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Understanding the Experiences of Underrepresented Women in Student Affairs at a Predominately White Institution Through a Dynamic Network Analysis Framework

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UNDERSTANDING THE EXPERIENCES OF UNDERREPRESENTED WOMEN IN
STUDENT AFFAIRS AT A PREDOMINATELY WHITE INSTITUTION
THROUGH A DYNAMIC NETWORK ANALYSIS FRAMEWORK

A Dissertation
Presented to
the Graduate School of
Clemson University

In Partial Fulfillment
of the Requirements for the Degree
Doctor of Philosophy
Educational Leadership

by
Lani Mylene San Antonio
May 2015

Accepted by:
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ABSTRACT

As institutions become more diverse among the student body, minority faculty and staff are recruited to better support underrepresented students. However, while much thought is often placed in recruitment efforts, institutions often fail to execute appropriate retention efforts of their minority faculty and staff (Turner, Gonzalez & Wood, 2008). Due to this, underrepresented women often find themselves faced with many barriers and lack of resources needed to successfully transition into new roles and environments (Harris, Wright & Msengi, 2011; Jackson & Harrison, 2007; Maramba, 2000).

The purpose of this study was to investigate the experiences of underrepresented women in student affairs by examining the network structure and the interactions individuals have with different entities within the organization. The goal of this study was to understand what experiences underrepresented women have that help them effectively engage and successfully integrate to a Predominately White Institution. The study looked at relationships across the network and shared resources and tasks to gain understanding of the student affairs network. Complexity leadership theory and intersectionality were used as theoretical frameworks to inform the study and dynamic network analysis was the chosen methodology for this study.

A purposeful sample of student affairs employees at a mid-size, four-year, public, southeastern university was selected. 81.7% (n=101) responded to the survey. The data collected was analyzed using network measure and visualization tools available in the ORA software. QAP analyses were also conducted to understand the influence of beliefs on inclusion and mission of the organization on professional and social relationship

networks, resource capability, position in the network, and underrepresented agents in the network.

Findings show that underrepresented women are involved in reciprocal relationships with informal leaders in the network, hold informal leadership roles and attend social and diversity related events to connect with other people. The results indicate that leaders within student affairs should examine the environmental conditions present in the organization and recognize the impact these conditions have on underrepresented women. Furthermore, leaders should focus on creating dynamics that foster engagement and access for underrepresented women.

DEDICATION

For the women in student affairs that continue to create spaces and challenge the status quo – never settle.

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As a Filipina-American, I was raised on the belief that it takes a village to raise a child. Well certainly, it took a village to raise this doctoral student. I would like to take a moment to recognize those that were instrumental in helping me reach my goals.

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CHAPTER ONE

NATURE OF THE STUDY

As higher education becomes more diverse among the student population, institutions are given the task to also diversify their staff to reflect the student body. At many institutions, Affirmative Action and Equal Employment Opportunity policies guide efforts to recruit and retain a diverse candidate pool for faculty and staff positions. However, there is often a gap between the efforts to recruit and the efforts to retain minority staff at these institutions (Kayes, 2006; Parker, Clayton-Pedersen, Moreno, Teraguchi & Smith, 2015). Minority women often find themselves dealing with many barriers (marginalization, isolation, unwelcoming campus communities) as well as a lack of resources (supervision, mentorship, etc.) needed to successfully transition into their new roles and environments (Harris, Wright & Msengi, 2011; Jackson & Harris, 2007; Maramba & Museus, 2011).

The experience of minority female faculty members in higher education is well documented; however limited data exists about the experiences of minority women in staff positions, specifically in the division of student affairs. In Turner, Gonzalez & Wood's (2008) review of the literature on minority women in higher education within a 20 year span, the following themes emerge: importance of creating support networks at the institution, feelings of isolation and tokenism and the need to effectively recruit, hire and retain qualified minorities into positions in the academe. As educational institutions are very complex in nature, many reasons can account for individual experiences. A more in-depth understanding of the experiences of minority women at Predominately White

Institutions (PWI) can help identify the issues that impact staff engagement, staff retention, leadership opportunities and other factors that exist within a network.

Statement of the Problem

Despite institutional and individual attempts, minority women are vastly underrepresented in higher education (Turner et al., 2008; Zambrana, Ray, Espino, Castro, Cohen & Eliason, 2015). One solution to this problem is to help create a critical mass of minority women in student affairs. Tarr-Whelan (2009) suggests the *30% solution* as a way to justify the need for more women at decision-making levels. The *30% solution* would create balanced leadership by actively recruiting and selecting women in decision making roles sufficient to represent 30% of the group, thus achieving a critical mass. However, even when organizations achieve a critical mass, underrepresented groups would still face various challenges within the workplace. In fact, Etzkowitz, Kremelgor & Uzzi (2000) warn that “the precise number is less important than the nature of the response that the new minority receives from the majority” (p. 107). Literature suggests that even though attempts are made to design policies and processes to recruit minorities, these practices are counterproductive if measures on how to keep minorities at the institution is not considered (Turner et al, 2008). For example, some factors leading to the high attrition rates of minority faculty and staff include an institution’s lack of attention on minority retention and recognition of success (Parker et al., 2015), little diversity education among selection committee members (Kayes, 2006) and barriers in accessing invested mentors of color on campus (Holmes, Land, Hinton-Hudson, 2007; Zambrana et al., 2015). Additionally, minorities often experience feelings of isolation,

tokenism and even racism in the workplace due to their “otherness” (Patitu & Hinton, 2003). On the positive end, the presence of like-minded networks of colleagues and mentors strongly impact minorities in their careers and help them move forward (Howard-Hamilton, 2003).

Purpose of the Study

This study stems from a strong interest in understanding the experiences of minority women student affairs administrators at Predominately White Institutions. Existing literature shows a great amount of research on the experiences of minority women faculty members in higher education, but little research is present regarding student affairs administrators. West (2011) sees this exclusion as a “consequence of their underrepresentation, isolation, and marginalization within higher education.” The goal of this research project is to understand how these women navigate their experience and how it is impacted by their environment, specifically at institutions where their minority status (race and gender) may be even further marginalized.

The literature establishes a common theme regarding racial minorities in higher education: the importance of establishing a strong network (Henry, 2010). The formation of these networks assists individuals in their navigation as professionals in a complex learning environment. It is also important to recognize that creating networks in a complex environment such as that of higher education, these network form through individual relationships as well as through interactions with different entities that exist within the network. For example, these entities could be relationships through shared tasks, resources and beliefs. Therefore, using dynamic network analysis allows one to

study these networks and the interactions between individuals and identified entities in order to understand the experiences of those involved and the impact of their environment (Carley, 2003). Specifically to this study, dynamic network analysis will examine the experiences of underrepresented women as they interact with their environment.

The focus on minority women in student affairs in this study creates the need to address intersectionality. Intersectionality is the “interaction between gender, race, institutional arrangements, and cultural ideologies and the outcomes of these interactions in terms of power” (Davis, 2008, p.68). Intersectionality scholars emphasize the inability of individuals to separate the various identities into different categories (Brah & Phoenix, 2004). Minority women often reflect on how intersectionality plays a role in their experiences in administration. Individuals find the balance between being a female and a person of color a complex issue that is not addressed in a consistent or standard way. Sometimes, when issues or experiences arise that address both gender and race/ethnicity, minority women often experience “intersectional invisibility...the general failure to fully recognize people with intersecting identities as members of their constituent groups” (Purdie-Vaughns & Eibach, 2008).

Understanding how these identities impact the experiences women have is important, but Anthias (2013) challenges intersectionality researchers to move beyond the individual and evaluate the structures that exist and perpetuate marginalization. Taking this into consideration, the study will comprehensively explore this specific population’s experiences in a complex learning environment. More specifically, this

study will investigate how underrepresented women student affairs administrators perform as part of an even larger network (i.e. division of student affairs and overall institution). Additionally, this study aims to explore how the experiences within the network help the women frame their experience and move towards future success.

Definition of Terms

The following terms will be used throughout the study. The definitions below help understand the context of the terms used.

- *Agents*: individuals within a network
- *Complexity*: Complexity refers to the interaction and interdependency among agents and networks in a dynamic environment (Marion, 2012).
- *Complex Adaptive System*: A collection of agents and networks interaction within an institution (McFarland, 2012).
- *Entity*: A *who, what, where, when, or why that is being studied such as people, agents, knowledge, resources, tasks, locations, or beliefs* (Carley, Reminga, Storrick & Columbus, 2010).
- *Leadership*: Through the lens of complexity theory, this refers to the entanglement of managerial, enabling and adaptive leadership styles (Uhl-Bien, Marion, McKelvey, 2007).
 - *Formal leadership*: Any person given a title-bearing leadership role at an institution. The position would be integral to the organizational chart hierarchy.

- *Informal leadership*: Leadership that emerges from official organizational channels as a result of interaction between entities.
- *Network*: A group of agents in a complex adaptive system.
- *Meta-Network*: A multi-mode, multi-link, multi-level network.
- *Underrepresented*: This term refers to an agent that identifies as non-White.

Theoretical Frameworks

This study draws from the complexity leadership theory framework. Complexity leadership theory addresses leadership within complex adaptive systems (Uhl-Bien et al., 2007). Three important types of leadership: administrative, adaptive and enabling emerge in these systems. Complexity leadership theory recognizes the dynamic nature that exists when these three types of leadership become intertwined. Additionally, complexity leadership theory can be used to understand complex organizations and take into account the environment within the organization so that one can better identify the formation of social networks among the group and identify ways to allow for the transference of thoughts and information. Lastly, complexity leadership theory can also be used to help facilitate change within an organization because it looks at ways that change can emerge through the entanglement of administrative, adaptive and enabling leadership (Uhl-Bien et al., 2007). Complexity leadership theory will not only frame the study, but will also influence the methodology.

Intersectionality will also be addressed in this study. However, as stated above, the study aims to move beyond the participants individual identities and examine the broader organizational structure. This study uses intersectionality as a framework for

analysis. More specifically, this study uses Núñez's (2014) framework on intersectionality. The framework draws from Anthias' (2013) work, as the framework will "[locate] social categories and divisions within a broader social framing that tends to power, hierarchy and context – both spatial and temporal" (p.6). Núñez (2014) uses Anthias' work as a foreground and promotes a framework that can be used in education. Specifically, Núñez's model provides a multilevel analysis that addresses social categories and relations (level 1), multiple arenas of influence (level 2) and historicity (level 3).

Research Questions

This dissertation will focus on the following research question: What experiences do underrepresented women in student affairs have that hinder or help them feel effectively engaged and successfully integrated in a Predominately White Institution?

The additional questions support the main focus on inquiry. They are separated into the two main categories from the research question.

Relationships across the network

- Are underrepresented women generally located proximal to major informal leaders in the network and does such access influence feelings of engagement and integration?
- Are they in reciprocal relationships and cliques that give them access to informal leaders and does this access influence feelings of engagement and integration?

- Do underrepresented women have informal leadership roles in the network and do informal leadership roles help them feel engaged and integrated?

Institutional resources

- Do underrepresented women have access to institutional resources?
- Are there key events and programs during the year that encourage underrepresented women to connect to one another?

Research Methods

For this study, *Dynamic Network Analysis* is the chosen methodology and will be used to understand the experiences of underrepresented women in student affairs.

Dynamic Network Analysis studies the complex relationships among identified dimensions of an established network. Structured interviews with a sample population will be conducted to generate common themes for categories for the questionnaire. The questionnaire will then be sent to a selected population of employees in the Division of Student Affairs. The responses from the survey will be coded and inputted into ORA for analysis.

Significance of the Study

This study is significant to the field of education in many ways. As stated earlier, research on women, specifically minority women in higher education is sparse (Patitu & Hinton, 2003). Yakaboski & Donahoo (2011) note that the lack of research continues to marginalize women in the higher education. By focusing this study on minority women in student affairs, their experiences are placed in the center for examination.

When studying intersectionality, Anthias (2013) challenges researchers to “go beyond a focus on intersectional categories and to look at the broader social landscape of power and hierarchy” (p. 14). Similarly, complexity leadership theory moves beyond traditional leadership theories that focus on individual qualities and looks at the conditions of the environment and its role in fostering leadership. Thus, intersectionality, coupled with complexity leadership theory, will explain the experiences of underrepresented women through their interactions with and between different entities in the larger organization. It is my intention to examine these interactions and map out the levels of access minority women have to resources, key personnel and important tasks that exist within the organization and identify how such access impacts their overall experience.

This study expands the body of research on intersectionality and complexity leadership theory. Additionally, applying Dynamic Network Analysis to understand higher education, specifically the student services area, is unique and one of the first of its kind. But the most important and significant aspect of this study is the continued effort to bring underrepresented women to the center of discussion and to discover the structures and processes present in organizations that help or hinder their success within the organization.

Limitations

The study analyzes networks among a division of student affairs at a single institution. The experiences of the underrepresented women as explained by the connections they have with other agents, resources, tasks, locations and shared beliefs are

specific to the networks being analyzed. Thus, the applicability of the findings to other institutions may be limited.

Another limitation to this study is that the researcher's perceptions about their experience and the organization, which may be different than the actual conditions. For example, one agent may believe to have a professional connection with another agent which may not be a relationship reciprocated. A more accurate understanding of the conditions of a network would be utilizing researcher observations, a data collection method not used in this study.

Delimitations

In order to fully understand the experiences of underrepresented women in the network, some delimitations were placed in the study to ensure the population sample included minority women and the relevant agents that influence the women's experiences. Additionally, due to the concerns of size when conducting a network analysis, it is important to ensure a manageable sample size for the study.

To accomplish this, the first delimitation is to only survey full-time and salaried employees. Graduate students that are employed through an assistantship are also included in the study as they are considered paraprofessionals in the organization and given specific responsibilities that connect them to multiple entities within the network. Secondly, due to concerns regarding the size of the study, only about a third of the eligible employees in the division of student affairs will be asked to take part in the study. Lastly, structured interviews will only be conducted with represented and underrepresented women that represent diverse identities in regards to age, race, years of

experience, title and department. This delimitation is to ensure that the women's experiences are adequately represented in the survey.

Organization of the Study

The study will be comprised of five chapters. Chapter 1 has provided the context of the study and helps the reader understand the background and theoretical framework of the study. Chapter 2 will give a comprehensive review of relevant literature of the study components. Chapter 3 will give an in-depth look at the methodology utilized to conduct the study. The results of the research study will then be described in Chapter 4. Implications for practice and recommendations for future studies will lastly be discussed in Chapter 5.

CHAPTER TWO

REVIEW OF THE LITERATURE

The goal of this chapter is to present the relevant literature related to this study by focusing on (a) minority women in higher education and student affairs (b) theories related to the intersection of race and gender identity (c) theories related to leadership, and (d) dynamic network analysis. To understand underrepresented female experiences in higher education, it is important to review the history of how women became integrated into higher education. The first section of this chapter will provide a brief overview of the history of women in higher education, including the influences of Title IX and Affirmative Action/Equal Employment Opportunity policies. Additionally, much attention will be given to the challenges underrepresented women experience in the academe. Lastly, this section will review strategies and resources at institutions that aid in the successful integration into the institution for underrepresented women.

The next section will focus on one of two main theoretical frameworks guiding this study: intersectionality. As this study focuses on the experiences of underrepresented women in higher education and how they navigate their environment, intersectionality gives voice to the participants whose experiences are shaped by two of their identities: gender and race/ethnicity. Following this section, a discussion on leadership strategies that underrepresented women utilize to lead in their environment and be successful in their work will take place. Some examples of such leadership theories and approaches include transformational leadership theory, relational leadership theory and the tempered

radicalism framework. The section will end with the second main theoretical framework guiding this study: complexity leadership theory.

Complexity leadership theory offers an understanding of what is happening in the environment that is impacting the experiences of the participants. Additionally, this study uses complexity leadership theory because this theory focuses on the organization as a whole and takes into account the roles of external pressures, adaptive leadership and environments in regards to leadership within an organization.

Lastly, dynamic network analysis is discussed in this chapter because this is the chosen methodology for this study. Dynamic network analysis is also used as a theory to guide this study as it is used “for understanding changes of context and changes in process, both over time and at multiple levels of analysis” (Schreiber & Carley, 2008). An overview of dynamic network analysis is important for greater understanding of the subsequent chapters.

Underrepresented Women in Higher Education

History

Dating prior to the 1800s, women participated in higher education through the work of the Moravians. Moravians educated women beginning when they were young and eventually established academies for girls which led to the development of colleges. In regards to women serving as faculty, Elizabeth Callister Peele and Sarah Callister were hired as the first women instructors at any college or university (MacLean, 2014). The women taught painting and drawing. By the 1800s, there were many single-sex higher education institutions for women. In 1833, Oberlin College became the first

coeducational college in the United States, granting Bachelor degrees to the first three American women (Mary Hosford, Elizabeth Smith Prall and Mary Caroline Rudd) in 1841. The first African American woman to receive a Bachelor degree was Mary Jane Patterson in 1862, also from Oberlin College.

While institutions like Oberlin College opened their doors to both men and women, single sex institutions were very popular in the 1800s, especially in the southern United States. After the American Civil War, the Morrill Act in 1862 established historically black college and universities to serve the African American community. Wilberforce University in Ohio was one of the few institutions established prior to the Civil War that served the African American community. In 1866, Wilberforce University hired the first African-American woman, Sarah Jane Woodson Early, to serve as a Latin and English professor (“Sarah Jean Early”, n.d.).

Women and minority presence in higher education slowly continued to grow from the 1800s into the twentieth century. With enrollment numbers of women increasing, female administrators and staff were needed at colleges and universities to fill positions to directly serve the needs of women. These positions were designed to “counter fears that enrolling women would feminize male students or the institution” (Hoffman, 2011). Positions such as *Dean of Women* and *Women Physical Educators* were popular and served as the female counterpart to males on the staff side of the institution. Unfortunately, these positions declined during the post-war era as higher education shifted its focus on veterans returning to school through the GI Bill (Eisenmann, 2006). Additionally, with the passage of Title IX in 1972, administrators and faculty roles once

separated by gender were then collapsed into one office or position. Title IX proclaimed that:

“No person in the United States shall on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any educational program or activity receiving Federal financial assistance” (“Title IX”, n.d., para 1).

Hoffman (2011) called the passage of this law as the beginning of the *gender equity era*, which represented a major shift in the role of higher education for female students and the path to leadership for women in administrative roles. Specifically, when Title IX was instituted, administrative and faculty roles designed for women declined as similar offices separated by gender collapsed into one office at coeducational institutions. In regards to underrepresented female presence in student affairs and other administrative positions at higher education institutions, specific policies such as affirmative action and equal employment opportunity (EEO) policies sought to bring more gender and racial equality.

Affirmative Action/EEO laws

To better understand the impetus of minority women in higher education, it was important to understand the policies and protocols that higher education institutions may follow to guide their recruitment and selection processes. Several key laws in the Nation and within states prompted the creation of Affirmative Action and Equal Employment Opportunity policies at many institutions across the country. Most notably, Titles VI and VII of the Civil Rights Act of 1964 led to many state and national laws regarding

discrimination and equal rights. Title VI of the Civil Rights Act of 1964 simply stated that:

“No person in the United States shall, on the ground of race, color, or national origin, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving Federal financial assistance” (Education and Title VI, 2005, para. 1).

Furthermore, Title VII of the Civil Rights Act of 1964 stated that employers are required to “reasonably accommodate applicants’ and employees’ sincerely held religious practices, unless doing so would impose an undue hardship on the operations of the employer’s business” (“Laws Enforced by EEOC”, n.d., para. 1). Other national laws that affected the decision to adopt an Affirmative Action policy were “Title IX of the Education Amendments of 1972, Sections 503 and 504 of the Rehabilitation Act of 1973, the Americans with Disabilities Act of 1990, the Age Discrimination in Employment Act of 1967 and the Vietnam Veterans Readjustment Assistance Act of 1974” (Affirmative Action/Equal Employment Opportunity Policy, n.d., para. 2).

State Laws

Each state has a human rights commission that governs their human rights law. Each state’s human rights law incorporated the Civil Rights Act of 1964, but many also expanded to protect the rights of others including, but not limited to those with disabilities, varying religious beliefs, pregnancy status, etc.

For example, the South Carolina Human Affairs Law “prohibits discrimination based on race, religion, color, age, sex, disability and national origin” (“SCHAC Laws

and Regulations”, 2014). The Commonwealth of Virginia expanded their policy so that individuals cannot be discriminated for the identities listed above but also includes “pregnancy, childbirth or related medical conditions and marital status” (“Declaration of Policy”, 2001).

Some states, like the state of Tennessee, included quantifiers on the size of the employment agency which defined the “employer” as “the state, or any political or civil subdivision thereof, and persons employing eight (8) or more persons within the state, or any person acting as an agent of an employer, directly or indirectly” (“Humans Rights”, 2006, p.1). Therefore, employment discrimination was only prohibited to those agencies larger than eight employees.

Despite federal and state mandates, many criticized that a *critical mass* has not been attained to truly level the field. Therefore, women and minorities continued to encounter issues like marginalization and isolation in higher education and student affairs. For those that identify as both a woman and underrepresented, the challenges were even more abundant as this specific population found themselves faced with more barriers to succeed in leadership roles in higher education.

Challenges for Underrepresented Women

The following themes were present in the literature regarding challenges underrepresented women faced: feelings of marginalization, isolation and unwelcoming campus communities (Clayborne & Hamrick, 2007). In this context, marginalization referred to women feeling as they were the sole representative of their culture, thus responsible for all things related to their culture. In regards to isolation, underrepresented

women often attributed discontent to loneliness and isolation due to the lack of other people of color. Lastly, unwelcoming campus communities' referred to people, artifacts and policies that may make one not feel supported or welcomed. Understanding these challenges was important as they served as potential barriers for underrepresented women to feel engaged and successfully integrated into their roles.

Marginalization. Many underrepresented women in the academe have expressed feelings of marginalization among their departments and respected institutions. Patitu & Tack (1998) noted that while more women (including minority women) were hired in academia, they were often placed into disciplines that were deemed feminine and tended to be on the lower end of the spectrum in terms of wages and hierarchy. Patitu & Hinton (2003) defined marginalization as “any issue, situation or circumstance that has placed these women outside of the flow of power and influence within their institutions” (p. 82). For example, one administrator noted in Hinton’s dissertation that after they had accepted a director of multicultural affairs position, the position was reclassified as a coordinator, thus excluded her from meetings that her direct supervisor, the vice president of student affairs and other directors of their individual units attended (as cited in Patitu & Hinton, 2003).

