors are mutually connected. Network brokerage, in comparison, points to the existence of structural holes, in which ties between two actors do not exist, thus creating a hole (Brut, 2001). However, there is often a third actor or a group of ties between two unconnected actors that provide opportunities to act as bridges or connections between the structural holes. Generating a triad census can ascertain certain structural attributes in a network.

The Girvan-Newman technique, a community-detection technique, differs from the group measures referenced because it uses edge-betweenness calculations to remove network ties among group nodes to determine if changes in components occur (Carolan, 2013). By removing ties that register high edge-betweenness scores, the Girvan-Newman technique reveals communities (i.e., groups) within networks where each node only belongs to one community. Examining groups within networks also help researchers better understand group membership, group norms, and access to information and resources throughout a network (Valente, 2010).

Network-Level Measures

Size, density, clustering, reciprocity, average path length, and centralization are examples of network-level measures. Unlike the previous measures described above, network-level measures assign one score to an entire network (Valente, 2010), characterizing the structure and patterns present across all nodes and ties. For instance, size measures the number of nodes in a network and density measures the number of ties present within a network relative to the number of connections possible among the nodes. Networks of larger sizes are more likely to have less density because the increase in nodes limits individuals' ability to connect with one another (Valente, 2010). These measures are useful for theorizing how networks are likely to function. Researchers analyze networks to understand relational and structural aspects of networks, and can provide a more comprehensive picture on how networks function, such as how information or behavior flows through the network, organizational behavior, and how nodes develop social capital (Carolan, 2013).

Rationale for Social Network Analysis

Social network analysis is of utility for this study because it provides a means to quantitative analysis for studying relationships among people, things, or organizations. Unlike traditional quantitative methods that assume measures and observations are statistically independent, SNA assumes that relationships among and between these observations are dependent and influence one another. SNA is able to quantify different relational interactions to examine actors and actions interdependently, to identify linkages among networks that may facilitate social capital, and to bridge micro and

macro level types of analysis (Wasserman & Galaskiewicz, 1994). Also, unlike traditional quantitative methods, SNA does not assume generalizability to broader populations because, as a method and theory, it assumes each network is unique. In a sense, SNA is similar to qualitative research whereby researchers connect findings only within the context of the network, and as informed by broader social and cultural contexts (Lincoln & Guba, 1985). Though unlike qualitative methods, SNA employs various statistical techniques to numerically describe, examine, and predict individual and whole-level characteristics within the context of a network (Valente, 2010).

A second rationale for using SNA for this study is the computational techniques it provides to examine relationship structures between individuals, groups, and organizations on social networking sites. The vast scale of social media and the data available offers opportunities for researchers to examine increasingly complex knowledge of human behavior (Can & Alatas, 2019). In particular, SNA is a useful method for studying group and community structures, the dissemination and flow of information sharing, longitudinal network development and change in online spaces, interaction patterns, popular topics, and changes in individual and group behaviors (Himelboim et al, 2017). Network analysis using social media metrics can provide researchers with a unique perspective of human behavior within a digital environment that is undisturbed and exists within a mediated public (Cottom, 2017; Himelboim, 2015).

Third, parallels exist between social capital theory (SCT) and SNA, which also bode useful for this study. As discussed in Chapter II, SCT is an interdisciplinary theory

that examines resources and benefits available to individuals and groups within a network (Kwon & Alder, 2014; Lin, 2001; Putnam, 1995; Schuller et al., 2001). First, both SNA and SCT examine relationship formation. Each approach considers how relational ties can influence outcomes on an individual, a group, or a network. Second, like SNA, SCT theorizes that social networks have both individual and collective value (Putnam, 2000). Actors within networks inform and benefit from the social capital formed at the individual-, group-, and network- levels. Third, SCT examines linkages or connections between and among actors within a network as a means of access or mobilization. It considers how and to what extent information flows throughout networks, how influence occurs, how actors receive and maintain social credentials, and how these elements are reinforced within a network (Lin, 2008).

Finally, both SNA and SCT examine structural linkages within and across levels of a network. As discussed in Chapter II, bonding social capital refers to densely connected and sometimes exclusive networks that form based on common traits, characteristics, values, and interests (Alfred, 2009; Cao et al., 2013; Phua et al. 2017). Social capital within bonded networks typically remains within the network and is more tightly controlled. Whereas with bridging social capital, networks have looser boundaries and weaker ties, and often actors rely on linkages outside of the network to acquire social capital (Granovetter, 1973; Putnam, 2000). SCT more often explores linkages within and across networks through the bridging and bonding functions (Phua et al., 2017; Putnam, 2000). Social capital within network research can be examined from micro-levels (e.g., actors, dyads, and triads) and at macro-levels, which include

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structural linkages, and the whole network as embedded within broader social systems (Wasserman & Galaskiewicz, 1994). Additionally, using SNA, researchers can measure and operationalize the extent to which actors can access these resources through the direct and indirect connections with others in a network. Thus far, I have outlined the justification and rationale for using social network analysis as a quantitative method within the mixed-methods research design. I will now turn to discussing the utility of critical discourse analysis as the qualitative method chosen for this study.

Critical Discourse Analysis

Critical discourse analysis (CDA), an extension of discourse analysis and critical linguistics, was chosen as the qualitative content analysis method of choice for this study. CDA focuses on "the role of discourse in the (re)production and challenge of dominance" (van Dijk, 1993, p. 249). In this regard, dominance examines the dynamics of social power within and among social groups and institutional systems. Content analysis, as defined by Krippendorf (2004) is a "research technique for making replicable and valid inferences from texts (or other meaningful matter) to the context of their use" (p. 18). Researchers have applied this method in many social science and humanities disciplines, including psychology, sociology, anthropology, communication, history, literary analysis, and linguistics (Bos & Tarnai, 1999; Krippendorf, 2004; Merriam & Tisdell, 2015). Krippendorf (2004) identifies three distinguishing features of content analysis: a) an empirical, exploratory method with a predictive intent; b) a means to move beyond traditional notions of communication to reconceptualize ideas of communication in relation to messages, channels of medium, communication, systems,

and the idea of computation; and c) a distinct methodology that allows researchers to logically examine, compose, and evaluate textual and other media. Beyond these features, a basic assumption of content analysis is its concern with the (re)presentation and interpretation of social reality (Bos & Tarnai, 1999).

Intellectual and systematic approaches to content analysis have been applied to text, symbols, and language as far back as the 17th century (Downe-Wamboldt, 1992; Krippendorf, 2004). This form of analysis had application in religious and philosophical studies, journalism, and within literary contexts. Bernard Berleson, a British communication researcher, is lauded for creating the concept of content analysis and introducing it to the social sciences (Krippendorf, 2004). Berleson (1952) defined content analysis as "a research technique for the objective, systematic, and quantitative description of the manifest of communication" (p. 18). By considering the quantitative, visible, and surface elements of content, he argued researchers review and assign content to specified categories, assign frequency content, and compare the units with other units (Bos & Tarnai, 1999). Manifest content analysis refers to the focus on the visible meanings of symbols and language (Downe-Wamboldt, 1992). Latent content analysis, in contrast, considers the underlying or implied meaning of the content (Downe-Wamboldt, 1992; Krippendorf, 2004). Many scholars associate latent content analysis with qualitative research.

Considered a discovery-based approach to inquiry, qualitative content analysis documents mediated forms of textual communication to describe phenomena and explore meaning (Hsieh & Shannon, 2005). Several forms of qualitative content analysis

exist, including rhetorical analysis, ethnographic content analysis, literary analysis, discourse analysis, and conversation analysis (Krippendorf, 2004). Data collection, analysis, and interpretation are reflective throughout this research method. The sampling and analysis centers on narrative descriptions and comments that are textual in nature. Within qualitative content analysis, researchers systematically code data based on relevancy to the theoretical lens or question of inquiry. An added benefit to content analysis is that a researcher's presence does not affect the subject of study (Merriam & Tisdell, 2015).

According to Kress (1990), CDA as applied in social science and humanities research follows certain theoretical assumptions: a) language is a social phenomenon; b) texts are socially situated and informed by larger institutional systems; c) meaning arises from considering the impact of social power structures; d) language systems exist within historical and contemporary sociopolitical contexts; and e) social power structures are produced and reproduced in reading and hearing of texts and other media. CDA requires researchers to possess a critical theoretical understanding of social issues and apply a sociopolitical stance to the complexities of social power dynamics (van Dijk, 1993; Paltridge, 2006). Jackson and Foucault Welles (2015) argue that CDA is useful in analyzing how "language, explicit and implicit values, image, and tone are used" to facilitate meaning making, particularly within digital spaces and within counterpublics (p. 937). Finally, Fairclough and Wodak (1997) argue that CDA sees language as a form of social practice, whereby social issues, political issues, and power relations are negotiated and performed through discourse. The authors go on to contextualize CDA in

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three dimensions—texts, discursive practices, and sociocultural practices—that reinforce and produce discourse.

Studies are now using CDA to analyze critical discourse within social media platforms. Using Twitter data over other data collection methods such as surveys allows researchers to engage in a kind of digital ethnographic observation, in which people engage publicly and openly without the gaze of the researcher (Cottom, 2017). Kuo (2018), Jackson et al. (2018), and Trott (2020) all employ CDA and network analysis to examine the hashtag activism and the networked activity. Kuo uses CDA to examine #NotYourAsianSideKick and #SolidarityisforWhiteWomen to interpret how those hashtags function as digital counterpublics and how the conversations facilitated by the hashtags circulate among those different publics. Jackson et al. applied CDA to explore the significance in the content of the #GirlsLikeUs hashtag, which highlights the experiences of transwomen, to examine how meaning-making is facilitated through the hashtags' narratives. Finally, Trott examined Tweets from the #MeToo network to understand how intersectionality across identity and relationality was discussed and to examine how central actors in the networks were positioned within the context of social power and dominance.

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Reflexivity as a Researcher

</div>

Reflexivity involves a researcher's critical self-examination of one's underlying assumptions that impact knowledge construction and production (D'Silva et al., 2016). Also important in qualitative research are considering the impact of the scholar's perspective, identities, and experiences on the research design, data collection, and

analysis (D'Silva et al., 2016). Therefore, it is necessary that I acknowledge my position to this study. I am a Black, middle-class, cisgender, woman pursuing a Ph.D. in Educational Human Resource Development, with a concentration in Adult Education. My various identities orient me to society and position myself in unique ways to this topic. My interest in this work stems from personal and professional experiences with using social media to connect with other Black women in higher education and to learn about their experiences in the academy. I have witnessed how people from minoritized populations use social media in the academy. My experience as an observer and an active participant frames my understanding and my approach to this research. I follow the Cite Black Women Twitter account, occasionally engaging with it and similar accounts occasionally through reading, commenting, and ReTweeting content. My engagement with the collective, in part, influenced my ideas for this research. I believe in the support online communities can provide to Black women and believe that using a public platform like Twitter can disrupt negative perceptions of how Black women view themselves in the academy.

Within this work, I situate myself as a Black feminist scholar who uses Twitter as a public space to convene with others who share similar identities. My identities and my own experiences as a doctoral student and an emerging scholar also affect how I view this topic. I have 13 years of experience working as a non-academic staff member in higher education institutions. I previously held roles in multicultural student affairs, academic support, and academic program assessment. I have six years of university level teaching experience as an adjunct instructor. My professional experience and my

academic experiences uniquely position me as someone of the academy, but not in the academy as I have not held a faculty position. My experience and proximity to the academy informed and influenced how I viewed and interpreted these data.

Ethical Considerations for Research on Twitter

Important ethical implications of using Twitter as a data collection site must be explored. This study followed the definition of human subjects as provided by the Texas A&M University Institutional Review Board, which utilizes the definition for the Department of Health and Human Services. A human subject is a "living individual about whom an investigator (whether professional or student) conducting research obtains (1) data through intervention or interaction with the individual, or (2) identifiable private information" (Secretary's Advisory Committee on Human Research Protections, 2013, p. 4). Private information involves

> information about behavior that occurs in a context in which an individual can reasonably expect that no observation or recording is taking place, and information which has been provided for specific purposes by an individual and which the individual can reasonably expect will not be made public (for example, a medical record). Private information must be individually identifiable (i.e., the identity of the subject is or may readily be ascertained by the investigator or associated with the information) in order for obtaining the information to constitute research involving human subjects. (SACHRP, 2013 p. 4)

An application was submitted to the Texas A&M University Institutional Review Board in May 2021 and the board determined that the study not to be human subjects research based on the use of existing data.

Several scholars identify consent (Luka et al., 2017; McCay-Peet & Quan-Haase, 2017), discerning public versus private spaces (Ahmed et al., 2017; Luka & Millette,

2018; Odwazny, 2014), and confidentiality (Luka et al., 2017; McCay-Peet & Quan-Haase, 2017; Zimmer & Proferes, 2014) as major ethical concerns when conducting social media research. Ahmed et. al (2017) explore the legal and ethical implications of Twitter, noting because Twitter is a public platform, researchers, advertisers, news media, and the like can access and use Tweets without individual permission.

As stated above, the default user setting for Twitter is public, which means anyone can view content posted by a user and information that is included on a user's public profile. A log-in account is required to interact with users and download data for research purposes. While Twitter is by default a public platform, users may not fully understand Twitter's terms and conditions and may be unaware of how information from their accounts can be used. Researchers can obtain large datasets from Twitter or from other third-party programming interfaces that resell Twitter data. This data collection method creates difficulty in obtaining informed consent due to the ability to contact active user accounts since data collected may be from an account that is no longer active. Ahmed et al. (2017) also discuss the challenges with receiving response rates and how the labor involved with gaining consent can delay timelines and cause researchers to reduce the scale of projects. Furthermore, a 2014 presentation by Senior Attorney Laura Odwazny, Office of the General Council for the U.S. Department of Health and Human Services (HHS), outlines challenges, ethical issues, and regulatory considerations for conducting Internet research. Currently the HHS regulations on the protection of human subjects does not specifically reference internet research, and no formal guidelines are in place (Odwazny, 2014).

Ethical guidelines and frameworks emerged in response to the growing body of Internet research. Created in 2000, the Association of Internet Researchers (AoIR) is an international "member based-academic association dedicated to the promotion of critical and scholarly Internet research independent from traditional discipline and existing across academic boarders" (AoIR, 2021, n.p.). In 2002, AoIR produced its first guidelines for Internet Research Ethics (IRE) as a set of recommendations to support responsible and ethical Internet research for students, researchers, and ethical review boards (Ess & AoIR, 2002). The guidelines align with the UN Declaration of Human Rights, the Nuremberg Code, the Declaration of Helsinki, and the Belmont Report. The IRE has evolved in response to changes in Internet research, with version 2.0 published in 2012 and version 3.0 published in 2020. While the IRE does not provide explicit instructions or processes for conducting ethical Internet research, AoIR provides guidelines for researchers to consider across a range of theoretical, methodological, and philosophical interpretations raised by problems encountered in Internet research. Key tools ascertained from the IRE include considering the stages of research, types of data collected, types of venues/contexts, and general structure of analysis (franze et al., 2020).

Feminist scholars are also concerned with ethical perspectives of Internet and social media research (Edwards & Mauthner, 2012; Luka et al., 2017; Luka & Millette, 2018; Miller et al. 2012). In *Ethics of Qualitative Research,* Miller et al. (2012) argue that integrating feminist practices of care into research designs allows for the inclusion of standpoints, context, space for negotiation and dialogue, and situated knowledge.

Integrating feminist practices into ethics research produces feminist ethics of practice. Edwards and Mauthner (2012) define feminist ethics of care as "a process involving an ethics of care in a situated way based on values of reconciliation, reciprocity, diversity and responsibility, and with an awareness of power" (p. 22).

Edwards and Mauthner (2012) offer practical questions for researchers to consider in bringing feminist care of ethics into research processes. Luke and Millette (2018) extend the framing of these questions specifically to social media research, which they argue are dynamic, complex and "intertwined with other daily and historically shaped social relations, activities, and realities, likewise dynamic, influential, and reciprocal" (p. 2). Researchers must understand that social media—regardless of the scope and scale of data collection and analysis—is constructed by humans and as such must pay attention to how the research affects those being studied.

The AoIR's iterative guidelines and the feminist ethics of practice guided the ethical decision making for this study. Rather than outlining prescriptive procedures, AoIR provides researchers with a general structure of considering ethically relevant issues and questions along with suggestions to address challenges, given the context and scope of Internet research (franzke et al., 2020; Markham & Buchanan, 2012). Feminist ethics of practice challenges researchers to integrate feminist and intersectional values into the methodology, design, and analytic process through reflexive attention to the messy details of methodological development and decision making (Edwards & Mauthner, 2012; Luka et al., 2017; Luka & Millette, 2018).

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Methods

For this study it was necessary to integrate both qualitative and quantitative methods to answer the research questions. This section outlines data collection methods, SNA quantitative analysis methods, and critical discourse analysis as the mode of qualitative analysis.

Data Collection

Launched in 2006, Twitter is a microblogging social media platform where users can post "Tweets," which are up to 280 characters of text (and other visual media) and interact with other users. Twitter markets itself as an open and accessible platform where users can explore "what's happening in the world and what people are talking about right now" (Twitter, 2020a). Table 3 defines Twitter terms. The default privacy setting of Twitter accounts is public, meaning that any content published on the site is immediately accessible and searchable for anyone to view. Twitter has multiple purposes, from sharing information about life updates, use for social movements and political activism, for tracking real-time events, and health promotion and disease propagation (Zimmer & Proferes, 2014). As of 2019, 22% of U.S. adults used Twitter; of those users, 21% are women and 24% identify as Black (Pew Research Center, 2019). This racial demographic statistic is significant as Black-identified people account for 13.4% of the overall U.S. population as of 2018 (U.S. Census Bureau, 2018).

Table 3 *Twitter Terminology*

Term	Definition
Tweet (TW)	Tweets are messages that Twitters post on the platform. Tweets are limited to 280 characters and can include links, photos, and videos.
ReTweet (RT)	ReTweets are "a re-posting of a Tweet. Twitter's ReTweet feature helps you and others quickly share that Tweet with all of your followers. You can ReTweet your own Tweets or Tweets from someone else" (Twitter, 2020b).
Hashtag	"user-generated Twitter discourse convention intended to facilitate the curation of Tweets about a particular topic using Twitter's limited search capabilities" (Brock, 2012, p. 546).
Follower	Users that are provided access to receive another user's Tweets.
Reply	A reply is a direct response to a Tweet. Users can reply to their own and other Tweets.
Quote Tweet	Users may also ReTweet a Tweet with a comment that is separate from the content of the original Tweet that is Retweeted.
Mention	A Tweet in which another user is mentioned or tagged (AKA 'att-ed' with an @ symbol).

#CiteBlackWomen was the hashtag sampled for this study. This account and hashtag exist on Twitter and seek to acknowledge, confront, and re-center Black women faculty in academic work, thus centering intersectional experiences in a digital space. Christen A. Smith, an Associate Professor of Anthropology and African Diaspora Studies at The University of Texas at Austin, started *Cite Black Women* in November 2017 as a campaign, primarily engaging the movement through social media and t-shirts. From there, *Cite Black Women* expanded to a broader social media presence on Twitter, Facebook, and Instagram, "discussing the gendered racial politics of citation and its consequences" (CiteBlackWomenCollective, n.d., n.p.). This account was chosen because the primary purpose of centering the voices and work of Black women faculty and writers.

Data for this study were collected using a Twitter Application Programming Interface (API) along with Twitter Archiving Google Sheet (TAGS), "a free Google Sheet template to set up and run automated collection of search results from Twitter"

(TAGS, n.d., n.p.). Currently academic researchers can only access 1% of Twitter data, or a maximum of 3,200 tweets connected to a hashtag within seven days of the Tweet at the time of the download (Twitter, 2020). The hashtag did not exceed the maximum amount of allowable sampling during the data collection duration.

A purposive sample of 8,416 Tweets, ReTweets, and Replies containing the #CiteBlackWomen hashtag was collected from January 31, 2021 to June 1, 2021. As no established criteria exist in the literature for sampling Twitter data, I selected the timeframe as is fell over time when Spring semesters and quarters take place. As well, the timeframe fell over Black History Month and Women's History Month, and I expected more active participation to take place in the network.

Data Cleaning

After the data collection period ended, data were compiled and exported into an Excel spreadsheet for data cleaning. The excel spreadsheet included the following columns: a unique string identifier, the author the Tweet, text of the Tweet, date of Tweet, the reply username to any Tweet that contained a reply, the total followers, the total following, and a permanent link to each Tweet. A total of 840 duplicate Tweets were identified and removed. Next, usernames of Tweet authors were reviewed to identify any potential bot (non-human artificial intelligence Twitter accounts). Bots were identified by searching for the letters 'bot' in a username and by reviewing usernames with less than 10 followers. Low amounts of followers typically signal that a bot was involved. Next the Twitter profile for each suspected bot account was reviewed to confirm its status as a bot. As a result, 26 bot entries were removed.

Tweets were then categorized based on ReTweet, Reply, and Mentions. Next, data were cleaned to identify nodes and edges. For ReTweets and Replies, Tweet content was separated from usernames. A column was designated for nodes, edges, and the content of the Tweet. The unique string identification tied to Tweets were also included. For Mentions, usernames contained in a Tweet were separated to a unique column for each username. Using Excel power query function, nodes with multiple edges (usernames mentioned in a Tweet) were transposed from columns to rows. Thus, each node had a unique row for each unique edge, as opposed to having multiple columns for each node.

