



NAVIGATING SYSTEMIC RACISM: A CRITICAL RACE ANALYSIS OF DOCTORAL STUDENTS' CAREER CHOICES IN THE USA

Yulu Hou Department of Educational Administration, hoyulu@msu.edu
Michigan State University, East Lansing,
Michigan, USA

ABSTRACT

Aim/Purpose	This paper aims to explore the nuanced career choices of doctoral students in the USA through the lens of Critical Race Theory (CRT), addressing the underrepresentation and systemic challenges faced by students of color in their postdoctoral career paths.
Background	Despite increasing diversity in doctoral programs, racial and ethnic disparities persist in career outcomes. This paper examines how racial identities and systemic inequalities influence the career aspirations and decisions of doctoral students, highlighting the need for race-conscious dialogue in career development.
Methodology	A narrative literature review was conducted, focusing on peer-reviewed articles published between 2013 and 2023. The analysis utilized CRT to identify and examine themes related to race and career choices among doctoral students. A total of 23 articles were reviewed to assess the influence of race on career decision-making processes.
Contribution	This paper contributes to the body of knowledge by applying CRT to understand the career choices of doctoral students, a perspective that has been underutilized in this context. By integrating a race-conscious lens, this approach builds on existing literature and challenges dominant narratives in doctoral education, emphasizing the critical role of race and systemic factors in shaping career pathways.
Findings	The review identifies three major themes: (1) the endemic nature of racism in career choices, (2) the role of counter-storytelling in the career aspirations of students of color, and (3) the intersectionality of race with other identities influencing career decisions. These findings reveal how systemic racism and personal

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	narratives intersect to impact the career trajectories of doctoral students, especially those from underrepresented backgrounds.
Recommendations for Practitioners	Universities should recognize and address the role of race in career choices by fostering inclusive environments, providing culturally responsive mentoring, and validating diverse career paths beyond academia. Enhanced support for students from underrepresented groups is essential to mitigate systemic barriers.
Recommendations for Researchers	Future research should continue to explore the intersectionality of race, gender, and class in doctoral students' career decisions. Qualitative studies focusing on the experiential knowledge of underrepresented students and examining alternative career pathways outside academia are particularly needed.
Impact on Society	Understanding the racial dynamics in doctoral education can lead to more equitable career opportunities and contribute to diversifying the nation's intellectual and professional workforce. This paper underscores the importance of addressing systemic racism to create inclusive academic and professional environments.
Future Research	Further studies should investigate the structural and institutional factors that shape career pathways for doctoral students, with a focus on how academic and racial biases influence career choices. Expanding the scope to include international doctoral students and their unique challenges in career decision-making is also recommended.
Keywords	career choices, doctoral students, Critical Race Theory, systemic racism, intersectionality

INTRODUCTION

In times of persistent inequality and heightened awareness of social justice issues, the career trajectories of doctoral students in the USA warrant critical examination through the lens of race and ethnicity (Felder, 2019; Felder et al., 2014; Rasmussen & Leer, 2024). Doctoral education is traditionally viewed as a pathway to academic careers, fostering a generation of scholars and professionals who contribute to the nation's intellectual and economic growth (Committee on Science and Public Policy, 2000; Leech, 2012). Historically, the apprenticeship model in doctoral training in the USA directed trainees towards tenure-track faculty careers, mirroring the paths of their mentors (Austin, 2002). However, shifts in the employment landscape have resulted in fewer tenure-track positions and a more diverse range of career outcomes for PhD graduates (McCormick & Willcox, 2019; McKenna, 2016). At the same time, there has been increasing recognition of race and ethnicity as critical factors in career trajectories (Gibbs et al., 2014; Jaeger et al., 2017). Given these trends, it is crucial to understand how race and ethnicity shape doctoral students' career choices.

While this study is grounded in the USA, systemic issues related to race and ethnicity in doctoral education and career choices are not unique to this context. Studies from countries such as the United Kingdom and Canada have highlighted similar disparities in access, representation, and career mobility among doctoral students from minority racial and ethnic backgrounds (Arday, 2017; Henry et al., 2017; Mattocks & Briscoe-Palmer, 2016). These global perspectives underscore that systemic racism and its influence on career choices are part of broader patterns affecting higher education worldwide.

The need to focus on race in the USA is underscored by the persistent underrepresentation of certain racial and ethnic groups in doctoral programs and the academic workforce (Finkelstein et al., 2016; National Science Foundation, 2019). This underrepresentation highlights systemic issues related to access, equity, and inclusion in higher education (Williams & Williams, 2006). Career choices are influenced by unequal power dynamics, particularly concerning race, gender, and citizenship (Gillersleeve et al., 2011; Perna et al., 2009; Vital & Yao, 2021). Ignoring the role of race in this context

may inadvertently perpetuate stereotypes or biases, disadvantaging doctoral students of color in their career pursuits.