Isolation. Despite the growing number of women in higher education and the creation of specialized networks for women in student affairs (i.e. NASPA’s Women in Student Affairs Network, ACPA’s Standing Committee for Women, ACUHO-I’s Women in Housing group, etc.), women of color still felt isolated on college campuses. For example, even though Asian Americans were perceived as the “model minority” and

benefitted from this status, Lee (2012) stated that Asian American women faced the same “challenges of race and racism unique to being a women of color” (p. 207).

Many studies pointed to these feelings of isolation that underrepresented women faced in higher education. For instance, Hernández & Morales (1999) found that Latinas in higher education described their experience as a “desert” due to the lack of available mentors for their career trajectory at the institution. In their study, the women interviewed described feeling lonely and some even felt angry as the system did not provide support and equal opportunity for Latinas. The lack of presence of those from similar backgrounds on home campuses was a major contributor to feelings of isolation. Clayborne & Hamrick (2007) continued to support the notion of professional isolation as their study on African American, midlevel, student affairs administrators found that those who had support from other professionals, were from professionals that worked at different campuses and not their own.

Unsupportive campus climates. Campus climate and community played an important role in the feelings of comfort and fit for an employee. Harvey (1991) defined *campus climate* as a “term used to describe the culture, habits, decisions, practices, and policies that make up campus life; the degree to which the climate is hospitable determines the ‘comfort factor’ for African Americans and other nonwhite persons on campus” (p. 128).

Sometimes, the unsupportive campus climate came from the reactions coworkers from majority backgrounds gave to minorities. One participant that was interviewed for Hinton’s dissertation on African American administrators noted an experience where a

White administrator wiped their hands after shaking hands with them (as cited in Patitu & Hinton, 2003). This reaction suggested that there was something wrong with the African American administrator.

Another common reaction given to underrepresented women was the stereotype of the “angry Black female,” a stereotype often extended to all women of color. Accapadi (2007) noted that sometimes women of color were often oppressed in the workplace due to the lack of emotion they often show. Accapadi posed the scenario of how when a white woman cried after being upset about a situation, the women of color was easily perceived as the aggressor because they were not showing the same type of emotion in a conflict.

Strategies for Success for Underrepresented Women

Much of the literature surrounding minority women in higher education was about the issues they faced in their work. However, though sparse, literature regarding tips on how underrepresented women can successfully navigate the higher education landscape was becoming more prevalent. The strategies in the literature centered around the following topics: access to institutional support and resources, mentoring, creation of professional networks, and professional development opportunities.

Institutional support and resources. Henry (2010) found that institutional support was an important aspect to African American women in student affairs. The African American female participants in the study expressed that the “institution’s commitment to the success, failure, and positive acclimation” correlated with the levels of support given to them from the university (p. 10). Institutional level programming was integral to help underrepresented faculty and staff connect with each other. However, the

environment and logistics surrounding the programs were important so that participants can feel that they were in a space that was meaningful and safe to interpersonally engage with one another and openly discuss issues related to their race and gender (Henry & Glenn, 2009; Hughes & Howard – Hamilton, 2003; Watt, 2003). An example of connective programming was the annual Minority faculty and staff welcome at Clemson University. During this annual drop-in, minority faculty and staff were able to meet and connect with others as well as learn more about key resources for minorities like the hosts of the event, the Office of Access & Equity. Henry & Glenn (2009) found that connective programming initiatives such as the shared example was one way for institutions to show support.

Mentoring. Research stated that underrepresented women relied on mentoring relationships for success in their careers (Zambrana, Ray, Espino, Castro, Cohen & Eliason, 2015). Kram (1985) defined mentorship as a “relationship between a younger adult and an older, more experienced adult [who] helps the younger individual learn to navigate the adult world and the world of work” (p. 2). Patton & Harper (2003) found that African-American women were more successful when they had mentors that provided support through their career, but found it difficult to establish and build a connection with a mentor due to the lack of minority women mentors available at the institution. Some of the benefits of mentoring for underrepresented women included “necessary knowledge and skill development, socialization, career advancement opportunities, and psychosocial support to allow them to survive and thrive in higher education” (Chang, Longman & Franco, 2014, p. 375). Due to the small representation of

underrepresented women in student affairs at Predominately White Institutions, underrepresented women sought mentoring relationships from different places, such as a different departments or disciplines. Henry & Glenn (2009) suggested exploring relationships across functions and disciplines. Therefore, student affairs professionals were recommended to connect with those in other student affairs departments that may not connect with their direct position.

Due to a lack of minority women at many Predominately White Institutions, minority women found alternative ways to connect with a mentor. Those alternative sources of contact often occurred through local, regional and national professional associations. For example, NASPA offered the African American Women's Summit, a program that was designed for African American women by African American women. This annual program connected African American women in student affairs where they shared successes and exchanged information about the struggles they faced at their institutions (West, 2011).

Professional networks. Studies showed that professional support networks were integral to the success of underrepresented women. For minority women, support networks and mentorship often come from outside the workplace such as church, community organizations and family (Patton & Harper, 2003). Clayborne & Hamrick (2007) found that the lack of meaningful support structures on campus "limited collegiality and sense of belonging on campus" (p. 139). Phelps highlighted the importance for Black female faculty to "have access to others who could validate their experiences, welcome their input, and critique their work" (as cited in Gregory, 2001,

p.130). Furthermore, having other sources for support helped women “process, eliminate, or release work-related concerns” (Clayborne & Hamrick, 2007, p. 135).

Professional development. Though professional development opportunities were identified as important for one to continue to be successful in their position and move up, Clayborne & Hamrick (2007) found that these opportunities were curtailed for African American administrators due to two principal reasons: poor supervision and scarce resources. Participants reflected that their supervisor often failed to prepare them for the next level and were not present in their professional development. Supervisors may have seen professional development as something a supervisee does on their own time or through the guidance of a mentor. However, Winston & Creamer (1998) called for the need of synergistic supervision in student affairs, which looks at supervision as beneficial and helpful in supporting staff versus punishment for those with unsatisfactory performance. One characteristic of synergistic supervision was the notion of “Growth Orientation,” which focused on the personal and professional growth of the supervisee as “the supervisory process would be deemed a failure if the staff involved do not become better or more proficient in carrying out their responsibilities and having a sense of accomplishment and personal satisfaction in their positions” (p.33).

In looking at NASPA, a national organization for student affairs practitioners, the annual conference provided many pre-conference workshops that specifically aim to develop minority women in student affairs. At the 2014 NASPA conference held in Baltimore, Maryland, NASPA provided the following pre-conference workshops: *African American Women’s Summit – Engaging in Authentic Self-Worth: A Multi-Dimensional*

Approach to Transforming Leadership, APPEX: Asian Pacific Islanders Promoting Educational eXcellence and *Paying It Forward: CSAOs of Color and the 'Chutes & Ladders' of our Careers*. These opportunities were also found closer to home, for example, Suzuki (2002) pointed to the annual seminar on leadership development for Asian American faculty and administrators at California State Polytechnic University, Pomona facilitated by the Leadership Education for Asian Pacifics (LEAP) organization.

Identity Theories

This section will provide an overview of the relevant race and gender identity theories that inform this study. As the target population in the sample is underrepresented women, it is important to review theories that explore these two identities and how these identities come to surface in higher education and administration. Understanding these theories will help establish the intersectionality framework used in this study, which is also expanded upon in this section.

Critical Race Theory

To better understand the lived experiences of underrepresented women, one must start with critical race theory. Though many higher education institutions employed Affirmative Action/EEO policies in an attempt to diversify their staffs, legal scholars such as Derrick Bell found that society, especially the legal profession, was slow to change and did not respond to racial inequities in the way that many post-civil rights era activists hoped. Building on the *critical legal studies* and *radical feminism* movements, *critical race theory*, a theoretical framework to examine the lived experiences of those marginalized, was founded (Delgado & Stefancic, 2001). As critical race theory has

progressed over time, many different spin-offs of the theory have gained momentum, including: *LatCrit*, *AsianCrit*, *Critical Race Feminism*, etc.

Tenets of critical race theory. While born out of the legal field, significant research in higher education used critical race theory as a framework. Solarzano, Ceja & Yosso's (2000) definition of critical race theory acknowledged that critical race theory, when applied to education, differed from the law because it used race and racism to construct social reality and addressed how it intersected with other factors to impact communities of color. Critical race theory helped uncover the "social inequities that exist within the structure of higher education" (Hiraldo, 2010, p. 57).

Critical race theory as a framework does not have one central basis. In terms of higher education, the five overarching tenets below were applied:

1. Counter-storytelling
2. Permanence of racism
3. Whiteness as property
4. Interest conversion
5. Critique of liberation (Hiraldo, 2010)

These five tenets were consistent through the literature regarding critical race theory in higher education. These tenets helped frame policy and procedure, but also valued the lived experiences of minorities and helped frame the environment in which they must live and work. The value placed on the lived experiences allowed for a freeing and transformative experience for persons of color as it explored multiple constructs of their identity (Howard-Hamilton, 2003).

Counter-storytelling. Critical race theorists utilized counter-stories to construct social reality and illuminated issues in society that challenged the dominant perspectives. In higher education, these counter-stories allowed for individuals to give voice to experiences where they felt marginalized. Counter-stories were personal narratives that often delved deeper into a person's lived experiences and often shared memories that the individual may have never shared with others. For example, an Asian American administrator may have used personal narratives to discuss their experience of microaggressions in the workplace that may have deeply impacted the administrator. Solarzano, Ceja & Yosso (2000) also highlighted the importance of providing safe spaces known as counterspaces for individuals to feel comfortable and safe in sharing their experiences. Howard-Hamilton (2003) noted that these academic and social counterspaces do not always have to be a physical structure; they can also be an organization that members can identify with such as a culturally based fraternity or sorority.

Permanence of racism. Critical race theorists recognized that racism was deeply ingrained in society – specifically in culture, law and mindset. Therefore, critical race theory asked how this mindset continued to marginalize persons of color. In education, Yosso (2005) pointed out that racialized assumptions were often coupled with deficit thinking. Specifically, minority students and families were often criticized to be the ones at fault for poor academic performance due to their lack of capital and resources to advance in society. In student affairs, different forms of capital were privileged over others, especially in decisions regarding recruiting and hiring. Often times, residence life

departments preferred applicants for staff positions that have directly lived on campus or served as a resident assistant. These preferences worked against those that may not have been able to afford to live on campus during college or came from families that culturally did not approve of moving away from home for college.

Whiteness as property. In society, many believed that the notion of ‘being White’ was an asset that only those that identify as White can have. Thus, this belief led to the idea that being White was a property value due to embedded racism in society. Ladson-Billings (1998) offered the example of the division of academic and student affairs at institutions as a perpetrator of using race as property rights. The author recognized that African Americans were achieving academic excellence and receiving doctoral degrees in education. However, many of these degrees were in educational administration, thus leading this population to careers as student affairs practitioners and few going into faculty. However, at many institutions, the power laid within academic affairs as they were the owners of the curriculum of students (Patton, McEwen, Rendon & Howard-Hamilton, 2007). As the composition of academic affairs tended to be predominately White, African Americans were excluded from curricular decision making in higher education and may work against the education of students of color as the curriculum would be designed by the knowledge of White faculty members that may or may not acknowledge the differences in how students of color learned versus students from majority backgrounds.

Interest conversion. Interest convergence acknowledged that despite intent, White individuals benefitted from civil rights legislation. For example, affirmative action

policies at some institutions worked against other minorities and thus hindered rather than helped racial equality. More specifically, affirmative action policies that privileged certain minorities over others created a situation where those that benefit from affirmative action were white applicants and the policies still continued to ignore historically underrepresented applicants (Ladson-Billings, 1998). An institutional example highlighted Clemson University, where the affirmative action policy prioritized the hiring of three distinct groups: black women, black men and white women. Thus, this policy does not prioritize Asian or Latino males or females and continued to exclude those underrepresented populations. Critical race theorists in higher education were called to continue to evaluate policies born out of the civil rights era and examined if they are truly benefitting underserved populations equally.

Critique of liberalism. Delgado & Stefancic (2001) criticized liberalism in addressing racial issues in America because, often times, the call for action by liberals was to produce colorblind measures. Critical race theorists disagreed with colorblind practices because they found that it can only help the large scale issues, however, it did not address the everyday work and policies that traditionally kept minorities on the periphery. This exclusion was embedded in many student development theories, which was what guides many practices in student affairs. Student development theory was centered on the experiences of White college students and does not always include the experiences of students of color (Patton et al., 2007). Therefore, student affairs administrators designed programs that did not fit those that did not identify as White.

Critical race theorists believed in the continuation of dialogue to dismantle racial stereotypes and inequities before attempts to create colorblind and neutral policies.

Theoretical Foundation: Intersectionality

Understanding the experiences of underrepresented women were quite complex. For one, most literature focused on the experiences of women or the experiences of minorities. Unfortunately, little research looked at the intersection of both salient identities of race and gender (being female and non-White) in the student affairs context. This gap in literature made the understanding of these women's experiences as leaders difficult. Parker (2004) noted that "to advance a model of feminine leadership based on White women's gender identity essentially [excluded] Black women's experiences in constructing gender identity and, therefore, [excluded] Black women's voices in theorizing about leadership" (p.10).

In this study, intersectionality was very important. Born out of critical race theory, intersectionality referred to the "relationships among multiple dimensions and modalities of social relations and subject formations" (McCall, 2005, p. 1771). Intersectionality acknowledged that these multiple identities shaped the individual and groups perspectives and experiences in the social, economic and political contexts (Collins, 2000; Strayhorn, 2013, Patton et al., 2007). Such was the case for black women in the United States, who often were more conscious about these two identities because of the complexity of the political and social landscape (Reid & Comas-Diaz, 1990; Settles, 2006). The nature of the intersection between issues related to race and gender was multifaceted and lends to the importance of understanding the individual's experience. For many minority women,

they did not always feel they could relate completely to the experiences and issues of women as much research on women referred to the experiences of white women and the research regarding minorities often centered on males (McCall, 2005).

In *Asian Americans and Pacific Islanders in Higher Education*, several Asian American women in student affairs reflected on the career path of Asian American women in student affairs. The women noted that the Asian American identity often intersected with their careers and impacted their personal and professional decision making skills. Julie Wong (2012), associate vice chancellor for student affairs at the University of South Florida – St. Petersburg, reflected on the “Asian cultural values of hard work, honor, and respect” and how those values shaped her career but also gave her a false belief that by working hard, one would not be replaceable. Specifically, when she was given the opportunity to travel abroad as part of the *Semester at Sea* program, she was disappointed when her supervisor would not allow her the sabbatical from her administrative position to pursue this dream.

Intersectionality was notably seen in feminist theory, specifically Black Feminist Thought (BFT). Born out of the 1970s, Black Feminist Thought “[recognized] that women of African descent in the United States faced a unique set of issues that were not being addressed by the predominantly White feminist movement” (Pasque & Nicholson, 2011, p. 7). At the forefront of BFT was the acknowledgement of the intersection of race and gender; one could not separate the two categories. Secondly, Collins (2000) noted the connection between Black women’s collective and common experiences that influence individual experiences, responses and overall standpoint on racism and sexism. Lastly, a

key point of BFT was the role that African American intellectuals played in the content generation, which provided a platform for Black women to share their individual and collective experiences (West, 2011).

Intersectionality framework for education research. For many race and gender theorists, intersectionality has become a “buzzword” in research (Davis, 2008). However, the notion of intersectionality is more than just looking at the intersection of social identities but also to look at the “systems of power and oppression that shape these experiences” (Núñez, 2014, p. 85). Núñez (2014) presented a model of intersectionality for educational research based on the work of sociologist Floya Anthias’ work on intersectionality. The model provided three levels of analysis: (1) social categories and relations, (2) multiple arenas of influence, and (3) historicity. This study utilized pieces of this framework for analysis.

Levels of analysis. The first level of analysis is an abstract as it looks at the various social categories that a person identifies with (i.e. gender, race, social economic class, education, etc.). This analysis is not only abstract but map-like to accentuate the intersection of an individual’s multiple identities and “within- and between-group comparisons [were] appropriate when exploring influences on societal inequality” (p. 87). The identities can stand alone and overlap with other identities.

The second level of analysis is more concrete as it focuses on what arenas contributes to inequality among social identities. Anthias (2013) frames this into four domains:

- “*Organisational (structural position)*: this focuses on how population categories are organized within institutional frameworks, e.g. family structures and networks, educational systems, political and legal systems, the state apparatus and the system of policing and surveillance.
- *Representational (discourses)*: this focuses on the images and texts, the documents and information flows around social divisions in different institutional frameworks.
- *Intersubjective (practices)*: this focuses on practices in relation to others, including non-person actors such as the police, the social security system and so on. It denotes patterns of practices of identity and otherness (such as practices of bonding, friendship and distancing).
- *Experiential (narratives)*: this focuses on narratives relating to meaning-making and sociality (including the affective, the emotional and the body). This includes narrations of identification, distinction and othering.” (p. 11).

When conducting these levels of analyses, it is important to frame questions in a way that examines the power dynamics in the environment. As the *organizational* level refers to structural position, this draws attention to one’s position in a network, the education they possess and the personal knowledge they have in their position. Through this intersectionality framework, analysis on where and how people received power in an organization and what chances an underrepresented female has in the organization to be a director are important. *Representational* looks at how a department or unit crafts a certain

image. As institutions seek to project a belief of inclusion and support for diverse beings, the creation of a chief diversity officer is one possible solution. However, this position alone cannot solely evoke this belief. Thus, organizations likely fill these types of positions with minorities, thus pigeon-holing underrepresented people in certain positions within an organization. *Intersubjective* looks at the relationships people have with one another, in regards to their work and personal friendships. Analysis at this level may include participant's reflections not just on how they see those relationships, but how the other entity views them. Lastly, *experiential* helps understand power through narratives and making meaning of experiences. This is seen in the beliefs underrepresented women have about their organization and the level of which they feel engaged and integrated in their work and environment.

Finally, the third level of analysis refers to *historicity* (Anthias, 2013), which “emphasizes locating social categories, associated concrete relations and arenas of practices within a broader temporal and spatial context” (Núñez, 2014, p. 89). This level of analysis is broader, as it tends to investigate the influence and intersection of social, economic and political systems that exist and evolve over time.

An example of this is the #blacklivesmatter campaign and the impact this campaign had on college campuses and how it spurred local protests and action at these campuses. The #blacklivesmatter campaign was created by Alicia Garza, Patrisse Cullors and Opal Tometi. They saw the campaign “as a call to action for Black people after 17-year-old Trayvon Martin was posthumously placed on trial for his own murder and the killer, George Zimmerman, was not held accountable” (Garza, 2014, para 1).

Strengths and weaknesses of intersectionality. Using intersectionality in higher education research allows for a strong perspective. For many, the emphasis placed on giving voice to the lived experiences of minorities makes this framework incredibly insightful to scholars. Additionally, intersectionality provides a vehicle for scholars to examine the power that exist in organizations that continue to marginalize others. However, this approach is also limiting, especially in terms of methodology. Typically, interpretivist approaches utilize qualitative methods to make meaning of individuals lived experiences. However, some scholars call themselves quantitative criticalists and use statistical analysis research under a critical race theory lens (Stage, 2007).

Leadership Theories and Approaches

This study is not solely focused on underrepresented women's experiences in their work. It explores how the studied population is able to lead and ultimately feel engaged in their environment. Leadership is an important concept that is often discussed and included in co-curricular initiatives in higher education; unfortunately, many theories center on the ideal traits and attributes for leaders (Uhl-Bien, Marion, McKelvey, 2007). Very rarely do these leadership theories take into account other aspects of leadership outside the individual leader.

For example, few theories (outside of situational leadership theory) include the impact of the environment, or that leadership is a complexly interactive process. This is particularly important as existing research indicates that minority women, specifically African American women, use leadership styles that are more consultative and collective, nonhierarchical and transformational (Clayborne & Hamrick, 2007). In order to

adequately understand leadership in organizations, theories must address the complexity of leadership beyond the individual. In the following sections, a review of relevant leadership theories and approaches that can apply to higher education and moves beyond ideal individual attributes and takes into consideration complex adaptive systems is discussed.

Reciprocal Leadership Theories

Many leadership theories focused on the reciprocal interactions between the leader and the follower. These theories valued leadership as a process that “meaningfully [engaged] leaders and participants, [valued] the contributions of participants, [shared] power and authority between leaders and participants, and [established] leadership as an inclusive activity among interdependent people” (Komives, Lucas & McMahon, 2007, p. 53). When looking at reciprocal leadership theories, transactional and transformational leadership most often came to mind.

Unlike transactional leadership where outcomes were attained through transactions, transformational leadership theory identified several key attributes of leadership that enable others to lead in an organization. Desirable attributes included a charismatic personality, being considerate and intellectually stimulating to the group. The last two parts pointed to fact that it is not just about the possession of specific leadership traits, it is about the use of these traits to effectively challenge and move the group along in the organization. Bass (1990) noted that transformational leaders were able to gain consensus around a central mission, but also helped members move beyond their individual interests for the good of the group. This was important in achieving

organizational change as one would connect to the transformational leader and effectively moved beyond a homogenous way of thinking. Transformational leadership also addressed the individual needs in a group, which helped support the minority within a group and helped bring the minority's perspective in a very homogenous culture.

Authentic Leadership

Underlying the success of a transformative leader was often an authentic leader (Komives et al., 2007). Following high-profile controversies like Enron and the inauthentic leadership qualities of those leaders, authentic leadership development began to take form. The focus of authentic leadership theory was the notion that leaders should be themselves, not take on a different persona when leading (Avolio & Gardner, 2005). Authentic leaders lead by example by “setting high moral standards, honesty, and integrity” (Avolio, Gardner, Walumbwa, Luthans & May, 2004, p. 807). Shamir & Eilam (2005) characterized authentic leaders as the following:

- 1) Authentic leaders do not fake their leadership.
- 2) Relatedly, authentic leaders do not take on a leadership role or engage in leadership activities for status, honor, or personal rewards.
- 3) Authentic leaders are originals, not copies.
- 4) Authentic leaders are leaders whose actions are based on their values and convictions. (pp. 396 – 397).