After the nodes and edges were determined, an edgelist—a two-column spreadsheet where each row represents a dyad between two actors—was created for each Tweet type (Carolan, 2013). Next, each edgelist was reviewed to identify self-loop associations. Within the context of Twitter, a self-loop refers to users who ReTweet, Reply to, or Mention their own usernames in a Tweet. More broadly a self-loop refers to edges where the node has a tie with itself (Hansen et al., 2020). Since the focus of this study was to examine interactions among other users, any self-loop associations at the edge level were removed, leaving those connections between distinct users (e.g., user A ReTweeting user B). A master edgelist with all three Tweet types was then compiled upon removing the self-loop associations.

Quantitative Methods: Social Network Analysis

For the purpose of this study, the networks were defined by Twitter users who connect with the #CiteBlackWomen hashtag by Tweeting directly with the hashtag,

Retweeting, Replying to an original Tweet containing the hashtag, or mentioning someone within the original Tweet. Users signified nodes while the Retweets, Replies, and Mentions indicated edges, as defined in Table 3 above.

Measures

Basic information provided in public Twitter profiles was collected on users who engaged with the #CiteBlackWomen hashtag. This attribute data (i.e., data collected on and describing each node in the network) includes aggregated reporting of the total unique users, total Tweets posted, the total people followed, and the total number of followers. These attribute data allowed for building directed unweighted networks based on Tweets, ReTweets, and Replies (Rehm & Notten, 2016). These attribute data were also used to examine patterns of network structure across the different Retweets and replies through SNA (Social Media Research Foundation, n.d.).

Analysis

This study used RStudio, an open-source statistical software for data management, analysis, and graphic visualizations, for network analysis (RStudio, 2021). SNA involves statistically computing ties and connections among users within a network to examine individual relationships, patterns, and broader network structures. As such, this study explored ties between and among users who ReTweet, Reply to a Tweet, or Mention a user within a Tweet; the content of the Tweets themselves was not explored for SNA. Analyzing the structural elements within the network was calculated to answer Research Question 1. To examine structures, I computed groups, components, k-cores, and utilized the Girvan-Newman technique for community detection. To analyze whole

network-level structures, I computed size, density, clustering, reciprocity, centralization, and average path length. To answer research questions 1 and 2, I computed the following centrality measures: degree, in-degree, out-degree, betweenness, and closeness. Centrality measures are used in network research to indicate patterns and frequency of interaction among nodes and indicate which nodes within both networks are the most popular or critical to the network.

Qualitative Methods: Critical Discourse Analysis

The same data collection methods applied for critical discourse analysis also do for SNA as described above. However, unlike SNA, which focuses only on user connections and interactions, critical discourse analysis in this study examined the textual content of the Tweets. Qualitative research typically involves smaller, non-random, and purposeful sampling of individuals and cases (Creswell, 2008; Merriam & Tisdell, 2015). To date, little guidance exists on purposive sampling methods for using data mined from Twitter (Kin et al., 2018). As such, I extracted a percentage of Tweets from the nodes with the highest in-degree, out-degree, and betweenness centrality. Central nodes are those that hold crucial positions in networks and nodes with the highest betweenness were critical to determining how information spread within networks. Other Twitter-based research studies on activism and counterpublics used this sampling technique to ensure the included sample of Tweets is more likely to be seen by more nodes within the network (Jackson et al., 2018; Jackson & Foucault Welles, 2015). A sample of 558 Tweets was extracted from the #CiteBlackWomen network based on the highest in-degree, out-degree, and betweenness centrality scores. Any duplicate

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Tweets (e.g., multiple ReTweets of the same Tweet) and Tweets not in English were removed from the data set. These removals resulted in 540 Tweets from which to apply critical discourse analysis.

To analyze the qualitative data, individual Tweets extracted from Twitter Archiving Google Sheet (TAGS) were exported into a Microsoft Word Document and uploaded into ATLAS.ti, a qualitative data analysis software. Adapting the principles of critical discourse analysis from Fairclough (1992), I began analyzing the data at three dimensions, the word level, the discursive level, and the sociopolitical practice level as indicated on the figure below.

Figure 1 *Three-Dimensional Model for Critical Discourse Analysis Fairclough (1992)*
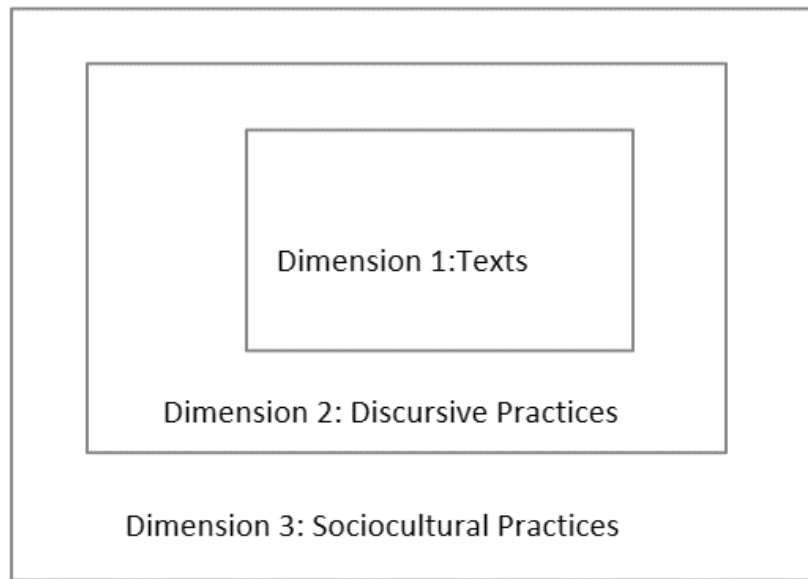
The word dimension level of analysis included looking for connections of words or characters chosen and how these words indicate attitudes towards topics. This analysis involved looking at individual words and hashtags. The second dimension, discursive practices, analyzed groups of Tweets which I reviewed within the context of a single Tweet. Looking within a single Tweet, I examined how word choices within the Tweet indicated values, attitudes, thoughts, and perceptions. Finally, I examined the social structures at the third dimension, regarding how language and communication creates and reinforces social relationships, practices, and norms. Discerning meaning behind participation in these networks also contextualized any existence of counterpublics within this public space.

I read and reread Tweets and began generating codes and code descriptions to explain the data. Codes were also generated based on relevant hashtags included within

the Tweets. Throughout the analysis process, codes were refined, clarified, and eventually grouped into broader thematic categories. These categories were generated based on the identification of emerging patterns and the thematic categories became the basis for the major findings that are presented in Chapter IV.

Reliability

Data analysis processes in qualitative research utilized several tools and techniques to support quality and rigor. Examples of these tools and techniques to support the quality, trustworthiness, and rigor of qualitative work include member checking, triangulation, researcher's reflexibility and positionality, inclusion of rich, thick descriptions, and clear documentation of collection and analysis process (Anderson, 2017; Lincoln & Guba, 1985; Merriam & Tisdell, 2015).

Because these data are considered archival, participants could not be contacted to serve as a source of checking and validation. However, theoretical assumptions guiding this study served as data triangulation (Lincoln & Guba, 1985), which is a tool employed by researchers to examine the quality and trustworthiness of qualitative data. Additionally, the study provided an audit trail (Lincoln & Guba, 1985) to document the data collection and analysis process. This audit trail process included the following:

1. Documenting the raw data – Raw Tweet data collected via TAGs software into excel spreadsheet

2. Categorical analysis and data reduction processes – Remove duplicate Tweets, read, and re-read data for initial coding

3. Data reconstruction and synthesis – Code Tweets, and using ATLAS.ti

   software to compare and contrast codes to uncover potential themes.

4. Process notes – Maintain detailed notes and develop a codebook

5. Other supplemental documents such as research memos and journals

I maintained a detailed research journal to document the analysis process. After each round of Tweet review, I noted initial reflections. I documented observations, reflections, and rationale during the recoding process and in refining codes into categorial themes.

Limitations

Based on confines in identifying the authenticity of users and the data collection process, it is important to discuss the limitations. First, limits exist to determining the extent to which users provide an authentic representation of themselves online. Little user demographic information is available on Twitter using the data collection methods explained above. Users have the choice to disclose birthdate and location on public profiles; however, this profile information does not include identity markers such as race and gender. Thus, taking part in these networks means users may hold identities that align with the primary target audience (e.g., Black women), but users who engage in these networks may not fall within the targeted demographic. Although Twitter is a public platform, users may disclose personal or identifiable information. This study did not identify individual Twitter users or include direct quotes from Tweets, unless the quotes come from accounts that are verified (e.g., given a designation by Twitter for accounts for well-known public figures, celebrities, journalists, or organizations), from

unverified accounts representing organizations, or for unverified accounts with at least 10,000 followers.

Second, Twitter restricts access to how much data academic researchers can obtain through its free application programming interface (Twitter, 2020). Social media companies such as Twitter have access to swaths of information about its users, from personal preferences, interact dynamics within relations, purchasing patterns, and political and social movements (Puschmann & Ausserhofer, 2017). These data are often used by companies for marketing, advertising, and to improve their platforms. Twitter once shared data with researchers liberally to attract platform developers. However, the platform now increasingly restricts access of data, including for academic purposes. To gain access to complete data, researchers must pay significant costs to Twitter or through a third-party website to access these data. Related, because Twitter limits how many data researchers can gain access, there are sampling challenges and limits to theorizing the data. González-Bailón et al. (2014) found that bias exists in what data Twitter provides through the API. These data are more likely to over-represent central users and exclude users on the periphery. These ethical and sampling concerns listed above limited the generalization of this study's results to the entire #CiteBlackWomen network.

Chapter Summary

A mixed-methods research design for this study was determined to be the best methodological approach to examine networks, to understand social capital formation among Black women faculty in digital spaces, and to understand the intersectional lens through which this population uses a digital network. I began by providing an overview

and rationale for using a mixed-methods research design and identified SNA as a

quantitative methodological approach and CDA as a qualitative approach for examining

the data for this study. I then provided a detailed overview of SNA and critical discourse

analysis. I outlined the research design, methods, and planned analysis. I ended the

section by exploring the ethical issues and limitations of conducting research on Twitter.

CHAPTER IV

FINDINGS

The purpose of this study was to examine how Black women faculty develop and use informal digital social networks to facilitate social capital. Black cyberfeminism (Gray, 2017) and social capital theory (Lin, 2001; 2008) are the two frameworks that provided a theoretical foundation for this study. Combined, both frameworks were necessary for understanding a) how informal digital networks built by Black women faculty are structured and function and b) the unique ways in which Black women faculty use these informal networks to facilitate social capital. Thus, the following research questions guided this study:

1. What characteristics are evident in informal digital social networks created and utilized by Black women faculty?

2. How does participation in an informal digital network facilitate the development of social capital among Black women faculty?

3. In what ways do individuals participate in an informal digital social network created for Black women faculty?

4. In what ways does an informal digital network facilitate discourse about intersectional experiences of Black women faculty?

This chapter begins with general descriptive statistics of the #CiteBlackWomen network. Next, I illustrate the interactions generated from Tweeting through a network analysis. Third, I analyze ReTweets, Replies, and Mentions as subnetworks to examine

if and how these different types of interactions generate network patterns. Thereafter, I

transition to presenting three key findings ascertained from the critical discourse

analysis.

Network Analysis Results

The #CiteBlackWomen network comprised 8,416 unique Tweets. Tweets

totaling 4,358 (51.8%) were posted to the network without any interaction from other

users, meaning a Tweet with the CiteBlackWomen hashtag was posted to Twitter, but

was never ReTweeted, Replied to, or Mentioned in another tweet. Contrarily, 4,058

(48.2%) Tweets of this network did include user engagement via Mentioning,

ReTweeting, or Replying. Out of the 4,058 interaction Tweets, 88.0% were ReTweets,

5.2% were Replies, and 10.1% were Mentions. These Tweet types in aggregate will

hence be referred to as an interaction Tweet, interaction network, or interaction user.

A total of 5,872 unique users are included in the network; 51% of those users

(N=2,994) sent at least one type of interaction Tweet. Users had an average 5,204

followers (SD=16,398.64; Median=1,136; Range=2-605,393), or the number of accounts

that follows an individual. Users had an average of 1,920 following (SD=3,326.94;

Median=1011; Range=1-117,820), or the number of accounts an individual user follows.

On average, each user posted 1.43 Tweets (SD=2.48) between January 31 and June 1,

2021, with a range of 1 to 100 Tweets and a median of 1 Tweet. Among the 2,994

interaction users, 85.5% (N=2,259) posted only one Tweet. On average, each interaction

user posted 1.36 Tweets (SD=1.77), with a range of 1 to 100 Tweets. Those users had an

average 5,162 followers (SD=14,483.44, Median=1,117; Range=2-364,959) and an

average following of 1,884 (SD= 2,892.77, Median=997; Range=1-37,655), which is

slightly smaller than the overall network.

Figure 2 *Bar Chart of CiteBlackWomen Total Tweets and Interaction Tweets from January 31, 2011 to June 1, 2021 by Week*
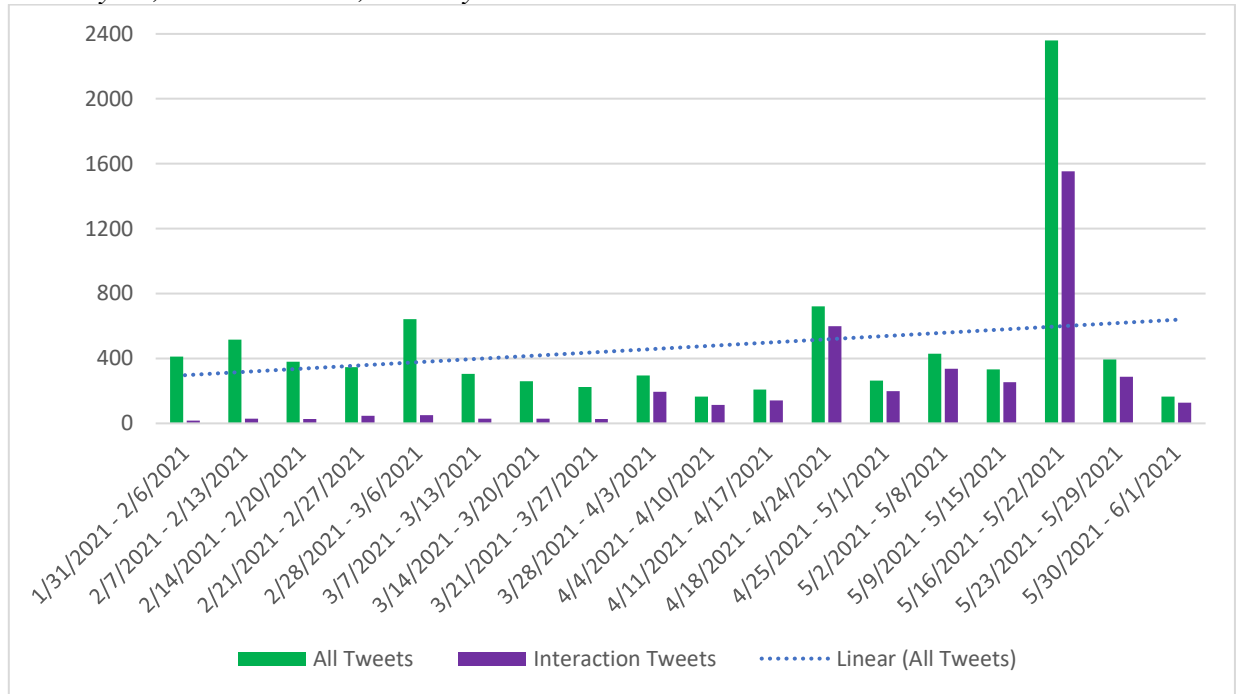
Presented in Figure 2 is a graphical representation of the total Tweets by week

over the data collection period. Tweets were collected for a total of 122 days. Note that

January and June Tweets have very small totals as only one day of data collection

occurred within each month, respectively. Network participation steadily increased by

each month, peaking in May as indicated by the trendline on Figure 2. The month of

May contained the highest concentration of Tweets, representing 43.74% (N=3,861) of

all Tweets and 63.12% (N=2,562) of all interaction Tweets, respectively. The peaks in

Tweet frequency across the network coincided with events, conferences, and topics

relevant to the purpose of the #CiteBlackWomen network. These topics and events will

be expounded upon in the Critical Discourse Analysis Findings section.

Interaction Network Characteristics

Results for the remainder of this network analysis will only include 4,058

interaction Tweets, which will hence be referred to as the interaction network. The other

non-interaction Tweets were considered isolates and were removed from the dataset. The

interaction network results indicate a large, loosely connected, and decentralized

network. The total user engagements within the network consisted of 5,897 nodes, 8,401

edges (defined as ReTweets, Replies, and Mentions) and were divided into subgroups, as

indicated in Table 4 along with other descriptive information.

Table 4 *Network-Level Measures for Interaction Network and Individual Interactions*

	Interaction Network	Mention*	Reply*	ReTweet*
All Tweets	4058	490	212	3570
Nodes	5897	1163	301	5170
Edges	8401	2751	239	5803
Average Degree	2.82	4.72	0.98	2.24
Degree Centralization	0.10	0.07	0.02	0.11
Density	0.0002	0.0020	0.0016	0.0002
Mutuality Proportion	0.33	0.99	0.03	0.01
Transitivity	0.02	0.07	0.14	0.02
Diameter	17	17	4	10
Average Path Length	6.2	7.56	1.20	4.47

Note: There is overlap in Tweets, nodes, and edges among the three subgroups, which
indicates a total higher than total listed in text above.

The average degree score for the interaction network is 2.82, which represents the number of ties to and from a node. The degree centralization was 0.10, and indicates 10% the #CiteBlackWomen network was focused on one individual or a set of individuals. Gesell et al. (2013) suggest threshold metrics when evaluating the applicability of measures to networks. The authors found aassigns centralization threshold value greater than 0.25 to indicate a highly centralized network. The centralization value for the #CiteBlackWomen interaction network shows a decentralized network in which not one person or a small set of people have power and control over the network. Gesell et al. suggest a density threshold to be between 0.15 to 0.50 values, in order to build connections that allow for influencing behavior of network members. The whole network's overall density was 0.0002, and indicates the network only represents 0.002% of overall possible ties among all nodes. This low density indicates that most nodes have a small number of ties, and users within this network are largely unconnected. The largely disconnected network also suggests a low likelihood that existing connections would influence the behaviors of network members, as noted by Gesell et al.

The number of nodes with two-directional ties was 1,372, and as a result the mutuality proportion represents 33% of the interaction network. Gesell et al. (2013) recommend a mutuality proportion of at least 0.50 or 50% to indicate small ties. While mutuality is lower than the recommended threshold, the value indicates possible smaller clusters within the larger network. The diameter was calculated to be 17. Relatedly, the average path length (APL) between any two given nodes was 6.20 lengths. Both the

diameter and APL indicate less cohesion within the interaction network, as it takes nodes

more paths to reach each other in a network.

Figure 3 displays how users engaged in the #CiteBlackWomen network over the

examined time period. Colored points represent nodes and the grey lines represent edges

in this network. The nodes represent Twitter users who engage in some way with the

#CiteBlackWomen hashtag and ties represents ReTweets, Mentions, and Replies.

