

Role Congruity Prejudice Toward Women of Color Faculty in STEM Disciplines

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Abstract

Women of color (WOC) professors confront distinct problems in academic institutions due to the intersection of their gender, cultural, and racial identities. Using role congruity theory and intersectionality as a conceptual framework, this study investigated how bias influenced the experiences of WOC professors in the STEM disciplines and the consequences for advancement. Role congruity theory evaluates leadership conduct less positively when performed by a woman, which makes it harder for women to achieve or persist in leadership roles (Eagly & Karau, 2002). As such, we examined the intricate interaction of role congruity and intersectionality (compounded oppression due to having multiple marginalized identities) among WOC professors through in-depth interviews with three tenured and five pre-tenured WOC faculty members from various US universities. The findings offer insight into their challenges with unwelcoming instructional environments, institutional culture, and prejudice towards their leadership roles, undermining their evaluation and professional development. Furthermore, this study emphasizes the critical need for institutional reform in creating supportive and inclusive workplaces for WOC scholars.

Introduction

In STEM disciplines, WOC faculty often face unique challenges stemming from the intersection of their gender, cultural and racial identities (Reyes, 2011). These scholars encounter a complex web of discrimination, where gender congruity intersects with racial prejudices, resulting in instances of cultural bias. WOC faculty may find themselves navigating many stereotypes and prejudices driven by historical and systemic biases (Gregor et al., 2022). For example, Greene et al. (2010) found that WOC faculty perceive their academic environment as being “chilly and unwelcoming”, with little professional support through mentoring and disparities of resources and privileges between men and women faculty. Chow (2015) also noted that a foreign accent can hurt an instructor’s course evaluations. Some WOC faculty who are not native English speakers may face discrimination based on their accents, resulting in undervaluing their diverse perspectives and competencies or being excluded from mainstream academic conversations (Chow, 2015). These stereotypes perpetuate discrimination, distorting perceptions of WOC faculty expertise, authority, leadership, and professionalism in academia, further limiting the diversity of ideas and perspectives, and perpetuating the dominance of white cultural norms. These experiences also impact the retention and advancement of WOC faculty within the academy. As such, this study explored how instructional bias affects the experiences of WOC faculty within STEM disciplines by investigating the following questions: (a) How do WOC faculty negotiate the role congruity expectations in the STEM fields?, and (b) What are the implications of role congruity for their performance evaluation and advancement?

Conceptual Framework: Role Congruity Theory through an Intersectional Lens

The Role Congruity Theory (RCT), put forth by Alice Eagly and Steven Karau (2002), is a social psychological theory focusing on gender stereotypes and social perception and

expectations of leadership roles. According to the theory, people generally believe some characteristics and behaviors fit particular gender roles better than others. Agentic behavior, such as assertiveness, ambition, decisiveness, and a concentration on task-oriented tasks, are typically perceived as more consistent with masculine gender roles. On the other hand, communal behaviors are linked to qualities like calmness, empathy, nurturing, collaboration, and cooperation, typically connected to female gender roles (Eagly & Karau, 2002).

Although RCT primarily focuses on how gender roles and leadership interact, it also has implications for how the intersection of race and gender affects an individual's general perception of leadership. In the context of this study, faculty leadership refers to the ability and inclination of faculty members to initiate and engage in efforts that align with their traditional roles in teaching and leading classrooms; research; influencing policy and institutional change; and creating innovative solutions for challenges faced within the academic community (Kezar and Lester, 2009). While the theory explores how gender influences perceptions of one's leadership qualities, it does not explicitly address race. Thus, it is worth exploring how race and gender roles interact, and how this affects leadership evaluations. Individuals who are both women and members of racially minoritized communities may have particular difficulties when race and gender are intertwined in the context of leadership evaluations. These populations may experience even more role incongruity due to the interconnectedness of gender and race, which can compound the experiences of prejudice and biases resulting in exacerbated role incongruity. For instance, assumptions and expectations that conflict not just with conventional ideas of leadership based on gender but also with stereotypes and expectations related to race may be encountered by women of color. This positions WOC in a difficult circumstance where they may

be seen as missing both the communal aspects of femininity and the agentic skills associated with leadership in academic settings.