Authentic leadership is one approach used by many college administrators. Uusiautti (2013) interviewed higher education administrators regarding their positive leadership experiences and found that the administrators at their core were authentic and self-aware.

The administrators interviewed related their success to working with others towards a common goal. Additionally, the administrators “regarded their position as an opportunity that also carried responsibility to take care of the followers and the whole organization” (p. 487). This selfless leadership allowed for trust to be built within an organization and for shared vision and beliefs to take form amongst the employees and constituents.

Relational Leadership Theory

Uhl-Bien’s (2006) relational leadership model pulled from early theories such as *Leader-member exchange*, but moved beyond the dyadic nature of the leader-follower and toward the relational dynamics between members in an organization. Uhl-Bien addressed the impact of social network theory and how networks played a key role in the success (and failure) of individual leaders. In regards to building social networks within homogenous groups, relational leadership theory focused on the interactions between the individuals. Relational leaders took the time to build a community feeling among the members of the organization (Komives et al., 2007). Relationship building was important as it helps establish the trust needed for members of the organization to effectively carry out a shared vision that works towards positive change.

Tempered Radicalism

Meyerson & Scully (1995) defined the tempered radical as an individual that was committed to an organization, but also to a cause, ideology or community that differed from or even at odds with the dominant culture of the organization. Examples of tempered radicals included the African American student affairs administrator at a Predominately White Institution that is a contributing member of the institution, but

champions causes that help bring more minorities to the institution. Another example is the Latina administrator that advises ethnic based organizations and supports their programs outside of office hours.

Though Meyerson's (2001) initial work came from interviews with business professionals, the tempered radicalism framework is very applicable to the division of student affairs at universities. In fact, in many ways, student affairs practitioners plays the role of tempered radicals through their work to develop students, especially at institutions that may place all its resources into academic affairs. However, at small and large institutions across the country, women of color, specifically at Predominately White Institutions, continue to find themselves in a position where the tempered radicalism framework is beneficial. For instance, they are able to help address and raise important issues regarding the nature of society and the embedded racism that often exist in policies and procedures.

The tempered radicalism framework allows for one to move forward their agenda in a low-risk environment though some tactics can be considered more high risk. Tempered radicalism also addresses the value of choice and negotiation. While some changes are incremental and long-awaited, the importance is that change is occurring, even if slow paced. Meyerson's (2001) research identified five main tenets to tempered radicalism. These tenets include:

- 1) Quiet resistance to pursue personal congruence
- 2) Turn personal threats into opportunities by confronting discriminatory statements

- 3) Engage in negotiations to identify alternative solutions to conflicts
- 4) Leverage small victories for large organizational results
- 5) Organize collective action around a critical issue or organizational controversy.

Quiet resistance to pursue personal congruence. This tenet focused on how individuals can remain true to one's self, but continually resist the dominant view in a quieter and less aggressive manner. Some examples included psychological resistance through the maintenance of positive self-definition, utilization of self-expression as resistance, cultural artifacts such as office décor and dress, use of cultural language and behaviors to reinforce resistance and finally behind the scenes resistance such as the use of personal time to observe cultural holidays if a time away policy was not already established. In Niskode – Dossett, Bonney, Conteras Bullock & Kao's (2011) chapter in *Empowering women in higher education and student affairs*, they presented a dialogue between five women of color in student affairs. In the chapter, the participants discussed many ways they must use psychological resistance to the dominant stereotypes of their culture. For example, one Latina student affairs administrator recalled an impactful moment when a White male mentor told a fellow Latina colleague that idolized him early in her career that she could never wear jeans or be casual at work like him because people expected more from her as a woman of color. The lesson learned from that experience was that women of color still needed to work harder than their male and White female colleagues because of the negative stereotypes that continually exist.

Turning personal threats into opportunities. Often times, underrepresented women were placed in a situation where they overheard or were directly addressed with a discriminatory statement. Sometimes, these statements were personally threatening and caused anxiety in the workplace. Kolb & Williams (2000) provided negotiation tips to change the dynamics at various levels when placed in this situation. These tips included ways to interrupt and address the issue, but also ways to divert and change the tone of the encounter so that it was not as contentious of an environment. This was very important for tempered radicals to be effective because the various tactics helped the individual utilize the best strategy in given situations. Patitu & Hinton's (2003) study recalled one administrator's experience when she chose to laugh off a racist joke made in front of her due to the surrounding environment. Laughing was a mechanism used to alleviate the tension that the joke caused.

Broadening the impact through negotiation. The use of negotiation techniques to create alternative solutions to conflict helped *tempered radicals* make a difference. Tempered radicals often negotiated competing interest when working in an organization and trying to make effective change. For example, in student affairs, initiatives that supported the academic success of only African American students were a source of contention for Latino students that were also identified as needing such academic success initiatives. However, was it beneficial to dismantle an initiative when it does help at least one minority group succeed? Tempered radicals may have leveraged their influence to include Latinos into the initiative or to help create another support initiative that may have been more fitting for this group. Tempered radicals in student affairs would have

considered identifying various external stakeholders and resources to identify third parties that can help them enact change in their organization.

Leverage small wins. Meyerson (2001) indicated that it was important for tempered radicals to leverage small wins to lead to even greater change down the road. Though it was hard for the tempered radical as this often leads to incremental changes that may take longer than quick fixes, it was important for the tempered radical to continue to pursue and to recognize the role of time when making changes; especially being ready to capitalize on the appropriate time. For example, Meyerson & Tompkins (2007) described the work of the NSF grant program ADVANCE that was created at the University of Michigan to move towards gender equity through recruiting qualified females to the institution.

The ADVANCE program showed great significance because it was modified from its original conception due to the outcomes of the landmark cases of *Grutter v. Bollinger* and *Gratz v. Bollinger*. While this example was on a much larger scale, tempered radicals used stories and language to leverage small wins. Kezar (2010) suggested that administrators use data to tell stories of success regarding collaboration with other departments to push forward change. This was something as small as featuring underrepresented women as a spotlight on a departmental website or newsletter highlighting their work and success.

Organize collective action. On a larger scale, sometimes tempered radicals needed to mobilize around a critical issue. For tempered radicals, this could be located on the institution's campus or outside of the institution. For student affairs practitioners,

many tempered radicals found support through various knowledge communities within their professional associations to gather with like-minded professionals and address important topics that they are passionate about. Meyerson (2001) found that membership to groups that center around identity or interest gave individuals psychological strength to continue dealing with pressures and threats they experienced and turn these experiences into opportunities for greater learning. West (2011) found that the African American Women's Summit at NASPA contributed to personal and professional success, specifically regarding personal well-being and professional opportunities for mentoring and networking African American participants. Mentoring could lead to recruitment of these like-minded individuals into positions of power at an institution to help enact change and create networks on campus.

Theoretical Foundation: Complexity Leadership Theory

Traditional leadership theories like the ones discussed above have largely focused on the actions and attributes of leaders, not the complex systems and processes that encompass leadership (Uhl-Bien, Marion & McKelvey, 2007). These theories were suited for production-oriented, top-down, bureaucratic structures. However, as information technology has grown, industrial organizations were moving towards knowledge management systems (Lee, Tsai & Amjadi, 2012; Uhl-Bien et al., 2007). With the shift to knowledge production, organizations have also seen a shift in the development of their organizations. Complexity science recognized that systems were more than just the interaction agents have with the environment; but also about the internal dynamics (Marion, 1999). Therefore, it was important for complexity researchers to look at the

organization as a whole. Complexity theory looked at organizations as Complex adaptive systems (CAS), which were systems “composed of a diversity of agents who interact with one another, mutually affect one another, and in so doing generate novel behavior for the system as a whole” (Marion & Uhl-Bien, 2001). Complex adaptive systems were dynamic networks where the “whole [was] defined by the interactions, interdependencies, and inter-commitments among the parts” (Marion, 1999, p. 128).

To understand the leadership in CAS, Uhl-Bien et al. (2007) propose Complexity Leadership Theory (CLT) as a leadership framework. CLT “focuses on identifying and exploring the strategies and behaviors that foster organizational and subunit creativity, learning, and adaptability when appropriate CAS dynamics are enabled” (p. 299). Thus, the environment of complex organizations is integral in CLT. Also, in looking at the conditions of the environment, complexity researchers are able to better identify the formation of social networks among the group and the transference of thoughts and information. CLT states that three types of leadership emerged from CAS. These systems are: administrative, adaptive, and enabling. Complexity leadership theory recognizes the dynamic nature that existed when these three types of leadership were intertwined.

Uhl-Bien & Marion’s (2009) presents a meso model on complexity leadership theory. This model displays the role of administrative, adaptive and enabling functions in an organization. The model highlights the *entanglement* of administrative and adaptive leadership that occurs across the structure, given the right enabling functions.

Entanglement is the “dynamic relationships between the formal *top-down*, *administrative forces* (i.e., bureaucracy) and the informal, *complexly adaptive emergent*

forces (i.e., CAS) of social systems” (Uhl-Bien et al., 2007). Innovation, learning, adaptability, and new forms are all potential outcomes of entanglement in a complex system.

Enabling. As complexity from the environment entered an organization, the enabling function took the complexity and fostered or suppressed the situation and created conditions that met the administrative and adaptive needs of an organization. Enabling leadership fostered and manipulated the conditions within an organization through the following processes: interactions, interdependency, heterogeneity, pressure, conflicting constraints, process-related conflict, psychological safety, or non-restrictive vision (Marion, 2012). Further, Marion noted that enabling leaders “[interfaced] between adaptive and administrative leadership to effective productivity” (p. 194).

One example of the enabling function was the nature of conflict that arises due to the external issues. The #blacklivesmatter campaign was an example of an external pressure. Many student leaders at institutions across the nation found the events surrounding Trayvon Martin and Michael Brown’s death and the subsequent campaign, as a prompt to look at their own conditions at their institutions and launch protests on their respective campuses. This campaign created conflict for administrators that did not want a negative image about race relations occurring on their campus. However, enabling leaders created venues where students and administrators would discuss issues and learn from one another. Town hall meetings or programs where dialogue can happen between students, faculty and staff were some examples. Enabling leaders sought to find a balance

and managed the entanglement between administrative and adaptive functions within the organization.

Administrative. Administrative leadership referred to the bureaucratic nature of organizations, specifically the individuals at the top of the organizational chart that possessed decision-making abilities within an organization. Leaders that exercised the administrative function sought to control and standardize processes to focus the organization on the production of outputs or profits. Administrative leaders “[structured] tasks, [engaged] in planning, [built] vision, [acquired] resources to achieve goals, [managed] crises and personal conflicts, and [managed] organizational strategy” (Uhl-Bien et al., 2007). In the example above, the administrative function responded to student protests with standardized processes on how to handle and control the protests and even likely provided guidelines and rules for staff and faculty that guided their behavior and response to the feelings and thoughts of the students. The administrative function came with decision-making power through positional hierarchy and authority within the organization. However, complexity leadership theory suggested that leaders in this function monitored their ability to exert control in favor of allowing creativity, learning and adaptability (adaptive leadership) to occur within an organization.

Adaptive. In complexity leadership theory, the adaptive function described what was happening in an organization. In dynamic systems, adaptive functions referred to the reactions of the organization (and its agents) to the complexity of the environment and its enabling conditions. Adaptive leadership was found in the form of an individual, but was mainly a result of the interaction between agents in a network. Furthermore, adaptive

leadership resulted in adaptive outcomes and change within an organization (Uhl-Bien et al., 2007). The demonstrated change in an organization was due to the interaction and interdependence that occurred when information was shared between groups. More specifically, Uhl-Bien et al. (2007) noted that change began in the “struggles among agents and groups over conflicting needs, ideas, or preferences; [collaborative change resulted] in movements, alliances of people, ideas, or technologies, and cooperative efforts” (p. 306). Adaptive leaders at institutions would embrace race-related issues prompted by the #blacklivesmatter campaign and foster discussion, support students, create initiatives and commit to change for the betterment of the student body.

Summary

Higher education institutions are very complex environments with many internal and external pressures. These complex systems are dynamic, volatile and uncertain. As the higher education landscape is ever changing, complexity leadership theory is used in this study to understand the experiences of underrepresented women in a complex adaptive system such as a student affairs division. Complexity leadership theory is a suitable approach for leaders to manage such environments. Understanding how minority women student affairs administrators navigate the political and complex environment at Predominately White Institutions is an important aspect to better understand their overall experiences in their position and their ability to fully integrate and engage in the campus community. Through the lens of complexity leadership theory and intersectionality, this study attempts to understand the experiences of this specific population but also connects

the entities that help or hinder success in their careers through interactions within the environment.

CHAPTER THREE

METHODOLOGY

Purpose

The primary goal of this study was to understand the experiences of underrepresented women student affairs personnel at a Predominately White Institution through a dynamic network analysis approach. As stated in Chapter 1, complexity leadership theory and intersectionality theory were the theoretical frameworks for this study with dynamic network analysis used as the methodology. The study identified and quantified connections between various entities within the network. These entities were the agents themselves, the institutional resources, various tasks and beliefs of the agents, etc.

The purpose of this chapter was to describe the methodology and method for this study. More specifically, dynamic network analysis and the statistical procedures used in the analysis will be discussed. Table 3.1 illustrated the theoretical premises, independent and dependent matrices and methods used to answer the research questions.

Research Questions

This dissertation focused on the following research question: What experiences do underrepresented women in students affairs have to help them feel effectively engaged and successfully integrated in a Predominately White Institution?

The additional questions supported inquiry as the primary focus and were separated into the following two main categories from the research question:

Relationships across the network

- Are underrepresented women generally located proximal to major informal leaders in the network and does such access influence feeling of engagement and integration?
- Are they in cliques and reciprocal relationships that give them access to informal leaders and does this access influence feelings of engagement and integration?
- Do underrepresented women have informal leadership roles in the network and do informal leadership roles help them feel engaged and integrated?

Institutional resources

- Do underrepresented women have access to institutional resources?
- Are there key events and programs during the year that encourage underrepresented women to connect to one another?

These questions were operationalized as the following propositions:

Proposition 1: Location in a network, the level of ones' clique leadership as measured by eigenvector centrality, the level of ones' reciprocal relationships as measured by Simmelian ties, the degree of informal leadership as measured by betweenness centrality, and the level of ones' centrality in the resource network as measured by degree centrality, influence follower perceptions of engagement and integration.

Proposition 2: Underrepresented women are equivalently distributed across different work cliques in the network.

Proposition 3: Underrepresented women are in informal leadership roles in the network.

Proposition 4. Underrepresented women have degree centrality in the resource network that is commiserate with the access of other women.

Proposition 5. Underrepresented women report events and programs that help them connect with one another.

As noted in Table 3.1, these research questions pulled from the theoretical premises of complexity theory and intersectionality theory. Dynamic network analysis (DNA) was used to answer the questions. By using DNA, I was able to understand the experiences of underrepresented women through the lens of the network. More specifically, I was able to understand their roles as informal leaders, their access to resources and their overall feelings of engagement and integration.

Table 3.1

Research Question Matrix

Research Question	Theoretical Premises	QAP: Independent Matrices	QAP: Dependent Matrices	ORA Measures
<p>What experiences do underrepresented women in student affairs have to help them feel effectively engaged and successfully integrated in a Predominately White Institution?</p>				
<p><i>Relationships across the network</i></p> <p>1) Are underrepresented women generally located proximal to major informal leaders in the network and does such access influence feelings of engagement and integration?</p>	<p>Uhl-Bien, Marion & McKelvey, 2007 (enabling); Freeman, 1979 (Closeness centrality)</p>	<p>Agent-by-agent professional & social relationships (closeness centrality)</p>	<p>Belief grouping (Inclusion) Belief grouping (Mission)</p>	<p>Agent-by-location Visualization</p>

<ul style="list-style-type: none"> • Are they in reciprocal relationships and cliques that give them access to informal leaders and does this access influence feelings of engagement and integration? • Do underrepresented women have informal leadership roles in the network and do informal leadership roles help them feel engaged and integrated? 	<p>Uhl-Bien, Marion & McKelvey, 2007 (administrative and adaptive); Dekker, 2006 (Cliques); Tortoriello & Krackhardt, 2010 (Simmelian ties); Watts & Strogatz, 1998 (Clustering coefficient)</p> <p>Uhl-Bien, Marion & McKelvey, 2007 (enabling) Núñez, 2014 (organizational) Freeman, 1979 (betweenness, closeness centrality) Wasserman & Faust, 1994 (degree centrality)</p>	<p>Agent-by-agent professional relationships Agent-by-agent social relationships</p> <p>Agent-by-agent position Agent-by-agent professional & Agent-by-agent social relationships (betweenness centrality)</p>	<p>Belief grouping (Inclusion) Belief grouping (Mission)</p> <p>Belief grouping (Inclusion) Belief grouping (Mission)</p>	<p>Newman's Grouping Simmelian Ties Clustering Coefficient Clique Counts</p> <p>Centrality measures (Agent-in-the-know, closeness centrality, betweenness centrality)</p>
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<p><i>Institutional resources</i></p> <ul style="list-style-type: none"> • Do underrepresented women have access to institutional resources? • Are there key events and programs during the year that encourage underrepresented women to connect to one another? 	<p>Uhl-Bien, Marion & McKelvey, 2007 (administrative and enabling); Carley, 2002 (resources)</p> <p>Uhl-Bien, Marion & McKelvey, 2007 (administrative); Carley, et al., 2013 (events)</p>	<p>Agent-by-agent resource capability</p>	<p>Belief grouping (Inclusion) Belief grouping (Mission)</p>	<p>Newman's grouping Resource capability</p> <p>Newman's grouping</p>
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Research Design

A mixed method research design was used to answer the research questions. As the nature of this study was sequential exploratory, the study utilized three different, but sequential methods: qualitative analysis, collectivist or network analysis and quantitative analysis. First, structured interviews (qualitative method) were conducted for contextual understanding of the organization and for survey development. The step 2 survey was created using response scales identified in step 1 and sent to the selected population. Collectivist or network methodology was used to generate networks based on responses to the survey. These networks were analyzed in the third step with visualizations and matrix statistical analysis (quantitative method).

Setting and Participants

The network boundaries for this study were the professionals that work in the division of student affairs at a four-year, public, Predominately White Institution (PWI) in the Southeastern part of the United States. In the qualitative part of this study, I collected data using open-ended survey from 14 staff members in a student affairs division. The staff members involved in the structured interview was chosen from a simple random sample of women staff members. To ensure a representative sample that showed variance in the core tasks and responsibilities within the Division, other staff members were invited to participate in the interviews as well. Information collected during the structured interviews was then used.

Secondly, data was collected from all professional staff members through an online survey in order to explore the environment within the Division of Student Affairs.

Responses from staff that identified as non-white (underrepresented) and female were pulled out for in-depth analysis both individually and against the network as a whole. Graduate students who were employees within the division were invited to participate. In the third quantitative analysis, quadratic analysis processes (QAP), a regression tool used to test relationships of matrices rather than variables were conducted to help answer the research questions.

Selection of Participants

When network analysis is conducted, sampling and bounding considerations should be made. Borgatti et al. (2013) suggested that one look at the research question to determine sample size. In this study, the research question provided specifics on the target population but bounding considerations were made to ensure a manageable size. At the time of the study, the Division of Student Affairs consisted of 510 employees comprised of graduate students, temporary, and full time staff. As the research question focused on the experiences of underrepresented women, it was necessary to ensure that the population sample included enough members of this target population group as well as other agents that had ties to the targeted population. Therefore, specific departments were selected based on the nature of their work to ensure that the agents were interactive and interdependent on one another. To satisfy both of these objectives, sampling decisions were made to reduce the sample size. The decision making process utilized for participant selection can be found below in Figure 3.1.

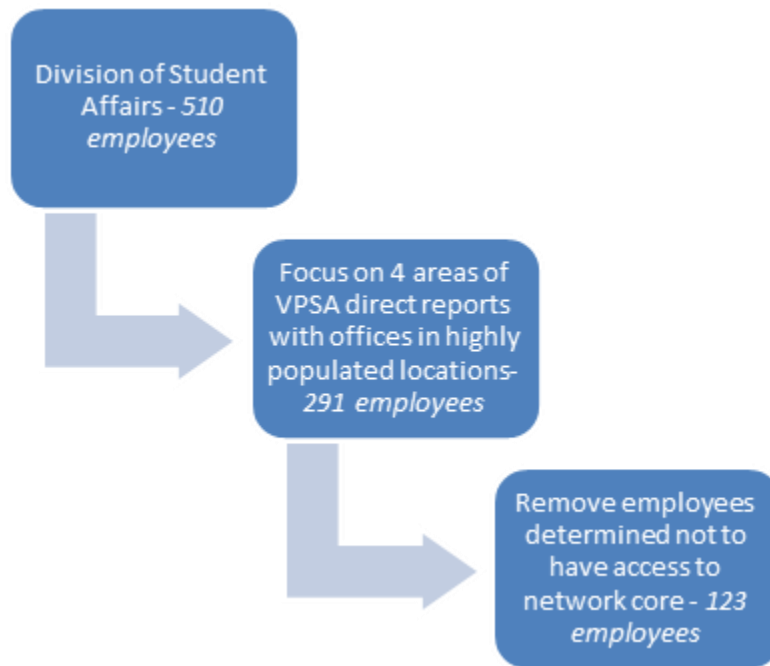


Figure 3.1. Illustration of step by step process for participant selection.

Upon review of the organizational chart of the Division studied, the Vice President had six direct reports (five Associate Vice Presidents and one director) in addition to administrative support staff. Further examination of the departments the five Associate Vice Presidents (AVP) oversaw, it was determined that three of the five areas directly related to student life. Therefore, employees under those three AVPs as well as those that directly reported to the VPSA that were not AVPs (i.e. director and administrative staff) were selected as it was presumed that offices directly working with student life likely gathered more frequently around work related issues. Additionally, location was considered. Specifically, offices located in buildings that were highly populated by students were considered favorable as this supported the argument to include employees that directly worked with student life as office that worked directly to serve students were more likely to collaborate with other agents in the network that had

similar functions. Thus, any office under the three AVPs selected that were not part of buildings that students frequented were not included in the participation list. Lastly, employees that were determined to not have access to the network were removed as these employees likely did not interact or depend on others in the network. Examples of this include hourly or seasonal employees, employees listed as specialists and in very dense organizations, staff in low-level positions where they may have limited access to other members of the organization.