Figure 3 *Visualization of CiteBlackWomen Interaction Network*
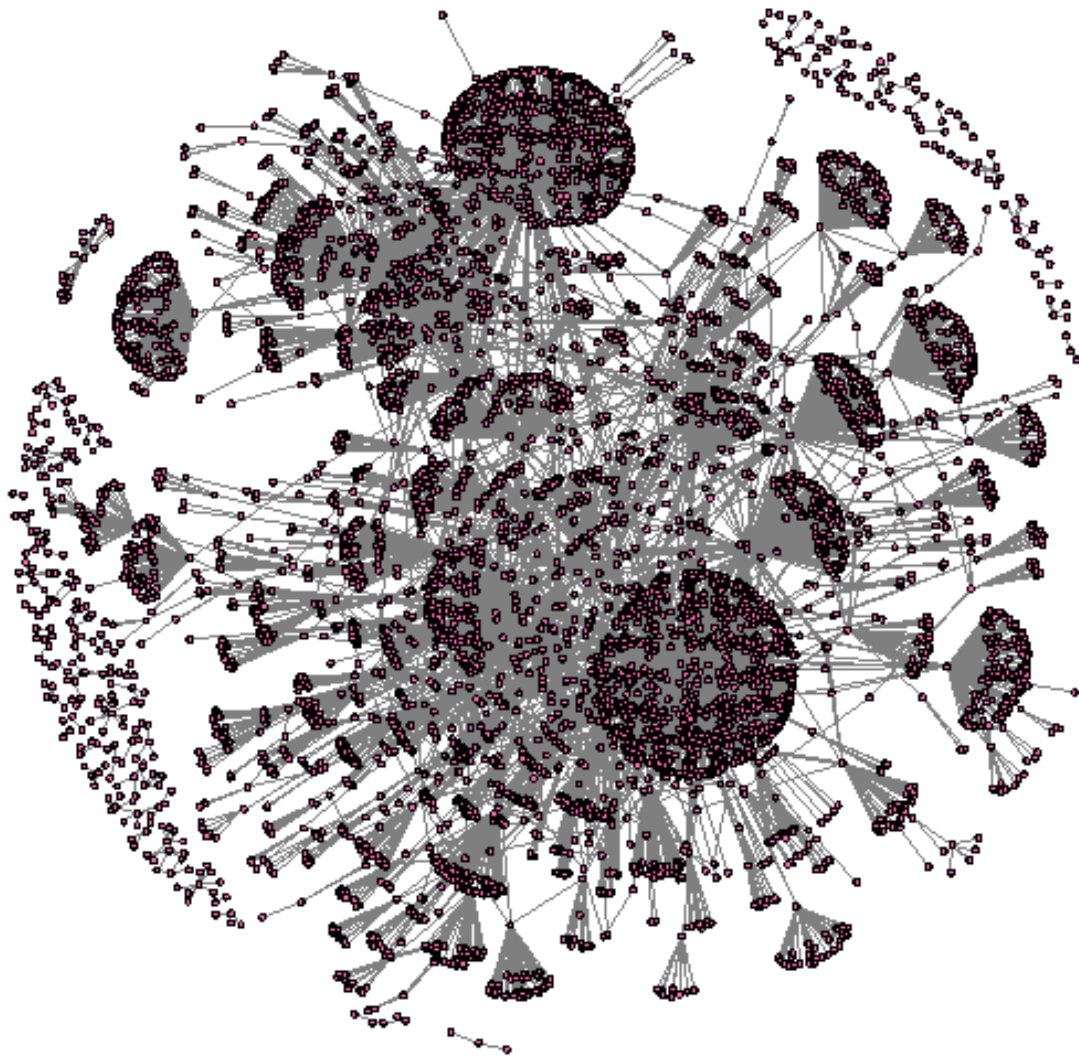
Network Comparison

As noted above, the interaction network was divided into three distinct

subnetworks based on interaction: Mention, Reply, and ReTweet. Similar to the

interaction network, network-level measures—nodes, edges, degree, degree centralization, density, mutuality proportion, transitivity, diameter, and average path length—were calculated across these three subnetworks. In the following section, each subnetwork will receive its own set of descriptive statistics, and network characteristics will be compared across the three subnetworks and to the interaction network.
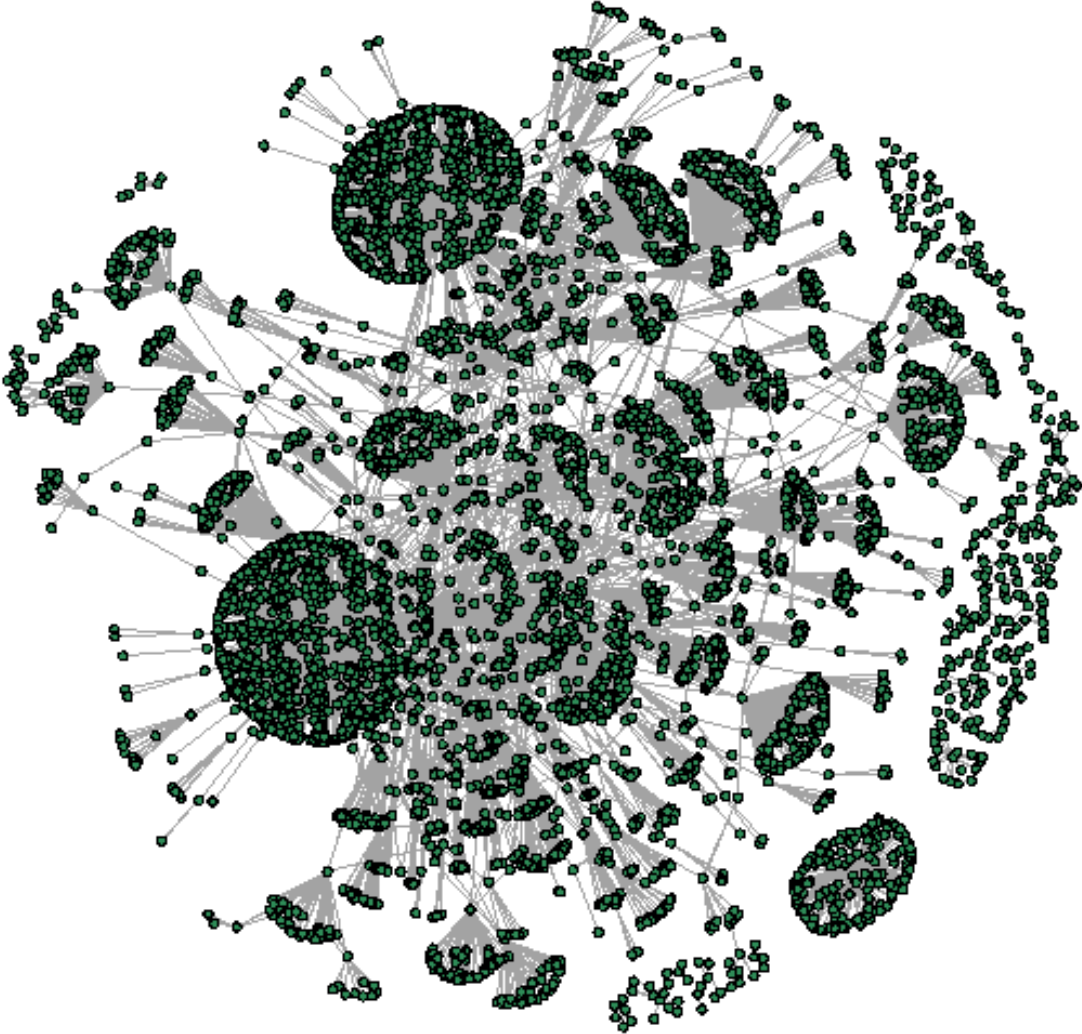
ReTweet Network

ReTweets were the most frequently used mode of interaction between Twitter users, comprising approximately 90% of the interaction network. Comparing the interaction network visualization to the ReTweet network visualization displays little difference, based on the large quantity of overlap in Tweets between the two networks. Clusters within the central network are present and appear to surround a small number of nodes within the network. Moving further away from the core shows several smaller clusters that are less dense and not cohesive. The average degree score is 2.24 and is lower than the average degree for the Mention subnetwork and the interaction network. The ReTweet network has an average diameter of 10 and the average path length if 4.47. The diameter and average path length are the second highest average scores in comparison to the Reply and Mention subnetworks and lower in comparison to the interaction network. These scores indicate potential inaccessibility among users within this network, or at minimum greater social distance between users in this network.

The degree centralization for the ReTweet network was 0.11, and indicates 11% of the ReTweet network was focused on one individual or a set of individuals. The measure was the highest score when comparing the Mention, Reply, and the interaction

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network. While the value is the highest among the network, degree centralization is still low and points to a largely decentralized network where no one person or small group of individuals control the network.

The ReTweet network's overall density was 0.0002, and indicates the network only represents 0.002% of overall possible ties among all nodes. This low density provides evidence that this is a widely dispersed, less cohesive network (see Figure 4). Only 33 (0.63%) of nodes within the network contain two-directional ties, and the mutuality proportion is just 1%, indicative that the network is not tightly clustered. The level of mutual proportionality within this network also indicates a low level of two-directionality, in that that if User A ReTweets User B, then User B is unlikely to then ReTweet content from User A.

Figure 4 *Graph Visualization of CiteBlackWomen ReTweet Network*

Mention Network

Mention Tweets were the second most frequent mode of communication in the #CiteBlackWomen network. Figure 5 displays the Mention network. In comparison to the whole interaction and ReTweet networks, the Mention network is even less densely populated. The majority of nodes within the Mention network are not highly cohesive. A few clusters of nodes exist throughout the network that likely center around a few key nodes. The average degree score is 4.72 and is larger than any degree values across other subnetworks and the interaction network. This is likely because a single Tweet might mention several users, potentially boosting degree scores for each user. The Mention network has an average diameter of 17 and the average path length if 7.56. The diameter and average path length are the highest average scores among all subnetworks and the interaction network. As both diameter and average path length measure the distance between users within a network and the mean distance between two nodes within the network, respectively, the higher score shows most users are not accessible to each other.

Figure 5 *Graph Visualization of CiteBlackWomen Mention Network*
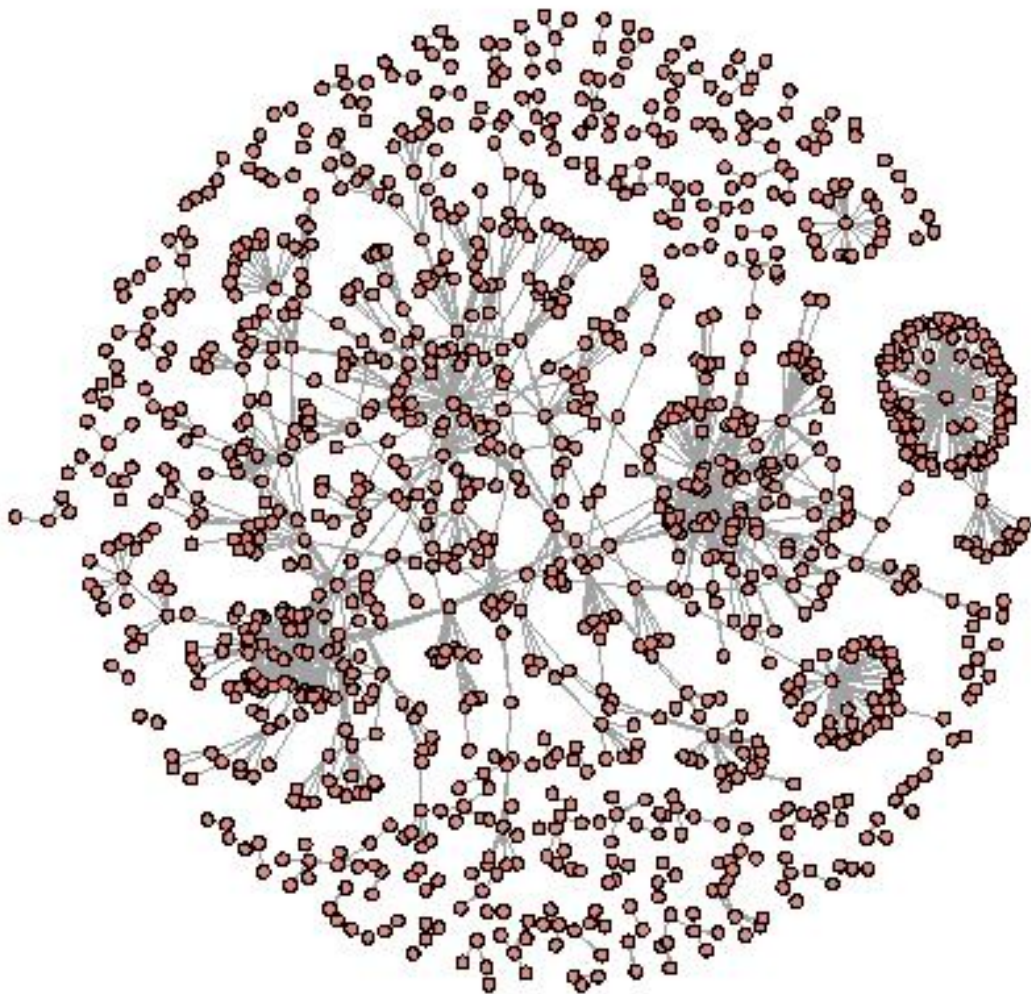
Observing the degree centralization of the Mention network indicates that 7% of

the network was focused on one individual or a small set of individuals. This value is

lower in comparison to the interaction and ReTweet networks. Along with a less than

1% density score (0.00016), descriptively the Mention network is a loosely connected

network. Interestingly, the mutual proportion of the Mention network was 99% and was

the highest among all the whole and subnetworks. In other words, people are likely

Mentioning one another when they Tweet using the #CiteBlackWomen hashtag. This value indicates that the vast majority of nodes have two-way directional ties when interacting via Mentions on Twitter.

Reply Network

The Reply network was the smallest network among the sub-interaction groups, as indicated in Figure 6. Aside from a few small clusters, most of the nodes have no or single connections. The average degree score is approximately 1 and is smaller than any degree values across other networks reported above. While the Reply network is the smallest, it has the smallest mean diameter (4) and shortest average path link of 1.20. These two measures provide some evidence that this Reply network is slightly more cohesive than the ReTweet and Mentions networks. However, the density of the network is less than 1% (0.00016), which indicates that most nodes are not connected to others within the network. Finally, the mutual proportion of the Reply network was 3%, which was much lower than Mention network and higher than, but still closer to, the mutual proportion of the ReTweet network.

Figure 6 *Graph Visualization of CiteBlackWomen Reply Network*
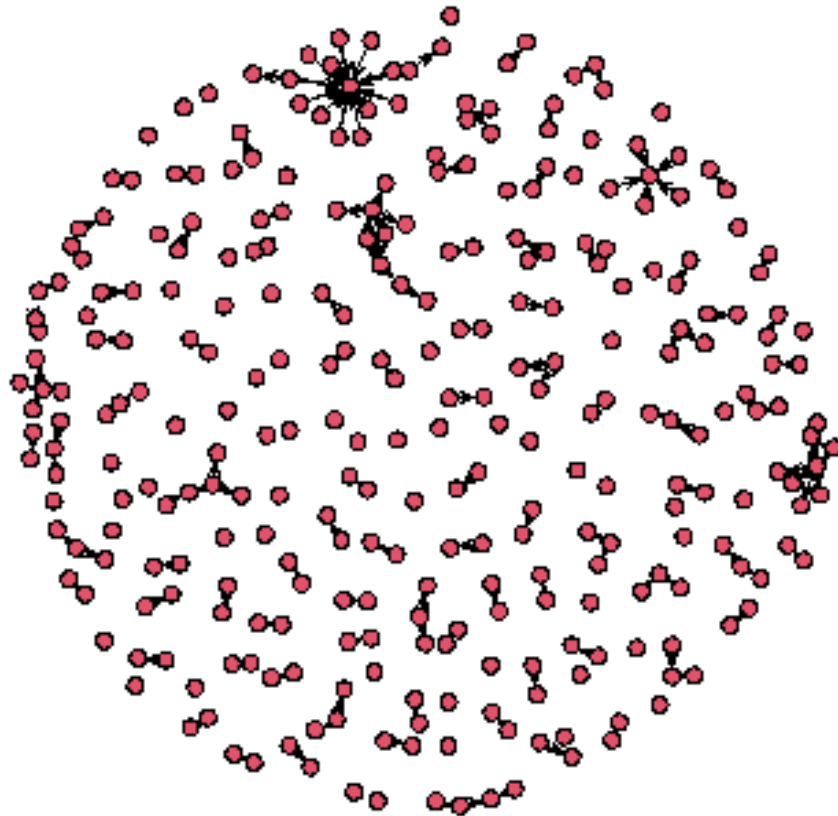
Centrality

The following measures of centrality were calculated on this network: degree, in-degree, out-degree, betweenness, and eigenvector centrality. Measures are included in Table 3. These centrality measures assign importance to which individual nodes occupy influential or central positions within the network based on connections (Valente, 2010). Whole network visualizations of in-degree, out-degree, betweenness, and eigenvector centrality measures are included below in Figures 7a-7d.

Table 5 *Descriptive Statistics on Centrality Measures by Tweet Type*

Centrality Measure		Degree	In-Degree	Out-Degree	Betweenness	Eigenvector
Interaction	Mean	2.90	1.45	1.45	3581	0.001
Network	SD	21.07	2.61	19.66	38240.9	0.013
Mention	Mean	4.72	2.36	2.36	3439.00	0.007
	SD	9.82	4.92	4.92	17149.70	0.03
Reply	Mean	0.98	0.49	0.49	0.12	0.006
	SD	1.08	0.95	0.76	0.83	0.057
ReTweet	Mean	2.24	1.12	1.12	158.00	0.001
	SD	20.27	0.80	19.96	3613.86	0.014

The interaction network has a mean degree value of 2.90 (SD=21.07) and suggests that each node, on average, is connected to about three nodes. The two nodes with the highest degree were @CiteBlackWomen (#63), an eponymous account to the overall network and @AJLUnited (#13), an organization's Twitter account, with degree values of 1,207 and 825, respectively. As indicated by the standard deviation measures on Table 5, there is higher variation in average degree within the Interaction network than for the Mention network (M=4.72; SD=9.82) and the Reply network (M= 0.98; SD=1.08). ReTweet average degree was slightly lower than the Interaction network at 2.24 (SD=20.27), with a comparable rate of variation. Reply network had the lowest average degree and variation (M=0.98; SD=1.08). This measure indicates engagement via Mentions was more likely to connect links to and from other nodes than the other forms of engagement.

In-degree measures the number of times an individual is sent linkups by others in the network, while out-degree measures the number of linkups an individual sends throughout the network (Valente, 2010). Both measures of centrality are useful in identifying different types of influential individuals in the network. In-degree and out-

degree measures were the identical for all four network types. These data suggest that users in the CiteBlackWomen network, on average, receive the same number of linkups as they send. These scores were lower than the average degree, and suggests that a maximum of about two linkups were sent or received. However, variation exists among both scores when observing standard deviations. For instance, the out-degree scores the ReTweet network (M=1.12; SD=19.66) show a wide amount of variation in comparison to the in-degree scores for the ReTweet network (M=1.12; SD=0.80). This variation suggests that certain individual users in the network have higher levels of popularity in the network than the average member. The interaction and sub network measures of betweenness had the highest mean scores and most variability out of all the centrality measures included on Table 4. However, the betweenness values and the variability are more difficult to interpret given that the size of the network has over 100 nodes (Freeman, 1979).

Figure 7 (a-d). *Interaction Network Graphical Representation of Centrality Measures*

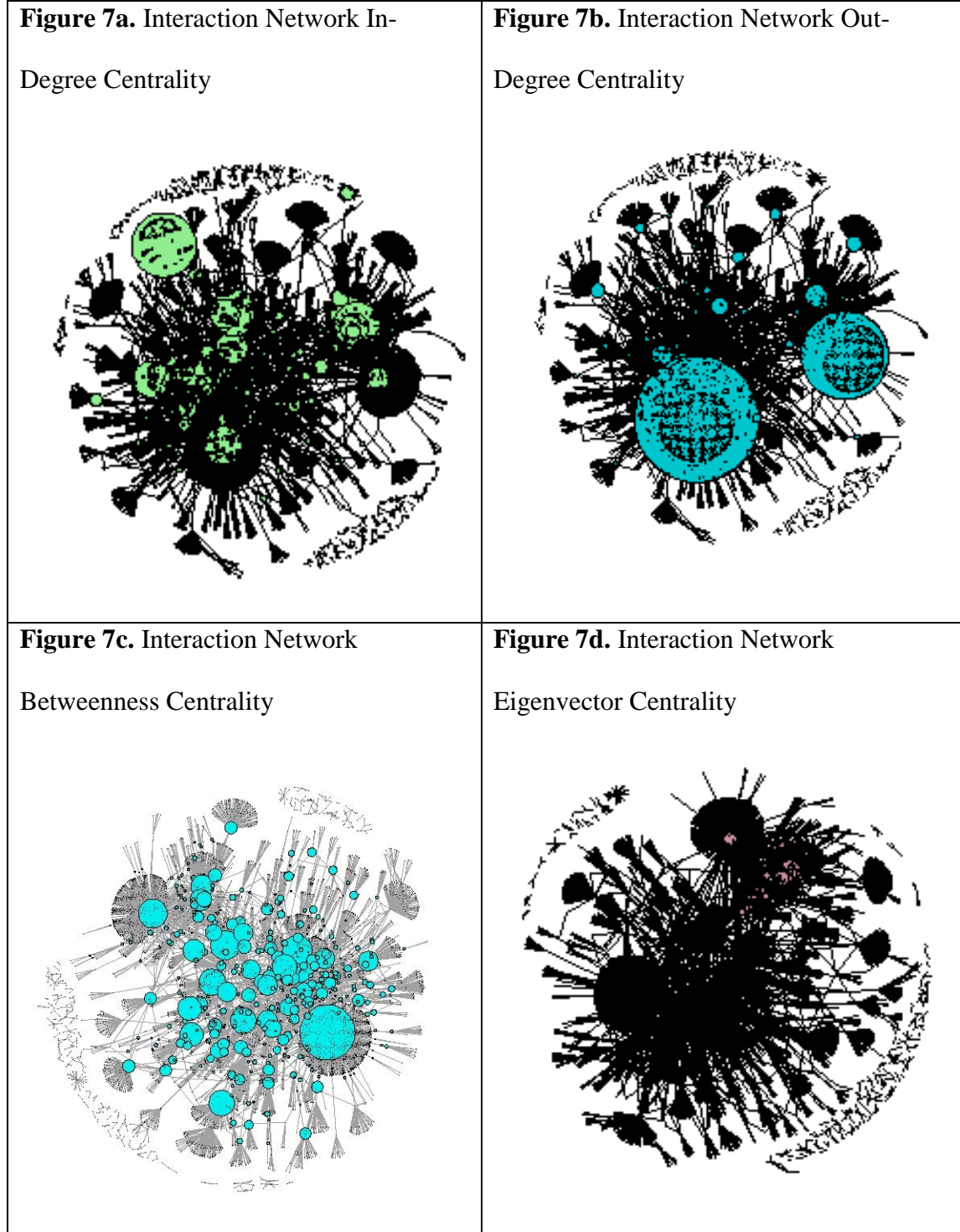| **Figure 7a.** Interaction Network In-Degree Centrality	**Figure 7b.** Interaction Network Out-Degree Centrality
Figure 7c. Interaction Network Betweenness Centrality	**Figure 7d.** Interaction Network Eigenvector Centrality

Table 6 represents the top 20 Twitter users based on in-degree, out-degree, and betweenness centrality of the interaction network. The betweenness scores among the highest for the top 20 users was a mean of 617.59 (SD=254.860), with scores ranging from 405.25 to 1498.31 (scores reported in square root). When controlling for square root values, the mean betweenness scores for the top 20 users was approximately 130 times larger than the mean score of interaction network. The out-degree measures had the second highest degree value, with a mean of 194 (SD=276.65) and scores ranging from 55 to 1179. The mean outdegree score for the top 20 users was approximately 133 times higher than the mean score of the interaction network. Finally, the in-degree measures for the top 20 users had the lowest scores with a mean score of 370.5 (SD=17.35) and a range of 18 to 79, with a mean score 25 times higher than the mean score of the interaction network. While betweenness had the highest values within the network, outdegree had the highest among of variability of all the degree measures. In-degree had the lowest values and lowest variability.