Hence, it is essential to integrate multiple frameworks as a lens to nuance women of color's intertwined gender and racial experiences (T. Berry, 2010; T. et al., 2009; Ladson-Billings, 1998, 2009; Wing, 1997, 2000; Yosso, 2005). Intersectionality (Crenshaw, 1991; Crenshaw, 2019) provides a lens to expand the RCT enabling researchers to understand the interplay of race and gender and how WOC faculty navigate the multiple identities daily. The premise of intersectionality theory pioneered by Kimberly Crenshaw (1991) criticizes identity politics as it fails to transcend difference; instead, it conflates or ignores intragroup differences, which only contributes to creating tension among groups. She argues that postmodern theories must acknowledge the multiplicative identities and how power has clustered around specific categories fostering social hierarchies, positioning women of color within at least two subordinated groups exposed to racism and sexism. Crenshaw (1991, 2019) believes that through an awareness of intersectionality, we can better acknowledge and ground the differences among us and negotiate how these differences will find expression in constructing group politics.

In their qualitative study, Turner et al. (2011) found that WOC faculty encountered institutional tokenism, subtle discrimination, racism, and marginalization as invisible norms and standards; ambiguous tenure and promotion system; lower evaluation for WOC faculty; and uneven representation of WOC faculty in different academic departments. The impacts were prominent specifically in three academic fields (Science et al. [STEM], Social, Behavioral, and Economic Sciences [SBE], and Humanities/Arts). Participants in the study reported knowledge gaps about how campus policy affected their daily lives and inconsistent and arbitrary communication regarding diversity programs and services on their campuses. The study also

illuminated that WOC faculty experience difficulties with students' behaviors who do not expect to be taught by women of color (Turner et al., 2011).

DeCuir-Gunb et al. (2009) investigated the emotional response of underrepresented WOC faculty to white men studying engineering on predominantly white campuses. Their results showed that WOC faculty in engineering face structural discrimination, tokenism, sexism, and racism, comparatively more due to their underrepresentation in the discipline. WOC faculty are overly represented in committees, face antagonistic classroom encounters from engineering students challenging their authority and knowledge, and have negative course evaluations by students. To cope with these challenges, DeCuir-Gumb et al. (2009) found WOC faculty used mentoring, socio-familial managing resources, and psychological and cultural resources.

In the next section, we discuss the methods that undergirded this study including our sample and data collection and analysis procedures.

Methods

The current study is part of a larger study that was carried out at six research institutions in the United States, including one Historically Black University (HBU), three Hispanic Serving Institutions (HSIs), one majority-minority enrollment school, and one predominantly white institution (PWI). The purpose of the larger study was to understand policies and practices that are instrumental in recruiting, retaining, and advancing WOC faculty in STEM. We employed a comparative case study research design (CCS) (Bartlett & Vavrus, 2017). This iterative CCS "allows us to think about how similar processes lead to different outcomes in some situations; how different influences lead to similar outcomes in others; and how seemingly distinct phenomena may be related to similar trends or pressures" (Bartlett & Vavrus, 2017, p.15). Iterative CCS "allows us to think about how similar processes lead to different outcomes in some

situations; how different influences lead to similar outcomes in others; and how unique events may be related to similar trends or pressures" (Bartlett & Vavrus, 2017, p.15). CCS, in particular, provided insights into how power dynamics and interwoven systems of oppression impact the behaviors and viewpoints of distinct academic groups and how they influence WOC faculty to negotiate the cultural discrimination in predominantly white or male spaces.

Participants

The current study's sample includes three tenured WOC professors and five pre-tenured WOC faculty members. Participants in this study derived from a variety of racial/ethnic groups including Asian, Black/African American, Latina/Hispanic, and Native/Indigenous. For the larger study, we used a combination of purposeful and snowball sampling to recruit participants. We emailed prospective participants at select research universities, using our criteria explained below, and invited them to participate in the study. We also reached out to STEM networks and asked them to recommend participants for the study, which we then emailed those suggested individuals. This sample was extracted from this larger study due to their in-depth experiences with the phenomenon under investigation.