In total, 123 staff members were selected as the study participants. For the structured interview, the participants were separated by gender and then a stratified sample of women was invited to interview. To ensure variation in types of positions represented, other participants were invited. Fourteen women participated in the structured interview. The online survey was then distributed to all 123 selected staff members.

Survey Participant Demographics

Overall, 123 participants were selected for this study. Of the 123, 101 completed the survey yielding an 82% response rate. 35% of the respondents identified as male (n=35) with 65% identifying as female (n=66). In regards to race and ethnicity, Table 3.2 illustrated the breakdown of race among the respondents.

Table 3.2

Race/Ethnicity of Participants

Race/Ethnicity	Response	Percentage
White/Non-Hispanic	65	65%
Black/African American	22	22%
Hispanic	5	5%
Native American	2	2%
Asian/Pacific Islander	1	1%
Two or more races	5	5%
Other	1	1%

The following types of employees were surveyed

Graduate Assistants – Graduate students employed by the Division through a graduate assistantship or paid internship. This excluded any graduate students paid through an organizational position (i.e. Graduate Student Government) or paid hourly (i.e. desk assistant).

Administrative support – Staff members that provided administrative support to an office or administrator.

Entry level – Staff members that did not oversee the functions of a department nor directly supervised any other staff outside of undergraduate/graduate student staff.

Mid-level – Staff that had some oversight over the functions of their department and supervised full time staff.

Director – Directly responsible for the functions of their department.

Senior Leadership – Dean or Vice President position.

The table below depicted the response rate from each position group.

Table 3.3

Types of positions Represented in Network

Type of Position	Response	Percentage
Graduate Assistant	13	13%
Administrative support	15	15%
Entry level	19	19%
Mid-level	40	39%
Director	11	12%
Senior leadership	3	3%

The following tables illustrated more demographics of the sample population. Specifically noted were the length of time each staff member had been at the institution and the highest level of education attained.

Table 3.4

Length of Time at the Institution

Length of Time	Response	Percentage
0 – 5 years	47	46%
5 – 10 years	18	18%
11 – 15 years	15	16%
16 – 20 years	7	7%
21+ years	14	14%

Table 3.5

Highest Level of Education Attained

Education	Response	Percentage
High school degree	18	18%
Associates degree	5	5%
Bachelors degree	30	30%
Masters degree	39	39%
Doctorate degree	9	9%

Data Collection

The Structured Interview

The first phase of this research study included a structured interview with a sample of underrepresented and represented females from different departments and positions in the Division of Student Affairs at the selected institution. Research studies that employed DNA found that interviews were an important component of the research process. Interviews allowed the researcher to have a basis of understanding of organizational tasks and topics, employee resources and knowledge, and the overall function of the division within the larger institutional community. Interviews were an appropriate method to understand the dynamics of the network and also to generate content for further survey development. The questions for the qualitative portion were derived from prior studies of complexity leadership theorists with modifications to reflect the exploratory nature of the study.

Interviews were conducted to identify the perceptions of the main tasks that employees within the division performed, the knowledge and the resources (people and/or goods) needed to perform the tasks and the key events employees attended to connect with others. These tasks, knowledge, and resources became the response scales in the network survey described below. The questions asked in the structured interview mirrored an open-ended survey where participants were able to list examples and elaborate on their responses. The interview data was transcribed and coded using Corbin and Strauss (2008) open and axial coding methods.

Network Survey

Utilizing the results from the interview, categories of common tasks, knowledge, resources and events were generated to use as survey response options and a survey was developed. This survey asked who-by-whom and who-by-what questions to generate networks of relationships. This survey was given to all members of the division to collect information regarding the interaction and relationships within the network through agents, shared tasks, knowledge, resources and beliefs. The survey was imported into the Qualtrics Research Suite to collect the data electronically. The responses collected were downloaded from Qualtrics and inputted into ORA and SPSS for further analysis according to DNA.

Data Analysis

Network Analysis

After the qualitative analysis, the second analytical stage used DNA to analyze the data imported to ORA to better understand the organization's environment and the dynamics among the members within the network, the available resources, and the existing knowledge and beliefs. DNA was used to quantify Complexity Leadership Theory, which was the primary theoretical framework in this study. With DNA, I generated matrices of dyadic relationships to understand the nature of interactions in the target population and to identify key leaders and informal leaders in the network.

The matrices generated from the survey was analyzed using ORA, a software program developed at the Center for Computations Analysis of Social and Organizational Systems (CASOS) at the Institute of Software Research at Carnegie-Mellon University.

ORA examined how networks changed over time and illustrated the relationships between nodes in a given network. Additionally, key players, groups and entities were identified through ORA.

To utilize ORA, several matrices were created that included all the responses in the survey. First, a set of agent-by-agent matrices were created to represent the patterns of dyadic relationships participants had with other agents in the network. All identifying information (i.e. name) was taken out of the matrix so each participant's identification changed to "Agent #". Demographic information was included so that the researcher could group participants based on demographic information they self-disclosed.

Additionally, the following matrices were created:

Agent-by-Task matrix – utilized answers to questions related to shared tasks through assignments, projects and committee work.

Agent-by-Location matrix – utilized answers related to physical location of office

Agent-by-Belief matrix – utilized answers related to shared beliefs across the network. A set of pertinent shared beliefs will be developed.

Agent-by-Knowledge matrix – utilized answers related to conceptual knowledge needed to perform tasks in the network (i.e. skill set)

Agent-by-Resource matrix – utilized answers related to resources within the institution used in the network.

From these matrices, various meta-matrices were created to represent the cumulative connections among these multiple networks (Carley, 2002).

Once the matrices were uploaded into ORA, degree centrality, eigenvector centrality, Simmelian ties, and betweenness centrality measures were calculated, descriptive statistics were generated, and visualizations were depicted. Additionally, a key entities report was produced to identify central agents, task, beliefs, knowledge and locations within the network. Within the key entity report, total degree centrality and in-the-know statistics were generated to understand the position of the agents within the network. Additionally, as this research specifically focused on underrepresented women, data for agents that identified as a female and non-White were specifically pulled out for analyses. I also identified key social and work cliques in the network to determine how underrepresented females distributed across these cliques.

Visualizations

ORA generated visual graphs of the network. In these visuals, nodes (agents, beliefs, tasks, etc.) were depicted as dots and the relationships between the nodes are lines connecting the dots. In Figure 3.2, a visualization of the professional and social relationships agents have in the network is depicted. The red nodes represented agents that identified as female and as a racial/ethnic minority; blue nodes were the men and women that identified as White. Additionally, non-respondents were coded as blue nodes. ORA visualized simple and complex processes however, this study primarily used grouping as a way to understand the network. In the figure below, three groups appeared to emerge as sub-clusters of networks within the organization.

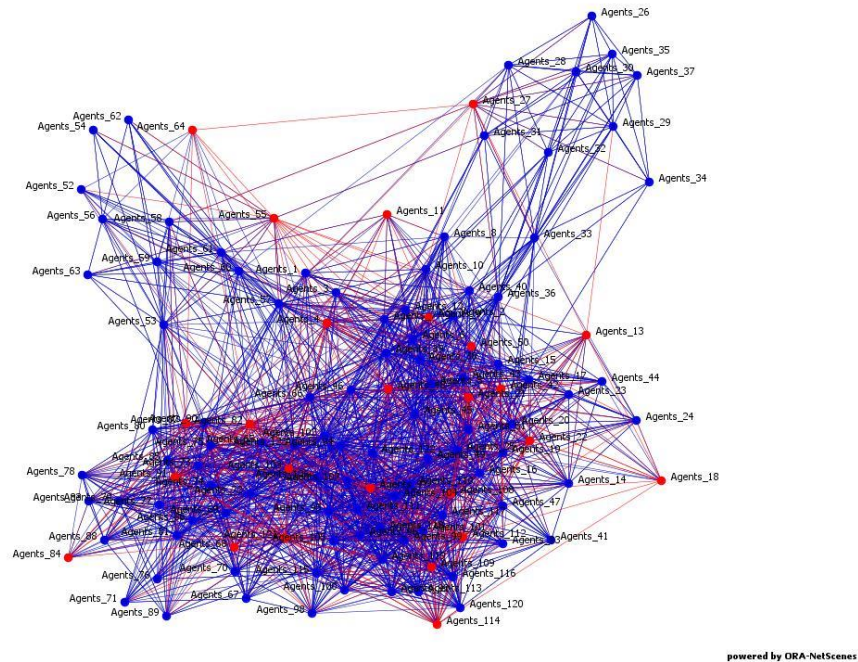


Figure 3.2. Agents professional and social network.

Statistical Analysis

Descriptive and inferential statistics were calculated in the third analytical stage using the networks and statistics generated by ORA. Matrix-based regression analysis, or multiple regression quadratic assignment processes (MR-QAP), was used to evaluate the effects of the various independent matrices in Proposition 1 on belief statements regarding personal engagement and integration. To understand the belief patterns from the data collected, belief responses were inputted into SPSS to generate a belief pattern matrix. Scores for non-respondents were generated in SPSS using liner estimation methods and factor analysis was used to reduce the integration scale. Two factors were identified and labeled Mission and Integration. Factor scores were calculated for each

candidate for each factor, and repeated vector methodology was then used to create dependent, agent-by-agent matrices for each factor (columns of scores were created for each agent in the data set, so if there were 10 agents, there would be 10 columns of scores). These were used as dependent networks in the QAP analyses.

QAP operated with square, equivalent matrices, so all statistics were converted to agent-by-agent matrices. In addition to agent-by-agent matrices based on professional and social relationships, position and agent underrepresented identity, closeness centrality, betweenness centrality, and resource degree centrality were converted to square, symmetrical matrices (required by QAP) by copying the given statistic into the row of an agent-by-agent matrix and reproducing that column vector across all rows (Borgatti et al., 2013). These matrices were used as independent matrices in the QAP analyses. Significance was determined using Dekker permutations because it is more robust against matrix collinearity, autocorrelation, and lack of normality than are other permutation methods.

Missing Data

In network analysis studies, it was important to have a high response rate (although QAP was robust against reasonable levels of missing data) (Borgatti, Carley & Krackhardt, 2006). The manner in which data is collected was one way to help ensure minimal missing data. Utilizing an online survey to collect data had many benefits including minimal issues with data sensitivity, little respondent reaction to the interviewers (versus face to face data collection) and low levels of data collection errors. The main downside to collecting data via online surveys was the high probability of

lower response rates. To ensure a higher response rate, appropriate follow up methods were used to build rapport with non-respondents to encourage them to complete the survey.

In this study, there were 22 non-respondents. As there was little research on how to handle missing data (Borgatti et al., 2006) this study utilized two approaches to account for missing data. One approach, as suggested in statistical analyses, was to remove all missing nodes and continue to run QAP analyses. The second approach was to identify agents who selected non-respondents and to assume that those agents would have been selected by the non-respondents. Borgatti et al. (2013) suggested the second approach was stronger than performing analyses with missing data. After the analyses were conducted, the results were compared to look for any incongruities.

Role of the Researcher

It is important to acknowledge my role in this research study and the relationship that I have with the participants and the setting. As a student affairs practitioner (though not at the institution studied) that identifies as a non-White female, the target demographic within this study, I have a deep personal interest in this research study. Additionally, as an active member of regional and national associations within the higher education career field and a frequent attendee of the association's annual conferences, I have previously met some of the professionals at this institution outside of the context of the study. Despite these personal and professional connections to the study and the participants, I believe that since this is an exploratory study, in my role as a researcher, I

am able to present the results with openness and with no preconceived notions due to my personal background. In order to help reduce researcher bias, data is anonymized.

There is very little research that exists regarding the experiences of underrepresented women in student affairs and this research study will help add to that body of knowledge. I believe this information will help those like me navigate their careers at PWIs. Additionally, I believe this research study will allow for another methodological tool to use for understanding group dynamics at a higher education institution.

Ethical Considerations

Since data was anonymous and I am not be able to link a response to a specific person, I believe there were little ethical issues with this research study. The structural interviews had no physical or emotional risk to the participants. However, as this study asked questions regarding individual's personal experiences (structural interview and subsequent survey), one may have had an emotional reaction to the questions asked. Additionally, participants may have had worry if they have negative responses to answers for fear of supervisors or upper-administration finding out. To help ease participants concerns, I provided privacy statements prior to participation and reassured participants that the data will be anonymized.

Summary

In conclusion, this study was a dynamic network analysis of a student affairs division at a Predominately White Institution. Data was collected through structured

interviews and a subsequent survey instrument. The survey was distributed to the entire division and results were analyzed via ORA.

CHAPTER FOUR

FINDINGS

The purpose of this study was to understand the experiences of underrepresented women in student affairs at a Predominately White Institution. Dynamic network analysis was the chosen methodology for the study. The research study was executed in three phases. The first phase was a structured interview with selective participants. The second phase used the data collected from the interviews to create a survey which was distributed to a selected population of full time and graduate assistant staff in a student affairs division. The survey was distributed through Qualtrics, an online survey software program. The third phase then placed the data collected from the survey into matrices using Excel where it was processed and then loaded into the Organization Risk Analyzer (ORA) software (v. 3.0.9.9j) for network analysis. The network analysis uncovered how the experiences of underrepresented women were impacted by the environment and the interactions among the entities within the network.

The following research question guided this study:

What experiences do underrepresented women in student affairs have that hinder or help them feel effectively engaged and successfully integrated in a Predominately White Institution?

The additional questions supported the main focus on inquiry. They were separated into the two main categories from the research question.

Relationships across the network

- Are underrepresented women generally located proximal to major informal leaders in the network and does such access influence feelings of engagement and integration?
- Are they in reciprocal relationships and cliques that give them access to informal leaders and does this access influence feelings of engagement and integration?
- Do underrepresented women have informal leadership roles in the network and do informal leadership roles help them feel engaged and integrated?

Institutional resources

- Do underrepresented women have access to institutional resources?
- Are there key events and programs during the year that encourage underrepresented women to connect to one another?

This chapter is organized into four parts: structural interview findings, meta network information, relationships in the network and institutional resources. The research questions were answered in the last two sections. Basic definitions used in this study are listed below in Table 4.1. Additional terms introduced into the discussion were defined in the subsequent sections. All definitions were listed in the 2013 ORA User's Guide written by Kathleen M. Carley, Jürgen Pfeffer, Jeff Reminga, Jon Storrick, and Dave Columbus.

Table 4.1

Basic Dynamic Network Analysis Terminology

Terminology	Definition
Node	Representation of an item (who, what, where, how, why)
Matrix	Relationships between nodes in a square format
Network	Representation of a set of nodes and links between the nodes
Meta network	Representation of a group of networks

Structural Interview Findings

Structured interviews were conducted with 14 women at the institution (see Appendix A for the structured interview questions). The interview data was coded, analyzed and used to create the survey response scales, which was then used to collect data for the subsequent network analysis. Interview data was placed into the following categories:

- Personal goals and accomplishments
- Resources
- Knowledge
- Tasks
- Events and programs

The participants selected in the structured interview represented a diverse group in position (title and department). This was intentional to ensure that the eventual response scales would have a comprehensive list of options for survey respondents.

The Meta-Network

The network analysis survey was distributed to 123 full time and graduate assistant staff members among twelve departments/offices in a division of student affairs. The full survey can be found in Appendix B. Participants answered the following types of questions:

- Demographic information
 - Gender
 - Age
 - Race/ethnicity
 - Type of position held
 - Length of time at institution
 - Education
 - Office location
- Job specific information
 - Types of resources used
 - Types of knowledge needed
 - Types of tasks completed
 - Key events and programs attended
- Interactions with agents
 - Task related
 - Professional related
 - Socially related

- Beliefs
 - Statements regarding feelings on work
 - Statements regarding feelings of race and gender
 - Statements regarding commitment to diversity

Data was organized into matrices, or networks. There were three agent-by-agent networks (relationships about tasks, professional relationships, and social relationships), and agent-by-task matrix, agent-by-resources, and agent-by-knowledge. ORA enabled analysis of such networks taken individually or together.

Table 4.2

Network Statistics

Network attributes	Size
Nodeset count	7
Node count	228
Link count	167913 (excludes 1353 self-loops)
Network count	21
Total density	0.706

The networks were initially analyzed together to calculate general statistics about the department; Table 4.2 provides an overview of these statistics. Density was an important statistic to describe the network. Density compared the existing links to the total of possible links that can exist in the network (Carley et al., 2013). The density of the network illustrated the level of cohesion among the agents in the network (Borgatti et

al., 2013). The density for this network was high ($n=0.706$), which meant that there was a high-level of connectivity among the members of the network. Therefore, a majority of the agents in the network connected to each other and were dependent on one another.

Of the 123 agents that were sent the survey, only 103 participants (83.7%) started the survey. One hundred and one participants (82.1%) completed the survey and were included in the following analysis. An overall view of the network by the counts of the nodes represented in the network can be found in the table below.

Table 4.3

Meta-Network Node Counts

Node Class	Size
Agents	123
Belief	13
Event	21
Knowledge	25
Location	16
Resource	10
Task	20

As stated above, the data collected from the survey were entered into matrices and then loaded into ORA for analysis. Three agent-by-agent networks were created as square matrices (same number of rows as columns). To adjust for missing data, the data from participants who selected a given non-respondent were entered in the network in place of

that person's missing data. The logic was that if someone in the survey selected the non-respondent, then the non-respondent would logically have chosen that person in return. Therefore, connections were added to non-respondents based on if others selected them as a connection.

The three agent-by-agent networks were agent-by-agent task relationships, agent-by-agent professional relationships and agent-by-agent social relationships. Agent-by-agent task relationships refer to the connection agents have with others through a shared task or project. Agent-by-agent professional relationships refer to whom the agents state that they connected to professionally. Lastly, agent-by-agent social relationships referred to the social connections between agents.

Table 4.4

Performance Measures Definitions

Performance Measures	Definitions
Complexity	Density of the meta-network as a whole
Social density	Density of the agent-by-agent network(s)
Social fragmentation	Amount of disconnectivity of nodes in the agent-by-agent network(s)
Average communication speed	Average speed with which any two nodes can interact

Table 4.5

Performance Measures of the Network

Performance Measures	Value
Overall complexity	0.229
Social density – Agent-by-agent task relationships	0.274
Social density – Agent-by-agent professional relationships	0.209
Social density – Agent-by-agent social relationships	0.051
Social fragmentation – Agent-by-agent task relationships	0
Social fragmentation – Agent-by-agent professional relationships	0
Social fragmentation – Agent-by-agent social relationships	0.032
Average communication speed – Agent-by-agent task relationships	0.549
Average communication speed - Agent-by-agent professional relationships	0.499
Average communication speed – Agent-by-agent social relationships	0.304

Table 4.5 showed that the professional and task relationships networks were much more dense than the social relationships network. The social fragmentation scales further supported this. With the small value of density in the agent-by-agent social network and the presence of two isolates, it was not surprising to see some social fragmentation in this network as some nodes are not able to reach other nodes by any means (Borgatti et al., 2013). Lastly, the average communication speed was fairly high across all networks, thus

indicating that information passed rapidly through the organization. This may be due in part to the higher density values of the network.

Network Key Entities

ORA generated many network analysis reports. A key entity report “identifies key entities and groups who, by virtue of their position in the network, are critical to its operation” (Carley et al., 2013). The top recurring agents in the network is listed in Figure 4.1. This was calculated by the amount of repeated top-ranked measures related to agent-by-agent connections. The number listed at the top of the bar indicated the percentage of measures the agent scored in the top three. The top ranked agent scored in the top three for 50% of the measures calculated. Of the recurring top agents in the network, only one agent (Agent 42) identified as an underrepresented woman. Every other agent listed in Figure 4.1 identified as White; 3 were male and 6 were female. The top ranked agent was a White female.

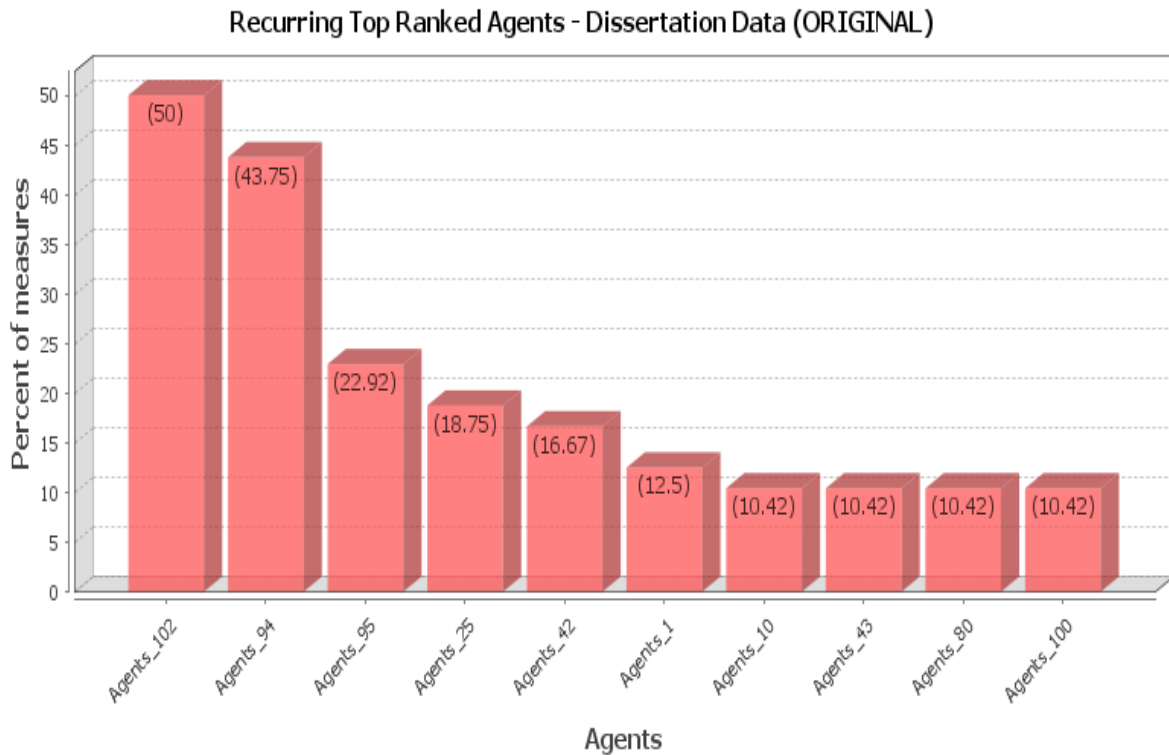


Figure 4.1. Recurring top ranked agents in the network

Shared Beliefs Across the Network

To explore the shared beliefs about inclusion across the network, thirteen belief statements were asked on the survey in which participants could select from a Likert scale on how much they agreed to each statement. Data collected on beliefs was inputted into SPSS to replicate the missing data from non-respondents by replacing missing data with selected linear trend procedures. After the missing data was replaced, factor analysis was conducted to determine how the items clustered.