Despite the growing diversity in doctoral programs, there is a significant research gap in understanding how race and ethnicity influence the career choices of doctoral students, particularly those from underrepresented backgrounds. Existing literature on career choice highlights the expanding career options for doctoral graduates, with a notable shift from traditional academic roles to diverse professional opportunities (Ewing-Cooper & Gallien, 2022; Urban & Linver, 2019). Scholars have extensively examined these trends, providing insights into PhD career pathways and the experiences of doctoral students during and after their training (Gibbs & Griffin, 2013; Grim et al., 2021; E. Kim et al., 2018; Seo et al., 2021). However, much of this research relies on quantitative methodologies and tends to focus on the science and engineering fields, often overlooking the nuanced aspects of career decision-making processes shaped by racial and ethnic identities (Gibbs et al., 2014; Main et al., 2019).

Additionally, while prior reviews have addressed general employability and gender disparities in academic careers, an updated, race-conscious analysis of doctoral students' career choices is lacking (Edmunds et al., 2016; Young et al., 2020). Young et al. (2020) highlighted the increasing shift from traditional academic pathways to more diverse career options, stressing the need for doctoral programs to better prepare candidates for varied employment landscapes. Edmunds et al. (2016) focused on gender disparities in academic medicine, revealing that women are underrepresented and face significant barriers, such as lack of mentorship and gender discrimination, which impact their career choices and progression.

In summary, a key research gap lies in understanding how race, systemic inequalities, and intersectional identities uniquely influence doctoral students' career choices. This review aims to address these underexplored areas by (a) analyzing how race and racism are represented in existing literature, (b) highlighting overlooked narratives of students of color, and (c) examining how intersecting identities shape career pathways. For the purpose of this review, "career choices" refers to the process of choosing a postdoctoral career path, including career opportunities, preparations, and decisions. Contemporary research highlights the significance of incorporating intersectional frameworks, which consider race and ethnicity alongside gender and socioeconomic status, to better understand and address the unique challenges faced by minority doctoral students (Clark et al., 2021; Gibbs et al., 2014; Meyers et al., 2023).

Given the importance of intersectionality, this review adopts a CRT perspective to analyze the literature on the career choices of doctoral students, including but not limited to students of color. CRT is particularly suited for this study as it provides a framework to examine how race and racism are entrenched within institutional structures and how they intersect with other forms of oppression, shaping individuals' experiences and opportunities (Delgado & Stefancic, 2001). This theory is underpinned by several key tenets that guide the current study: the permanence of race and racism, counter-storytelling, and intersectionality. The permanence of race and racism highlights the enduring nature of racial dynamics in educational structures (Bell, 1992). Counter-storytelling elevates the often-marginalized experiences of students from underrepresented racial and ethnic backgrounds (Solórzano & Yosso, 2002). Intersectionality acknowledges the complex interplay of multiple identities, such as race, gender, and class, in shaping the unique experiences and challenges faced by doctoral students (Crenshaw, 1991).

Applying these tenets allows the review to challenge dominant, often race-neutral perspectives in career choice literature and enrich the analysis by centering the systemic nature of racial influences. CRT's focus on structural and institutional dimensions enables the identification of barriers and facilitators in career paths, making it an essential tool for uncovering how race and systemic inequalities are embedded in doctoral students' academic and professional journeys. Through this approach, the study connects CRT's theoretical principles with the literature to reveal deeper insights

into how race shapes career decisions and the extent to which these influences are acknowledged or overlooked in existing research.

The following sections offer a detailed description of the methodology for this literature review, covering the theoretical framework and the methods employed for searching, screening, and analyzing relevant literature. The literature review section synthesizes the findings into three key themes that are then discussed in detail. Finally, the paper presents recommendations for advancing race-conscious research on doctoral students' career choices and implementing strategies to support their career development.

METHODOLOGY

This study uses a narrative review approach to examine the existing literature on doctoral students' career choices through the lens of Critical Race Theory (CRT). While it follows the guidelines outlined by Ali et al. (2022) to ensure rigor and methodological integrity, it is not presented as a fully systematic review in the traditional sense. Instead, this review is structured as a narrative review that carefully selects and analyzes relevant sources. This distinction is important because, unlike systematic literature reviews that conduct exhaustive searches across all relevant sources, narrative reviews intentionally sample a subset of key literature to provide in-depth and critical insights on a specific topic (Baumeister & Leary, 1997).

The literature included in this review was drawn from targeted databases: Education Source, Education Resources Information Center (ERIC), and Educational Administration Abstracts, covering the period from 2013 to 2023. This timeframe was chosen to capture the increasing scholarly attention on the intersection of race and doctoral education, as well as shifts in policies and practices aimed at addressing systemic inequities. The objective is to highlight recent developments and key contributions that have emerged in response to these evolving dynamics.