Data Collection Procedures

We used Zoom web conferencing technology to conduct 60-minute semi-structured interviews with participants. Questions in the interview protocols addressed departmental and institutional policies; practices; and models that helped or impeded the recruitment, retention, and promotion of women of color STEM faculty.

Data Collection Procedures

A professional service transcribed the audio-recorded data from the Zoom interviews. We used a priori and open coding to create a codebook (Decuir-Gunby et al., 2011). In Dedoose, a

qualitative analysis software, we employed focused coding on the transcripts using the codebook generated from our first phase of analysis. In the final stage of our analysis, we used axial coding to identify themes (Saldana, 2016). During this phase, we generated themes as we ordered and classified superordinate and subordinate codes based on emergent patterns.

Findings and Discussion

The role congruity theory of prejudice, when applied with an intersectional lens, provides a robust framework for understanding the issues experienced by WOC faculty in U.S. higher education institutions. In the current study, it illuminated how biases, stereotypes, and historical discrimination may lead to role incongruity as a leader, influencing teaching evaluations, career possibilities, leadership experiences, and a general sense of inclusion within academic institutions. Further, our findings showed that WOC faculty experienced prejudicial treatment undermining their leadership style both in agentic and communal leadership behaviors.

Bias in Teaching Evaluations

The data showed that cultural biases and stereotypes led to negative assessments of WOC faculty. The participants' teaching abilities were often underestimated and devalued due to preconceived notions about their knowledge of the subject matter or how they taught course material. Participants also reported instances of racial and gender bias when discussing assigned courses and how departmental leaders handled said assignments following students' adverse response in previous semesters. For example, one participant shared,

The graduate students' evaluations were basically "She was always angry. She answered our questions very angrily". Like, "Okay, I'm an angry woman. Really? You don't see that?" I'm sure if I was a man, you would have said, "Oh, very assertive. This man knows exactly what he's doing." I don't think I would have gotten those same evaluations in that

same negative way from those students had I been a man. So, it absolutely manifested in the way that they reviewed me. (Vanessa, Pre-tenured Latina faculty member)

This participant's comment underscores existing research that men faculty taking an assertive approach in the classroom is viewed more positively than women faculty (Chávez & Mitchell, 2020). The participant also pointed to gendered rhetoric that denote Latinas as feisty when they engage in perceivably assertive behavior. Additionally, role congruity theory illuminated that when women take on positions and behaviors that are characteristically male, they often face consequences of engaging in social roles that do not succumb to the norms of that context (Eagly & Karau, 2002).

Participants also discussed how having an accent was perceived as being less authoritative on a subject matter. In some cases, this resulted in racialized undertones on teaching evaluations. One participant explained,

So my strong Chinese accent commonly appears on the teaching evaluation. Then, I read articles about this. I [also] talked to my chair because I was worried about my teaching [evaluations]. Specifically, because that was one semester, I got a really bad evaluation. I can tell you why. Because I told my students I valued effort. Those comments of, "Oh, I'm not good at STEM," or, "My mom is not good at STEM, therefore it's okay that I'm not good at it." I don't take those. So before you complain, I would ask you, "Did you work on this? How long have you been working on this?" So maybe it's the way I presented it, but it was not well received. A couple of students were really loud and noisy. (Yasmin, Tenured, Asian woman professor)

While the participant began by highlighting how her accented language was negatively evaluated on teaching evaluations, she also discussed ways she attempted to humanize STEM learning by

accounting for student effort. However, this approach was still met with disdain as expressed in the teaching evaluations. While the students' perspectives are outside the scope of this study, previous research may suggest that the participant's race, gender, and accent played a role in how she was evaluated (Chávez & Mitchell, 2020). Additionally, her stance on student complaining, while challenged by the students through the teaching evaluation process, may have received less objections had it come from a professor that identified as a man (Eagly & Karau, 2002).