Factor analysis identified how variables group together into subgroups. From the factor analysis and scree plot (a plot of eigenvalues), two groups emerged – one major group and one slightly less significant. The first group was identified as “INCLUSION,” referring to the level of which an agent feels included into the organization. The second, less significant, group was labeled “MISSION” to refer to the agent’s belief and support of the mission of the organization.

The following belief statements were grouped together.

- INCLUSION:
 - INCLUSIVE COMMUNITY: *I believe the Division of Student Affairs is committed to creating an inclusive community.*
 - FREE EXPRESSION: *I believe that I work in an inclusive environment that allows for freedom of expression and thought.*
 - ACCEPTANCE: *I believe that the Division of Student Affairs accepts me for who I am.*
 - GENDER: *I believe my gender is a barrier in my ability to perform my role within the Division of Student Affairs.*
 - RACE: *I believe my race is a barrier in my ability to perform my role within the Division of Student Affairs.*
 - POSITIVITY: *I have positive feelings about my work and the people I work with.*
 - NEGATIVITY: *I have negative feelings about my work and the people I work with.*

- ENGAGED IN DIVISION: *I believe the Division of Student Affairs makes an effort to continually engage me in my work.*
- MISSION:
 - MISSION: *I believe my work directly impacts the mission of the Division of Student Affairs.*
 - GOAL: *I believe everyone in my department understands and works toward a common goal.*

Three of the 13 belief statements did not load on either factor and therefore they were not listed above. These belief statements were recruitment of a diverse staff, self-engagement in the network and the support from leaders in their departments. The table below (Table 4.6) reproduced the Pattern Matrix (factor loadings) from SPSS of the belief scores.

Table 4.6

Belief Scores Pattern Matrix

BELIEF	INCLUSION	MISSION
TREND (Mission)	-0.079	0.842
TREND (Goal)	0.207	0.744
TREND (Inclusive Community)	0.608	0.32
TREND (Free Expression)	0.764	0.199
TREND (Acceptance)	0.812	0.157
TREND (Positivity)	0.614	0.333
TREND (Negativity)	-0.76	-0.062
TREND (Engaged in Division)	0.507	0.396
TREND (Gender)	-0.9	0.35
TREND (Race)	-0.749	0.197
TREND (Engaged in my work)	N/A	N/A

The negative scores indicated that the inverse of the statement was true. For example, the belief statement coded as NEGATIVITY was read “*I have negative feelings about my work and the people I work with*”. Since the score was negative, the shared beliefs were the inverse, which meant the agents in the network did not have negative feelings about their work and the people they worked with. From this, factor scores were calculated for each respondent, one for inclusion and one for mission. These scores were converted to matrices that used the repeated vector method in which the scores were

copied repeatedly to create an agent-by-agent network of belief scores. These were used as dependent networks in subsequent analyses.

Quadratic Assignment Process

As discussed in the previous chapter, quadratic assignment process (QAP) analyses were performed in this study. INCLUSION and MISSION, the two belief groups that emerged in the factor analysis, were used as the dependent variable in the QAP analyses. The QAP analysis was performed multiple times, calculating significance levels at different numbers of permutations. Dekker significance scores stabilized at 10,000 permutations. Table 4.7 reported the results from the QAP analyses at 10,000 permutations.

As these calculations were conducted using data that was calculated through SPSS for each non-respondent, QAP analyses were also conducted with no replacement data for the non-respondents. The second round of QAP analyses without the replacement data found to have similar results to the original QAP analyses. Therefore, the results presented were those that included the replacement data as there was not significant change in the results.

Table 4.7

QAP Analyses

Variables	Coefficient	Standard Coefficient	Sig. Y – Perm	Sig. Dekker
DV: INCLUSION				
Agent-by-agent professional relationships	0.059	-0.024	0.084	0.076
Agent-by-agent social relationships	-0.111	-0.024	0.156	0.142
Agent-by-agent total (closeness centrality)	-2.099	-0.162	0.086	0.084
Agent-by-agent total (betweenness centrality)	-7.007	-0.070	0.360	0.355
Agent-by-agent (position)	0.011	0.019	0.433	0.423
Agent-by-agent (resource capability)	0.242	0.093	0.234	0.235
Agent-by-agent (underrepresented)	0.427	0.170	0.037	0.035
DV: MISSION				
Agent-by-agent professional relationships	0.058	0.024	0.085	0.079
Agent-by-agent social relationships	-0.013	-0.003	0.467	0.469
Agent-by-agent total (closeness centrality)	-3.373	-0.260	0.022	0.021
Agent-by-agent total (betweenness centrality)	3.419	0.034	0.355	0.349
Agent-by-agent (position)	-0.069	-0.120	0.156	0.162
Agent-by-agent (resource capability)	0.187	0.072	0.280	0.282
Agent-by-agent (underrepresented)	-0.132	-0.052	0.301	0.300

Relationships Across the Network

In organizations, individuals experience connections that can be categorized as either social or professional interactions. The level of interactions describe the experiences one has in the network. However, interactions and connections are complex

in nature as they are impacted by many different entities (office location, shared tasks, shared beliefs, etc.). In this section, research questions one, two and three will be answered. To understand the relationships across the network, visualizations, ORA statistical measures and QAP analyses are used.

Research Question One – *Are underrepresented women generally located proximal to major informal leaders in the network and does such access influence feelings of engagement and integration?*

This question focused on the location of underrepresented women in the network and whether their location was proximal to major informal leaders. Additionally, this question sought to understand if their location influenced feelings of engagement and integration in the network.

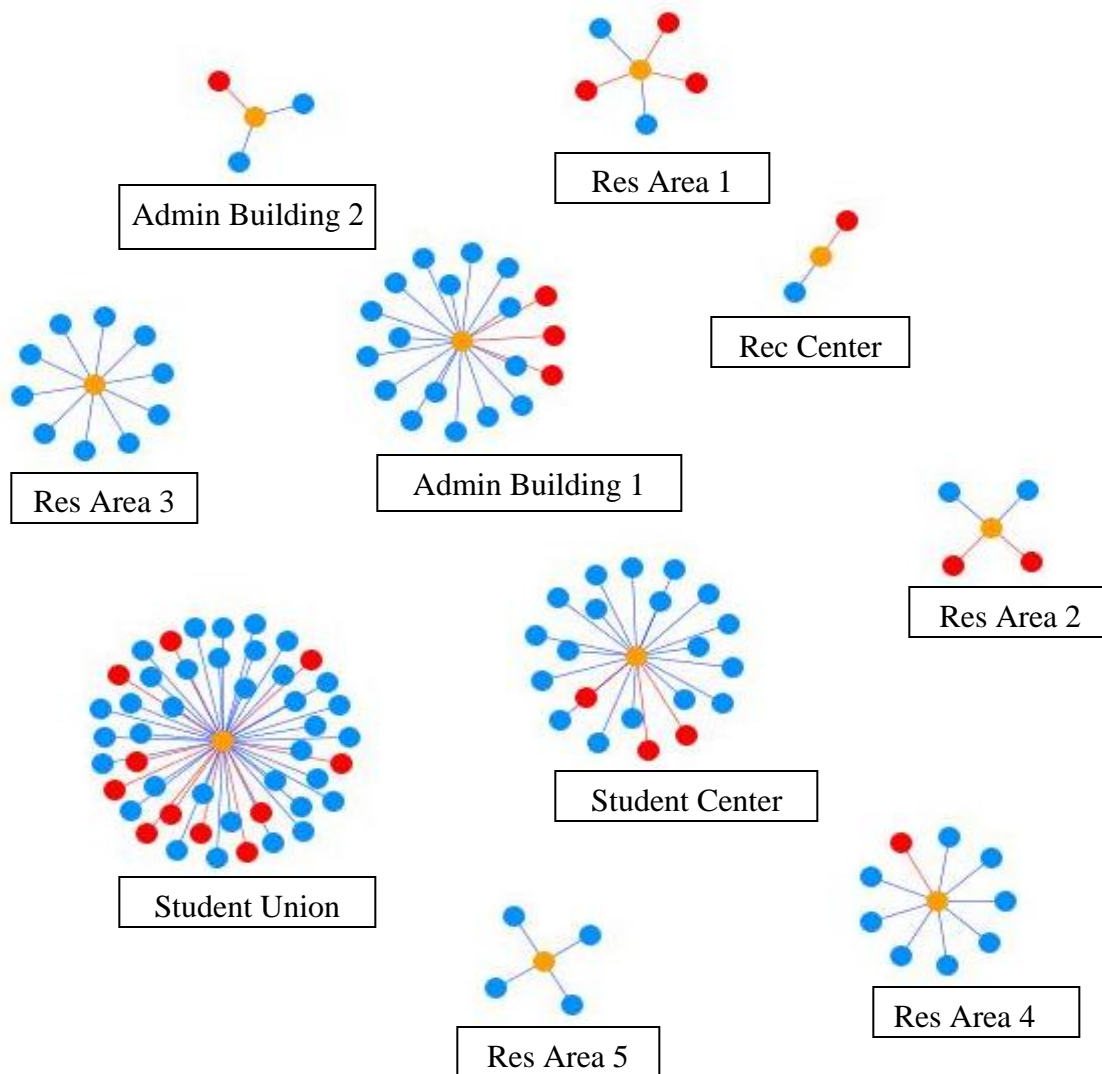


Figure 4.2. Agent-by-location visualization.

In the above figure (4.2), the agents in the network were located across ten locations on the campus. Each location was labeled and represented by the orange nodes. The blue nodes represented agents in the majority group; red nodes represented agents in the underrepresented group. Underrepresented women were distributed across all locations, except Res Area 4 and Res Area 5.

The top ranked agents in the network (Figure 4.1) were located in the following areas: Administrative Building 1 (Agent 194, Agent 100, Agent 102), Administrative Building 2 (Agent 1), Student Center (Agent 10), Student Union (Agent 25, Agent 42, Agent 43) and Res Area 4 (Agent 80, Agent 95). In each of the locations that have top ranked agents, underrepresented staff existed with those location networks as well.

QAP analyses found a significant coefficient at the 10% level between agent-by-agent total (closeness centrality) and both dependent variables: MISSION and INCLUSION. As reported in Table 4.7, the coefficient for closeness centrality with INCLUSION as a dependent variable was -2.099 with a Dekker significance of 0.084. For closeness centrality with MISSION as the dependent variable, the coefficient was -3.373 with a Dekker significance of 0.021. The negative coefficient for closeness centrality in both calculations indicated that individuals with higher closeness centrality are associated with agents who feel more engaged and integrated in the network.

This finding concluded that underrepresented women were located proximal to major informal leader and that to the degree that they themselves were close to others (including informal leaders), they would have high feelings of inclusion.

Research Question Two – *Are their reciprocal relationships and cliques that give underrepresented women access to informal leaders and does this access influence feelings of engagement and integration?*

The second research question looked at the groupings of clusters of agents in a network, specifically as agents connected with each other and formed reciprocal relationships and cliques. Cliques were clusters of agents in which communication among

cliques members was greater than communication with others. Simmelian ties were reciprocal relationships among three or more entities; individuals in Simmelian ties had strong bonds and they tended to lead cliques. To evaluate if underrepresented women were part of reciprocal relationships and cliques, visualizations of the network were produced and network characteristic measures were considered. Additionally, QAP analyses on the agent-by-agent professional and social relationships were calculated.

The following visualizations (Figure 4.3, 4.4, 4.5) illustrated the clusters that existed within the network. Red nodes represented underrepresented women. The blue nodes represented agents that identify as White male or White female.

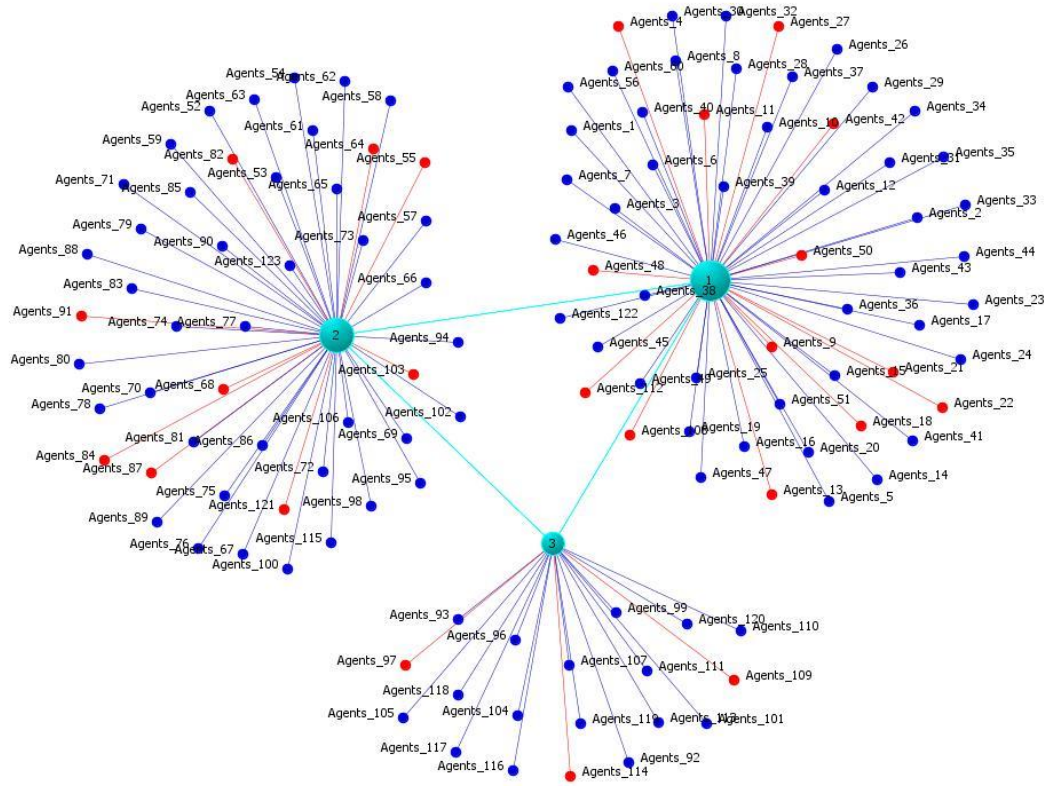
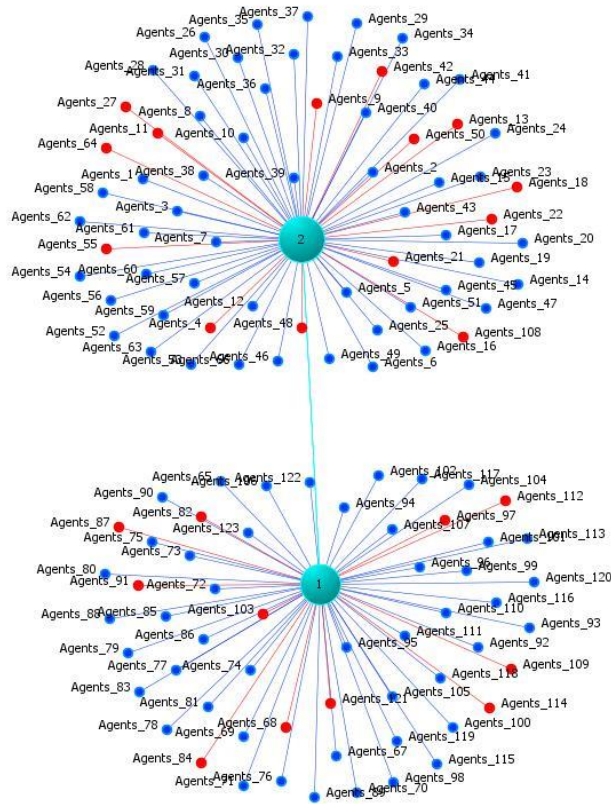


Figure 4.3. Agent-by-agent task relationships (Newman's Grouping).

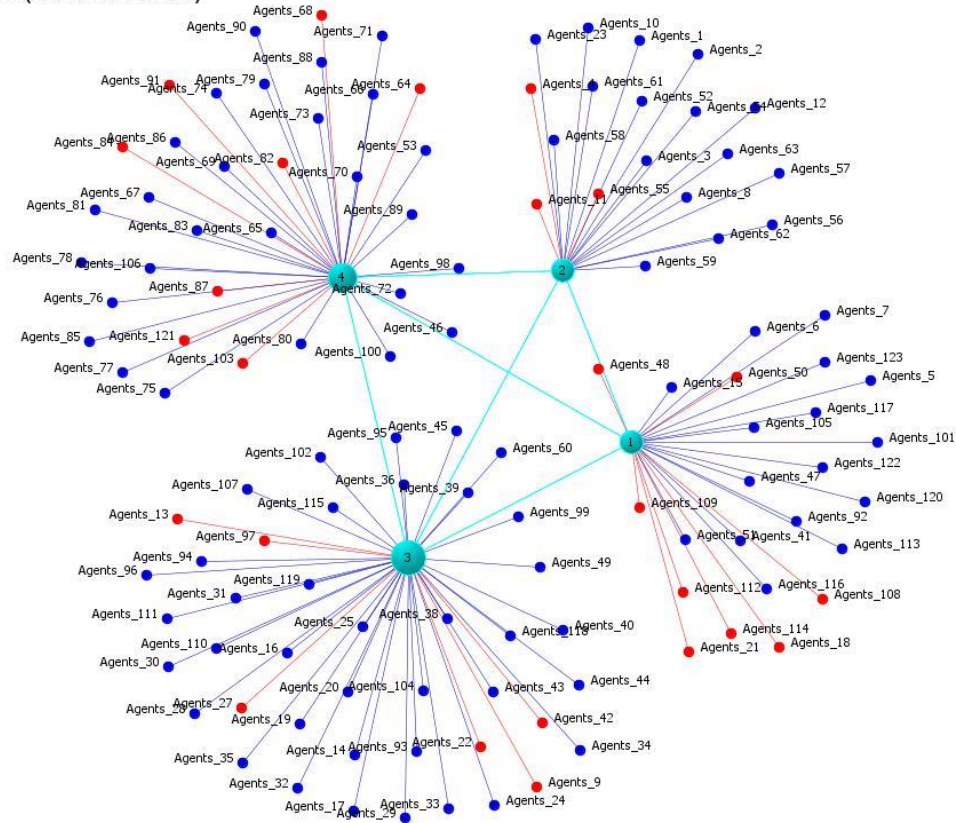
The task relationships network with the Newman's Grouping (a process that identified interactive cliques) overlay indicated three distinct groups in the network. Groups 1 and 2 had more agents than Group 3. Underrepresented women appeared to be equivalently distributed across all three groups.



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Figure 4.4. Agent-by-agent professional relationships (Newman's Grouping).

Figure 4.4 displayed the agent-by-agent professional relationships network with a Newman's Grouping application. This network was very dense and applying Newman's Grouping allowed for more separation in the network. The visualization above showed that there were two distinct groups of professional relationships in the network. Underrepresented women were well represented in both groups.



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Figure 4.5. Agent-by-agent social relationships (Newman's Grouping).

Figure 4.5 illustrated a Newman's Grouping visualization on the agent-by-agent social relationships network. There were four groups among the social network. Underrepresented women were present in all four groups of the network, thus indicated that all underrepresented women were socially engaging with members of the organization to some degree. Group 3 had the largest number of nodes but a proportionally lower number of underrepresented women.

Network characteristics of Simmelian ties, clustering coefficient and clique counts were examined, see Table 4.9 for a definition of these terms. From these analytics, the

level of connectedness between nodes and the levels of access nodes had to resources in the network were determined.

Table 4.8

Definitions of Simmelian ties, Clustering Coefficient and Clique Counts

Network Characteristics	Definitions
Simmelian ties	Strong and reciprocal ties between three nodes.
Clustering coefficient	Measurement of the degree of clustering in a network.
Clique counts	Number of distinct cliques that each node belongs to.

After an all measures report was pulled from ORA , a total network analysis was completed. The relationship measures were examined to show the minimum, maximum, total average and average of underrepresented women.

Table 4.9

Reciprocal Relationship Measures

Measures	Min	Max	Averages		
			Total	Rep Women & Men	UR Women
Simmelian Ties – Agent-by-agent professional relationships	0	0.41	0.157	0.148	0.146
Simmelian Ties – Agent-by-agent social relationships	0	0.123	0.025	0.026	0.025
Simmelian Ties – Agent-by-agent task relationships	0	0.59	0.214	0.227	0.161
Clustering Coefficient – Agent-by-agent professional relationships	0.285	0.953	0.52	0.516	0.512
Clustering Coefficient – Agent-by-agent social relationships	0	1	0.322	0.320	0.282
Clustering Coefficient – Agent-by-agent task relationships	0.284	0.878	0.538	0.529	0.534
Clique Count – Agent-by-agent professional relationships	1	590	104.53 7	101.271	121.4
Clique Count – Agent-by-agent social relationships	0	35	5.61	5.316	6.76
Clique Count – Agent-by-agent task relationships	1	3740	522.95 1	548.020	424.68

Note. UR = Racial/Ethnicity identification is non-White, Rep = Racial/Ethnicity identification is White or Non-response.

Simmelian ties represented reciprocal relationships between three different agents in network analysis. The nature of these connections was dynamic and “[facilitated] the formation of shared interests and the pursuit of common goals by mitigating competition and self-interest” (Tortoriello & Krackhardt, 2010, 170). Within the network, Simmelian ties ranged from 0% to 59%. Notably, the average for underrepresented women was lower than the total average and the average of those that did not identify as an underrepresented woman. For the agent-by-agent professional relationships network the Simmelian tie measure was 15.7%, with the underrepresented women average measure lower at 14.6%. For the agent-by-agent social relationships network, the total average for the network and for underrepresented women was the same at 2.5%. The most significant difference is in the agent-by-agent task relationships network where the average in the represented group was higher (22.7%) than the total network average (21.4%) and the underrepresented women average (16.1%).