Table 6 *Top 20 Users Measures of Centrality in the Whole #CiteBlackWomen Network*

In-degree		Out-degree		Betweenness*	
User	**Score**	**User**	**Score**	**User**	**Score**
DiLeed	79	citeblackwomen[+]	1149	citeblackwomen[+]	1498.31
60Minutes[+]	69	ProfKori**	799	AJLUnited[+]	905.25
Citeblackwomen[+]	58	schock**	212	jovialjoy	836.39
jovialjoy	52	thePhDandMe**	194	ProfKori**	776.26
cclareMDMPH**	50	AJLUnited[+]	164	thePhDandMe**	760.12
#187**	45	KaporCenter[+]	160	#179**	640.65
#91**	41	jovialjoy	141	#74**	634.46
TheCCWH[+]	39	60Minutes[+]	132	drcwatego**	620.23
#37**	38	#186**	111	#185**	588.77
#89**	34	profgabrielle**	106	heisereads	539.63

In-degree		Out-degree		Betweenness*	
ProfKori**	32	#178**	97	DiLeed	504.32
PulitzerPrizes[+]	31	#1062**	89	#293**	498.44
AJLUnited[+]	26	#82**	75	JSTOR_Daily[+]	472.44
Notingshaw	23	NewBlackMan**	73	cclareMDMPH**	463.90
profgabrielle**	23	#149	73	schock**	452.47
thePhDandMe**	23	timnitGebru**	68	meredithdclark**	443.60
ColorOfChange[+]	21	cclareMDMPH**	67	#187**	438.39
#572	20	mclemoremr**	59	sjjphd**	438.25
schock**	19	ProfessorCrunk**	56	60Minutes[+]	434.64
profsassy**	18	#354	55	KaporCenter[+]	405.25

*Measure presented in Square root
**User is a faculty member.
[+]User is an organization, corporation, or group entity.

I conducted a search on Twitter and through internet search engines to determine whether these top accounts across the three measures of centrality could be categorized as an individual or an organization. For privacy, individual users from unverified accounts or accounts with less than 10,000 followers will only be referred to as the user number and role ascertained from their Twitter profile. That descriptive information is included in Table 5.

Of those 38 nodes, 30 represent individuals and eight represent organizations, corporations, or group entities. Five organizations center around topics of equity, diversity, and social justice, including diversity and social justice in technology (AJLUnited and KaporCenter), removing unfair and biased practices against Black people in marketing (ColorOfChange), Black feminist initiatives (CiteBlackWomen), and an organization for women and those who study women throughout history (TheCCWH). The remaining three organizations are a national media outlet (60Minutes), an academic journal (JSTOR_Daily), and an international award

(PulitzerPrizes). Among the 30 individual nodes, 75% identified as academics (e.g.

professors and/or researchers in a university setting). The remaining six individual users

identified as the following: two users identified as non-higher education educators, two

as employees of non-academic organizations, one as an essayist, and one as a university

staff administrator.

All 38 nodes were among the top 20 users with highest values of in-degree, out-

degree, and betweenness centrality. Eight users (60Minutes, AJLUnited, cclareMDMPH,

CiteBlackWomen, jovialjoy, ProfKori, schock, and thePhDandMe) were among the top

20 scores for all three measures of centrality. Four users (#187, DiLeed, KaporCenter,

and profgabrielle) were among the top 20 scores for two measures of centrality.

Groups and Communities

I calculated the following measures to determine to what extent groups informed

the overall structure of the network: components, bi-components, cutpoints, triads, and

transitivity. I employed the Girvan-Newman Technique to for community detection.

Groups are considered a set of three or more people connected within the larger network

(Valente, 2010). Components are maximally connected subgraphs and include a set of

nodes that are linked through paths of any length within a network (Valente, 2010). The

interaction network consisted of 100 weak components, which do not consider

directional ties between nodes, and 4,816 strong components, which do consider

directional ties. The largest weak component (#1), contains 94.18% (5,536) of all nodes

within the network. The components were much more dispersed when calculating the

strong components. The top strong component only accounted for 13.97% (821) of

overall nodes within the network. More details are located in Table 7.

The interaction network consisted of 400 weak cutpoints and 239 strong

cutpoints, which represent nodes that serve as points of leverage within the larger

network (Valente, 2010). Removing these cutpoints creates more separation across

groups within the network. Further review was conducted with the cutpoints to

determine if overlap existed with users with the top 20 centrality betweenness scores.

Within the strong components, 17 of the 20 top betweenness scores were cutpoints; 18 of

the 20 top betweenness scores were weak component cutpoints.

Table 7 *Top 10 Weak Component Membership of #CiteBlackWomen Interaction*
Network

Rank	Strong Component	Size	Weak Component	Size
1	3	821	1	5536
2	186	18	69	18
3	78	11	14	9
4	138	8	41	9
5	4	7	62	8
6	157	7	68	8
7	206	6	66	7
8	170	6	58	6
9	21	6	20	6
10	66	6	77	6

K-cores

K-cores represent a subset within a network whereby each node within a given k-

core is connected to at least K other nodes within a network (Valente, 2010). For

example, in a 3k-core, each node in that core has a degree of at least three. The average

size of k-cores was 1k-core, meaning the nodes within the subset are connected to at

130

least one other node. Increasing the size of the k-core, called collapsing, steadily

removes nodes from the network, until a core group is identified. Figure 8 is a graphical

representation of the k-core distribution within the network. The different colors connote

individual k-core memberships. The black k-core is the most common color within the

visual and represents 1k-core, which comprises 4,278 nodes within the network.

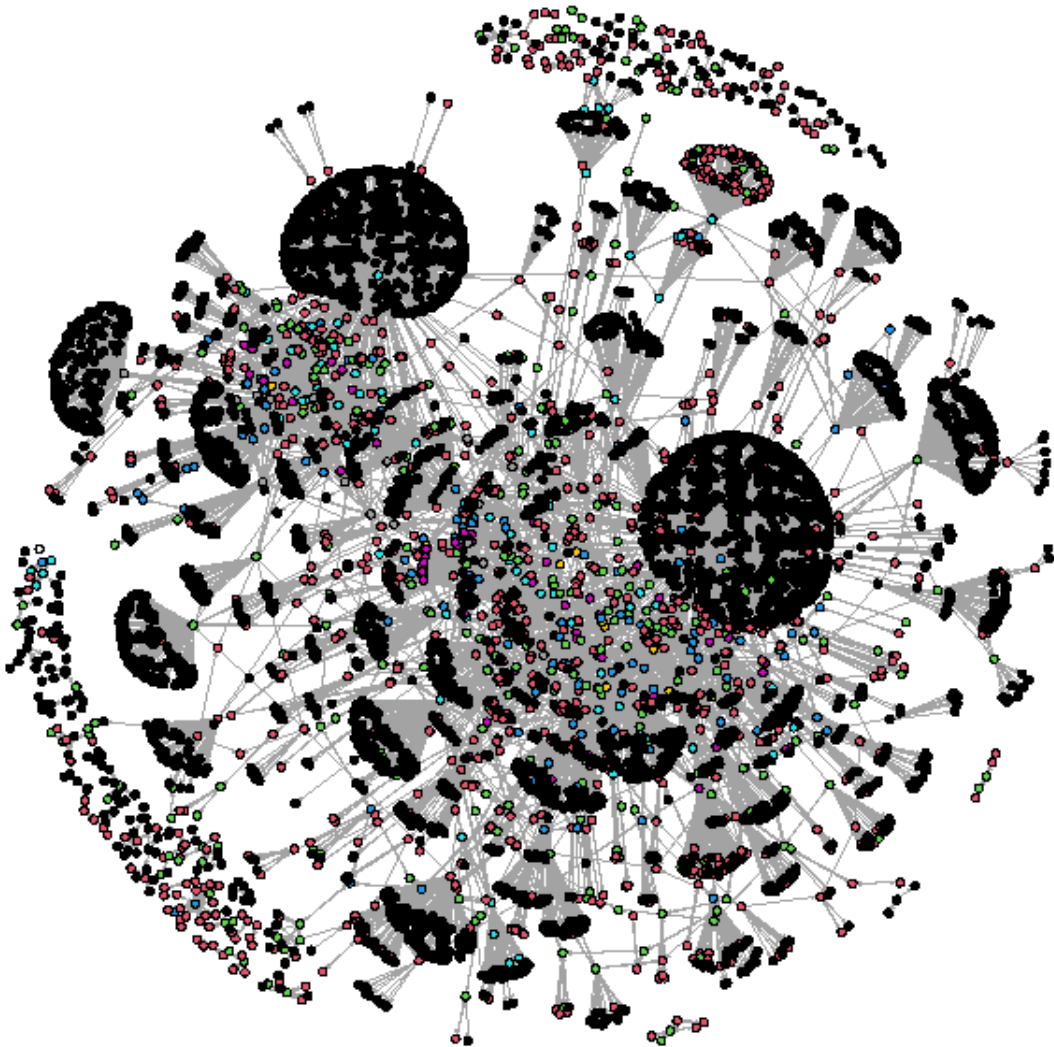**Figure 8** *Interaction Network Graphical Representation of K-core Membership*

Figure 9 shows 13k-core, which is the densest k-core within the network. This

core contains 13 nodes, and each node has at least five two-directional ties. There is only

one uni-directional tie from rajiinio to AJLUnited. 13k-core only contains 12 nodes, as

indicated on Table 8. Of the 12 nodes, seven (@60Minutes, @AJLUnited, @jovialjoy,

@KaporCenter, @rajinio, @schock, and @timnitGebru,) also are among the top 20 most

central users to the network, as noted in Table 6. Nodes towards the center of the core appear to have a higher number of ties than nodes on the periphery of the core.

Table 8 *K-cores for #CiteBlackWomen Interaction Network Ranked by Size*

K-core	Size
1	4278
2	942
3	318
4	118
5	64
6	62
7	16
8	29
9	24
10	8
11	4
12	1
13	13

Figure 10 is a graphic of the 10k-core, which contains the 13 nodes in the 13k-cores, the 1 node in the 12k-core, the four nodes in the 11k-core, and eight nodes in the 10k-core. Compared to Figure 9, Figure 10 shows more modes on the periphery and an increase in unidirectional ties. The nodes on the periphery have fewer ties than do those towards the center. Unlike 13k-cores where each node had a similar number of ties, 10kcore has five central nodes within the network with the highest number of ties. These five nodes—AJLUnited, jovialjoy, rajiinio, 60Minutes, and timnitGebru—are likely involved at the center of interaction within the k-core and may have a similar role within the network. Observing these two k-cores shows the interconnections of nodes within smaller groups in ways that are not evident within the larger network. While k-cores

provide evidence of dense connections within the network, observing connections in

triads can be helpful in understanding to what extent mutual connections and clustering
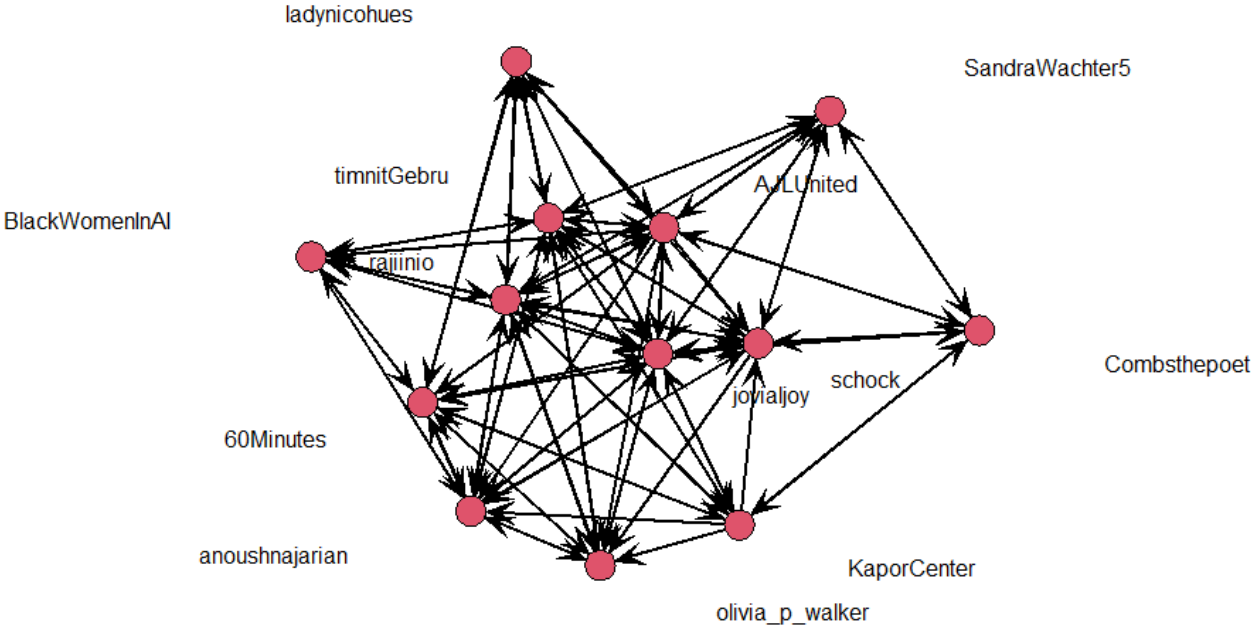
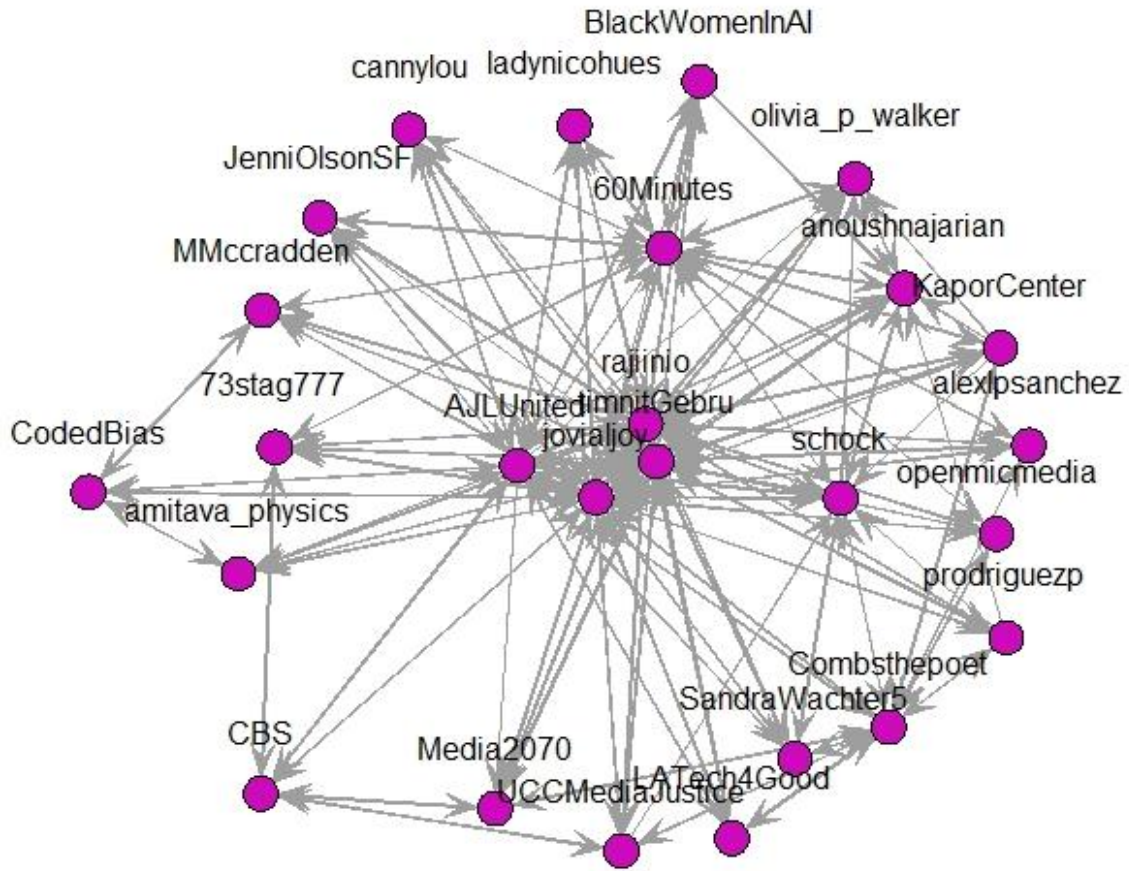exist.

Figure 9 *Network 13k-cores*
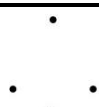
Figure 10 *Network 10k-cores*
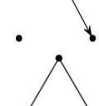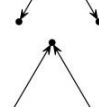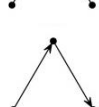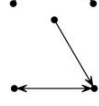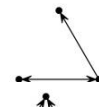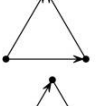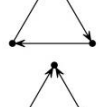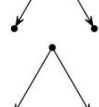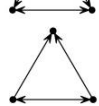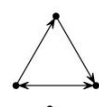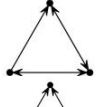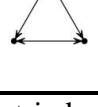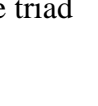
Triads

The network contains approximately 33.8 billion triads. A full triad census

distribution is noted in Table 9. The third column, triad type, divides triads into three

categories as discussed in Chapter 2. Null indicates triads with no ties, one asymmetrical

tie, or one mutual tie. Brokerages are triads have at least one null dyad, but more mutual

ties exist than the null triads (Burt, 2001; Prell & Skvoretz, 2008). Closures represent

triads where each node is fully connected or 'closed' (Burt, 2001; Prell & Skvoretz,

2008). The most common triad type was 003, which indicates an empty triangle with no mutual or asymmetrical ties among the triad. Triad 003 represents 99.88% of overall triads within the network. While the total number of brokerage triads (1,109,846) and closure triads (15,723) are significantly lower than the number of null triads (33,829,965,109), brokerage triads exist at a rate of 71 times higher than closure triads.

Transitivity is a proportion that measures clustering within triads through the number of mutual ties. Four type of transitive triads exists and also fall within the closure category. Of all triads, only 15,587 (0.000046%) were transitive. Gesell et al. (2013) suggests a transitivity threshold of at least 0.30 or 30% to indication network cohesion. This low level of transitivity indicates that many nodes do not have mutually connected paths, and thus do not have network cohesion. The most frequent transitive triad with a total of 368 triad was the 300 triad, which contains every possible tie between nodes. This number of transitive triads indicates evidence of small clustering within the network. Given the indication of clustering based on the triad census results, I ran the Girvan-Newman Technique, which is an approach that detects subgroups or communities where each node only belongs to a single community. Communities are determined by deleting selected links based on edge betweenness scores (Valente, 2010).

Table 9 *Triad Census of #CiteBlackWomen Interaction Network*

Triad	Visualization	Type	Census
003		Null	33,791,537,396
012		Null	30,491,273
102		Null	7,936,440
021D		Brokerage	989,040
021U		Brokerage	1,158
021C		Brokerage	10,709
111D		Brokerage	1,574
111U		Brokerage	92,523
030T*		Closure	129
030C		Closure	0
201		Brokerage	14,842
120D*		Closure	14,842
120U*		Closure	248
120C		Closure	13
210		Closure	123
300*		Closure	368
Total			33,831,090,678

*Transitive triad

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Girvan-Newman Technique

The Girvan-Newman technique generated 165 mutually exclusive communities. The group sizes range from 1 to 936 nodes, and the median group size has two nodes. The top 10 communities represent 54.63% (3,211) of nodes within the overall network. Table 10 outlines the top communities by size, mean degree, maximum degree, and median degree. The mean degree of the top 10 communities is 2.16; however, much variability exists in maximum degree scores within each community. Observing the individual degree values within each community shows one node disproportionately maintained the highest degree and showed a median degree of 1.

Table 10 *Top 10 Communities in #CiteBlackWomen Interaction Network Ranked by Size*

Community	Size	Mean Degree	Max Degree	Median Degree
39	936	2.00	927	1
12	685	2.02	674	1
5	429	2.9	193	1
6	207	2.11	141	1
18	190	2.37	43	1
23	168	2.06	144	1
27	158	2.04	128	1
10	147	2.26	33	1
1	146	2.06	130	1
35	145	2.14	37	1

Critical Discourse Analysis of the #CiteBlackWomen Network

This section presents three findings of critical discourse analysis to answer research question three and research question four of this study. The research questions are as follows:

3. In what ways do individuals participate in an informal digital social network created for Black women faculty?

4. In what ways does an informal digital network facilitate discourse about intersectional experiences of Black women faculty?

I begin this section by describing the general natures of Tweets within the #CiteBlackWomen network. These descriptions provide important context for drawing context and meaning within the findings. Next, I present the following three, broad findings: a) disseminating information about the work created by Black women, b) combating erasure of Black women's intellectual contributions and labor, and c) digitally mediated spaces for affirmation, accountability, and support. Examples of Tweets in the form of direct quotes or screen grabs directly from Twitter.com are included throughout this section to provide additional context to these findings. To protect the privacy of users, I only include Tweets from verified accounts, from individual user accounts with at least 10,000 followers, or user accounts for organizations.

Describing the CiteBlackWomen Network

The textual and structural natures of Tweets provide crucial context to uncovering intended meaning. Deconstructing and contextualizing the different

structures of Tweets are important for making connections to broader meanings and for determining how individuals within this network contribute to discursive practices. First, I describe the construction of Tweets, including the formal and nuanced ways users develop Tweets and how these differences impact how readers receive and interpret messages. Next, I discuss how users select specific hashtags to indicate additional contexts and topics to readers.