The search strategy combined keyword searches with backward citation tracking, resulting in a final set of 23 articles for analysis. These articles predominantly focus on the STEM field, with six specifically addressing doctoral students in research universities. The articles employ a variety of methodologies, including 5 qualitative, 14 quantitative, and 4 mixed-methods studies. Qualitative research provides insights into personal and structural barriers faced by students of color (Creswell & Poth, 2018). Quantitative studies offer statistical evidence of disparities and trends (Johnson & Christensen, 2019). Mixed-methods research combines both approaches to offer a comprehensive understanding of the complexities involved (Tashakkori & Teddlie, 2010).

RESEARCH QUESTION

According to Ali et al. (2022), the initial step is to clearly define the review's purpose and formulate research questions to steer the entire review process. The primary research question for this study is whether and how race is portrayed in the literature on doctoral students' career choices. This study aims to examine the career choices of doctoral students in the USA over the past decade (2013-2023), with the objective of highlighting recent developments and key contributions in this field.

THEORETICAL FRAMEWORK

Ali et al. (2022) emphasize the importance of the theoretical foundation in guiding a literature review. This study utilizes Critical Race Theory (CRT) to inform the analysis of literature about doctoral students' career choices. Originating from legal studies, CRT has become a pivotal framework for examining race, power, and inequality across various fields, including education (Delgado & Stefancic, 2001). Its application in this study is essential for understanding how systemic racism and intersecting forms of oppression shape the career trajectories of doctoral students, particularly those from underrepresented backgrounds.

A central tenet of CRT is the recognition that racism is deeply embedded in social structures and systems rather than being an isolated or infrequent event (Bell, 1992). In the context of doctoral education, this understanding underscores that career opportunities and outcomes are influenced by entrenched racial biases and power dynamics within academia. By framing the analysis through this perspective, the review seeks to explore how institutional and systemic racism manifests in the career decision-making processes of doctoral students and reveals how historical and current practices sustain racial inequities.

CRT's emphasis on counter-storytelling provides a means to elevate the voices and experiences of those often marginalized in academic discourse (Solórzano & Yosso, 2002). In this review, counter-stories illustrate how doctoral students of color navigate their career choices amid racial barriers. These narratives challenge dominant discourses that frequently overlook or oversimplify the complexity of career decisions for minority students. Highlighting such stories enriches the literature by providing insights into how these students draw on their cultural identities and personal experiences to inform their career paths.

Intersectionality, another key tenet of CRT introduced by Crenshaw (1991), is crucial for understanding the interplay of race with other identity markers such as gender, socioeconomic status, and nationality. This approach allows for an exploration of how overlapping systems of disadvantage impact students' opportunities and decisions, recognizing that the challenges faced by doctoral students of color are compounded by their intersecting identities. Including intersectionality ensures that the analysis captures the nuanced ways these identities shape career considerations and outcomes.

This review employs CRT as both a theoretical lens and an analytical tool to critique and synthesize existing literature. The permanence of race and racism informs the examination of how academic institutions perpetuate racial disparities in mentorship, networking opportunities, and access to career resources. Counter-storytelling is used to underscore studies that include the narratives of doctoral students of color, offering a deeper understanding of their career motivations and obstacles. Intersectionality dissects how race, gender, and social class interact to influence career trajectories, allowing for a more comprehensive understanding of the systemic factors at play. Together, these tenets guide a deeper analysis of how systemic issues influence the career choices of doctoral students, particularly those of color.

LITERATURE SEARCH PROCESS

As suggested by Ali et al. (2022), it is essential to detail the literature search process, including the databases searched, keywords used, and the results of finding and filtering. The search process for this study consisted of two rounds. The first round involved a comprehensive search using three databases: Education Source, Education Resources Information Center (ERIC), and Educational Administration Abstracts. The search strategy employed the following combination of keywords: "doctoral student OR PhD" AND "career choice OR career decision OR career expectation OR career aspiration OR career perception OR career interest" AND "United States." This initial search yielded 81 articles. After removing duplicates and articles not aligned with the research focus, such as those examining career success or motivations for pursuing doctoral studies, 68 articles were excluded, leaving 13 articles.

In the second round, a manual review of the reference lists of the identified articles from the first round was conducted. This process aimed to uncover additional relevant articles that did not appear in the initial database search. Through this manual search, 10 more pertinent articles were identified, resulting in a total of 23 articles for the literature review (see Figure 1 for the search process and inclusion and exclusion criteria).