Clustering coefficient measures described the density of the agent ego networks (personal networks), thus an agent with a high clustering coefficient score was connected with others that were strongly connected to each other. When looking at each agent and the various ties they have to different agents in the network, there was strong and weak ties. Weak ties were not necessarily negative as it represents the ability to reach out to different areas of the network (Wei, Pfeffer, Reminga & Carley, 2011). In the agent-by-agent professional relationships network, the clustering coefficient ranged from 28.5% to 95.3% with an average of 52%. In the agent-by-agent social relationships network, the clustering coefficient ranged from 0% to 100% with an average of 32.2%. Lastly, in the

agent-by-agent task relationship network, the clustering coefficient ranged from 28.4% to 87.8% with an average of 53.8%. The averages for the underrepresented women in the three networks (professional, social and tasks) were lower than the total and the represented group averages.

Network measures calculated the total number of distinct groups in which each agent belongs. Individuals with high clique count numbers were represented in more cliques than those with lower scores. In the agent-by-agent professional network, the clique count ranged from one clique to 590, with an average of 104.537. In the agent-by-agent social network, the clique count ranged from 0 to 35, with an average of 5.61. In both these networks, the average number of cliques for underrepresented women was higher than the total average and the represented average with agent-by-agent professional (121.4) and agent-by-agent social (6.76). The opposite was noted for agent-by-agent tasks, where the clique counts ranged from one to 3740 with a total average of 522.951. This was a represented average of 548.020 and the underrepresented women average as 424.68.

QAP analyses on agent-by-agent professional relationships and agent-by-agent social relationships were calculated using the dependent networks INCLUSION and MISSION (see Table 4.7). Agent-by-agent professional relationships was significant at $p < 0.10$ in both analyses [INCLUSION: 0.059 (coefficient), 0.076 (Dekker); MISSION: (0.058 (coefficient), 0.079 (Dekker)]. These scores indicated that there was a relationship between reciprocal professional interactions and one's feelings of inclusion and belief of the mission within the organization.

In regards to social relationships, agent-by-agent social relationships were not statistically significant in either analysis [INCLUSION: -0.111 (coefficient), 0.142 (Dekker); MISSION: -0.013 (coefficient); 0.469 (Dekker)]. Therefore, there was no indication that social relationships impacted beliefs on inclusion or mission.

Research Question Three – *Do underrepresented women have informal leadership roles in the network and do informal leadership roles help them feel engaged and integrated?*

This question sought to understand if underrepresented women in the network were positioned in informal leadership roles within the network. To define each agent's position within the network, centrality measures such as total degree centrality (agents in the know), betweenness centrality (agents who mediated major lines of communication) and closeness centrality (agents who were close to the other agents in the network) were determined. Additionally, QAP analyses on position and betweenness centrality were performed to better understand how one's position informs beliefs on feeling engaged and integrated into the network.

Centrality measures identified key informal leaders in the network. Centrality looked at how near a node was to other nodes in the network. Someone with high centrality scores were able to access information easily through links connecting to other nodes (Carley et al., 2013). ORA calculated several types of centrality measures: degree centrality, betweenness centrality, closeness centrality and eigenvector centrality.

Table 4.10

Centrality Measures Definitions

Centrality Measures	Definitions
Centrality	Nearness of a node to all other nodes in the network.
Degree centrality (<i>In the know</i>)	Node with the most connections
Betweenness centrality	Connects nodes that are not connected directly to each other; connects disconnected groups.
Closeness centrality	Average closeness of a node to the other nodes in a network.
Eigenvector centrality	Node most connected to other highly connected nodes.

Table 4.11

Centrality Measures for agent-by-agent professional relationships, agent-by-agent social relationships, agent-by-agent task relationships

Rank	Agent	Value	Description
1	Agent 102	0.506	
2	Agent 94	0.482	Agent in the Know –
3	Agent 103*	0.437	Professional
4	Agent 25	0.437	Relationships
5	Agent 121*	0.396	Network
1	Agent 87*	0.163	
2	Agent 42*	0.159	Agent in the Know –
3	Agent 80	0.151	Social Relationships
4	Agent 25	0.139	Network
5	Agent 109*	0.135	
1	Agent 102	0.669	
2	Agent 94	0.645	Agent in the Know –
3	Agent 95	0.616	Task Relationships
4	Agent 103*	0.531	Network
5	Agent 96	0.510	
1	Agent 57	0.054	
2	Agent 102	0.053	Betweenness
3	Agent 94	0.046	Centrality –
4	Agent 36	0.038	Professional
5	Agent 103*	0.033	Relationships
			Network
1	Agent 55*	0.101	
2	Agent 80	0.099	Betweenness
3	Agent 42*	0.078	Centrality – Social
4	Agent 51	0.073	Relationships
5	Agent 109*	0.060	Network
1	Agent 36	0.051	
2	Agent 102	0.040	Betweenness
3	Agent 94	0.036	Centrality – Task
4	Agent 95	0.028	Relationships
5	Agent 103*	0.024	Network

*denotes agent(s) identified as underrepresented women

Centrality measures for agent-by-agent professional relationships, agent-by-agent social relationships, agent-by-agent task relationships (con't)

Rank	Agent	Value	Description
1	Agent 102	0.678	
2	Agent 25	0.642	Closeness Centrality – Professional Relationships Network
3	Agent 108*	0.635	
4	Agent 94	0.616	
5	Agent 121*	0.616	
1	Agent 80	0.235	
2	Agent 87*	0.232	Closeness Centrality – Social Relationships Network
3	Agent 42*	0.227	
4	Agent 46	0.224	
5	Agent 51	0.223	
1	Agent 95	0.787	
2	Agent 102	0.782	Closeness Centrality – Task Relationships Network
3	Agent 94	0.753	
4	Agent 36	0.718	
5	Agent 96	0.685	
1	Agent 94	0.265	
2	Agent 102	0.263	Eigenvector Centrality – Professional Relationships Network
3	Agent 103*	0.239	
4	Agent 106	0.231	
5	Agent 95	0.224	
1	Agent 25	0.322	
2	Agent 42*	0.307	Eigenvector Centrality – Social Relationships Network
3	Agent 45	0.302	
4	Agent 16	0.299	
5	Agent 36	0.288	
1	Agent 102	0.240	
2	Agent 95	0.237	Eigenvector Centrality – Tasks Relationships Network
3	Agent 94	0.233	
4	Agent 103*	0.213	
5	Agent 96	0.202	

*denotes agent(s) identified as underrepresented women

In Figure 4.1, the top five leaders were listed for each network, including the three in-the-know networks. Among the top five leaders in each network, several identify as underrepresented women. Most specifically, Agent 103 was in the top five for the in-the-know networks for professional and task relationships. Agents that scored high in-the-know values were considered very connected in the network because they were agents who had many links to others and had access to others' thoughts, beliefs and ideas (Carley et al., 2010).

Betweenness centrality calculated when an agent was the intermediary between other agents. Thus, an agent with a high betweenness centrality score connected with different groups in a network and controlled the messages sent within the network (Wei et al., 2011). In Figure 4.1, the top five leaders in each network for between centrality measures were listed. In the agent-by-agent social relationships network, three of the top five leaders were underrepresented women (Agent 55 = 0.101; Agent 42 = 0.078; Agent 109 = 0.060). Agent 103 was the only underrepresented woman to score in the top five for the agent-by-agent professional (0.033) and agent-by-agent task (0.024) networks.

Eigenvector centrality was a network statistic that measured clique leadership. Borgatti et al. (2013) noted that the statistic was a "measure of popularity in the sense that a node with high eigenvector centrality is connected to nodes that are themselves well connected" (p. 168). Concurrent with the other centrality scores, Agent 103 was in the top five of the agent-by-agent professional (0.239) and agent-by-agent task (0.213) relationship networks. In the agent-by-agent social relationship network, Agent 42 had an eigenvector score of 0.307.

ORA measured the distance between one node to other nodes in the network. Closeness centrality was the measurement of the shortest path distance from each node to all other nodes. This measurement was important because an agent with a high closeness centrality score had easy access to resources in the network or had a good overview of everyone in the network (Wei et al., 2011). In looking at the data, the following table illustrated the closeness centrality scored for the following agent-by-agent matrices: agent-by-agent professional relationships, agent-by-agent social relationships and agent-by-agent task relationships.

Table 4.12

Agent-by-agent Closeness Centrality Measures

Meta-Networks	Min	Max	Averages		
			Total	Majority (Men & Women)	Underrepresented Women
Agent-by-agent professional Relationships	0.008*	0.678	0.500	0.503	0.491
Agent-by-agent social Relationships	0.008*	0.235	0.135	0.137	0.128
Agent-by-agent task Relationships	0.008*	0.787	0.558	0.568	0.516

*denotes agent(s) identified as underrepresented women

As noted in Table 4.12, the average scores of underrepresented women in the network were lower than the average scores for the total network and the group excluding underrepresented women. Additionally, the lowest centrality scores in each meta-matrix were given to agents that identified as an underrepresented female. Despite the lower scores, several underrepresented women had high closeness centrality scores across all three matrices, specifically in the agent-by-agent professional relationships network and the agent-by-agent social relationships network.

The QAP analyses on agent-by-agent (position) and agent-by-agent (betweenness centrality) were not statistically significant (see Table 4.7). This indicated that there is no relationship between one's formal position or centrality in the network and their feelings on inclusion and mission. Furthermore, the results on betweenness centrality noted that there was no relationship between one's ability to connect others (sometimes disenfranchised individuals) and their beliefs on inclusion and mission of the organization.

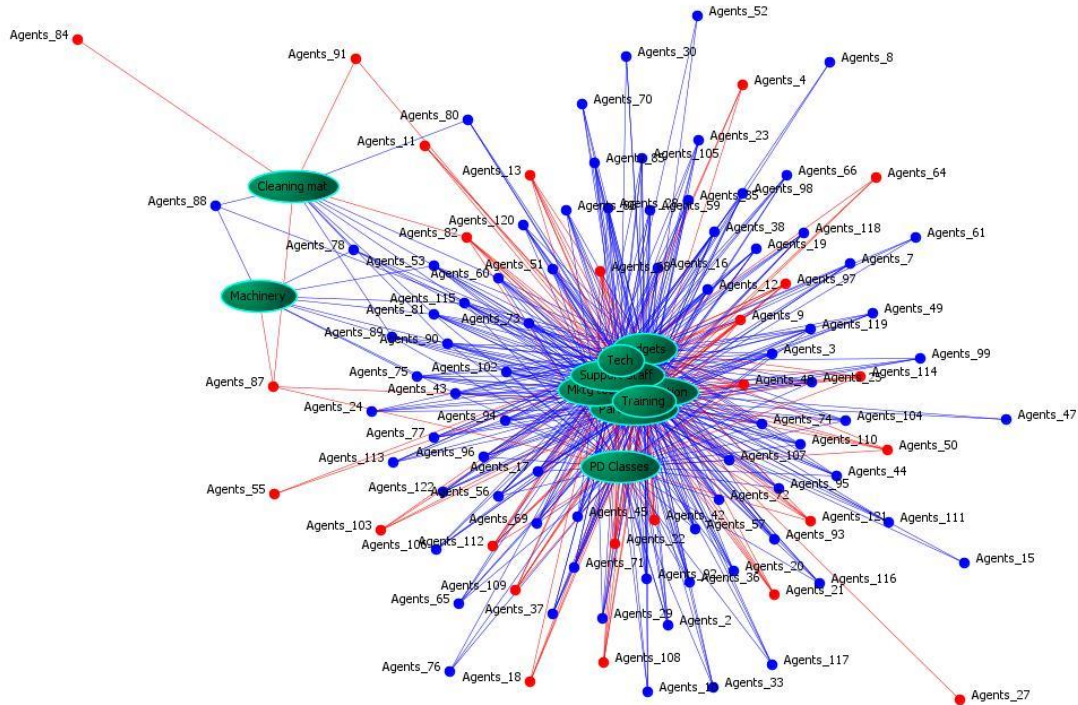
Shared Resources Across the Network

Individual experiences in a network can be understood through the lens of access. Access is not solely to other agents as the previous section discusses, but includes access to other entities like resources, tasks, and key events and programs. To understand if underrepresented women have access to institutional resources, agent competence regarding resources and tasks is calculated through network visualizations, ORA statistical measures and QAP analyses.

Research Question Four – *Do underrepresented women have access to institutional resources?*

To illustrate the level of access agents had to institutional resources, the visualization of the agent-by-resource network was generated in ORA.

Dissertation Data 2 (COPY as of 03.10.15)



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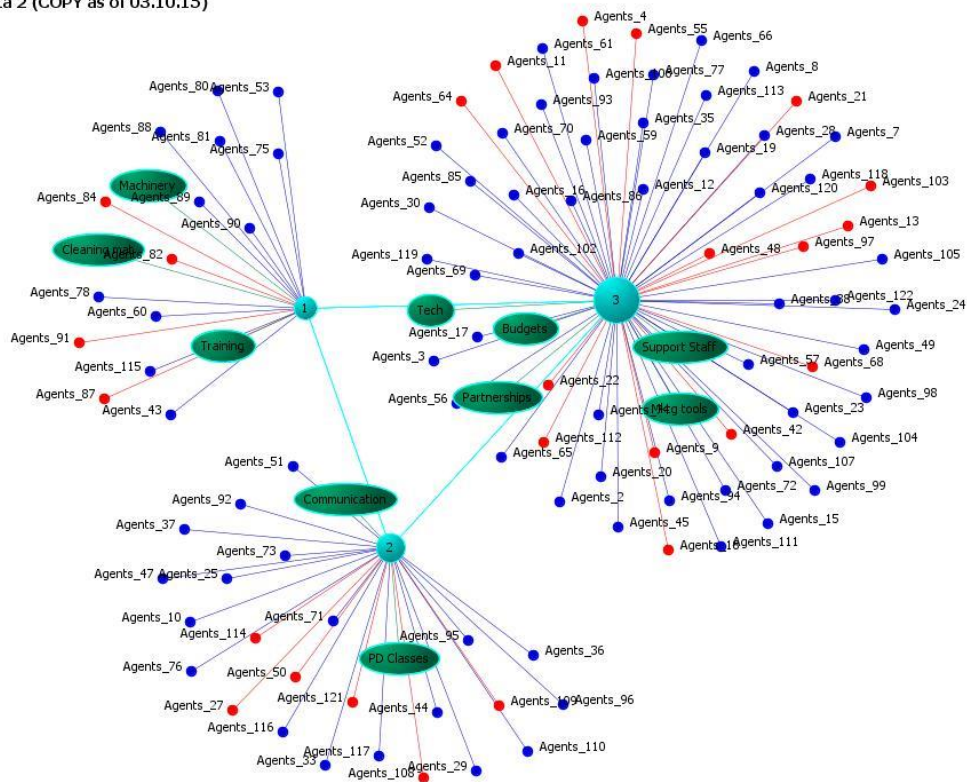
Figure 4.6. Agent-by-resource visualization.

The blue and red nodes in Figure 4.6 represented the agents in the network; red was underrepresented women, blue majority males and females. The green ovals represented the ten resources in the network. At first glance, it was noticed that two resources were located in the periphery, while the rest of the resources were clustered in the middle of the network. The two resources on the edges were cleaning materials and machinery. Resources located in the middle were technology, partnerships,

communication, marketing tools, budgets, professional development classes, support staff and training. Their central positioning indicated their relative importance.

Another observation was that the underrepresented women fell towards the edges of the network, the distance between the nodes and the center of the network illustrated that lack of access to the key resources of the network. Some underrepresented agents were closer to the center of the network. Those agents were Agent 9, Agent 22, Agent 42, Agent 48 and Agent 68.

Dissertation Data 2 (COPY as of 03.10.15)



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Figure 4.7. Agent-by-resource visualization (Newman's Grouping).

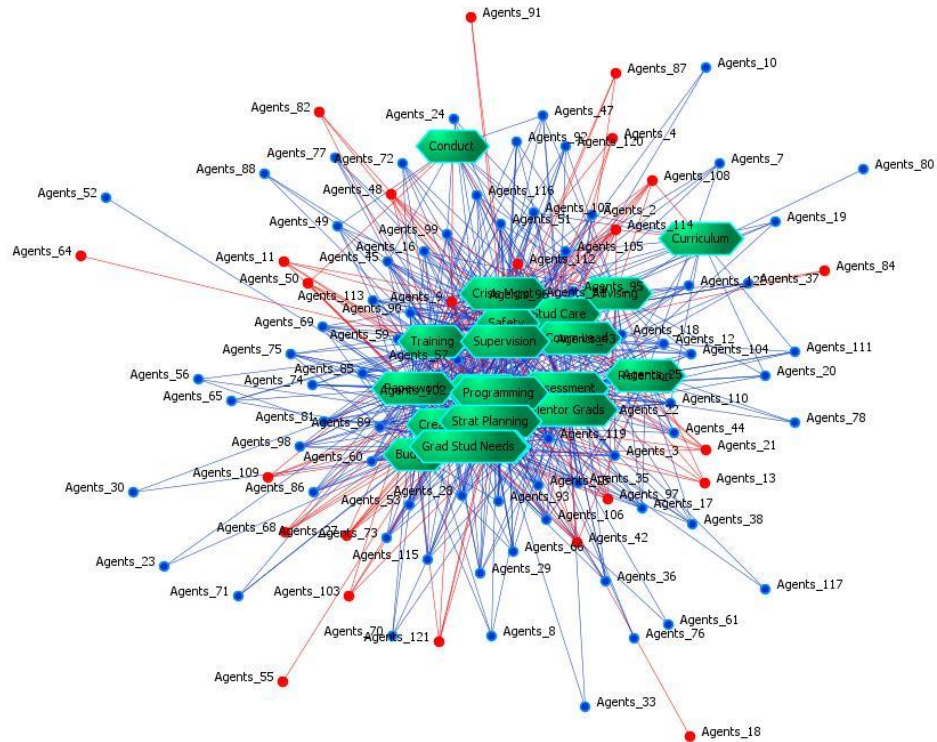
Newman's Grouping visualizations allowed one the ability to further examine clustering in the network. Figure 4.7 illustrated that three distinct groupings existed in the

agent-by-resource network. Group 1 included machinery, cleaning and training. Group 2 included communication and professional development (PD) classes. Group 3 had budgets, technology, marketing tools, collaborative relationships and support staff.

ORA also calculated each agent's resource capability in the network. The closer their resource capability score was to 1, the higher connected the agent was to various resources. When ranking the resource capability scores for each agent in the network, the maximum score was 0.993 and the minimum score was 0.007. Five underrepresented women were listed in the top 25% of the network in regards to resource capability; Agent 9 (n=0.953), Agent 22 (n=0.953), Agent 42 (n=0.953), Agent 48 (n=0.953) and Agent 68 (n=0.953). Each of these agents was also the closest to the center of the network in the above visualization.

QAP analyses were also conducted to see if there was any correlation between resource capability and beliefs on mission and inclusion (see Table 4.7). After completing the QAP analysis, it was found that resource capability was not a significant predictor of the dependent networks.

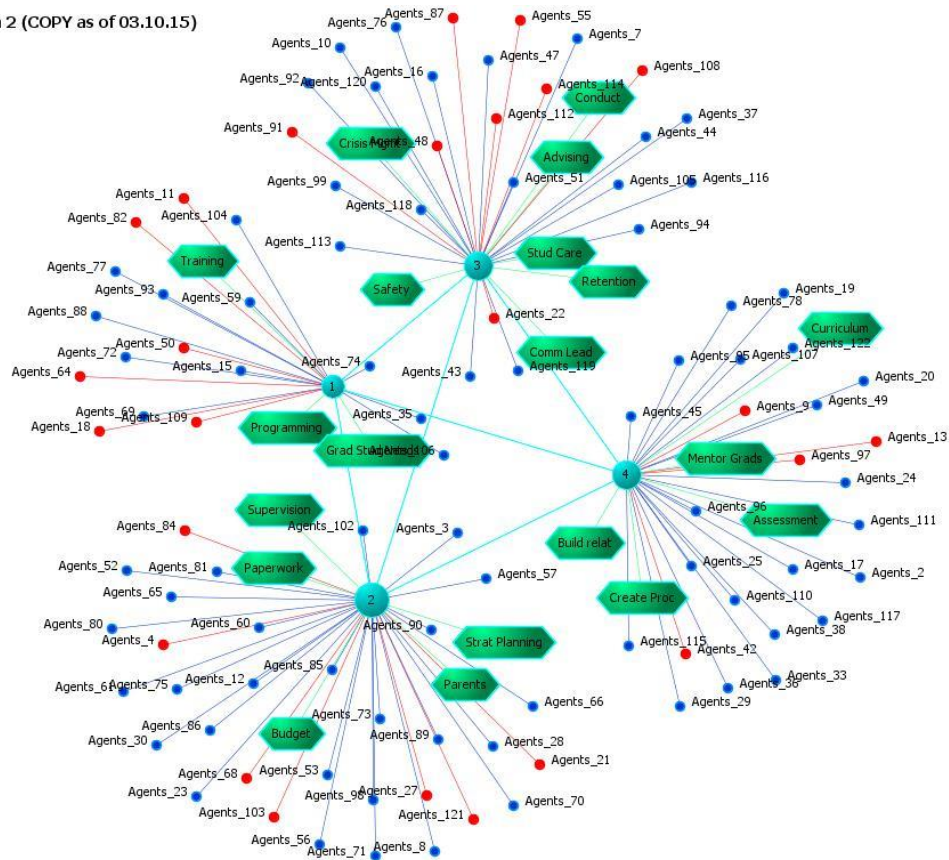
Tasks were the actions that one took to accomplish a project, solved a problem, completed an assignment, etc. Understanding the types of tasks within a network was important because it helps understand the levels of access agents had by the tasks they completed on a day to day basis. The figure below was a visualization of the agent-by-agent task network.



powered by ORA-NetScenes

Figure 4.8. Agent-by-task visualization.

The tasks were illustrated by the green shapes and the nodes represented the agents. The red nodes were underrepresented women and the blue nodes represented the majority (male and female) in this figure. The tasks were clustered in the center with curriculum development and conduct pushed towards the periphery. These two tasks were considered more specialized and given to specific people and departments rather something that all people in the network worked with.



powered by ORA-NetScenes

Figure 4.9. Agent-by-task visualization (Newman's Grouping).

As the tasks were clustered tightly in the middle, Newman's Grouping was applied to the network. The figure illustrated that four distinct groupings existed in the network. Group 1 included training, programming and graduate student needs. Group 2 tasks centered around paperwork, supervision, budgets, strategic planning and working with parents. Group 3 focused on crisis management, safety, student care, advising, retention initiatives, conduct and committee leadership. Group 4 included curriculum, assessment, creating processes, building relationships and mentoring graduate students. Underrepresented women were well distributed among the four groups.