Tweets are constructed in a plethora of ways. Users may choose to write Tweets using formal grammar (e.g., use of punctuation, complete sentences). However, users often opt to Tweet beyond the formal grammatical rules. These Tweets contain a mixture of words, complete sentences and fragments, hashtags, emojis, images, memes, gifs, and external links. A user's intended formatting and usage of the techniques previously listed can inform and connote certain meanings that differ if the formatting changes. These formatting choices can also be used to signify certain messages to an intended audience. While symbols such as memes, gifs, and emojis were not explicitly analyzed for this study, often these symbols are important signifiers to conveying meanings of the tweets to the intended audiences.

Figure 10 below by P. Gabrielle Freeman (@profgabrielle) provides an example of how users employd emojis as symbols to emphasize points. The second sentence of the Tweet includes a hand clapping emoji between each word. Mainstream uses of this emoji are traditionally meant to signal applause. Clapping is a common physical action used as a means of emphasis by individuals within the Black community when one is making a declaration or point (Brown, 2016). When used in digitally mediated spaces,

the clap emoji, especially when paired with capitalized words and/or statements, seeks to emulate the physical and emotional mechanisms as if this statement was delivered in person. By using the clap emoji along with capitalizing each word of the second sentence in the Tweet, Freeman is conveying to a distinct mode of delivery to readers regarding the primary topic of the Tweet, which is about the importance citing additional context about the history of Black organizing. Additionally noteworthy is that the image and linked information includes details of a book publication by Freeman. Freeman's use of emojis within the Tweet provide important context on the role non-word symbols have in signaling different messages to the readers. These symbols also are laced with sociocultural meaning, which varies within intended communities and contexts.

Figure 11 *Tweet by @profgabrielle March 20, 2021*

Many of the Tweets analyzed for this study included other hashtags in addition to #CiteBlackWomen. The purpose and use of these hashtags varied widely, but, in general, were relevant and complementary to #CiteBlackWomen. I identified 283 hashtags co-occurring with the use of the #CiteBlackWomen hashtag. While dozens of hashtags exist within the Tweet sample, I briefly categorize the most popular hashtags below.

- Academic (e.g., #FeministScholarship, #ScholarSunday, #PhD, #AcademicChatter), Commemoration Months (e.g., #BlackHistoryMonth, #WomensHistoryMonth),

- Intersectional Hashtags (e.g., #AfroLatinx, #Misogyoir, #BlackFeminism, #WellReadBlackGirl),

- Fields/Disciplines (e.g., #PscyhTwitter, #SocialWorkTwitters, #MedTwitter, #STEM),

- Racial/Ethnic Identity (e.g., #NativeTwitter, #BlackExcellence),

- Gender Identity (#InternationalWomensDay, #Readwomen, #WomenKnowLaw),

- Education (e.g., #Edchat, #EduTwitter, #HigherEd, #AntiracistEd), and

- Writing (e.g., #AcademicWriting, #WritingBlackness, #WritingChallenge).

Hashtags were often employed by users to signal different applicable topics and contexts to readers. In this sense, hashtags were tertiary to the main content within a Tweet (see Figure 11). In other instances, hashtags were also used as the primary text of Tweet. Such is the case for the Figure 12 below, by Camille Clare (@cclareMDMPH). No individuals or specific works are cited. Instead, Clare callsed for individuals to practice citing Black Women as part of Women's History Month. Two Tweets authored by Tao Leigh Goffe (@taoleighgoffe) in Figure 13 have a similar effect as Clare's Tweet, but differs in that the intended Tweet is a Reply to another related message. In the first Tweet, Goffe espouses the value of Black feminism. The intention of Goffe's second Tweet is to bring attention back to the first Tweet and to invoke users to support Black feminists through citing Black women.

Figure 12 *Tweet by @cclareMDMPH March 5, 2021*

Camille A. Clare MD MPH
@cclareMDMPH

For this #womxnshistorymonth, let's #CiteBlackWomen. That's the tweet.

10:17 PM · Mar 5, 2021 · Twitter for iPhone

20 Retweets   **2** Quote Tweets   **148** Likes

Figure 13 *Two Tweets by @taoleighboffe April 29, 2021*

|道| Tao Leigh Goffe, PhD ◎ @taoleighgoffe · Apr 29
black feminism is so simply beautiful, so elegant, that others believe they came up with these ideas, that the ideas always existed

💬 6   🔁 61   ♡ 438

|道| Tao Leigh Goffe, PhD ◎
@taoleighgoffe

#CiteBlackWomen and black feminists

6:43 AM · Apr 29, 2021 · Twitter for iPhone

12 Retweets   **62** Likes

Unlike Figures 12 and 13, which include hashtags integrated into complete sentences, Figure 14 only includes hashtags and emojis. Clare's reply includes the #CiteBlackWomen hashtag and two hand in face emojis, two flushed face emojis, and two tired face emojis. Duplicating the emojis is another signal to the reader that Clare wants the primary content of the message to convey emotions of frustration about the topic of the first Tweet rather than using words. However, the intent of Figures 12 and

14 are similar, in that Clare's message to the reader is to focus the topic on the hashtags over writing a full Tweet.

Figure 14 *Tweet Reply by @cclareMDMPH March 24, 2021*

Note: The identity of the user in the first Tweet is excluded to protect privacy. See note above for privacy considerations.

Within the #CiteBlackWomen network users employed various grammatical and symbolic techniques to delivery Tweets and to convey specific meanings to readers. Constructing Tweets with emojis was used to model expressions that are often reflected in face-to-face communication. Some of these symbols were also used to as an emotive tool to signify to readers the author's connection to and association with the Black community. Hashtags was another prominent technique applied to a Tweet. Using hashtags rather than complete sentences shifted the delivery of the message. Both techniques were commonly used along with text, media (e.g. links, memes, images) within the network.

Finding 1: Dissemination Work Created by Black Women

I observed that #CiteBlackWomen prominently exists as a space to disseminate the knowledge production of Black women. Disseminating includes Tweets that highlight the work (e.g., book, journal article, seminar, lecture, syllabus) produced by Black women. Dissemination within the informal network was, by far, the most common network utilization. Analysis points to three types of dissemination: a) for situational awareness of the intellectual production Black women produce; b) to commemorate historical contributions, and c) share attitudes and values about Black Women's intellectual production.

Situational Awareness

Several tweets shared within the #CiteBlackWomen network were primarily dedicated to sharing information for situational awareness purposes. This type of dissemination most often involved users who generated standalone Tweets containing information, news stories, or highlighting work made by Black women. Individual users and organizations would highlight scholarly and non-academic work. Users who presumably identify as Black women would also use the #CiteBlackWomen hashtag to disseminate their own work. Tweets of this type were often tagged with other hashtags, most notably #CiteASista and #CiteBlackWomenSunday to cross promote across different audiences and other relevant topics.

Interaction (i.e, Replying or Mentioning) with other users was not as common. While some users may have directly attributed authors on Twitter (i.e., through tagging the author, if the author so happened to have a Twitter account), doing so was not

necessarily meant to create opportunities for interaction and conversation with the

author. Such is the case for Figures 15 and 16.

Figure 15 *Tweet by @AccessiblePsy February 17, 2021*

Figure 16 *Tweet by @ UmichNCID February 4, 2021*

Both Tweets feature information about scholars whose work contributes to understanding the experiences of historically oppressed groups. The Tweet by @AccessiblePsy is also part of a larger campaign to feature the work of scholars as part of Black History Month. While both Tweets directly Mention the scholars @DrDVega and @DRCSWatkins, the authors' intent is to call attention to the scholars' areas of study and other academic contributions rather than to engage with the users directly on the platform. Both examples illustrate how users within this network bring attention to the intellectual work of Black women and the relevancy of the knowledge they produce. The work featured by @AccessiblePsy may not be of interest to every user who interacts with the #CiteBlackWomen network. Instead, the decentralized nature of the network

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allows for different individuals to set topical agendas and include more directed interests while centering on the purpose to provide a discursive space to promote the intellectual labor of Black women.

Unlike the two previous examples, the following Tweet takes a different approach to highlighting the need to #CiteBlackWomen. Figure 17 features a Tweet by Monica McLemore, associate professor of family health care nursing at University of California, San Francisco (UCSF Profiles, n.d.). The #FON2030 hashtag is in reference to The Future of Nursing 2020-2030: Charting a Path to Achieve Health Equity Report, published by the National Academy of Medicine in May 2021 (National Academies of Sciences, Engineering, and Medicine, 2021). McLemore critiqued the report for gaps in making advancements towards health equity through referencing and quoting @demonicground, Katherine McKrittrick, professor of Gender Studies at Queen's University. McKrittick's work is not directly related to nursing or health equity; however, McLemore's intent was to use McKrittick's academic and literary work as a connection to the failures of this report. By including the #CiteBlackWomen and #CiteASista hashtags, McLemore is providing a reminder that by not including the perspective and intellectual labor of Black women, the attempts of this report and the nursing industry will always fall short in centering Black voices, and thus contributing to an ongoing challenge of health inequity.

Figure 17 *Tweet by @mclemoremr May 23, 2021*

Monica McLemore PhD, MPH, RN, FAAN #EndowedProf ✓
@mclemoremr

When I stopped reading #FON2030 yesterday, I went back to the emancipatory work of @demonicground because we will never achieve health equity without centering Black justice, joy & life. This is what the that report are missing. They should #CiteBlackWomen #CitaASista

MUSIC WAVEFORMS ALLOW US TO GLEAN THAT REINVENTING BLACK LIFE ANEW IS BOUND UP IN COGNITIVE SCHEMAS THAT ENVISION, AND FEEL, BLACK SOUND OUTSIDE NORMATIVE STRUCTURES OF DESIRE.

Katherine McKittrick
Dear Science and Other Stories (Errantries)

#kindlequotes

10:54 AM · May 23, 2021 from Oakland, CA · Twitter for iPhone

#CiteASista

#CiteASista is a hashtag commonly used along with #CiteBlackWomen. This #CiteASista hashtag was developed in 2016 by then doctoral students and now assistant professors Brittany Williams and Joan Collier. The co-founders developed the website

and corresponding Twitter account as an "actionary (reaction and action-based) response" to white supremacy, providing "a space to uplift and center the voices and contributions of Black women in the U.SA. & abroad" (#CiteASista, n.d.). The #CiteASista hashtag was created approximately one year before #CiteBlackWomen, though the latter hashtag and eponymous Twitter account has greater usage and a larger following. The primary purpose of both accounts is to center the voices and work of Black women inside and outside of academe and were found to be used concurrently within the Tweets used for this data sample. Because both hashtags were created by individuals from different disciplines, using both within one Tweet is likely to reach audiences that are mutually exclusive to each collective, and thus enhance awareness around Black women's work and labor. Other hashtags relevant to #CiteBlackWomen also exist.

#CiteBlackWomenSunday

Inspired by the #FollowFriday trends, which encouraged users to follow accounts, #ScholarSunday is an alliterative hashtag founded by historian and professor Raul Pacheo-Vega (2012) who encourages academics on Twitter to "recommend new Twitter users to your followers" (para 3). #CiteBlackWomenSunday was created by the founders of #CiteBlackWomen collective and is modeled after #ScholarSunday. The #ScholarSunday hashtag is tied to weekly Twitter chats where users "emphasize the importance of supporting research led by Black women" (Pérez, 2019, section 3, para. 2). An example of how the #CiteBlackWomen collective use Sunday Tweet chats can be found on Figure 18 below.

Figure 18 *Tweet by @citeblackwomen April 18, 2021*

The primary purpose of this hashtag is to highlight other scholars, promote one's own work, and to bring more awareness within the digital network. More often, the user indicates plans or an attempt at direct engagement with the work. These tweets contain a series of hashtags, direct tag to specific user(s), title of specific work, and a link to additional media, where applicable. Figure 19 provides an example of how users engage with the #CiteBlackWomenSunday hashtag. This Tweet is authored by Chanda Prescod-Weinstein (@IBJIYONGI), assistant professor of physics and core faculty member in women's studies at the University of New Hampshire (Prescod-Weinstein, n.d.). The Tweet depicts the titles and authors of four books, the #CiteBlackWomenSunday hashtag, and an image of the four book covers.

Figure 19 *Tweet by @ IBJIYONGI March 28, 2021*

The interaction of #ScholarSunday and #CiteBlackWomenSunday extends beyond members of the #CiteBlackWomen collective to a broader academic audience, as was the case for several Tweets. Using both hashtags within one Tweet brought additional awareness to the scholar beyond an individual's academic interests. Users acknowledge scholars who may be of interest to follow and acknowledge the sociopolitical importance of highlighting the intersectional identities of said scholars. Thus, this hashtag becomes a tool for mobilizing representational power of Black women scholars in a public digital medium that allows for enhanced visibility within

various fields and disciplines where those scholars may not always be seen and acknowledged.

Historical Contributions

Beyond traditional means of sharing academic knowledge production, and beyond the types of diffusion described above, users also disseminated information with #CiteBlackWomen including the historical contributions of Black women. Tweets in this regard took the form of small informative notes or quotes and tended to highlight contributions beyond the academy. These different modes of dissemination also acted as a means of digital labor whereby Tweets were specifically constructed with the goal to highlight the significance of Black women's intellectual work.

Tweets highlighting historical contributions were most prominent during Black History Month in February and Women's History in March. These Tweets often included additional hashtags with both or either commemoration month for further contextualization. The historical contributions of Black women were acknowledged to call attention to Black women's work that was not correctly attributed or to contribute to mainstream historical biographical discourse.

An example of a Tweet highlighting a historical contribution authored by Simamkele Dlakavu (@simamkeleD) is in Figure 20 below. In this Tweet Dlakavu commemorates the birthday of Claudia Jones and includes an image of a book cover of the book titled *Left of Karl Marx: The Political Life of Black Communist Claudia Jones*, by Carole Boyce-Davies. Interestingly, the Tweet itself acts as a form of citation of Black women, both by its author of the book and by its subject. Boyce-Davies is a

distinguished professor of African diaspora studies and focuses on Caribbean-American radical intellectual traditions (n.d.). Boyce-Davies (2008) writes on the political and community activist legacy of Claudia Jones. Dlakavu goes beyond commemorating Jones and speaks to the impact the book has had on her life and thus socio-politically situates herself in relation to the work. By making this statement, Dlakavu emphasizes the profundity of the work, while not going into detail about how and in what ways the work was important.

Figure 20 *Tweet by @simamkeleD February 21, 2021*

Value and Attitude Expression

Several individuals used #CiteBlackWomen as a public space to express

thoughts, opinions, and attitudes toward disseminated information. The ways in which

users discussed the work, even within the primary context of information sharing, shifted

the nature and intent of the Tweets. Using keywords and bringing to the foreground

specific concepts and topics, users implicitly and explicitly expressed values, attitudes,

and even conveyed emotion toward topics and work highlighted within a Tweet. Two

figures below include examples where network participants express positive views

towards the work disseminated within the Tweet. The tone of the Tweets relayed a

positive engagement with the work and spoke to the value the users felt the work

contributes to disciplines and within broader discourse.

Figure 21 represents the first Tweet is a thread of Tweets (i.e., several related

Tweets authored by the same user and connected by replies to the original Tweet) made

by Dr. Muna Abdi (@Muna_Abdi_Phd), an education and racial equity researcher and

consultant who discussed specific efforts to decolonize and diversify education. Figure

22 is a Reply by @DiLeed to larger Tweet thread. By using the hashtag

#CiteBlackWomen, @DiLeed expressed value and support of Abdi's work, while

simultaneously disseminating work to a broader audience and signifying that the author

belongs within the greater narrative about who is responsible for knowledge production.

The choice of the words "love" and "wisdom" signify to the reader that @DiLeed has

positive attitudes and values towards Abdi's thread on decolonization. Using these

words signals different intent to the Tweets beyond disseminating information alone as

@DiLeed language choice is not neutral. @DiLeed also only provides a brief note about the thread and does not contribute to the topic. Instead, the author signals to the reader to defer to the knowledge and expertise of Abdi.

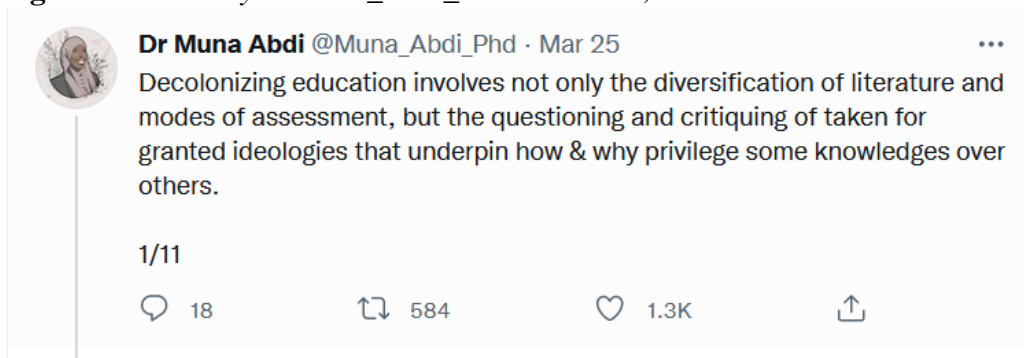**Figure 21** *Tweet by @Muna_Abdi_Phd March 25, 2021*

Figure 22 *Tweet Reply by @DiLeed in response to @Muna_Abdi_Phd March 25, 2021*

Analysis revealed that users disseminate information on the #CiteBlackWomen network for situational awareness of the intellectual production Black women. Individuals and organizations would share upcoming publications, highlight news

stories, or detail the research interests of Black women scholars. Tweets disseminating information also used other hashtags, specifically #CiteASista and #CiteBlackWomenSunday. Acknowledging the historical contributions of Black women, particularly during Black History Month and Women's History Month, was a second way users disseminated information on the #CiteBlackWomen network. Finally, individuals use the network to share values and attitudes towards and about Black Women's intellectual production.

Finding 2: Combating Erasure

A second key finding established from analysis was calling out the erasure of Black women's labor and intellectual production within academic spaces, stories by media outlets, and mainstream narratives. Combating erasure most often took the form of individuals who made concerted efforts to acknowledge erasures or those who provided reminders of the importance of citing Black women. A second instance of combating erasure occurred through a coordinated campaign of users who called out the erasure of Black women scholars by a major television primetime show. Examples of both instances are explored in the following section.

Erasure reduction was more often present through the work of individuals. Figure 23 shows a Tweet from *University Daily Kansan*, a student newspaper at the University of Kansas (n.d.). The Tweet features a quote from the director of the Kansas University Emily Taylor Center for Women & Gender Equity. The center replies to the Tweet by first thanking the publication for this article feature. Then the center cites bell hooks, a renowned author, professor, and feminist scholar specializing in intersectional issues of

race and gender, for originating the phrase "feminism is for everybody" through hooks 2000 publication *Feminism is for Everybody: Passionate Politics* (Famous African Americans, n.d.). The center even includes a link to the publication. By acknowledging hooks as the author of this phrase, the director is making a concerted effort to reduce and resist erasure of a Black woman who has made significant contributions to feminist discourse.

Figure 23 *Tweet by @KansanNews and Reply Tweet by @KUETCWGE in response to April 30, 2021*

Another prominent example of combating erasure within this network is the discovery of a 60 Minutes segment, which is a primetime news program on the CBS network and is known for "offering hard-hitting investigative reports, interviews, feature segments and profiles of people in the news" (CBS, 2020, n.p.). On May 16, 2021, the

news channel aired a segment about concerns with police departments' usage of facial recognition technology and wrongful arrests (CBS, 2021a). Three Black women scholars, Deborah Raji, Joy Buolamwini, and Timnit Gebru, spent hours engaging with the 60 Minutes production team for a story involving artificial facial recognition and evidence of discrimination against people of Color. Joy Buolamwini (@jovialjoy), one of the three scholars who provided additional research and context for the 60 Minutes segment, was among the first to publicly comment about the mis-crediting, as explained in the Twitter thread below in in Figures 24-26 (Buolamwini, 2021).

Figure 24 *Tweet thread by jovialjoy part 1 May 17, 2021*

Figure 25 *Tweet thread by jovialjoy part 2 May 17, 2021*

Joy Buolamwini ✔ @jovialjoy · May 17 · · ·
Replying to @jovialjoy
There was an interview scheduled and on my way to receive a COVID19 test
I got a last minute notification that the interview had been canceled before I
even reached the destination. It recalls to mind how @reshmasaujani and
@GirlsWhoCode were handled by @60Minutes. 2/n

💬 5   ⟲ 250   ♡ 1.5K   ⬆

Joy Buolamwini ✔ @jovialjoy · May 17 · · ·
I was glad to see the work of @ClareAngelyn highlighted as it rightfully
should be. From a public education standpoint I am not clear why
@60Minutes did not include any of the results from the Dec 2019 @NIST
study.

nist.gov
NIST Study Evaluates Effects of Race, Age, Sex on
Face Recognition Software

💬 4   ⟲ 163   ♡ 1.1K   ⬆

Joy Buolamwini ✔ @jovialjoy · May 17 · · ·
@AJLUnited we will continue to do the work and also speak out against the
continual erasure of our voices, our research, and our lives.

Be Heard
youtube.com
Voicing Erasure - A Spoken Word Piece Exploring ...
Learn more about the project at
https://www.ajlunited.org/voicing-erasureIs it okay...

💬 2   ⟲ 182   ♡ 1K   ⬆

Joy Buolamwini ✔ @jovialjoy · May 17 · · ·
Shoutout to @shalinikantayya for her tireless work directing the
documentary film @CodedBias which centers the lives and voices of the
excoded and people negatively impacted by #facialrecogntion. Shout out to
@naacpimageaward for using your platform to celebrate the marginalized.