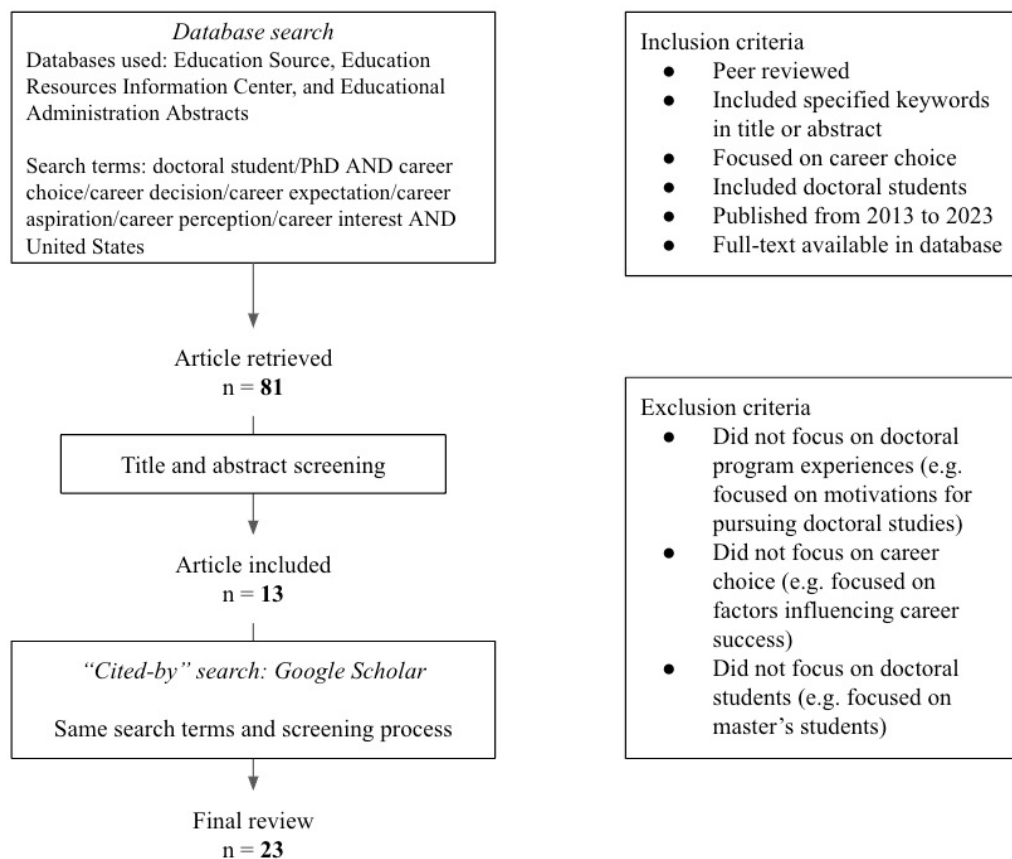


Figure 1. Literature search process

LITERATURE ANALYSIS PROCESS

Following Ali et al.’s (2022) recommendations on managing and annotating the reviewed literature, an Excel spreadsheet was utilized to organize extracted information from each article. This included details such as the disciplinary focus, the population of interest, and key findings. Each article was read in detail, and analytic notes were taken on their theories, research questions, methods, and findings.

An iterative approach to the literature review, as emphasized by Ali et al. (2022), was adopted by employing thematic analysis to identify recurring themes. Initially, 12 articles were randomly selected and analyzed to generate relevant themes related to doctoral students’ career choices, such as career opportunities and personal values. These preliminary themes were then assessed in the remaining 11 articles to determine if they were present and whether any new themes emerged. Based on these assessments, adjustments were made to ensure the consistency and comprehensiveness of the themes.

The thematic analysis was further refined by integrating the identified themes with tenets from a CRT framework. Specifically, the tenets of the permanence of race and racism, counter-storytelling, and intersectionality were considered. To operationalize the tenet of the permanence of race and racism, I focused on identifying themes that illustrated how systemic and structural racism influenced career choices, including barriers to mentorship and access to professional networks. Instances where racial disparities were described as ingrained or persistent were coded under this tenet. Counter-storytelling was operationalized by highlighting narratives and firsthand accounts of doctoral students of color that challenged dominant discourses and presented alternative perspectives on career decision-making. Articles that featured these counter-narratives were coded to underscore how

personal and community-driven motivations informed career paths. Intersectionality was operationalized by coding for themes that showed the interplay of race with other identity markers, such as gender and socioeconomic status, focusing on how these intersecting identities affected career experiences and choices.

These CRT tenets guided the coding process by providing a lens through which to identify and analyze themes that highlighted the complex, systemic nature of racial influences on career trajectories. While other CRT tenets were acknowledged, the analysis centered on these three due to their prominence in the literature and their relevance to understanding how race and intersecting identities shape career decisions for doctoral students in the USA.

LIMITATIONS

While this narrative review provides valuable insights into how race and systemic inequalities influence doctoral students' career choices, there are inherent limitations to the chosen methodology. One limitation stems from the distinction between systematic literature reviews (SLRs) and narrative reviews. Unlike SLRs in STEM fields, which often apply strict methodological rigor and replicable selection processes, social science research lacks the same potential for replication due to the variability in research designs and qualitative approaches (Okoli, 2015). While structured and thorough, this review does not claim the exhaustive scope associated with traditional SLRs, which may limit the comprehensiveness of the included literature.

Another limitation is the potential for publication bias, where studies reporting significant findings are more likely to be published and accessible. This review attempts to mitigate this bias through backward citation tracking and the inclusion of a range of publication types. However, the possibility remains that unpublished or less accessible studies may contain relevant data that was not captured.