Underrepresented women were more equally distributed in the network based on the visualization. Three underrepresented women were in the middle of the network (Agent 9, Agent 22 and Agent 112), thus illustrating high connectivity to many tasks in the network. In looking at the ORA measures for task capability, these agents all had high scores, Agent 112 (n=0.953), Agent 9 (n=0.881) and Agent 22 (n=0.881). These agents, along with Agent 114 (n=0.5) were in the top 25% of the network. The maximum score for task capability in the network was 0.993 and the minimum was 0.007.

Research Question Five – *Are there key events and programs during the year that encouraged underrepresented women to connect to one another?*

This research question looked at the key events and programs that agents attended to meet others in the network. Events could be public occasions or meetings that require an invitation. The events listed as selections in the survey were based on the key events mentioned during the structured interview. To understand the types of events underrepresented women were attending, a Newman's Grouping visualization in ORA were produced to see how underrepresented women clustered around certain events. Additionally, a key entity report calculated the top recurring events in the network and data was analyzed to find out how many underrepresented women selected each event listed in the survey.

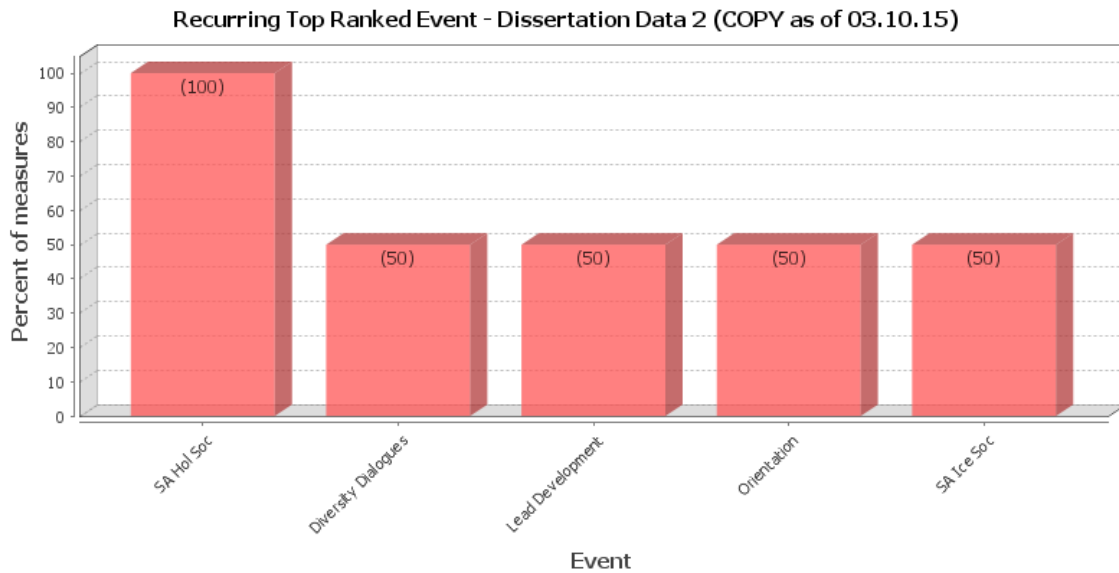


Figure 4.11. Top recurring ranked events.

As seen in Figure 4.11 the top recurring events were the division’s holiday social, diversity dialogue initiative, leadership development meetings (division-wide meetings), new student orientation and the division’s ice cream social. Among the underrepresented women in the sample, three of the top recurring events were selected as key events to connect with others. Those events were the holiday social (n=17), ice cream social (n=15) and diversity dialogues (n=10). Other top events for underrepresented women to connect with others were the Tunnel of Oppression diversity program (n=11) and Goal Teams (n=11). Table 4.6 showed the number of underrepresented women that selected the corresponding events as a key event and program they attended in the past year to connect with others.

Table 4.13

Events Attended by Underrepresented Women

Event	Count
Assessment training	9
Graduate student recruitment weekend	6
First Friday parade	9
First Year reading	4
Goal Teams (division committees)	11
Diversity dialogues	10
International festival	5
Leadership development (division meetings)	9
Maps program (first day of classes program)	3
MLK weekend	9
New student orientation	9
Holiday social	17
Ice cream social	15
Student leader recognition committee& events	3
Professional development committee	4
Employee appreciation committee	3
Student affairs soiree	6
Curriculum committee	2
Town hall meetings	9
Tunnel of Oppression (diversity program)	11
Women's Leadership Conference	7

Table 4.13 showed that underrepresented women attended social events more so than other types to connect with others in the network. Such events in the organizations

were the student affairs holiday and the ice cream social. The other top attended programs among underrepresented women include diversity programs (Tunnel of Oppression and diversity dialogues) and goal team committee events.

Summary

In all, this chapter shared the results gathered from the data collected using dynamic network analysis as a methodology. Specifically, the methods used to collect data were structured interviews and the survey distributed to a specific sample of student affairs staff. The survey results were analyzed using ORA, which provided network measures and visualizations to help understand the experiences of the underrepresented women in the network. The relationships were described through individuals' interactions with other agents, resources and tasks. QAP was also helpful in understanding the correlations between the different entities that exist within the network and the feelings regarding engagement and integration.

CHAPTER FIVE

CONCLUSIONS

In Chapter Five, I review the overall study findings and provide insight on the implications this study has for future research, for the practice of student affairs, and for methodology. Additionally, the following will provide suggestions on how to engage and continually integrate underrepresented women into the organization for student affairs practitioners.

As higher education continues to become increasingly diverse, minority women are still underrepresented at many higher education institutions. Furthermore, women in higher education continue to be marginalized in research as few studies focus on the experiences of underrepresented women in student affairs. To address these issues, this study examines the experiences of minority women student affairs professionals at a Predominately White Institution. The theoretical frameworks that guide this study are intersectionality and complexity leadership theory. Intersectionality provides a framework of analysis that examines minority women's experiences beyond their identities and looks at elements within the environment that continue to marginalize women. Complexity leadership theory acknowledges that in complex, knowledge producing organizations, many factors should be considered, specifically the environment and the various entities within an organization and how they handle external pressures.

The study seeks to understand the experiences of minority women by posing the following research question: What experiences do underrepresented women in student

affairs have that hinder or help them feel effectively engaged and successfully integrated in a Predominately White Institution?

This question was supplemented by the following sub-questions:

- Are underrepresented women generally located proximal to major informal leaders in the network and does such access influence feelings of engagement and integration?
- Are they in reciprocal relationships and cliques that give them access to informal leaders and does this access influence feelings of engagement and integration?
- Do underrepresented women have informal leadership roles in the network and do informal leadership roles help them feel engaged and integrated?
- Do underrepresented women have access to institutional resources?
- Are there key events and programs during the year that encourage underrepresented women to connect to one another?

The supporting questions were addressed in Chapter 4 and a more thorough discussion on the findings will occur in this chapter. The following is a brief summary of the findings for each of the supporting questions listed above:

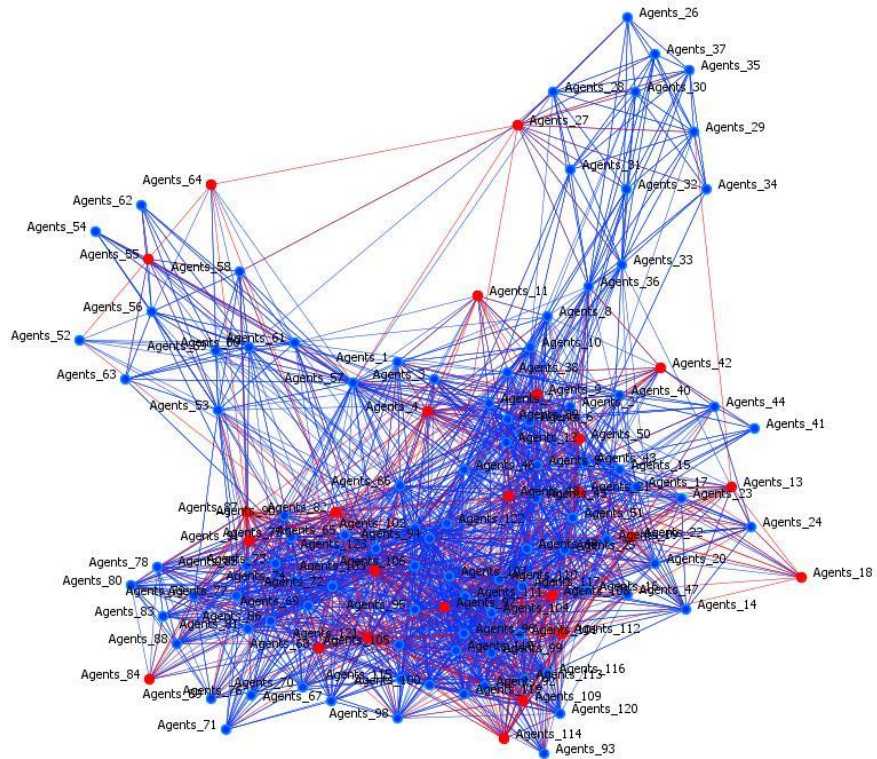
1. Underrepresented women are equally distributed across the network and located proximal to major informal leaders in the network.
2. Underrepresented women at the research site participated in reciprocal relationships and are part of cliques. This distribution of relationships gives them sufficient access to informal leaders.

3. Underrepresented women have informal leadership roles in the network.
4. Underrepresented women have sufficient access to resources in the network.
5. Key events and programs that underrepresented women attend include employee appreciation events and diversity related events.

The research questions and findings are separated into three themes: *Relationships across the network*, *Informal leadership roles* and *Key events and programs*. The following discussion will look at the findings under these themes. Additionally, this chapter will look at the meta-network as a whole as it relates to the research question.

The Meta-Network

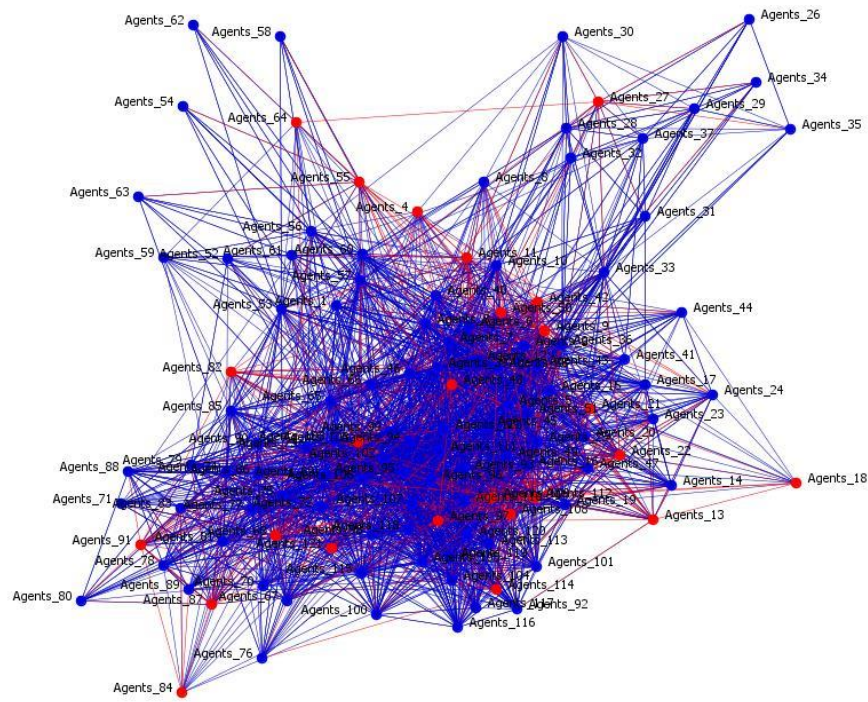
The meta-network of the student affairs division evaluated in this study is very dense, highly connected and moderately hierarchical. For the majority of the network, the agents are in a tightly coupled environment, but there are definitely some distinct groupings within the network where it is more loosely coupled. The following figures show the professional, social and task agent-by-agent networks to give an idea of how the agents are connecting with one another in the network. The red nodes represent underrepresented women and the blue nodes represent agents that identify as a White male or a White female.



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Figure 5.1. Professional relationships network visualization.

The above figure is a visualization of the agent-by-agent professional relationships network produced by ORA. Everyone in the network is connected to at least one other agent. Thus, each agent engages in professional relationships with at least one other co-worker. The visualization does show that some grouping is occurring in the network with at least three distinct groups apparent. One group is tightly clustered whereas the other two have fewer agents and the linkages are not as dense. This illustration suggests that those in the large, tightly clustered group may interact with one another professionally more frequently than agents in the other two groups.



powered by ORA-NetScenes

Figure 5.2. Tasks relationships network visualization.

Figure 5.2 shows the agent-by-agent tasks relationships network visualization produced by ORA. For the most part, the network is very dense with many linkages between the nodes in the network. As the tasks network is very dense and tightly coupled, it is likely that decisions go through multiple people before action can be taken. Additionally, in looking at the visualization, while some underrepresented women are more central to the network, the majority of underrepresented women are located more towards the periphery. This indicates that underrepresented women are not as central in tasks relationships as other agents in the network.

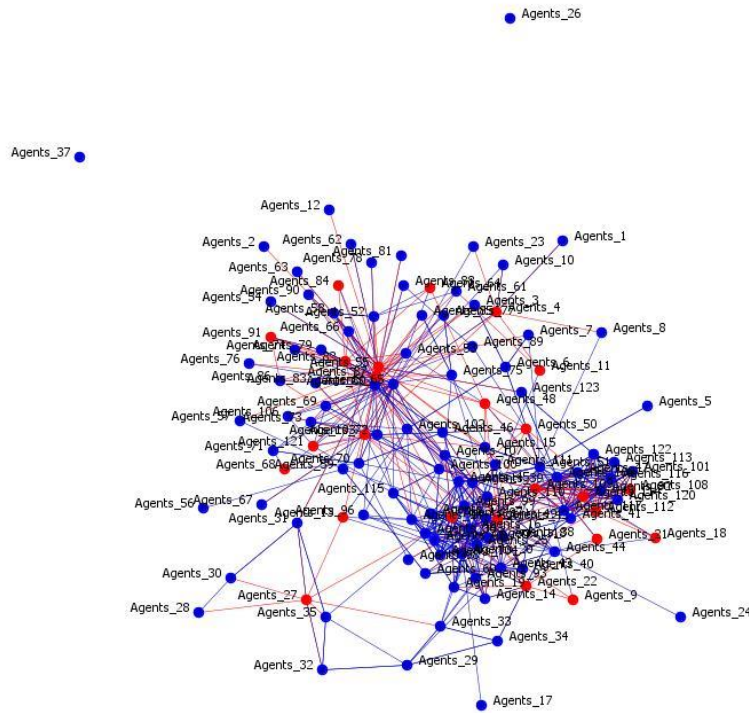


Figure 5.3. Social relationships network visualization.

Figure 5.3 looks at the social relationships that exist among agents in the network. Unlike the professional and tasks relationships networks where all agents are connected to at least one other agent, there are two isolates in the social relationships network (Agent 26, Agent 37). Additionally, this network is not as dense as the other two networks as there is less clustering in the network. There is some grouping however and underrepresented women are distributed fairly equally across the network. In one group, there are many linkages between agents, suggesting that this group may have stronger social relationships and actively engage in these social relationships more often. As a whole, with underrepresented women equally distributed across the network,

underrepresented women appear to be socially connected with many agents in the organization.

Beliefs

The survey includes ten belief statements for participants to agree/disagree with on a Likert scale. The findings show that two groups of beliefs emerged: beliefs on inclusion and beliefs on mission. Beliefs reveal how underrepresented women make meaning of their experiences within the network (Núñez, 2014). These beliefs relate to the research questions as feelings of inclusion directly correlate with feelings of integration, and beliefs regarding mission relate to feelings of engagement.

Through the QAP analyses performed, several independent networks were found to be statistically significant. The independent networks statistically significant for both inclusion and mission were: agent-by-agent professional relationships and agent-by-agent total (professional & social) closeness centrality network. These findings suggest that there is a correlation between the professional relationships that agents in the network engage in and their beliefs on inclusion and mission. Thus, agents that engage in professional relationships feel more engaged and integrated into the organization. The closeness centrality network refers to the total score of each agent's professional and social relationships closeness centrality in the network. As closeness centrality measures the "average closeness of a node to the other nodes in the network (Reminga & Carley, 2003, para. 9), this finding suggests that agents with higher closeness centrality scores are also more engaged and integrated into the network.

The agent-by-agent underrepresented network is only statistically significant with the dependent network of inclusion. It is not statistically significant when the analysis was performed with the dependent network of mission. This means that underrepresented women in the network have a solid concept on the mission of the organization and believe their work directly relates to the goals of the organization. These findings establish that underrepresented women within the network possess a healthy concept of the organization's mission and believe that their work relates directly to the overall goals of the organization.

Further investigation on the statistical significance of the QAP analysis regarding the agent-by-agent underrepresented network and the dependent variable of inclusion finds that in the raw data of the survey findings, a majority of those that agree with gender and race being a barrier to the work they are able to do are agents that primarily identify as a minority female. However, while underrepresented women note these feelings, the network analysis does not indicate a lack of access for underrepresented women to resources within the network. The findings indicate that these feelings may be more self-perceptions but not necessarily reality within the network.

One possible reason may be attributed to what Anthias (2013) refers to as *historicity*. *Historicity* addresses the social, economic and politic systems that impact organizations over time. Underrepresented women may experience negative feelings towards the organization due to other influences in the larger organization. For example, one may be in alignment with the mission of their department, but doubt their ability to move up the career ladder if they feel the institution is not open to a minority female

leader. This state of mind may be attributed to larger feelings of the organization. Further analysis of the institution as a whole would be helpful in understanding the root of these opinions. Potential explanations could include the impact of institutional history for women and minorities, an organization's response to a controversial issue (i.e. institutional response to #blacklivesmatter campaign), and the demographics of formal leaders at the institution. Additionally, critical race theorists may look to see if any policies exist that may continue to perpetuate negative emotional outcomes in the network. Individual interviews, follow up focus groups and observations of underrepresented women in their environment are possible methods one can use to understand the root of the beliefs minority women hold regarding the organization.

Relationships Across The Network

Borgatti et al. (2013) notes that there are four types of dyadic relationships commonly studied in network analyses: co-occurrences, social relations, interactions, and flows. Of the four types of relationships, three of them can be directly examined. *Co-occurrences* refer to membership of a group or participation in an event. *Social relations* are the relations people have to one another. In this study, social relations are self-reported in the survey by each agent. *Interactions* are also self-reported data and are measured by transaction and activities between agents. Lastly, *flows*, which are the outcomes of the communicative exchanges are not directly studied but implied based on the agent's connections with one another.

Relationships in the network are studied within several contexts: professional relationships, social relationships and task relationships (those that interact due to a

shared task). Network visualizations, ORA statistics, and QAP analyses all support the proposition that underrepresented women are equally represented throughout the network, thus enabling them to have relationships with formal and informal leaders within the division. Upon further analysis of the professional and social networks, though grouping is noticeable, underrepresented women are still equally distributed among the different groups in the network.

Additionally, underrepresented women are also in reciprocal relationships and cliques with informal leaders. On average, underrepresented women are part of more cliques than those in the majority for professional and social relationships. However, among task relationships, there are a significant lower number of cliques that underrepresented women are part of compared to their represented peers. Being in less task-related cliques suggests that underrepresented women are not as involved in the functions of the organization which can also mean less usage of department resources.

The notion of *representation* in Núñez's (2014) intersectionality framework would examine if minority women occupy specific types of roles, which may silo them from other areas of the organization. For example, if an organization tends to hire minority women in specific positions like an office that focuses on multicultural affairs, it is possible that those women are solely working on diversity initiatives together. This singular focus may keep them out of workgroups that center on different aspects of the organization like campus recreation or crisis management. This may differ from an employee that works in a department that has broader responsibilities like a coordinator in housing who may regularly work with staff in facilities, student programming, Greek

life, campus police, conduct and student leadership. Overspecializing certain departments in the organization can become a detriment to underrepresented women in those functional areas because they lack the ability to branch out as much as their counterparts are able.

Additionally, one may want to investigate how minority women may be invited or can enter more work-related task groups to enhance their experience and give them more direct access to resources and power within the organization. One way minority women are possibly able to gain access is through a mentor or champion of their career growth. The literature notes the important role of mentors and supervisors that are invested in the development and success of minority women employees (Chang et al., 2014; Henry, 2010; Patton & Harper, 2003; Zambrana et al., 2014). As only three of the Directors in the network and none of the Senior leadership identified as minority women, it is possible that these women may not have mentors at the formal leadership level that are able to connect them to different task groups.

Simmelian ties and clustering coefficient measures were calculated by ORA to illustrate the reciprocal relationships agents participated in. These connections and ties are important because Anthias (2013) sees relationships as ways that underrepresented women can gain access to power and resources within an organization. Network statistics such as Simmelian ties and clustering coefficient measures illustrate that underrepresented women have slightly lower scores than represented men and women. The largest gaps are present in Simmelian Ties – agent-by-agent task relationships (underrepresented = 0.161, represented = 0.227) and clustering coefficient – agent-by-

agent social relationships (underrepresented = 0.282, represented = 0.320). Having lower scores among Simmelian ties establishes that underrepresented women are in fewer 3-way reciprocal relationships that are represented agents, especially among relationships formed due to shared tasks and projects. Participation in Simmelian ties leads to such things as greater organizational commitment and more positive attitudes about the organization. As underrepresented women have lower Simmelian ties in the task network, it is likely that they have less access and exposure to various resources within the division.

As for the lower clustering coefficient scores, especially in the agent-by-agent social relationships network, the scores indicate that underrepresented women are not as connected with cliques in which agents are strongly connected to others. However, these weak ties may be due to the underrepresented women connecting to otherwise disenfranchised agents within the network. In looking at Figure 5.3, agent-by-agent social relationships network, it is clear that two groups emerge. Though underrepresented women are represented in both groups, more of the underrepresented women are part of the loosely coupled group. In some cases, like Agent 27, they only connect to less than ten other agents.