💬 1   ⟲ 142   ♡ 1K   ⬆

Figure 26 *Tweet thread by jovialjoy part 3 May 17, 2021*

After making the erasure known, Buolamwini announced a petition organized by
the Algorithmic Justice League (@AJLUnited), "an organization that combines art and
research to illuminate the social implications and harms of artificial intelligence" (AJL,
2021a, para. 2). Buolamwini is also the founder of the league. The petition called for
three demands from the show's producers and the main correspondent Anderson Cooper:

> 1. Publicly apologize for erasure and poor communication during the production.
> 2. Instate a policy of formally crediting all willing sources who inform their
> productions.

3. Commit to creating a segment that focuses on the Black women leading the research and the work to expose algorithmic harms, by end of 2021. (AJL, 2021b, para. 4)

The Algorithmic Justice League created an automated means by which users could share the petition on various social media platforms while using the same messaging. This automation resulted in several hundred ReTweets to galvanize support. The petition was shared widely on social media and received 6,405 signatures of the 7,000 goal. In addition to the petition, #CiteBlackWomen network users took to social media to express their dismay and outrage over the erasure. Many users directly Mentioned 60 Minutes (@60Mintues), CBS News (@CBSNews), and Anderson Cooper (@andersooncooper) on Twitter in expressing their disappointment.

On May 18, 2021, two days after the news segment aired, CBS News released an editor's note, which read:

In response to our story "Facial Recognition" (airdate May 16, 2021) -- about law enforcement's use of facial recognition technology to identify suspects -- we heard from some viewers who believe we should have included the work of computer scientist Joy Buolamwini and the organization she founded, the Algorithmic Justice League, regarding algorithmic bias. Ms. Buolamwini has also been in touch with us on this same issue.

While we did not interview Ms. Buolamwini on camera for this segment, she was an important part of the research we did due to her work in this field. We were last in touch with Ms. Buolamwini in February. As we continued reporting, we sharpened our focus on the facial recognition technology that law enforcement is currently using to identify suspects and make arrests and, crucially, on the lack of well-established national guidelines around the technology's use. We also emphasized the human role in this process -- police personnel tasked to interpret facial recognition results -- as well as two men who said they were wrongfully arrested. That alone took the full time we had to tell this story clearly and fairly.

That being said, we are very grateful to the dozens of sources – off and on camera – who helped us develop and focus this segment but were not Mentioned

by name. As with all our reporting, we spoke with a wide range of people, including some of the leading thinkers and researchers in the field, like Ms. Buolamwini. (CBS, 2021b, n.p.)

Users took to Twitter to express their concern and disappointment for not doing enough to adequately redress the erasure following the show's response to the criticism. While many individuals were dismayed by the response, several individuals encouraged the three researchers to continue their work towards accountable and unbiased artificial intelligence. To date, there is no evidence that the other demands outlined in the petition have been met beyond the statement released by CBS News. The incident surrounding the 60 Minutes segment coupled with instances highlighted by individuals are signals within and throughout the #CiteBlackWomen network of continuing issues with Black women's erasure from the mainstream situations of knowledge production.

Finding 3: Digital Spaces for Affirmation, Accountability, and Support

Affirmation, accountability, and support were also means by which individuals used the #CiteBlackWomen network. Because many users do not meet the previously outlined privacy guidelines, I instead provide a general summary of Tweets. Tweets that fall within this theme include direct acknowledgements of someone's success and achievement and to encourage others. Tweets of this nature contained congratulatory remarks, notes of gratitude, highlights of accomplishments such as journal and book publications, and expressions of value to those based on their work and who they are as a person. Congratulatory remarks comprised new graduates, recently defended theses, and tenure and promotion appointments. Individuals within the #CiteBlackWomen network

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also encouraged and amplified others based on the contributions they made to their respective fields.

The second type of network utilization came in the form of formal and informal accountability groups for academic productivity, as evidenced through including hashtags such as #AcademicWriting, #MelanatedMarch, #WritingBlackness, and #WritingGoals. #MelanatedMarch and #WritingBlackness are two examples associated with organized productivity groups and are the focus of this analysis. Both hashtags were used concurrently with #CiteBlackWomen participants as tools to promote writing productivity and accountability. #MelanatedMarch is a 31-day writing challenge in the month of March whereby participants are challenged to write 30-60 minutes a day and "as always #citeblackwomen" (Clare, 2021a, n.p.). #WritingBlackness was created by then doctoral student DeMarcus Jenkins (2020) as a 20-to-30-day writing challenge where participants spend at least one hour per day working a project. Participants are encouraged to post a photo that details progress and Mention other users as a form of public accountability.

Participating in either writing challenges created a culture of giving and receiving to the network. Giving to the network comprised of publicly accounting for one's academic or professional commitments, which often took the form of writing goals and through outlining one's process towards knowledge generate. Users would also provide affirmation, cheering, and support to others. In return, participants often received the same from other individuals. The public accounting also provided opportunities for users to share tips and tools that may be helpful to others.

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Participants in the accountability groups typically included a count of the days

towards completing the organized accountability (e.g., Day 1 of #WritingBlackness).

Tweets contained a brief description of intended tasks and any progress. Tasks often

consisted of writing grant applications, revising manuscripts, searching for journal

articles and books for upcoming projects, reading, data analysis, writing, and grading.

Some participants also included writing goals such as commitments to specific amounts

of writing time, words written, and daily writing commitments. Lastly, though less

common, participants shared personal self-care practices, such as yoga, walking, and

resting.

In addition to expressing goals and progress within these writing challenges,

participants often Mentioned other users who are also participating in the accountability

group. While Mentioning other users, participants inquired into the progress of others.

This inquiry acted as a nudge to increase the possibility that other participants would

stay on track by documenting their participation in the challenge and progress on their

respective tasks. Most individuals who employed either hashtag would do so for daily

accountability to other users, to share one's own processes of generating knowledge

production, and to provide support to others.

Chapter Summary

In this chapter, I provided results from network analysis and discourse analysis

findings of the #CiteBlackWomen Twitter collective. Using network analysis, I

examined the composition of the network, which comprised 8,416 unique Tweets made

by 5,872 users. I calculated network descriptive characteristics for the whole network

and interaction Tweets within the network and visualization techniques were used to present network structures. Comparisons were made between the whole network and interaction networks. Using measures of in-degree, out-degree, and betweenness centrality, I identified influential users within the network. I ended the section on network findings by presenting results of group measurements and community detection results.

Using critical discourse analysis, I identified three findings to respond to the guiding research questions regarding the context, engagement, interaction, and discourse within the #CiteBlackWomen network. The three findings provided insight into how network users exist as a digital counterpublic to center the intellectual production of Black women, combat erasure, and facilitate a space for affirmation and support. In the next chapter, I discuss the network results and qualitative findings in how they answer the research questions. I also discuss how this study contributes to existing bodies of literature and end the chapter by providing implications and recommendations for future adult education research and practice.

CHAPTER V

SUMMARY, DISCUSSION, AND IMPLICATIONS

Introduction

Black women are disproportionately underrepresented in the academy compared to women in other racial/ethnic groups. Challenges with stereotyping, discrimination, cultural taxation, presumed incompetence, and incredibility or invalidating their knowledge production facilitate an academic culture that systemically excludes Black women (Dancy & Jean-Maire, 2014; Griffin et al., 2011; Patitu & Hinton, 2003). Tools and strategies such as building informal social networks (Allen & Joseph, 2018; Griffin et al., 2013) and creating and maintaining a positive self-identity (Alfred, 2001; Bass & Faircloth, 2011) have been employed to enhance success. The increasing ubiquity of social media within academic and personal spaces now present opportunities for Black women faculty to share experiences, combat presumed incompetence prevalent among colleagues, and center their own work. Thus, the purpose of this study was to examine how Black women faculty develop and use informal digital social networks to facilitate social capital.

The existing bodies of knowledge which foregrounded this research include the evolving functions and purpose of social media, public spheres, and the use of counterpublics by marginalized groups to challenge dominant narratives and to explore specific group interests. The proliferation of social media and social networking sites over the past twenty years has revolutionized how people interact and build community.

These advancements resulted in larger scale, semi-public, and public networks whereby users can interact around shared interests, characteristics, and experiences (boyd, 2010; Carr & Hayes, 2015). Emerging literature on the differences in social media usage by social identity dimensions such as gender and race reveal that women of Color are more likely than White women to use social media to develop digital communities, share experiences, find support, and to cultivate social capital (Charmaraman et al., 2015).

As introduced by Fraser (1994), counterpublics are one way in which individuals use digitally networked spaces to explore group interests specific to identity and culture. These publics challenge existing discourse that traditionally excluded marginalized voices (Graham & Smith, 2016; Hill, 2018). Black women, in particular, are significant contributors to counterpublics on social media such as by generating hashtags to challenge mainstream narratives about feminism, gender, race, and class. Such practices extend exclusionary discourse about social justice issues such as sexism to inform their unique intersectional experiences.

A mixed-methods research design was employed to answer the research questions for this study. Social network analysis, a theoretical perspective and methodological approach, was the quantitative methodology selected for this study (Valente, 2010). While social network analysis is well known in other disciplines such as sociology, economics, computer science, and psychology, its usage is relatively recent in higher and adult education settings (Biancani & McFarland, 2013). Critical discourse analysis was selected as the qualitative method analysis because of its approach to describing phenomenon, exploring, and uncovering meaning from intersectional

experiences informed by social structure (Fairclough, 1992; van Dijk, 1993). Together, both social network analysis and critical discourse analysis were vital to uncover important perspectives for examining nuanced and complex phenomena found on informal digital networks used by Black women.

The following overarching research questions guided this study:

1. What characteristics are evident in informal digital social networks created and utilized by Black women faculty?

2. How does participation in an informal digital network facilitate the development of social capital among Black women faculty?

3. In what ways do individuals participate in an informal digital social network created for Black women faculty?

4. In what ways does an informal digital network facilitate discourse about intersectional experiences of Black women faculty?

The conceptual framework for this study integrated social capital theory and tenets of Black cyberfeminism to explore the presence of social capital and intersectional experiences of Black women in digital spaces. Social capital theory argues that through social ties, individual actors can access and mobilize network resources, which can be leveraged as individual and collective assets (Lin, 2001, 2008; Putnam, 1995). Putnam (2000) split social capital theory into two wide-ranging structural functions called bridging and bonding. Bridging occurs among networks with actors who have weaker ties (Granovetter, 1973; Phua et al., 2017) and who often build linkages outside of the network to acquire social capital (Putnam, 2000). Bonding, in comparison, occurs among

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more homogenous actors who hold strong ties that are more likely to stay within the network (Alfred, 2009; Cao et al., 2013; Phua et al. 2017). Both bridging and boning functions provide evidence of structural social capital.

Black cyberfeminism extends beyond the limits of cyberfeminist theory and is grounded in the Black feminist thought tradition to interrogate intersectional identities within digital spaces (Gray, 2015; 2017). Three common elements unite both theoretical traditions: a) Black women's experience must be contextualized to intersecting social structural oppressions, which uniquely inform their presence and interactions within digital academic spaces; b) information, influence, social credentials, and reinforcement are functions of individual social capital and are present within digital networks (Lin, 2001), and; c) bridging and bonding social capital (Putnam, 2000) are vital to understanding how social network structures impact Black women faculty.

This conclusion offers a broad overview on the significance of the findings. I first summarize the results and findings of this dissertation and then discuss said results and findings in relation to each research question. I examine emergent patterns, explore possible reasons, causes, and factors for the findings and results, and interrogate to what extent the findings support, deepen, or contradict existing literature. Next, I propose several ideas for future research to build upon the theoretical and methodological outcomes of this study. I conclude by outlining implications for practice and policy within adult education and higher education.

Summary of the Results and Findings

This dissertation applied a mixed-methodology research design to respond to the research questions. Social network analysis was the quantitative method used to describe network structures, ascertain connections among users, and identify influential roles. Using critical discourse analysis, I qualitatively explored the meaning and significance of content from the #CiteBlackWomen hashtag. Throughout this dissertation I drew from user connections and content within Tweets to examine and illustrate how the #CiteBlackWomen hashtag is used as an informal network for Black women faculty.

Social Network Analysis

Results from the social network analysis indicate a loosely connected network with smaller pockets of more densely connected clusters. Network-level measures showed approximately one-third of the network was mutually connected, meaning the connections went both to and from a pair of individuals. Mutual connections were most prominent among Mentions, representing nearly 100% of mutual connections. The network-levels also showed a low level of density and transitivity, which point to a largely fragmented network. While results of network-level measures show fragmented network, mutuality measure does provide evidence of a bridging capital, which is common in non-cohesive networks (Putnam, 2000; Burt, 2001). Because the #CiteBlackWomen network was loosely connected, information was likely not to travel far or would take several path lengths to go between any given two individuals within the network.

Mean measures of in-degree and out-degree centrality revealed that individuals within the network received the same number of linkages as they sent. However, there was greater variation in the number of linkages sent. The top individual with the highest number of linkages sent was 14 times higher than the top individual with the highest number linkages of received. This finding suggests there is greater variation across users in how often they shared or sent out content (e.g., ReTweeting), as a few key individuals far outweigh others in disseminating and sharing information within the network. Measures of betweenness had the highest mean scores and variability in the network. The top 20 individuals with the highest betweenness scores had scores approximately 130 times larger than the average network bridge connection score. The higher betweenness scores suggest these users can act as important gatekeepers for information flow in the network and thus are important for information dissemination (Carolan, 2013; Freeman, 2004; Valente, 2010; Wasserman & Faust, 1994). The users with high betweenness scores may also be important for facilitating new connections between other less connected members in the network.

This study applied multiple measurement techniques to detect groups and clusters, which include component, k-core, and triad census (Valente, 2010). While the #CiteBlackWomen network is a loosely connected and non-cohesive network, analyzing group detection techniques showed evidence of densely connected groups. The component measure revealed the presence of smaller groups of nodes who were more tightly clustered, but were largely disconnected from other parts of the network (Valente, 2010). These groups were more likely to have mutual connections between nodes.

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Mutual connections provide evidence of bonded clusters with a high level of cohesion. Thus, while the larger #CiteBlackWomen network is non-cohesive and disconnected, some smaller groups serve as tight knit communities. Additionally, cutpoints, or nodes that if removed would create a more disparate network (Valente, 2010; Wasserman & Faust, 1994) were identified within components and provide useful information by identifying nodes who assist in maintaining connectivity between disconnected groups and the larger network (Ahm & Park, 2015).

As outlined by Prell and Skvoretz (2008), triads were categorized as brokerages triads (triads with at least one null dyad) and closure triads (triads with connections among dyads). Findings from this study revealed a higher number of brokerage triads than closure triads. Also present within triads is evidence of weak ties, which are common in non-cohesive networks (Burt, 2001; Gould & Fernandez, 1989). The number of brokerage triads census suggests the #CiteBlackWomen network has several nodes that may serve as connection points to other nodes and groups. In addition to triads, k-cores were calculated to identify the densest core clusters within the network. These core clusters were often more cohesive, as evidenced by the mutual linkages among all nodes within the cores. Higher numbers of two-way linkages within more densely populated groups suggests that information and resources will flow at a higher rate among more group members than within the larger non-cohesive network. Unlike the #CiteBlackWomen network, the densest k-cores acted as tightly connected, cohesive groups and suggests evidence of bonding ties (Burt, 2002). The presence of bonding ties does suggest that network members are building strong communities within the larger

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network community. The group analyses conducted in this study provides evidence of both bridging capital and bonding capital. Examining the content of the Tweets provided more insight into what types of information and resources were diffused in the #CiteBlackWomen network.

Critical Discourse Analysis

The #CiteBlackWomen network is an informal digital community in which participants engage in a plethora of ways. The Tweets in this study encompassed a broad range of topics, including academic life, fields and disciplines; topics of gender, race/ethnicity, and intersectional identities; education, writing, and commemoration months. Individual participants often Tweeted with an array of formal and informal communication styles and grammatical tools. Hashtags, emojis, images, memes, gifs, and external links to other media were sometimes used in place of written text. These different mnemonic choices signaled specific messages and meaning for specific audiences. A purposive sample of Tweets from users highest in-degree, out-degree, and betweenness centrality were sampled for critical discourse analysis (Jackson et al., 2018; Jackson & Foucault Welles, 2015). Through critical discourse analysis three broad findings were identified: a) disseminating information about the work created by Black women; b) combating erasure of Black women's intellectual contributions and labor; and c) digitally mediated spaces for affirmation, accountability, and support.

The first finding is disseminating information about the work created by Black women and was the most common way individuals used the network. Disseminating information within the network highlighted different types of knowledge production

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such as books, journal articles, seminars, lectures, syllabi, or prominent contributions to fields and history. Network participants often disseminated information for situational awareness, to commemorate historical contributions, and to share attitudes and values towards the intellectual production of Black women.

Secondly, individuals engaged with the #CiteBlackWomen network to call out the erasure of Black women's labor and intellectual production across academic and non-academic spaces. Individuals most often called attention to the erasure through individual interactions among the network and including the #CiteBlackWomen hashtag. The network also instituted a collective campaign, inviting individuals to join together and act on behalf of Black women unacknowledged for their contributions to stories featured by a major media outlet. While the coordinated campaign against the media outlet appeared to be a one-time incident rather than a regular occurrence within the network, the swift and coordinated actions of participants point to the amorphous nature of the network, given changing interests and needs.

The final finding uncovers how network participants used digitally mediated spaces for affirmation, accountability, and support. Tweets primarily fell into two broad categories: affirming and cheering on network participants' successes and achievements and means of accountability. Affirmational tweets included congratulatory remarks, notes of achievement, and expression of gratitude. Informal and formal accountability groups were also generated to promote productivity and provide support. This final chapter examines key findings from this study and responds to the research questions which guided this study. I conclude with limitations and suggestions for future research.

Discussion of Research Questions

In this study, I set out to examine how Black women faculty develop and use informal digital social networks to facilitate social capital. Informal digital networks are increasingly used by different professional academic communities (Johnson et al., 2019; Jordon, 2016; 2019; King, 2011) and by individuals from marginalized communities as counterpublics to amplify critical discourse of experiences traditionally excluded from mainstream narratives (Bailey, 2021; Brock, 2012; Hill, 2018; Jackson et al. 2016; Jackson et al., 2020). Understanding network characteristics, individual participation, and the intersectional experiences of participants can further the understanding of how informal digital networks can serve as useful tools to enhance success of Black women faculty. The following sections discuss the results and findings in relation to the research questions which guided this study.

RQ1: What Characteristics are Evident in Informal Digital Social Networks Created and

Utilized by Black Women?

The #CiteBlackWomen network is loosely connected, decentralized, and did not have a high level of interaction across all users. The network-level measures, including a low centralization score and low-density scores provide evidence of the loosely connected network (Valente, 2010). Trott (2020) examined the #MeToo protest network on Twitter, which comprised of over 50,000 Tweets and 40,904 users, a network much larger than the #CiteBlackWomen network. Despite the size, Trott (2020) found several thousand nodes along the periphery were largely disconnected from other network participants. The general network structure of the #MeToo network has some similarities

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with the #CiteBlackWomen network, in that disconnected nodes exist along the periphery and are often disconnected from central users.

The average individual only Tweeted once using the #CiteBlackWomen hashtag during the data collection timeframe. There were slightly more Tweets that involved interaction (Reply, ReTweet, or Mention) that did not include any interaction; ReTweet was by far the most popular interaction Tweet. These data counter what was found by Rehm and Notton (2016) who examined Twitter as an informal learning space among teachers using #EDchatDE feature. The researchers found that Mentions to be the most dominant Tweet and also had the highest mean in-degree, out-degree, and overall degree centrality scores in comparison to ReTweets. Whereas the #CiteBlackWomen hashtag did not have coordinated and synchronous expectations for participation, synchronous engagement with the #EDchatDE hashtag typically involved recurring set dates and times of topical discussions coordinated by moderators. Participation may also have centered around a specific event. Therefore, the informal, asynchronous nature of the #CiteBlackWomen network may explain the greater occurrence of ReTweets over other direction interactions such as Mentions and Replies.

The network activity throughout the period of data collection remained relatively consistent, even with considering Black History Month in February and Women's History Month in March. There were slightly more Tweets in February and March than in April, but the number of Tweets in May was nearly two to three times higher than the previous months. May was an anomaly because of the related campaign to combat erasure of Black women artificial intelligence scholars who were excluded from a 60

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Minute segment. Since data were not collected over a longer period of time, it is difficult to ascertain if these Tweet patterns represent general participation trends in the network. Rehm and Notten (2016) collected data on #EDchatDE for a year and by doing so were able to identify varying participation in the different Tweet, ReTweet, Mention, and Reply features. Within this study Mentions remained the most consistent type of Tweet over the year, but there was variation between Tweets and Replies. The scholars were also able to account for changes in participation based on different members in the network and varying participation based on time of year, such as lower participation over national holidays. Collecting network data over a longer period of time could offer more comprehensive insight into engagement patterns in the #CiteBlackWomen network. Identifying influential users may also offer insight into engagement within the network.

Influential Positions

Freeman (1979) posits measures of centrality within network analysis research are vital in understanding the structural attributes within social network. Individuals who are centrally positioned in a network or who are positioned strategically between others can influence the larger flow of information and contact among the network. The top 40 most central users in the network only composed 10% of Tweets. Because the overall representation of central users is fairly low, it can be assumed that the network was dispersed and decentralized (Valente, 2010). Reviewing the average scores of in-degree, out-degree, and overall centrality within the #CiteBlackWomen network suggests that nodes had limited reach beyond their immediate connections.