Additionally, the focus on articles published between 2013 and 2023 means that any influential studies conducted before this period were not included unless referenced in the identified literature. This time constraint was chosen to capture recent developments but may exclude historical context that could enrich the analysis.

Lastly, as the sole author conducting the review and coding, there is a risk of researcher bias despite efforts to maintain reflexivity throughout the process. The absence of multiple coders limits the ability to cross-validate coding decisions, which could impact the reliability of the thematic analysis. Future studies could address this by involving multiple reviewers and expanding the search criteria to include gray literature and earlier publications for a more comprehensive review.

LITERATURE REVIEW

Building on the methodology, this section presents key findings from the literature review, focusing on the identified themes and how they illuminate the role of race and systemic factors in shaping doctoral students' career decisions. A literature review is fundamental in scholarly research as it establishes the existing body of knowledge and identifies areas needing further investigation. Conducting an effective literature review involves summarizing, analyzing, and synthesizing existing research to create a solid foundation for new studies (Levy & Ellis, 2006). This process is not merely a collection of summaries but a critical analysis that integrates previous research findings, identifies gaps, and sets the stage for future research endeavors (Ali et al., 2022).

To synthesize emerging insights and provide directions for future research on doctoral education, this literature review examines the career choices of doctoral students in the USA through the lens of Critical Race Theory (CRT). The three most salient themes identified are the endemic nature of racism in career choices, counter-storytelling in career aspirations, and intersectionality in shaping career paths.

ENDEMIC NATURE OF RACISM IN CAREER CHOICES

The first theme, illuminated by the tenet of the permanence of race and racism in CRT, underscores how systemic racism pervasively influences the career choices of doctoral students, particularly those from underrepresented groups. Guided by this tenet, the literature on race and career choice in doctoral education appears unbalanced. Much of it assumes a neutral and objective stance regarding race, with only about one-third of the articles reviewed providing a race-specific breakdown in their results section (Curtin et al., 2016; Fang et al., 2016; Gibbs & Griffin, 2013; Gibbs et al., 2014; Grim et al., 2021; Jaeger et al., 2017; J. Kim et al., 2019; Layton et al., 2016; Meyers et al., 2023). This lack of racial focus suggests an assumption that race may have negligible influence on career choice. However, empirical investigations indicate that racial and ethnic identities significantly impact students' career decision-making (Gibbs & Griffin, 2013; Haley et al., 2014; Jaeger et al., 2017). Longitudinal studies (Gibbs et al., 2014; Golde & Dore, 2001, 2004) have shown that as doctoral students progress through their programs, their aspiration for faculty roles generally declines, a trend more pronounced among students of color.

For studies that specifically focus on race and career choice, they emphasize doctoral students' socialization process and its impact on career choices (Grim et al., 2021; E. Kim et al., 2018; J. Kim et al., 2019; McGee et al., 2019). Graduate and professional socialization, as conceptualized by Weidman et al. (2001), refers to "the processes through which individuals gain the knowledge, skills, and values necessary for successful entry into a professional career requiring an advanced level of specialized knowledge and skills" (p. 5). Yet, this process is neither neutral nor universally applicable, as students of color encounter unique challenges in their interactions with peers and faculty members (Blockett et al., 2016; J. Kim et al., 2019).

As students of color navigate their socialization in academia, the influence of their peers becomes an essential yet complex component of their journey. Thiry et al. (2015) found that peers are a significant source of career information for students of color. However, Gildersleeve et al. (2011) reported that peers can also be a source of contention. Students of color often face microaggressions from White students in academic settings and endure the emotional toll of hearing about their peers' experiences with discrimination (Slay et al., 2019). This, combined with the environment of "social othering" created by white peers, can isolate students of color from integral departmental and peer interactions, which are vital for their career development (Grim et al., 2021).

Mentorship is another pivotal element in doctoral experiences, with its influence varying significantly for students from different racial backgrounds. Studies show that many students of color experience a lack of supportive mentorship, which can hamper their career growth. For example, Underrepresented Minority (URM) students at a Midwestern public research university reported less instrumental support than their peers (Curtin et al., 2016). This aligns with the findings that URM students often seek networking opportunities outside their departmental advisors and mentors (Griffin et al., 2018). Some even view their advisors as barriers to exploring diverse career paths, especially outside academia (Thiry et al., 2015). Such perceptions often come from the belief that advisors need students for their research and would not permit them to pursue additional opportunities. This lack of support is particularly detrimental given the historical context of underrepresentation in academia. Curtin et al. (2016) emphasized that sponsorship – which includes active recommendations, networking access, and advocacy – is of paramount importance to URM students' career growth.