Interestingly, in the agent-by-agent task relationships network, underrepresented women have a higher clustering coefficient average than the represented agents. This finding, coupled with the lower Simmelian tie measure indicates that while underrepresented women may not be taking part in as many reciprocal relationships or cliques that involve shared tasks, they do have access and connection to those that are

taking part in those work groups. Therefore, underrepresented women do have access to power and resources within the network though they may not directly utilize those resources.

In the network, the relationships agents have with one another have an impact on their feelings on engagement and integration in the organization. This is most significantly seen among professional relationships. The QAP analysis noted a correlation between professional relationships and their beliefs on mission and inclusion within the organization. Thus, underrepresented women are more likely engaged and integrated into the organization when they build strong, reciprocal professional relationships. This finding is concurrent with literature regarding mentoring and professional networks on campus as a reason for greater retention of underrepresented women (Patton & Harper, 2003). Interestingly, participating in reciprocal social relationships has no statistically significant bearing on feelings of engagement and integration within the organization. However, the QAP analysis does note that agents in the network have strong social relationships in the network.

Informal Leadership Roles in Network

Agents in a network that hold informal leadership roles are very important. Hypothetically, agents central in a network are “prominent, or influential, or leaders, or gatekeepers, or [have] great autonomy, control, visibility, involvement, prestige, power and so on” (Borgatti et al., 2013). Even though those characteristics are hypothetical, they are all potential outcomes for those central in a network. To determine informal leadership in networks, complexity leadership theory looks at the dynamics in complex

systems that enable individuals to lead within the organization (Uhl Bien et al., 2007). Thus, to measure if an agent has an informal leadership role, ORA uses centrality measures to understand one's position in the network. Carley et al. (2013) notes that agents with high centrality scores are able to access information easily due to the connections the agents have with other nodes.

Findings show that among degree centrality (agent in the know), betweenness centrality, closeness centrality and eigenvector centrality measures, there are several underrepresented women that rank in the Top 5. Most notably, Agent 103 scores consistently high across all centrality measures (with the exception of closeness centrality) in both agent-by-agent professional relationships and agent-by-agent task relationships networks. These findings suggest that Agent 103 is not only a leader in professional cliques, but also connects different groups through professional relationships and tasks. While Agent 103 does not have high scores in the closeness centrality measures, Agent 121 does score well in this measure in the professional relationships network. Thus, Agent 121 is more likely to receive information through professional relationships before others in the network. By having high centrality scores in the agent-by-agent professional relationships network, Agents 103 and 121 have a high number of professional connections within the network, thus are informal leaders. For Agent 103, high centrality in the professional relationships network coupled with high centrality scores in the task relationships network suggests that Agent 103 is not only very central in the network, but may have access to many different aspects of the organization in regards to the work that they do and the people they interact with each day.

Upon further examination of the top five leaders in the task networks, four of the top leaders (Agent 94, Agent 96, Agent 102 and Agent 103) report being in the same office location. This suggests that this office may be central to many functions of the organization. As Agent 103 identifies as an employee in an administrative assistant capacity suggests that it is possible that this employee may be the administrative assistant to one of the other leaders. This may explain why they are highly involved in many tasks across the network.

Socially, Agent 42 is the most recurring underrepresented woman in the top 5 leaders among the centrality scores for the agent-by-agent social relationships network. Additionally, Agent 87 not only scores high in total degree centrality, but also in closeness centrality whereas Agent 109 scores high in total degree centrality and betweenness centrality. With high closeness centrality scores, Agents 42 and 87 are socially closer to other nodes than other underrepresented women in the network. This differs from betweenness centrality, where Agents 42 and 109 are more likely connecting different social groups together. Thus, these women are more likely socially connecting with others in the network – whether through activities on campus or in the community.

Another way to characterize informal leaders is to measure their access to resources within the network. The structured interview identifies ten types of resources agents utilize in the network. Newman's grouping find three groupings amongst the ten listed resources. The types of groupings are listed below.

Table 5.1

Resource Network Newman's Grouping

Group	Resources
1	Machinery, Cleaning materials, Training & education
2	Communication between different stakeholders (i.e. staff, students, departments, etc.), Professional development classes
3	Collaborative partnerships, Marketing resources & tools, Monetary budgets, Technological tools (computer, iPad, handheld devices), Support staff

Further analysis of the groupings above puts forth the notion that certain types of positions more readily access specific resources. For example, in Group 1, it is possible that these resources are most likely related to positions in facilities – both maintenance and custodial sectors. Group 2 may refer to more entry level and graduate student staff as those two groups tend to interact with many different constituents to execute the projects in their roles. Lastly, Group 3 likely includes more directors and higher level administrators because the nature of their work relies on partnerships, oversight of monetary budgets and supervising support staff. In looking at the Newman's grouping visualization in Figure 4.9, underrepresented women are distributed across all three groups. While more formal leadership may suggest that those in Group 3 are more likely administrative leaders in the network, complexity leadership theory notes that access to

resources are important and evident in all areas of leadership in complex adaptive systems: administrative, adaptive and enabling.

Another way that ORA calculates one's level of access to resources is by calculating each agent's resource capability. To further understand the resource capability scores, the top 25% of scores are taken and five underrepresented women are in the top 25%. The five women are Agents 9, 22, 42, 48 and 68. Interestingly enough, only Agent 42 is listed as an informal leader among the centrality scores. Additionally, in regards to position – only Agent 48 identifies self as in a director level position whereas the other four agents identify as mid-level positions. Therefore, these women do not just have access to resources simply due to their administrative title and position, but possibly due to the conditions in the network that allow for them to easily access the resources.

Complexity leadership theory looks at informal leadership roles as an outcome of a set of conditions that allow agents to lead. Núñez (2014) framework on intersectionality applies different levels of analysis to situations to understand the impact of different levels of intersections. In the study, the organizational level of analysis directly relates to the underrepresented women's positions in the network and how does their position relate to power dynamics in the network, especially power through their access to resources. The findings, as interpreted through both frameworks, establish conditions within the network that enable underrepresented women to lead and access resources available.

However, while conditions may exist, the total number and representation of female minority informal leaders is low. In reflecting on Tarr-Whelan's (2009) argument about the 30% solution where women should represent 30% of the decision making team

to adequately represent a critical mass of women, the network studied does not meet this proposed solution. When reviewing the centrality scores of the study, often times the top 5 leaders only had one agent that identified as a minority woman (Agent 103 or Agent 42). One of the five agents represents only 20%. As for the five agents listed in the top 25% of resource capability scores, those five agents represent only 20% of the resource capability leaders in the network. As these percentages are not 30% like Tarr-Whelan suggests, it furthers the notion that while some underrepresented women may have informal leadership roles, minority women as a whole still are seen as informal leaders in the network.

Key Events and Programs

Institutions that provide events and programming that allow underrepresented women to engage and connect with one another provide needed institutional support to this population and show the institution's commitment to their success (Henry, 2010). Newman's Groupings identify three groups of programs and events. Group 1 events center around two categories: orientation related events and division wide meetings. Group 2 primarily has events that are more social and recognize employees. Lastly, Group 3 includes primarily diversity related events. Underrepresented women report they attend mainly social and employee appreciation events such as the student affairs holiday social and ice cream social. Connective programming like these events show institutional support to all employees, including underrepresented women (Henry & Glenn, 2009).

Findings show some deviation in key events and programs between the total network and underrepresented women. When looking at the top five events and programs

among the total network, the top events are the holiday social, ice cream social, diversity dialogues, leadership development meetings and orientation. However, when looking at the top events attended by underrepresented women, in place of leadership development meetings and orientation are the Tunnel of Oppression diversity program and events related to goal teams. Diversity dialogues and Tunnel of Oppression are diversity programs that encourage participants to openly discuss issues of diversity and social justice. Goal teams have members from different departments of the organization to discuss the six strategic goals of the division. Overall, the top five programs are concurrent with the literature on the type of programs that are important for underrepresented women to engage with one another and openly talk about issues related to race and gender (Henry & Glenn, 2009; Hughes & Howard – Hamilton, 2003; Watt, 2003).

However, a second level analysis may examine if social and diversity related programs give underrepresented access to informal leadership. Certainly, social and diversity programs may make minority females feel more welcomed and engaged in the environment, but these programs may not continually develop and expose minority women to resources and power within the network like other programs such as leadership development meetings. Additionally, some of the less attended programs include division-wide related committees, thus suggesting that minority women may not be involved in divisional committee leadership opportunities. As complexity leadership theory notes, events centered on leadership development may lead to innovation and new skills within an organization. If minority women are not attending these events, they are

being shut out of these opportunities for growth. Further study may examine why minority women are not attending programs related to leadership development and why they are not participating in divisional committee opportunities.

Implications

This study provides much insight and many ideas on the experiences underrepresented women have within a network. Additionally, aspects of the organization and the impact they have on underrepresented women are also discovered in this study. Though this study is not generalizable as the sample was taken from only one institution but many of the findings can be helpful for student affairs divisions as they seek to diversify their staffs and continually engage and retain underrepresented women.

As a whole, findings in this study suggest that underrepresented women are able to successfully navigate and lead in complex adaptive systems like higher education if given the right conditions. Such conditions include environments that are supportive of underrepresented women and enable them to be themselves at work. Creating environments where underrepresented women are able to take part in activities that relate to the mission of the division, understand their role in the organization and authentically connect with others and discuss issues of race and gender are ways that higher education can integrate and engage women of color.

Furthermore, based on this network and the impact of belief statements on inclusion and mission, it would be interesting to compare this study to other institutions that may vary in their approach to instilling their mission and goals around diversity. For the most part, this study finds that being an underrepresented female has no bearing or

impact on feelings regarding mission. Additionally, being underrepresented has no impact on access to resources. However, in the literature, underrepresented women are still very much marginalized in higher education and in research. It is possible that the reason that underrepresented women in this study are more supportive of the mission is because the activities identified in the key programs and events that allow underrepresented women to participate in events that bring the division together to celebrate, openly talk through issues of diversity and directly work on strategic goals. Thus, comparison to other institutions will see if different environments produce drastically different outcomes.

Implications for Methodology

This study applies two theoretical frameworks that are still relatively new to educational research. Complexity leadership theory, as measured by dynamic network analysis, provides great insight on knowledge producing organizations like higher education. Dynamic network analysis allows for this study to look beyond the singular impact of race and gender identities of the target population. Instead, dynamic network analysis seeks to understand the network as a whole and how the conditions of the environment can enable leadership and exchange of information and beliefs.

Taking into account the environment is central in Núñez's (2014) intersectionality framework. The framework utilizes three levels of analysis in an effort to move beyond social identities to further understanding of the power within the environment that perpetuates marginalization. As this is a relatively new framework for intersectionality,

the application of this framework to the analysis of the study findings provides a new approach for intersectionality researchers.

Dynamic network analysis is a methodological approach that can manage multiple complexities of an organization. Utilizing this methodology for future study will help researchers interested in understanding the correlation of many different entities.

Additionally, because dynamic network analysis is able to study large amounts of digital data, an opportunity exists to use this methodology to continue the study of large networks like higher education institutions.

Implications for Student Affairs

This study has many implications for student affairs. Student affairs administrators should evaluate the practices they are using to recruit and retain underrepresented women in their organizations. Additionally, they should evaluate what types of positions underrepresented women are occupying and how they are connecting these women to the larger organization. As the literature states, professional development opportunities are very important for minority women and they often look to their supervisors to provide that level of development. Therefore, it is important that supervisors are providing opportunities and time that allow for this development to occur.

Professional development should not only be seen as classes and additional training. They should also be opportunities where minority women are able to connect with others in meaningful ways that allow them to be part of the mission and vision of the organization. For example, oftentimes divisional committees are comprised of mid-level and upper administrative professionals. Sometimes, these committees allow for graduate

students to participate. However, custodial staff and administrative assistants are not always asked to serve on these committees. These opportunities are not available because of a need for these staff members to be visible in the offices and communities they manage. By not placing these positions in committees there is possibility of missing an integral point of view from the division on a committee. Furthermore, this can create further marginalization of underrepresented women.

Lastly, it is important for student affairs to be mindful not to group underrepresented women's issues with all women, or with underrepresented males. This study acknowledges that the intersection of race and gender provides a unique perspective for student affairs staff and should be something that is not taken lightly. By recognizing the intersection of identities as valid entities to be mindful of, policies and processes that further marginalize this population should be considered and reformed. For example, an example of such practice would be having a women's commission for the institution, but not inviting women of color or seeing women of color issues as something separate from all women issues.

Implications for Future Study

This study provides an overview of the network and the dynamics occurring among the agents within the network. However, to fully understand the impact of the intersecting identities that race and gender has on each agent's actions within the network, follow up interviews and observations could be facilitated for more in-depth study. A more in-depth approach would allow for more investigative questions such as perceptions on who has power in the network and what are ways underrepresented

women believe they can be successful in the network. Additionally, as this study showed some clusters within the network, it would be helpful to further study some of the larger, dense clusters. Further inspection among the larger clusters will allow for the ability to see if a smaller network would impact positions, beliefs and roles in the network.

As stated above, it would also be helpful to facilitate this research study at other institutions, similar and not so similar. By doing this, there allows for some comparison among the various entities and variables that impact a student affairs environment. More specifically, it would be interesting to further study the diffusion of beliefs across a network. As this study finds there was no significance on underrepresented women's belief on mission, it would be interesting to not only find out why, but also if this is the same at other institutions. Additionally, this study briefly touches on the environmental pressures that exist related to diversity and feelings of inclusion. However, the climate in higher education post-data collection has brought race and gender issues to the forefront of many higher education institutions. Protests and dialogue regarding the #blacklivesmatter movement and sexual assault on campus will likely leave long lasting impressions on college campuses so further study on how these movements impact the underrepresented female staff members would be important. As these issues are more global than local, studying the impact of these causes as it impacts the environment of a student affairs division would allow for more understanding on how environmental pressures impact experiences within a network that would enable underrepresented women to lead.

Summary

In all, this chapter provides a review of the study and a discussion on the common themes surrounding the findings. The study also provides insight on how the findings related back to the two chosen theoretical frameworks. Additionally implications for methodology and student affairs are revealed in this chapter. Lastly, implications of further study are expressed to press upon a continuation of research for underrepresented women. Overall, this paper provides an in-depth look at underrepresented women in student affairs at a Predominately White Institution through a dynamic network analysis.

APPENDICES

Appendix A

Informed Consent for Dissertation Interview

Information about Being in a Research Study
[REDACTED] University

Understanding the Experiences of Underrepresented Women in Student Affairs at a Predominately White Institution through a Dynamic Network Analysis framework

Description of the Study and Your Part in It

Dr. Russell Marion and Ms. Lani San Antonio are inviting you to take part in a research study. Dr. Marion is a faculty member at Clemson University. Ms. San Antonio is a doctoral candidate at Clemson University and is administering the study with the help of the Dr. Marion.

The purpose of this research is to explore the network dynamics that occur among student affairs staff members at a Predominately White Institution, specifically those that identify as an underrepresented female, and how these dynamics may inform overall experiences within the network context.

Your part in the study will be to partake in this group interview. This interview should last no longer than 90 minutes and will be audio recorded.

Risks and Discomforts

As this survey will ask questions on your beliefs regarding your experience at your institution, there are certain risks or discomforts that you might expect if you take part in this research. They include psychological or social distress based on your past experiences. Should you withdraw from participation in this study, there are no penalties or risks of retaliation.

Possible Benefits

We do not know of any way you would benefit directly from taking part in this study. However, this research may help us to understand the experiences of underrepresented women in student affairs that could inform future studies and program support and development.

Incentives

During this interview period, light snacks will be provided.

Protection of Privacy and Confidentiality

We will do everything we can to protect your privacy and confidentiality. We will not tell anybody outside of the research team that you were in this study or what information we have collected about you in particular. We will use pseudonyms and remove all identifying information during our data analysis. Audio recordings will be destroyed immediately after data analysis is complete. Therefore, it is unlikely that anyone reading the results will know you are a participant.

We might be required to share the information we collect from you with the [REDACTED] University Office of Research Compliance and the federal Office for Human Research Protections. If this happens, the information would only be used to find out if we ran this study properly and protected your rights in the study.

Choosing to Be in the Study

You do not have to be in this study. You may choose not to take part and you may choose to stop taking part at any time. You will not be punished in any way if you decide not to be in the study or to stop taking part in the study.

If you choose to stop taking part in this study, the information you have already provided will be used in a confidential manner.

Contact Information

If you have any questions or concerns about this study or if any problems arise, please contact Dr. Russell Marion at [REDACTED] 05 or marion2@clermson.edu. You may also contact Ms. Lani San Antonio at [REDACTED] 4711 or asan@clermson.edu.

If you have any questions or concerns about your rights in this research study, please contact the [REDACTED] University Office of Research Compliance (ORC) at [REDACTED] or [irb@\[REDACTED\]](mailto:irb@[REDACTED]). If you are outside of the [REDACTED] area, please use the ORC's toll-free number [REDACTED] 071.

Consent

I have read this form and have been allowed to ask any questions I might have. I agree to take part in this study.

Participant's signature: _____

Date: _____

A copy of this form will be given to you.

Appendix B

Survey from Qualtrics

Information about Being in a Research Study
[REDACTED] University

Understanding the Experiences of Underrepresented Women in Student Affairs at a Predominately White Institution through a Dynamic Network Analysis framework

Description of the Study and Your Part in It

Dr. Russell Marion and Ms. Lani San Antonio is inviting you to take part in a research study. Dr. Marion is a faculty member at Clemson University. Ms. San Antonio is a doctoral candidate at Clemson University and is administering the study with the help of the Dr. Marion.

The purpose of this research is to explore the network dynamics that occur among student affairs staff members at a Predominately White Institution, specifically those that identify as an underrepresented female, and how these dynamics may inform overall experiences within the network context.

Your part in the study will be to complete the following online survey. It will take you about 30 – 45 minutes to answer the questions.

Risks and Discomforts

As this survey will ask questions on your beliefs regarding your experience at [REDACTED], there are certain risks or discomforts that you might expect if you take part in this research. They include psychological or social distress based on your past experiences. Should you withdraw from participation in this study, there are no penalties or risks of retaliation.

Possible Benefits

We do not know of any way you would benefit directly from taking part in this study. However, this research may help us to understand the experiences of underrepresented women in student affairs that could inform future studies and program support and development.

Protection of Privacy and Confidentiality

We will do everything we can to protect your privacy and confidentiality. We will not tell anybody outside of the research team that you were in this study or what information we have collected about you in particular. We will use pseudonyms and remove all identifying information during our data analysis. Therefore, it is unlikely that anyone reading the results will know you are a participant.

We might be required to share the information we collect from you with the [REDACTED] University Office of Research Compliance and the federal Office for Human Research Protections. If this happens, the information would only be used to find out if we ran this study properly and protected your rights in the study.

Choosing to Be in the Study

You do not have to be in this study. You may choose not to take part and you may choose to stop taking part at any time. You will not be punished in any way if you decide not to be in the study or to stop taking part in the study. If you are a student of Dr. [REDACTED] and decide not to take part or to stop taking part in this study, it will not affect your grade in any way.

If you choose to stop taking part in this study, the information you have already provided will be used in a confidential manner.

Contact Information

If you have any questions or concerns about this study or if any problems arise, please contact Dr. Russell Marion at [REDACTED] 05 or marion2@clemson.edu. You may also contact Ms. Lani San Antonio at [REDACTED] 4711 or asan@clemson.edu.

If you have any questions or concerns about your rights in this research study, please contact the [REDACTED] University Office of Research Compliance (ORC) at [REDACTED] or [irb@\[REDACTED\]](mailto:irb@[REDACTED]). If you are outside of the [REDACTED] area, please use the ORC's toll-free number, [REDACTED].

Clicking on the "agree" button indicates that:

- You have read the above information
- You voluntarily agree to participate
- You are at least 18 years of age

You may print a copy of this informational letter for your files.

Survey

- 1) What is your gender identity?
 - a. Male
 - b. Female
 - c. Transgender
- 2) What is your age?
 - a. 18 – 30
 - b. 31 – 40
 - c. 41 – 50
 - d. 51 - 60
 - e. 61+
- 3) What is your race/ethnicity?
 - a. White/Non-Hispanic
 - b. Black/African-American
 - c. Hispanic
 - d. Native American
 - e. Asian/Pacific Islander
 - f. Two or more races
 - g. Other
- 4) Type of Position you hold (please select best answer that describes your position)
 - a. Graduate Assistant
 - b. Administrative support
 - c. Entry level position
 - d. Mid level position
 - e. Director position
 - f. Senior Leadership position
- 5) Length of time
 - a. 0 – 5 years
 - b. 6 – 10 years
 - c. 11 – 15 years
 - d. 16 – 20 years
 - e. 21+ years
- 6) Highest level of education attained
 - a. High school degree
 - b. Associates degree
 - c. Bachelors degree
 - d. Masters degree
 - e. Doctoral degree
 - f. Professional degree
- 7) Where is your office located?
- 8) Which of the following resources do you regularly use to perform your work?
Select all that apply.
- 9) Which of the following are key pieces of knowledge you need to perform your work? *Select all that apply.*

- 10) Which of the following are major tasks you perform in your role? *Select all that apply.*
- 11) What key events and programs did you attend this past year that enabled you to connect in ways that makes you feel engaged with your profession? *Select all that apply.*
- 12) With which of the following staff members have you worked in the last year on a project and/or task? *Select all that apply.*
- 13) Which staff members do you regularly interact with professionally? *Select all that apply.*
- 14) Which staff members do you regularly interact with socially? *Select all that apply.*
- 15) Please indicate your level of agreement with the following statements:
 - a. I believe my work directly impacts the mission of the Division of Student Affairs.
 - b. I believe everyone in my department understands and works toward a common goal.
 - c. I believe the Division of Student Affairs is committed to creating an inclusive community.
 - d. I believe that I work in an inclusive environment that allows for freedom of expression and thought.
 - e. I believe the Division of Student Affairs makes efforts to recruit and select a diverse staff.
 - f. I believe that the Division of Student Affairs accepts me for who I am.
 - g. I believe my gender is a barrier in my ability to perform my role within the Division of Student Affairs.
 - h. I believe my race is a barrier in my ability to perform my role within the Division of Student Affairs.
 - i. I have positive feelings about my work and the people I work with.
 - j. I have negative feelings about my work and the people I work with.
 - k. I believe the Division of Student Affairs makes an effort to continually engage me in my work.
 - l. I regularly feel engaged in my work.
 - m. I feel adequately supported in my work by leaders in my department.

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