Results of this study differ than findings of Rehm and Notten (2016), who had higher levels of centrality within the #EdchatDE network, likely due to the synchronous and conversational-focused nature of the network. In comparison, a study by Trott (2020) on the #MeToo protest network, while a much larger set of data over a shorter time frame than the #CiteBlackWomen network, was asynchronous in nature. While Trott did not report on specific centrality measures, the visualizations provided of the #MeToo protest network show several thousand nodes on the periphery and clusters of central users in the core. These findings indicate a higher presence of central users than what was found in the #CiteBlackWomen network. However, the higher prevalence of central users within the #MeToo protest network can largely be attributed to nodes from verified, celebrity accounts that have a higher likelihood of being visible on Twitter. While some central users in the #CiteBlackWomen network contained verified Twitter accounts, the follower counts are a fraction of the ones featured in the Trott study, which makes direct comparisons less possible.

The mean scores for in-degree and out-degree centrality measures were equivalent in the #CiteBlackWomen network; yet, the standard deviation for out-degree centrality was approximately seven times higher than the standard deviation of the in-degree centrality. This suggests there was greater variation across users in how often they shared or sent out content, with a few having a much "louder" voice, sending out more Tweets than the rest of the network. Because out-degree centrality measures the rate of nominations sent, results suggests that a much higher number of individuals within the network were sharing information through ReTweeting, since it was the most

frequent type of interaction Tweet used in the #CiteBlackWomen network. While

ReTweeting lacks a conversational aspect, as its primary function is to copy and

rebroadcast, scholars such as boyd et al. (2010) argue that the act of ReTweeting can be

"understood both as a form of information diffusion and as means of participating in a

diffuse conversation" (p. 1). In another sense, ReTweeting is used as a means to build

and manage relationships; through ReTweeting, users can express agreement, engage

with others, and start conversations. This act of engaging with others via ReTweeting is

particularly important since Twitter is not a platform that constrains conversations within

bounded networks. Results from network analysis and the critical discourse analysis

findings align with findings by boyd et al. (2010) in that users in the network often

ReTweeted to share information, validate the message of the Tweet, and to engage in

conversations.

Betweenness measures how often a node lies on the shortest path between other

nodes (Freeman, 1979) and was the highest measure of centrality in the

#CiteBlackWomen network. Many scholars highlight the importance of the betweenness

score as indications of nodes who serve as a bridge or gatekeepers and control the flow

of information and resources within the network (Carolan, 2013; Freeman, 2004;

Valente, 2010; Wasserman & Faust, 1994). Therefore, high betweenness scores suggest

the position with the highest influence in the network were users who served as a bridge

between users who would otherwise be disconnected from the network. Although the

betweenness scores point to evidence of bridging, it is important to note the limits to

betweenness scores within this study. Gould and Fernandez (1989) caution researchers

in using betweenness scores for networks larger than 100 nodes because the score measures the number of path links that connect nodes, and thus can have high values and high variability that are more difficult to interpret. Network group detection techniques may offer additional insight into connectivity among nodes within the network.

Groups within the Larger Network

This study applied different measurement techniques, including components and k-cores, to detect groups and clusters within the network. Calculating components were used to identify the presence of smaller groups of nodes that are connected by paths within the subset, but are disconnected from other parts of the graph and are very helpful when examining large networks (Wasserman & Faust, 1994). Examining the weak components, which do not consider directional ties among nodes, showed 100 smaller groups within the larger #CiteBlackWomen network. Because the network contains so many weak component groups, it can be assumed that several cutpoints are present to serve as connections to the larger network. Such was the case for this network. Given the high number of weak components and cutpoints, the #CiteBlackWomen network can be considered a non-cohesive network comprised of several small groups that are connected by nodes who act as bridges. Interestingly, cutpoints within these components overlapped with users who had the highest betweenness scores. Because the network is not densely connected, these cutpoints act as bridges to keep the smaller groups connected to the larger network. Therefore, these nodes can hold important roles in maintaining connectivity (Ahm & Park, 2015).

While components and k-cores calculate different group structures, both measures revealed similar outcomes regarding the structure of the #CiteBlackWomen network in relation to the role nodes play in bridging between other members in the network. K-cores reveal cohesive subgroups within network structures (Wasserman & Faust, 1994) and thus provided insight into the existence of clusters within the #CiteBlackWomen network. K-cores provide evidence of a small number of densely connected clusters since they are determined based on the number of ties shared by node within a given subgroup. Approximately one-third of the interaction network were mutually connected, meaning the connections went both to and from a pair of individuals. However, since k-cores are structured based on the number of shared ties within a subgroup, this measure provides key insight into which clusters comprise the core of the network and which nodes act as ties among clusters share between all nodes (Carolan, 2013). Much of the literature on Twitter network research did not examine the existence of groups, and instead focused on centrality and other forms of modeling (Jackson et al., 2016; Rehm & Notten, 2016; Trott, 2020). Thus, it is difficult to draw conclusions about this study in relation to existing research. Nonetheless, the results from group analysis are important in identifying the existing ties and understanding potential modes of building more connections among users (Valdez et al., 2021). Additionally, the existence of several smaller, more densely connected clusters offers evidence that bonding capital is occurring at a micro level within this network.

Social network analysis is an effective methodological and theoretical approach to examining the existence of social capital in networks (Burt, 2001; Carolan, 2013; Freeman, 2004). The existence and development of social capital through digital networks is more nuanced, and research is steadily emerging on the topic (Benbow, 2018; boyd & Ellison, 2007; Jordan, 2016; Luo et al., 2020; Rehm & Notten, 2016; Rehm et al., 2020). This study examined the #CiteBlackWomen network in relation to two forms of social capital: individual social capital as conceptualized by Lin (2001) and structural social capital (Putnam, 2000).

Individual Social Capital Formation

Evidence of individual social capital formation is present in the #CiteBlackWomen network. According to Lin (2001), social capital at an individual level is relational and tends to focus on one's ability to access resources and upwardly progress. Lin also identifies four functions of social capital: information, influence, social credentialing, and reinforcement. Information sharing, which involves the flow among and between connections, was by far the most prominent evidence of individual social capital within the #CiteBlackWomen network. ReTweets comprised the majority of Tweets within the network. Scholars such as boyd et al. (2010) and Ahm and Park (2015) examine the value and nature of ReTweeting within digital networks assert that the most prominent purpose of ReTweets is information diffusion. Examining the content of Tweets revealed that disseminating knowledge production of Black women

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was by far the most common network utilization. Information sharing within the network was largely outbound, meaning users sent other people's information out to the network. Au (2019) examined the four social capital functions of Lin (2001) in more depth and found that in a larger, heterogenous network, information sharing activates social capital when an individual directly asks for information or when information is reciprocally shared between two parties. While information sharing was present in the #CiteBlackWomen network, the findings are less clear at indicating the extent to which social capital was facilitated between members since the majority of individuals only had a uni-directional tie to another individual.

Influence as a function of social capital occurs when individuals hold strategic positions within a larger, heterogenous network (Au, 2019). The average in-degree, out-degree, and overall centrality measures assist in identifying influential members in the network (Freeman, 1979; Valente, 2010). While a smaller group of individuals had higher measures of centrality than the overall network, these most central users only accounted for approximately 10% of network Tweets, and thus do no exert a high level of influence over what information and other resources were diffused within the network. The lack of highly influential users is likely due to the largely decentralized and informal nature of the network. Rehm and Notten (2016) found that within a large, diverse Twitter network, individuals able to build and sustain interpersonal ties through interactions and building network followings were more likely to attain central positions in the network. However, because the present study did not measure the formation of ties through tracking followership trends, it is difficult to ascertain how the most central

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users obtained those positions. Instead of influence through dominance, central users were most likely to serve as bridges to disparate parts of the network. This notion of bridging is more common in heterogenous networks without strong ties and boundaries (Burt, 2001, 2004; Putnam, 2000) and will be examined in more detail in the next section on structural social capital.

Social credentialing as a social capital function activates based on the extent to which the reputation of an individual can be endorsed within a network (Lin, 2001). Au (2019) extends the work of Lin (2001) and asserts that social credentialing occurs within larger heterogenous networks through gaining referrals or by evaluating the positional resources within a network. As discussed earlier, in-degree, out-degree, and overall centrality measures revealed which members held the most central positions. While these central members only accounted for a small percentage of overall Tweets, specific member attributes could provide evidence of social credentialing to support these central positions in the network. A review of the mean follower counts of the top 20 users for in-degree, out-degree, and betweenness centrality revealed a follower count that was four to six times higher than the mean number of followers for the overall network. While status of the Twitter verification seal was not obtained for every network member, half of the top central users had verified Twitter accounts. Rehm and Notten (2016) found similar evidence of higher follower counts for the most central users of the #EdchatDE Twitter network. Similarly, Morris et al. (2012) discovered that even though a verification seal—which is issued at the vague discretion of Twitter to an individual or organization determined to be of sufficient public interest—does not equate to any

formal accreditation or validity of skill or knowledge, often audiences associate verification with credibility on the platform. Thus, the number of followers and the verification seal of Twitter accounts in the #CiteBlackWomen network may act as a means of social credentialing and amplify the presence of social capital among those members. However, it is important to acknowledge the impact of the Twitter algorithm in identifying central members, as the algorithm may not provide an accurate depiction of network engagement since popular Tweets and more prominent users tend to be over represented on the platform (González-Bailón et al, 2014).

Reinforcement as an individual social capital function exists in relation value, worthiness, and recognition within a network; this function integrates information, influence, and social credentialing as a means of social capital (Au, 2019; Lin, 2008). Reinforcement was best observed in the #CiteBlackWomen network by examining the position and credentialing of the most central members in the network. However, because this study did not observe changes in user engagement over time, it is otherwise difficult to find evidence of reinforcement. Thus far this section has examined the evidence of individual social capital formation among the #CiteBlackWomen network. I now turn to examining network structures to ascertain the existence of social capital.

Structural Social Capital

Results from this study provide evidence that participating in an informal digital network facilitates the development of structural social capital. As discussed in Chapter II, Burt (2001; 2002) defines structural holes as gaps or disconnections between individual nodes or smaller groups within a network. Burt (2002; 2004) hypothesizes

that connections across structural holes provide an opportunity to broker flows of information between network groups and offer individuals with the advantage of being exposed to new information and ideas more so than in a cohesive network that lacks structural holes. Burt (2002) further asserts that the evidence of structural holes may also indicate bridging ties that present opportunities to facilitate social capital among actors. Structural holes were present throughout the #CiteBlackWomen network, as evidenced by high measures of betweenness centrality (Gould & Fernandez, 1989; Prell & Skvoretz, 2008), the volume of groups (Prell & Skvoretz, 2008; Rehm et al., 2020), and the lack of network cohesion (Burt, 2001; 2002).

The betweenness centrality measure has been used by several scholars to signify brokers in a network (Gould & Fernandez, 1989; Rehm et al., 2020). Gould and Fernandez (1989) argue that betweenness centrality provides insight into how individuals act as brokerages between individuals within a network because it counts the number of paths. Brokers are actors who act as a bridge or intermediary between other disconnected nodes or groups within a network (Burt, 2002; 2004; Gould & Fernandez, 1989). Betweenness scores were, on average, significantly higher than other measures of centrality in the #CiteBlackWomen network. Rehm et al. (2020) posit that the underlying functionality of Twitter as a networked platform is designed to facilitate social capital because it allows users to easily find and connect with others with similar interests without geographical limitations or bounded group memberships common on other social network platforms. Therefore, the openness of Twitter and underlying structural holes of networks therein can be of benefit to individuals in closing gaps

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bridging connection with others that individuals would otherwise not be connected. It is the proximity to indirect connections that advantages brokers in facilitating bridges and thus forming social capital. While the betweenness scores were high for this network, it is difficult to draw conclusions about the strength of the scores in explaining the bridging aspects between connections. Gould and Fernandez (1989) caution against using large betweenness scores in networks with more than 100 actors due to extremely long path lengths that may comprise the soundness of the network's betweenness score. Instead, cutpoints may serve as an alternative measure for identifying brokers since the vast majority of cutpoints found in this network also registered higher betweenness scores.

According to Prell and Skvoretz (2008), analyzing triad structures can reveal instances of bridging social capital in networks. Actors within triads where no ties exist indicate structural holes and provide an opportunity for brokerage (Burt, 2001). The #CiteBlackWomen network triad census were labeled according to brokerage, closure, or null triads as outlined by Prell and Skvoretz (2008). The number of brokerage triads significantly outnumbered the closure triads. This triad census proportion points to the existence of actors that potentially serve as brokers between triads, and thus can provide structural evidence of social capital.

Network structures with structural holes tend to be comprised of weak ties (Burt, 2001; Gould & Fernandez, 1989). This notion of weak ties, developed by Granovetter (1973), states that connections among individual members within a larger, disconnected, and non-cohesive network can act as a bridge to groups and increase connection within

the larger network. ReTweeting as the most prominent type of Tweet in the #CiteBlackWomen network provides evidence of weak ties. ReTweeting creates ties by allowing a user to directly share the Tweet created by someone else without requiring any direct interaction (e.g., Replying) to broadcast the Tweet. Ahm and Park (2015) found that using ReTweeting as sharing function is important in forming bridges among disconnected actors and thus creating weak ties. At a structural level, weak ties form through sharing information plays a more important role than strong ties in maintaining connections and diffusing information.

These weak ties tend to be more important and beneficial to members in a non-cohesive network over a more cohesive network with stronger ties because the weak ties are more likely to facilitate opportunities for integration into smaller communities within the larger network (Burt, 2002). Brock (2012) posits that the features on Twitter, specifically a) the use of hashtags to search and categorize topics and b) mentions to directly interact with individuals, contribute to the development of weak ties among users and groups through informal communication processes. This subtle community integration contributes to the ability to share information between different groups and can impact how information and influence is spread throughout a community.

While these different network structures point to evidence that the #CiteBlackWomen network can facilitate social capital among its members, certain confines may limit the actual access to and use of social capital. Benbow (2018) posits that faculty members can access social capital in a social network through intentionally investing in the network. Similarly, Burt (2002) argues that networks present with

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structural holes must be approached with an entrepreneurial spirit, in that brokers must commit energy and effort to bridge across the structural holes to develop networks. The cutpoints points identifies several users who can serve as brokers in the #CiteBlackWomen network; however; this study did not examine if central users were aware of their positions, how these members were utilizing these influential positions, and to what extent these positions were influencing and controlling the flow of information and resources in the network. As articulated by Burt (2004), the "simplest act of brokerage is to make people on both sides of a structural hole aware of interests and difficulties in the other group" (p. 355). Thus, it appears that awareness is a vital next step in accessing social capital within the network.

As found by Lemay et al. (2019), results from this study support research of how online communities can facilitate social structures for knowledge exchange, sharing of information, mutual support, establishing new connections, and deepening existing connections within a networked space. The decentralized, less hierarchical structure of the #CiteBlackWomen network aligns with previous literature on the structure of Twitter-based academic networks (Jordan, 2016; 2019). As found by McPherson et al. (2015), using Twitter as a medium of informal learning allowed academics the opportunity to create effective communication channels and engage with other users without gatekeeping or highly enforced social norms evident in networks found on other social media platforms. The nonexistence of gatekeeping and hierarchies reduces barriers for folks such as doctoral students, early career faculty, and marginalized faculty

to facilitate meaningful connections and build social capital without the need to navigate traditional academic structures.

The findings from this study extend the limited research on how Black women facilitate social capital in academic settings. Jean-Marie and Brooks (2011) examined how Black women developed social capital through mentoring relationships. The authors argue that social capital is possible through an intentional investment in the network and would result in emotional support, knowledge sharing, and a space from which to discuss experiences unique to Black women. While the setting and focus of Jean-Marie and Brooks (2011) study differ from this study, findings provide evidence of greater social capital through active participation within the #CiteBlackWomen network. Charmaraman et al. (2015) argue that women of Color balance multiple and intersecting identities in online interactions, and often use digital spaces to push back on the lack of representation within their lives and serve as bridges to information. The researchers found that continual usage of these digital spaces over time helps in forming strong and weak ties, which in turn facilitates instances of social capital among women of Color. Results from the #CiteBlackWomen affirms findings from Charmaraman et al. (2015) in that evidence exists that members developed weak ties through bridging informational resources and using the space to connect over issues of representation.

RQ3. In What Ways do Individuals Participate in an Informal Digital Social Network

Created for Black Women Faculty?

To address this research question, I explore the two primary purposes in which individuals participate in the #CiteBlackWomen network. First, individuals engaged in the network as an informal community of practice (CoP). Wenger et al. (2002) define communities of practice as a group of people "who share a concern, a set of problems, or a passion about a topic, and who deepen their knowledge and expertise by interacting on an ongoing basis" (para. 1). The second means of participation in the network was as a digital counterpublic. As discussed previously, counterpublics are defined by Fraser (1994) as parallel environments to publics that produce counter discourses and form "oppositional interpretations of their identities, interests, and needs" (p. 67). Both the CoP and counterpublic offer distinct insight into conceptualizing practices, strategies, and usage of the network by those who identify as or who support the work of Black women faculty.

Community of Practice

The findings from this study provide evidence of how the #CiteBlackWomen network exists as a community of practice (CoP). Existing literature profiles the value and necessity of networks such as Sistah circles (Allen & Joseph, 2018) and mentoring groups (Griffin et al., 2013) to support the success of Black women faculty (Alfred, 2001b; Patitu & Hinton, 2003). While these spaces have not been formally identified and examined as CoPs, arguably, these organized collectives exist in parallel to or overlap CoPs (Luo et al., 2020). Wenger (2009) found that CoPs have existed by many names

and include three overarching characteristics: a) a shared area of interest, b) intentional

engagement, and interaction such as activities, discussions, and sharing information; and

c) a shared repertoire of tools and resources. The #CiteBlackWomen network is

organized by a shared interest of Black women faculty and those who support the work

of Black women faculty in confronting, acknowledging, and re-centering Black women

faculty in academic life and beyond. Utilizing social media, the network specifically

discusses and examines the "gendered racial politics of citation and its consequences"

(CiteBlackWomenCollective, n.d.). The shared interest of the #CiteBlackWomen

network is broad and can encompass a range of topics that fit varied interests of its

members.

The design and function of Twitter, although hashtags and lists do help to

categorize information, does not automatically lend itself to facilitating community. To

some members, the #CiteBlackWomen network primarily functioned as a network based

on personal linkages and interactions without larger commitment to "some kind of joint

enterprise or domain" (Wenger et al., 2011, p. 10). What primarily existed were

spontaneous information sharing and exchanges without a sustained commitment to

leveraging the collective membership to tap into social capital. Luo et al. (2020) posit

that intentional engagement with hashtags can be considered CoPs when individuals can

discuss specific topics of interest that are related to the larger purpose of the hashtag. In

practice, certain members use the #CiteBlackWomen to engage with others in

discussions, debating, and interacting. The accountability groups provide an excellent

example of how individual participants of the network intentionally engaged through

regularly mentioning participants, encouraging others to share updates, and providing one's own progress towards previously set goals. The #CiteBlackWomen network in use and function is based on the engagement of the members.

Johnson et al. (2019) found that mutual engagement was very present in a Twitter-based CoP, due to the high level of engagement among participants and the removal of traditional barriers that exist across discipline and ranking among K-12 teachers. Jordan (2019) found similar results when examining engagement of academic networks on Twitter; that is, participants in the study who used Twitter were able to interact without regard for rank or traditional academic hierarchies. Relatedly, Wenger (2009) argues CoPs can function as formally structured communities or as informal groups. In the case of informal groups, individuals may not always associate involvement in groups with shared interests as a community of practice. Informal CoPs include exchange (e.g., information, stories, tips, document sharing), inquiries (e.g., exploring ideas), and building shared understanding (e.g., hot topic discussions, reading groups). While the #CiteBlackWomen network does not have a formally defined organizational structure, the network has a short list of organizers. Findings from this study reveal that the organizers do not hold hierarchical positions in the network, nor do defined roles, titles, or positions exist. As discussed in the previous section, the decentralized and informal nature of the network increases access and supports the development of social capital.

According to Wenger (2009) the third characteristic of CoPs involves a shared repertoire of resources, tools, practices, routines, and artifacts. This characteristic was

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not as present in the findings as the other two dimensions. Evidence of a formerly established repertoire is not evident in the #CiteBlackWomen network. Instead, resource sharing in the #CiteBlackWomen network was spontaneous and in the moment. Network participants are only likely to be exposed to resources at the level of engagement with the hashtag. The design and function of Twitter are not conducive to serving as an archive for artifacts and resources that are more present in CoPs managed on other platforms, such as Facebook.

Existing literatures show promise in examining how social media provides communities of practice for learning, growth, and development. According to Gleason (2013), informal learning may manifest on Twitter through utilizing hashtags, following members, sharing and reading resources (e.g., links to media), joining conversations through Tweeting, ReTweeting, and Replying to other users to broader context and contribute to topics of interests to users. While this study did not examine the content of hyperlinks or other media shared by users, the high number of resources disseminated by users provides evidence that information distribution could facilitate learning if users are engaging with this shared media.

Johnson et al. (2019) found that CoPs within a higher education context have primarily centered on a formal means of professional development to better teaching practices. Using a case study, King (2011) examined graduate students experiences using Twitter and blogs as a place of informal learning and a professional learning community. The results found that such digital spaces can advance professional learning, networking, identity development, and expose participants to important discourse in the field.