The systemic nature of these challenges is often underestimated, with a tendency to focus on individual attitudes rather than institutional practices. Focusing on individuals with bad attitudes underestimates the scope and scale of racism, thus overlooking how racism is reproduced in institutions (Ahmed, 2012). This oversight is apparent in the current literature, given that less attention is paid to the role and responsibility of universities and departments regarding this issue. Addressing this gap, J. Kim et al. (2019) categorized university and department factors associated with doctoral students' ca-

reer choices, such as faculty composition, program prioritization, and proportion of female and minority Ph.D. students. For example, programs with a higher percentage of minority doctoral students see more of their graduates pursuing tenure-track positions immediately after graduation. Conversely, the discouraging representation of faculty of color can turn promising students away from academia (McGee et al., 2019). Therefore, it becomes imperative to recognize that the career choices of doctoral students are shaped not only by individual experiences but also by the entrenched racial dynamics within academic institutions.

COUNTER-STORYTELLING IN CAREER ASPIRATIONS

Findings from career choice literature reveal another CRT tenet at play – counter-storytelling, where students of color can use their narratives to challenge dominant career discourses (Gibbs & Griffin, 2013; Haley et al., 2014; Jaeger et al., 2017). These narratives show that for students of color, career decisions are not solely focused on personal advancement or achieving a balanced life but are deeply intertwined with broader cultural goals.

The importance of cultural and racial identities in career considerations is stressed in the narratives of students of color. Haley et al. (2014) found that participants often referred to their racial, ethnic, or cultural communities when considering career paths, seeking roles that resonated with their cultural and social identity beyond a balanced personal and professional life. Similarly, Gibbs and Griffin (2013) observed that scientists pursuing faculty careers cited personal values, informed by social identities like race and gender, as their primary drivers.

These narratives also reveal why students of color consider working in academia. One major consideration is the opportunities to contribute to their communities. For these students, being a role model, mentoring the next generation, and contributing to their communities become salient factors in their career considerations (Gibbs & Griffin, 2013; Haley et al., 2014; Jaeger et al., 2017). For example, one female URM student was motivated by the importance of applying her research to address health issues in her community. Despite facing discouraging experiences with advisors and colleagues, she chose to continue in her field (Haley et al., 2014).

In addition to giving back to their communities, some students enter faculty careers with a desire to challenge prevailing stereotypes and enhance the diversity of fields like STEM (Jaeger et al., 2017). For instance, one African American student in Jaeger et al.'s (2017) study shared his goal of becoming a professor to break stereotypes about his culture, highlighting the problem of representation. Students of color also expressed their desire to redefine the norms around being a faculty member and achieving academic success. While some students may resonate with the social identity of the faculty, they may not fully internalize and incorporate all the values and norms with that identity (Haley et al., 2014). Some expressed the intention to redefine their roles as faculty members by prioritizing teaching, engaging in culturally relevant research, fostering deeper connections with students, and dedicating time to family.

However, systemic barriers can discourage students of color from pursuing an academic career. Doctoral students of color may not feel a sense of belonging within the academy if they perceive a lack of representation and misalignment with their values. This lack of belonging can lead them to seek careers outside academia where they might anticipate a better fit for their social and personal identities. Factors such as funding politics, lack of collaboration, and overwhelming workloads can add to this feeling of misalignment, further deterring them (Haley et al., 2014). For instance, a qualitative study by McGee et al. (2019) reveals that students of color in STEM turned away from academia due to their immersion in prevailing academic norms and pressures, including politics of the academy and perceptions of stress and strain.

Despite the power of counter-stories, it is important to note that not every story from students of color is a counter-story. Varied experiences exist among different racial groups, and some narratives may align with dominant discourses – for instance, E. Kim et al. (2018) found that Asian students,

more than other racial groups, are inclined toward academic roles. This trend may be explained by the perception that education is the primary means for upward social mobility, especially when faced with increased barriers in non-academic fields. This perception aligns with the “model minority” stereotype, where Asian students are often viewed as achieving higher educational attainment and scientific success due to a cultural emphasis on education and science (Xie & Goyette, 2003). In certain disciplines like music education, minority students appear more likely to choose faculty careers compared to White students, suggesting a supportive environment for minority aspirations in these programs (Fang et al., 2016). Therefore, recognizing the differences in the historical and contemporary experiences of various racial groups is essential (Solórzano, 1998).

In summary, the narratives from students of color highlight the complex interplay between individual agency and systemic barriers in choosing a career path. Their counter-stories often challenge the mainstream discourse in career choices and underscore the significant role of personal and community values informed by their identities. These findings also indicate that while counter-stories are powerful, they are part of a wider range of experiences that vary across different racial groups. This perspective allows for a holistic understanding of the career-decision process for doctoral students.

INTERSECTIONALITY IN SHAPING CAREER PATHS

The interplay of race with other identity factors is found to be a critical but often neglected aspect in shaping the career choices of doctoral students. As defined by Delgado and Stefancic (2001), intersectionality considers “the examination of race, sex, class, national origin, and sexual orientation, and how their combination plays out in various settings.” While some studies have examined the role of gender and class in career choices, the intersection of these factors with race is less frequently addressed.