Perception of WOC faculty being Self-sufficient

In the context of leadership positions, WOC who exhibit characteristics of agentic leadership traits traditionally associated with male gender roles, such as ambition, decisiveness, and a focus on task-oriented activities, often encounter labels of being independent and not needing support (Eagly & Karau, 2002). These stereotypes undermine the leadership potential of WOC and perpetuate a lack of institutional mentorship and support than a desire to change institutional culture. This often results in exclusion from essential networks and opportunities as well as role incongruity. For example, one participant noted how, in her institutional context, senior faculty cultivated excuses to preclude them from mentoring WOC faculty. She stated, "Oh, she's so independent" or, "She doesn't want my help," or, "I don't want to insult her by offering her help." So, all these reasons that people imagine and come up with... You can just do that. That's not insulting. That's not racist. That's not anything". (Sabrina, tenured, Latina faculty member) As the participant concluded, providing mentoring and support for WOC faculty is not racist if it is being done in a manner that helps the faculty member to be successful. Also, as noted later in the participant's interview, men were still being mentored despite their perceived competence to do their job. As such, the participant believed that some senior faculty and leaders

did not want WOC faculty to persist in their departments evidenced by their lack of mentoring of these faculty.

Furthermore, the perception of WOC as self-sufficient and capable of handling leadership responsibilities alone distorts their true potential. It hinders their professional growth, inadvertently creating barriers for them to access the necessary guidance and mentorship essential for leadership development and career advancement. As such, another participant asserted,

When I talk to women, nobody has pulled them aside to tell them how to navigate the demands of the academy, and especially women of color, to do all that. And they're asked to step up to service... How are they going to say no to that chair?"

Devaluation of Service Contributions

WOC faculty face a discrepancy in the recognition and value attributed to their communal leadership positions, notably in service and mentorship, within academic contexts. While obtaining funding and publications is essential, the critical contributions of WOC professors to advancing diversity, equity, and inclusion (DEI) in higher education institutions largely goes unnoticed and underappreciated by STEM departments. WOC professors are frequently asked to take on additional tasks linked to fostering diversity and inclusiveness within their academic communities, resulting in a mismatch between the role demands and job expectation. For example, one participant contended,

Maybe being asked to sit on a zillion different communities because you're the only woman of color in the school. So, you're spending 10 hours a week doing your duty on the Diversity, Equity, and Inclusion Committee, or going to talk to other incoming faculty of color about the process or about the school. You're being constantly asked to do extra

stuff, for better or for worse. And so all that takes time away from, maybe, what you could be doing to improve your chances of getting tenure. Right? Of actually doing your research, publishing those papers, writing those grants. Right? I think the workload can be inequitable. And so, therefore, you have trouble showing as much productivity because you're being pulled in so many different directions. (Christina, tenured, Latina faculty member)

Several participants shared similar experiences as the aforementioned quote. They were asked to take on more service because of their racial and gender identities and its importance to or alignment with a given departmental or university need (e.g., advising diverse graduate students, faculty search committees, etc.). Thus, they were being implicitly recognized as a leader in this domain, but there was no explicit acknowledgement of their contributions or value to the department. More importantly, in the context of a research institution, too much involvement in service was undermining their capacity to become leaders of research and discovery in their fields.

Conclusion

This study adds to our understanding of how stereotypes and biases impact academic expectations and recognition for women of color in STEM areas. We utilized the Role Congruity Theory and broadened its application beyond gender by adding other social identities. Understanding WOC faculty's challenges and acknowledging their cultural perspectives' value can create more inclusive and supportive academic environments. This study also examined the interplay of cultural prejudice, gender expectations, and racial biases that affect the experiences of WOC faculty in STEM via an intersectional perspective. This research identified the perception of WOC towards leadership barriers and identified the imbalance in the recognition

and reward systems in academic institutions. The findings suggest the prevalence of role incongruity for WOC faculty, resulting in marginalization, hurdles to leadership roles, and poor evaluation reports, which can hinder the professional progress of WOC.

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