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Similarly, Golden (2016) and McKenna et al. (2016) found that virtual CoPs can facilitate sustained engagement, the production of new ideas, knowledge sharing, and problem-solving. According to a systematic review by Luo et al. (2020) on the use of social media for professional development in higher education, research on social media usage for faculty development is still in its infancy. Results from the systemic review reveal that the majority of studies on online CoPs from 2009 to 2019 were informal professional development contexts outside or organizations.

According to Hansman (2001), the social and contextual environments facilitated within communities of practice often provide adult learners with tools, important cultural dimensions, and unique perspectives to understanding professions. Additionally, Corcoran and Duane (2019) found positive benefits to using social networks and communities of practice to promote collaboration within higher education settings through reducing barriers to sharing institutional knowledge and building and maintaining social ties. These benefits align with elements of social capital previously discussed. While learning is typically embedded within the communities of practice functions, it is difficult to draw conclusions about the presence of learning of individuals in the #CiteBlackWomen network based on the data collection process. More directed examination with participants, possibly through interviews, is needed to determine the presence of learning.

Findings of this study explore the important the intersection of race, gender, and professional identity in digital spaces. Budding literature explores how gender-supportive communities of practice can be effective in promoting positive self-concept,

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enhanced engagement, and learning (Richard & Gray, 2018) among gamers. However, literature to date has not examined how CoPs can be galvanized to support professionals across various identity dimensions such as race and gender. One such reason for this lack of focus of CoPs on identity dimensions could be, in part, due to the primary focus on professional learning development.

Counterpublics

Situating the #CiteBlackWomen network as a counterpublic aligns with existing research. Trott (2020) posits that networked counterpublics are useful in understanding the production and spread of nondominant narratives on Twitter. For instance, Hill (2018) found that individuals on Twitter utilize digital counterpublics such as #BlackLivesMatter and #SayHerName to share unique experiences, circulate information to call out and discuss the common erasure of such experiences, and to address problems relevant to the counterpublic. Through calling out erasure, the #CiteBlackWomen network applied pressure to and demanded accountability for the acknowledgement of Black women's labor. This act of combating erasure is also claiming space. As put by Jones (2019), the act of intentional boundary work manifests through "creating hashtags for centering Black girls and women; continuously providing evidence of creating space for such discussion; building a shared language for understanding social problems intersectionally; and confronting discourse that violates norms of interaction" (p. 32). This boundary work produces a flexible frame to create, expand, and adjust the network as different topics and issues arise that effect Black women.

Counterpublics are often situated parallel to mainstream publics and serve as alternative spaces that are not controlled or surveilled by gatekeepers. The #CiteBlackWomen network exists parallel to dominant discourse about academic life. The network is able to leverage a varied array of identities, expertise, and experiences within and outside of digital life to create spaces for discussing the Black women's experience inside and outside of academic spaces. Jackson et al. (2020) argue that digital counterpublics challenge structures of power and dominant narratives common in mainstream media. Similarly, Bailey (2021) examines how Black women leverage Twitter as means of digital resistance to counter respectability, push back on stereotypes, and push for accountability as a means to ongoing perpetuated harm. Beyond discussing the everyday realities of the academy, the network empowers its members by giving them onus the topics and interests relevant to their own needs. This decentralized, heterogenous network is pluralistic and participatory in nature (Fraser, 1990; Gregory, 1994). Findings from this study show the power and value of networks in digital spaces, providing an opportunity to reframe and re-center Black women who have been routinely ignored, repressed, and excluded from mainstream academic discourse and more broadly, public discourse.

By operating as counterpublic, #CiteBlackWomen exists to create intersectional spaces for Black women within and beyond academic spaces. Scholars demonstrate how Black Twitter serves as a counterpublic public space for community building, interacting, and challenging oppression in digital spaces (Brock, 2012; Hill, 2018; Lee, 2017). While Black Twitter users have been able to repurpose Twitter beyond an initial

social and causal function, the discursive culture of Black Twitter suggests that Black women and other marginalized identities, such as Black queer and Black transgender folk, receive less attention (Lee, 2017). The inequitable inattention to intersectional identities beyond race illustrates how oppression functions in digital spaces as it does in offline spaces. The inequities support the need for digital counterpublics such as #CiteBlackWomen, which is designed to create space for and attend to the uniqueness of their interconnected identities.

Using Twitter as a platform due to its public accessibility and lack of hierarchical structure allows network participants to step beyond the traditional academic structures to engage with others and share their work. A key function of a digital counterpublics is its ability to enable people to organize without regard for geographic or temporal boundaries (boyd, 2010). Doing so allows #CiteBlackWomen to obviate the need for a traditional organizational structure common in physical spaces. Beyond the benefits to the structure of the network, participants' usage of Twitter, a platform not traditionally used in academic spaces, lends itself to expanding the nature of scholarship access and dissemination beyond disciplinary boundaries and beyond the proverbial ivory tower. Thus, there is more potential to reach others inside and outside of the academy in ways that integrate often erudite and inaccessible scholarship into everyday discourse.

The #CiteBlackWomen digital counterpublic extends existing literature of Bailey (2021) and Jackson et al. (2020), in particular, about the role Black women play in creating and contributing to digital counterpublics about feminism, race, gender, sexuality, class, justice, and other framing topics of interest. Black women have been at

the forefront of generating hashtags (e.g., #SayHerName, #MeToo, #BlackintheIvory) to extend social justice discourse beyond commonly exclusionary measures through acknowledging their unique intersectional experiences. As articulated by Jackson et al. (2020), when network counterpublics employ hashtags in digital spaces, these hashtags act as "schemas" and "recall complex, nuanced experience and claims, histories and presents, and theories of social belonging in a succinct, easy to digest, and repeatable form" (p. 199). Creating and contributing to hashtags facilitates discussion about Black women's intersectional experiences of race and gender. Such is the case for the #CiteBlackWomen network counterpublic. #CiteBlackWomen as a hashtag and a network, coupled with interaction therein, provides individuals with a concise means of creating powerful and compelling narratives that nuance and, in many cases, counter the mainstream narratives, which often limit and erase Black women's voices.

RQ4. In What Ways Does an Informal Digital Network Facilitate Discourse about Intersectional Experiences of Black Women Faculty?

This study sought to illustrate how aspects of Black cyberfeminist theory can be used for examining intersectional power structures in digital spaces. Intersectionality within this network is used as a tool for examining the overlapping identity dimensions foundational to the social locations of Black women in society. Weber (2001) argues that scholars must understand how these social identities all operate as simultaneous systems of oppression with complex patterns that inform social relationships among people. Applying an intersectional focus to experiences, Black women faculty amplify public discourse about inequality and erasure within the academy, mobilize counter

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movements, and eschew existing gatekeeping structures prevalent in academia. The intersectional lens coupled with technological affordances unique to digital spaces play a key role in modeling how Black cyberfeminism can exist as mainstream discourse outside of the academy.

The #CiteBlackWomen network largely functions as was originally intended: to cite Black women. Many of the Tweets posted were in some form of attribution of Black women's intellectual production and labor. Erasure continues to be an ongoing challenge for Black women, particularly when individuals question the intelligence and production of Black women. Calling out limiting and incorrect narratives about Black women is an affordance of Black cyberfeminism (Gray, 2015; Jones, 2019) and one way that Black women use social media as digital activism (Jackson et al., 2020). Disseminating information is another approach to ensure that Black women are integrated into the historical and contemporary lexicon through highlighting their achievements and contributions. Dissemination was done with intention, especially those during the historical commemoration months.

The findings for this study provide evidence for how participants of the #CiteBlackWomen network centered citing Black women as critical praxis. Praxis in citing Black women also facilitates the integration of Black women's work at the forefront. The labor involved in dissemination and calling out erasure act as mechanisms of self-empowerment and as praxis because it calls for using a theoretical understanding to inform actions (Cottom, 2017). Praxis within the #CiteBlackWomen network moves beyond dissemination or highlighting work. Praxis sets intention and theory into action

by putting to practice a commitment to acknowledging the intellectual production. This approach ensures that Black women are woven into and through the mainstream narrative and demands their centering amid constant erasure and silencing.

In addition to the means by which Black women in this network use social media, findings from this study also illustrate that Black women use the informal digital network to celebrate, affirm, and support one another. Much of the literature about Black women's use of social media thus far, when contextualized with intersectionality in mind, speaks to navigating unique spaces laden with repressive and oppressive structures that have been replicated online (Bailey, 2021; Jackson et al., 2016; Jackson et al. 2020; Kuo, 2020). However, what is less explored and acknowledged is how online spaces can be spaces of support and affirmation separate from lamenting about and pushing back against oppressive structures (Charmaraman et al., 2015). This study contributes to gaps in research in better understanding the cultural and sociopolitical ways that Black women use online experiences for positivity and affirmation.

The #CiteBlackWomen network does not assume that one experience represents the experiences of everyone. The decentralized and open nature allows the network to exists in a plethora of ways, as shown in the findings of this study. Individuals may share common identities and have some common experiences, but these experiences are situated in a multidimensional understanding of social, cultural, and political power relations that effect individuals in different ways. Applying this level of understanding to individual experiences reflects different positionalities. Black feminist thought centers positionality because it considers the power relations negotiated and performed through

discursive experiences and how this discourse both reflects and reproduces social structures (Collins, 2000). Black cyberfeminism as an extension of Black feminist thought specifically speaks to how digital spaces can accommodate a multiplicity of Black women's experiences (Gray, 2015; 2017). The intersectional lens coupled with technological affordances unique to digital spaces plays a key role in modeling how Black cyberfeminism can facilitate discourse inside and outside of the academy.

While the focus of this study has been examining the use of the #CiteBlackWomen as it relates to Black women faculty, findings from this research have implications for exploring and understanding the experiences of Black women outside of academic spaces. The analysis revealed larger and more encompassing attention to Black women's intellectual production throughout multiple industries and history, and a broader fight for equitable representation and validation. Black cyberfeminism examines the intersectional experiences of a marginalized group of people within digital spaces because the digital tools such as social media are complex and power relations that exist among and across social identities have not been fully examined within the digital space (Gray, 2015). Couple the existing challenges of holding intersectional marginalized identities with being intentionally excluded and uncredited necessitates digital pathways for Black women to draw from their own experiences and facilitate their own amplification.

Implications

Utilizing informal digital networks has implications for key stakeholders focused on developing and retaining Black women faculty. Implications from this study could

also benefit individuals who oversee professional training and development experiences

for other academic populations. Additionally, the theoretical and methodological aspects

of this study have implications for future research. The following sections will outline

implications for adult education, practice, policy, and research and theory development.

Implications for Adult Education

Adult education is nuanced and malleable, able to tap into and adapt from other

theoretical and practical traditions to further the field. First, this study offers insight into

the use of methodological and theoretical approaches that, to date, have had little to no

application in the adult education field. Network analysis is a useful methodological and

theoretical approach in education because it offers opportunity for analysis at multiple

educational and administrative domains (e.g., learners, classrooms/communities,

educators, networks). Second, this study's specific attention to intersecting identities,

oppression, within digitally mediated platforms can expend the perceptions into the

experiences of adult learners from historically oppressed backgrounds to seek learning

experiences online. Third, results of this study have implications for the increasing

ubiquity of social media as a tool for connecting with others to learn and grow in an

informal setting. Finally, conducting network research in adult learning settings can

identify influential players who are responsible for spreading information, gatekeeping,

and galvanizing networks (Valente & Davis, 1999).

Implications for Practice

This study offers insight into how Black women faculty are building spaces to

serve their own unique needs beyond the boundaries of disciplines and higher education

institutions. Existing literature documents the presence of offline communities and

networks (Allen & Joseph, 2018; Griffin et al., 2011). However, the public default

structure of Twitter acts as a means to increase the access and scale of networks created

for Black women faculty. While these informal digital networks provide tangible value

and support to Black women faculty, they do not adequately address structural issues

within the academy that persistently and negatively affect Black Women. Twitter as a

tool needs to be combined with numerous other tools and strategies that support the

success and retention of Black women in the academy. These tools and strategies include

mentoring (Bass & Faircloth, 2011; Griffin et al. 2011, 2013; Holmes, 2008; Stanley,

2006), reducing bias in the tenure and promotion process (Comer et al., 2017; Dancy &

Jean-Marie, 2014; Mitchell & Miller, 2011), and ending the devaluation of intellectual

production of Black women (Dancy & Jean-Maire, 2014; Griffin et al., 2011; Patitu &

Hinton, 2003). The #CiteBlackWomen network and others with similar structures and

purposes can serve as unique supplements where Black women can obtain micro

exposures to discursive communities designed to promote a strong sense of self-efficacy,

informal mentoring, and networking opportunities. More broadly, digital networks such

as #CiteBlackWomen can act as a means for bridging social capital, while in-person

networks established in institutions can facilitate bonding social capital that is less

frequent within informal digital networks. Many of these tools must be intentionally

embedded within institutional practices and policies to ensure that Black women faculty

can succeed within the academy.

Implications for Policy

Using digital spaces as informal places of learning and development pushes the existing boundaries of traditionally accessed spaces for development. Individuals are stepping beyond formal structures (e.g., institutions, programs, disciplines) to create informal communal spaces to benefit their needs. The adult education field has long explored the benefits of informal and community-based education (Merriam & Baumgartner, 2020). Digital communities of practice are an example of such informal space that is becoming increasingly ubiquitous within academic networks (King, 2011). Policies supporting the development of digital professional communities primarily exist at the organization and institutional levels. The labor in creating these digital networks varies, though in general it requires a knowledge of social media tools and language, and a strategic approach to building connections to meet the network's intended goals. Integrating digital communities of practices and other social technologies into academic professional spaces has learning implications. These digital tools require institutions to equip faculty with digital literacy acquisition in order to integrate these tools into practice. Additionally, institutions should build mechanisms through review processes for tenure and promotion to recognize the labor involving with maintaining these networks.

Finally, examining universities as an organization comprised of various networks and subnetworks may shed novel light into the structural patterns, influence, the nature of social relationships, and the existence of social capital. Social network analysis may

also be beneficial to higher education institutions and its training and development professionals interested in understanding the social structures driving institutions.

Implications for Research and Theory

This study contributes to the literature in understanding how Black cyberfeminism can be used to examine intersectional digital spaces for Black women faculty. Applying a positional and intersectional lens through theoretical tenets of Black cyberfeminism offered unique insight into social capital formation in digital spaces. The evolving technological affordances facilitate new digital pathways that are increasingly ubiquitous in everyday life. Black cyberfeminism offers theoretical insight to the role of digital technology in the informing, controlling, and replicating contemporary structural social inequalities (Cottom, 2017; Gray, 2015).

Findings from this study broadens the theoretical understanding of Black cyberfeminism beyond sociological and communication disciplines by examining its tenets from a professional academic context within the fields of adult education and higher education. The amorphous nature of Black cyberfeminism lends itself to being a useful and dynamic theoretical lens for examining power structures and inequalities within digital spaces, without restriction of disciplines, fields, or industries. By applying a Black cyberfeminist lens, this study explored how individuals across intersectional experiences can facilitate public discourse about experiences inside and outside of the academy.

This study sought to broaden the application of social capital theory by examining its development in digital networks created by Black women faculty.

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Considering the identities, social and cultural locations of individuals, particularly from historically marginalized backgrounds, sheds new insight into social capital formation and usage. Considering these factors, to date, there has been a gap in existing social capital literature (Greyerbiehl & Mitchell, 2014; Kwon & Alder, 2014; Yang et al., 2021). Similar to Charmaraman et al. (2015), this study found that Black women employ intersectional experiences when using digital social networks, particularly when building community connections and in interactions. Integrating social and cultural experiences of participants in social capital research may advance the application of this theory within various academic disciplines.

This study offers insight into using social media platforms, specifically Twitter, as a source of data collection. The primarily public and decentralized structure of Twitter allows researchers to observe participants and examine phenomena in nuanced and innovative ways not previously possible (Cottom, 2017). In particular, the archival benefits of big data transverse traditional time-bound, geographical, of gatekeeping boundaries that often serve as barriers to understanding populations (boyd, 2010). Individuals can connect on common experiences and topics of interests without regard for traditional time-bound, geographical, of gatekeeping boundaries that often serve as barriers to accessing participants for studies.

The methodological and theoretical components of network analysis lend itself to offering understanding not previously available with the existing tools within higher education institutions (Ha et al., 2019). As found by Biancani and McFarland (2013), higher education institutions primarily employ network analysis in examining research

collaboration, faculty networks, student networks, and universities as networks. However, much of the literature is discipline specific, and broader literature on interdisciplinary and informal communities of scholars is scant. Research is still fairly new in learning how faculty use social media for professional purposes (Lupton, 2014; Rowlands et al., 2011). Applications of network analysis could unearth and inform further understanding of social media usage and value within professional academic communities.

Finally, results of this study have implications for the future of social network research. While network research in digital spaces is steadily increasing, network research in digital spaces specific to learning or professional uses is still in its early stages. This study focused on network structure, identifying influential members, and finding clusters that exist within. However, the nature and use of network analysis research lends itself to greater use in observing and hypothesizing individual behaviors, social relationships, and organizational structures. This study used various network measures to offer insight into how social capital is formed and accessed by members in an informal network.

Limitations and Opportunities for Future Research

This study aimed to contribute to empirical higher education and adult education research on how social media, specifically Twitter, can be used to examine informal digital social network formation among Black women faculty. This section will outline limitations to the context of this study and cover several suggestions to extend this study for future research.

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First, this study was limited to examining #CiteBlackWomen network on Twitter. However, the network uses other social media platforms such as Instagram and Facebook (CiteBlackWomenCollective, n.d.). Thus, the Twitter data presented in this study may not represent the full scope and depth of Cite Black Women participants, purpose, and impact. Second, the data collection process limited the scope of time and the type of participant data that could be collected. Data collection took place over a four-month timeline, and thus the results of this study may not be fully representative of the scope and usage of the network. Analyzing #CiteBlackWomen Tweet data over a longitudinal period may present different and more comprehensive findings about the nature, function, and participants of this network. Doing so could illuminate the extent to which the network structure changes and to what extent those changes impact opportunities to facilitate social capital. Furthermore, this study used existing archival data. Additional data collection such as interviews could provide more insight into if and how participants are utilizing, contributing to, valuing, and learning from the network.

Third, the data collection methods used limit the ability to accurately describe the identities of participants. Not all participants who engaged in the CiteBlackWomen network identified as Black women; however, there was no mechanism to collect demographic data from participants. Some inferences from public profile information on Twitter could be made, but no assumptions about identities were made. Additionally, Tweets in languages other than English were excluded from this study. However, the language of a small number of Tweets indicates participation by folks from Brazil, suggesting multinational and multilingual participation. Expanding future research to

consider demographic data such as professional role, gender, racial identity, and geographic locations may provide more insight into the scope and participants in the network.

Fourth, certain Tweet features such as likes and Quote Tweets were not collected for this study. Examining likes may provide more information about passive engagement within the network as it involves acknowledging that a user sees a Tweet. Quote Tweets is a feature whereby a user can ReTweet another Tweet and include one's text and/or media along with an original Tweet. This feature provides more nuance beyond simply disseminating information via ReTweet and also acts as a way of sharing information since the Quote Tweet content can contextualize, affirm, contradict, or debate the original Tweet. However, Quote Tweets were more difficult to identify based on the data collection method. Identifying a data archiving process that allows for categorizing Quote Tweets and capturing likes may be helpful in providing more information about the network.

Fifth, the critical discourse analysis methods included in this study primarily focused on the textual analysis, aside from brief exploration on the use of emojis. Additional mediums such as images and links were often included in Tweets but were not analyzed. It is likely that corresponding media within the Tweets would provide additional context and depth to the analysis and should be taken into consideration in future research. Relatedly, differences exist between the network used for this study along with other networks with a broader academic focus (e.g., #ScholarSunday). Additional studies can compare and contrast other networks and examine the extent to

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which evidence exists for digital counterpublics in academic environments. Other comparisons could also take place between networks with different sociocultural identity foci.

Finally, future inquiries could expand upon the presence of learning and development, critical discourse, and social change in digital spaces including and beyond Twitter. Network research has set to provide evidence of behavior change, dissemination, and diffusion. The wealth and depth of data available on digital platforms can expand the scope of understanding or network structure and change on individuals, communities, and specific populations.

Conclusions

The purpose of this study was to examine how Black women faculty develop and use informal digital social networks to facilitate social capital. In Chapter I, I provided background information on the status of Black women faculty in higher education to build support and rationale for this study. This background information explored barriers Black women experience in the academy as well as tools and strategies to improve success and retention. I also outlined budding literature on the use of digital spaces by academics to ground the exploration of informal digital social networks in this study. Next, I presented an overview of the research problem, research questions, and guiding theoretical frameworks for this study.

In Chapter II, I reviewed bodies of literature involving functions and characteristics of social media, public spheres, and the use of counterpublics by marginalized groups to challenge dominant narratives and to explore specific group

interests. In Chapter III I described the mixed-methods design for this study, discussed data collection methods, and outlined the analysis process. In Chapter IV, I presented results and findings of the research. Finally, Chapter V discussed the findings and provided limitations, implications, recommendations for future research, and the conclusion to this study.

Universities that espouse commitments to diversity, inclusion, and justice must critically examine, revise, and eradicate practices and policies that seek to silence, devalue, and disregard the work of Black women. Compositional diversity, equitable representation within spaces of knowledge production, and a broader reimagining of what it means to be producers of knowledge are vital to engaging and centering voices often left behind. The #CiteBlackWomen network is a collective effort to uplift and center knowledge production of Black women. This dissertation was an attempt to affirm all of the Black women's voices across various contexts where knowledge is produced. This study also opens space for more exploration of Black women's development in digital spaces. It sets an agenda for the investigation of how personal agency, social capital, informal networks, and counterpublics, situated within the concept of Black feminism can create fertile ground for advancing Black women in higher education.

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