Existing research spotlights the systemic barriers that female doctoral students encounter, particularly in STEM fields. Clark et al. (2021) highlight the implicit bias and stereotypes that impede women’s persistence in STEM, such as the notion that women inherently lack the natural ability for STEM success and the sexism that creates a hostile work environment. These forms of discrimination, combined with individual factors like impostor syndrome and self-efficacy, can ultimately undermine women’s career confidence to continue in STEM fields. Gender-based disparities also extend to mentorship. Curtin et al. (2016) found that women are less likely than men to receive crucial research guidance and professional advocacy from their advisors, with URM women receiving the least support. From hostile environments to inadequate mentoring, these systemic barriers contribute to a decline in academic career interest among women Ph.D. students – a reason for academia’s “leaky pipeline” (Curtin et al., 2016; Etmanski, 2018; Meyers et al., 2023). Nevertheless, Main (2022) suggests a complex trajectory: while women with family responsibilities may not enter the labor force following Ph.D. completion, many transition to academic roles later.

The unique career paths of women, particularly those from underrepresented minority groups, underscore the need for an intersectional analysis (Clark et al., 2021). However, few studies explicitly examine how race plays a role in women’s career decisions. It appears that studies tend to focus on race or gender in a certain discipline. One example of intersectionality includes a study that examines whether and how career interest trends differ based on race/ethnicity, gender, and their intersection in biomedical science PhDs (Gibbs et al., 2014). The findings reveal that even after controlling factors such as self-efficacy, performance metrics, and mentorship quality, URM women display distinct career preferences. They showed increased interest in non-research fields and the least interest in faculty roles at research-intensive institutions upon graduation. This nuanced understanding points to the complex interplay of race and identity in shaping career paths.

In addition, class is found to be a robust predictor of occupational aspirations (Eshelman & Rottinghaus, 2015). Yet, as in the same case with gender, the intersection of race and class did not receive explicit emphasis. Studies focusing on class (Thiry et al., 2015) highlight the importance of net-

works both within and outside academia. Thiry et al. (2015) discovered that underrepresented minority and first-generation students often lack the necessary knowledge to navigate an academic career due to limited access to role models. Similarly, they showed less awareness of career opportunities beyond professors or industry researchers because of few familial professional networks. As a result, these students reported a greater need for explicit career information. Consistent with these observations, quantitative research (Layton et al., 2016) indicates that family and peer influences are not significantly associated with faculty career choices for URM students. In contrast, family influence was a strong, positive predictor for White respondents. Thus, there is a critical need for integrative approaches to understanding doctoral students' career choices, one that recognizes the complex and often underexamined intersections of race, gender, and class.

IMPLICATIONS

Having discussed the findings in depth, this section explores the implications for universities, policy-makers, and researchers aiming to support more inclusive career pathways for doctoral students.

IMPLICATIONS FOR PRACTICE

This literature review, grounded in a critical race perspective, reveals the nuanced ways race intertwines with the career choices of doctoral students, challenging the often-implicit notion that race remains unsaid within doctoral programs (Jaeger et al., 2017). Universities must recognize that career interests are influenced not only by academic disciplines and stages of study but also by demographic backgrounds, including race, gender, and nationality. Acknowledging this intersectionality allows for tailored support services in doctoral students' career decision-making processes.

Building on this understanding, universities should actively work to address biases in career choice. Despite the diversification of career options for doctoral graduates (Blaney et al., 2022; Main, 2022), an implicit hierarchy still privileges academic positions, potentially limiting the awareness of varied career paths, particularly for students from underrepresented minorities (Ewing-Cooper & Gallien, 2022; Meyers et al., 2023; Thiry et al., 2015). Universities should validate the legitimacy of exploring multiple career paths (O'Meara et al., 2014), including those in government, non-profit organizations, and private sectors, which often appeal to students from marginalized groups (McGee et al., 2019). This involves dismantling the stigma of "overqualification" for PhDs pursuing non-academic careers and enriching career resources to represent the wide variety of professional opportunities (Ewing-Cooper & Gallien, 2022).

Reshaping departmental cultures to counter racial and gender stereotypes is also imperative, as it serves to foster an inclusive environment where students from diverse racial backgrounds feel a sense of belonging. This shift can support and retain students from underrepresented groups, as it alleviates the pressure to detach from their cultural communities for academic success (Haley et al., 2014).

Moreover, it is crucial to address systemic barriers that disproportionately affect students of color, such as limited access to influential networks and inadequate mentoring. Doctoral programs must allocate funding and time to facilitate students' engagement with professional associations and ensure equitable access to these opportunities (Blaney et al., 2022). Faculty should be informed about resources and trained in culturally responsive mentoring to assist in navigating the impact of race on career opportunities (Meyers et al., 2023). This involves appreciating the cultural capital that doctoral students bring to their fields and aiding in translating that capital into career assets (Yosso, 2005).

However, simply equipping students with information about career options is insufficient without fostering their agency (Griffin et al., 2022). Students should be encouraged to actively engage with various networks and role models in potential career paths (Thiry et al., 2015). Additionally, the COVID-19 pandemic has shifted students' professional priorities (Meyers et al., 2023), such as the need for flexibility and work-life balance, and these new priorities must also be considered. These

evolving priorities highlight the importance of agency in empowering students to make informed decisions.

IMPLICATIONS FOR THEORY

A critical race analysis of doctoral students' career choices necessitates reexamining the socialization theory used to understand doctoral education. This theory views socialization as a set of processes that occur in stages throughout the graduate student experience, leading to a set of outcomes (knowledge, skills, and abilities) necessary for moving into academic and professional careers (Weidman et al., 2001). However, this perspective is insufficient for understanding the career choices of doctoral students, especially considering the experiences of students of color, as race and racial experiences are a part of the graduate student's meaning-making of self and profession (Twale et al., 2016).

First, the unique cultural characteristics and intersecting identities of graduate students of color often go unaddressed within the traditional socialization framework. These students might engage with the academic environment differently, not merely adapting to prevailing norms but also merging their cultural perspectives with professional practices (Griffin et al., 2022; Jaeger et al., 2017). Recognizing this, incorporating a theory of agency is essential in understanding doctoral students' career choices. It empowers them as agents who enact change and make conscious career choices aligning with their personal values, cultural identities, and professional aspirations.

Second, the traditional framework overlooks the significance of socialization within informal and external networks that students of color often rely on. These networks can exist in parallel to, or even in resistance to, established formal academic structures like peer and advisor relationships (Grim et al., 2021). Research into their mentorship should incorporate an understanding of culturally relevant psychosocial support and diverse apprenticeship experiences from various contexts.

IMPLICATIONS FOR RESEARCH

Through a review of 23 articles, this paper provides an introductory foray into how CRT can be used to examine career choice in doctoral education. Future research should continue exploring systemic and institutional factors that shape career pathways for doctoral students. This aligns with CRT's emphasis on structural oppression of students of color (Yao et al., 2018). For instance, how do the dynamics of race and racism play out in the daily operations, cultures, and power structures of doctoral programs? How do academic and racial biases steer students toward certain career paths? Answering these questions would align with a holistic approach, highlighting individual agency and organizational frameworks that constrain or facilitate career choices.

Future studies should prioritize the experiential knowledge of doctoral students from underrepresented groups through qualitative methodologies. Research on doctoral students should be disaggregated to acknowledge the diverse experiences of these students across disciplines, career interests, and stages of study. While current studies often highlight systemic barriers pushing students of color away from academia, there is a need for more exploration of the alternative careers they pursue.

Finally, an intersectional approach to studying doctoral students' career choices is imperative. This approach considers how multiple identities intersect to influence career aspirations and outcomes. Future research might explore how the intersection of race and gender affects the career planning of women of color in doctoral programs or how international doctoral students navigate career decisions in the context of global academic and non-academic job markets.

CONCLUSION

This paper aims to illuminate the intersection of CRT and doctoral education by examining current literature related to doctoral students' career decision-making in the USA. Situated within a racialized organization (Ray, 2019), the career choices of these students are seldom examined through the lens

of race. By utilizing a critical race perspective to analyze 23 relevant articles, this review identifies three key themes based on the CRT framework: the endemic nature of racism in career choices, counter-storytelling in career aspirations, and intersectionality in shaping career paths. This approach sets the research apart by advancing the application of CRT within the context of doctoral education and highlighting how systemic inequalities uniquely influence the career trajectories of underrepresented students.

While doctoral students have their own responsibilities in carving out a career path after years of training, policymakers and universities also play crucial roles. For policymakers, the challenge extends beyond providing equity of access but equity of choice, mobility, and opportunity to succeed in doctoral education and beyond. Universities, for their part, must engage in a transformative process that not only offers individual support mechanisms but also seeks to reform institutional structures and cultures that have traditionally marginalized these students. This commitment should be an integral part of the institution's strategic planning for diversity, equity, and inclusion, ensuring the long-term success and empowerment of doctoral students of color in their career paths. Ultimately, this paper contributes to a deeper understanding of the racial dynamics in doctoral education and underscores the need for a more nuanced and inclusive approach to supporting the career development of doctoral students.

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AUTHOR



Yulu Hou is a doctoral student in the Higher, Adult, and Lifelong Education program at Michigan State University. She holds a bachelor's degree in philosophy from Peking University, China, and a Master of Arts in Education from the University of California, Los Angeles, with a specialization in Social Sciences and Comparative Education. Her scholarship focuses on how social, political, and cultural factors influence educational and career pathways, particularly for minoritized groups. Her research interests include educational aspirations, professional identity, intersections of race, gender, and class, and international dimensions of equity and belonging. She also investigates teaching and curriculum development in the

context of artificial intelligence.