Investigation of Gender and Racial Diversity in U.S. Construction Higher Education

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Abstract
Construction education has been long criticized for its lack of women or minorities representation. Addressing this issue requires a comprehensive understanding of the current trends and situation around representation gaps of both students and faculty as well as the measures to improve diversity and inclusion. This study analyzes gender and racial representation across construction-related program graduates, enrollments, degree levels, and faculty demographics with data collected from reputable databases such as the U.S. Census Bureau, National Center for Education Statistics, Data USA, and American Society for Engineering Education. Additionally, best practices were synthesized from the literature to offer general strategic directions for diversity improvements. The findings indicate slight improvements in women and minorities representation in construction graduates and enrollment despite persisting gender and racial disparities. Additionally, the result demonstrates a significant lack of representation among women and minority groups across all faculty ranks especially at higher levels. This study will provide researchers and construction industry leaders useful insights regarding diversity challenges and trends in construction education along with corresponding improvement strategies.
Keywords: Construction industry, Construction education, Racial diversity, Gender diversity

1. Introduction

The construction industry is a vital component of the United States economy, contributing over 4% of the total GDP [1] and employing over 11 million workers [2]. The Bureau of Labor Statistics projects a significant increase in overall employment for construction and extraction occupations from 2022 to 2032, with an average of about 646,100 yearly job openings [3]. The construction industry has encountered a workforce shortage with the growing demand for new buildings and infrastructure [4]. Currently, the majority of the construction workforce is comprised of white and male populations [5]. Therefore, the industry needs to increase efforts in recruiting and retaining workers from underrepresented demographics including women and ethnic minorities to address this need [6]. Increasing these groups' representation in construction higher education programs is crucial in addressing this issue. However, the representation of women and minorities in construction education is incredibly low thereby limiting the pool of talented workforce. Based on 2021 data from the National Center for Education Statistics, 49.3% of total graduates from civil engineering programs were white and only 27.2% of all civil engineering degree earners were female [7]. It was also found that salary prospects, career advancement, and working conditions were ranked as the most critical factors among high school students when deciding whether to pursue careers in construction. Family disapproval, low salaries, and hazardous and unsanitary work sites were the main reasons discouraging Hispanic/Latino high school students from seeking a career in construction [8]. Additionally, the common societal perception of the construction

sector as a male-dominated field is the fundamental barrier to achieving gender diversity in construction as it makes women feel unwelcome thereby discouraging them from pursuing education and careers in the construction field [9]. This stereotype not only decreases the entry of women into the industry but could also affect their career progression. The working conditions in construction are also a primary factor behind the low women presence in the construction workplace. The physically demanding nature of construction jobs, along with long hours and difficult working environments makes it challenging to attract women into the field or enable women to succeed in those positions [10]. Also, the construction industry is renowned for the prevalent issues around sexual harassment and discrimination [11] which could also deter women from entering the construction education and workforce. In addition, limited targeted outreach was also reported as the main contributor to the lack of racial diversity in the construction education [8]. Furthermore, there is also a shortfall of diversity among construction education teaching staff. A study reported that female civil engineering faculty only accounted for 14.6% (465) of total civil engineering faculty (3191) in the United States in 2011. The findings suggest demanding academic responsibilities, work-life balance, and compensation were the primary concerns for the majority of female faculty members [12]. The study also found that faculty diversity plays an important role in improving graduation outcomes, especially for students from historically underrepresented backgrounds [13]. The reported lack of faculty representation in construction education could also further contribute to the diversity problem among the student population. Thus, it is important to recognize the underlying causes and present state of racial and gender diversity among students and faculty as well as the strategies for enhancing diversity in construction education to foster a more inclusive atmosphere for underrepresented groups, thereby building an effective talent pipeline for the industry.

2. Objective and Methodology

The main goal of this study is to examine the gender and racial representation of students and faculty in U.S. construction programs and synthesize best practices including effective recruitment and retention strategies in increasing such diversity. The findings from this study will allow researchers and industry leaders to better understand the representation gaps of women and minorities with construction students and faculty populations and useful measures to address the corresponding issue. The research procedures in this study comprised of the following stages: (1) Identification of problems (2) Data collection; (3) Data interpretation (4) Reviews on best practices.

2.1. Identification of problems

Through the review of reasons behind the lack of student and faculty diversity in construction higher education, this study recognized two essential needs: (1) gain insight into the current situation of gender and racial representation of both student and faculty in construction education including the trend and diversity in enrollment, degree completions, different construction programs, and faculty ranks;(2) understand the effective measures in enhancing both gender and racial diversity among students and faculty in construction education. Addressing these needs is fundamental in fostering an inclusive educational environment thereby increasing diversity in the construction domain.

2.2. Data collection

To examine the racial and gender representation in construction education, this study incorporates data from multiple reputable sources such as the National Center for Education Statistics (NCES) and the American Society for Engineering Education (ASEE). The retrieved data included student enrollment, graduation, and faculty demographics from construction-related degree programs across the United States. In this study, racial diversity was categorized into five distinct groups which include White, Black/African American, Asian, Hispanic/Latino, and Other. American Indian/Alaska Native, Native Hawaiian/Other Pacific Islander, unknown, and multiracial are

included under the “Other” section. The statistics on foreign nationals or nonresident aliens were not included in this study. The degree completion or student graduation data from 2011 to 2021 from the construction-related programs were retrieved from the degrees awarded module of the Integrated Postsecondary Education Data System (IPEDS) [14], an online tool under the control of NCES. The institutions selected for this study were limited to doctoral degree-granting universities (544 institutions) to ensure representation across all levels of higher education thereby offering a more comprehensive perspective on diversity. The construction-related program defined in this study includes five different majors: civil engineering, construction engineering, construction trades, civil engineering and technologies, and construction engineering and technologies. The reason behind this selection is that the majority if not all graduates from these majors tend to work directly in construction sector-related jobs. In addition, the faculty information and student enrollment data with race, gender, degree level (Undergraduate, Master's, Doctoral), and academic rank (Assistant, Associate, and Full professor) from 2019 to 2021 were retrieved from an online data portal provided by ASEE [15]. Additional data from Data USA, U.S. Census Bureau, and IPEDS such as diversity in overall faculty demographics, and the overall U.S. population were also used to provide a broader context and comparisons.

2.3. Data Interpretation

The analyses were performed in two stages: Student diversity analysis and Faculty diversity analysis. First, a longitudinal examination of the diversity of graduates from the construction-related program between 2011 and 2021 was conducted to extract relevant historical trends. This temporal analysis offers a comprehensive overview of the progress, stagnation, and shifts in diversity dynamics which could provide an understanding of the historical inclusiveness of construction education and identify any persistent disparities. Moreover, further investigation into the diversity situation of the five construction-related programs was conducted to provide a more nuanced understanding of gender and racial representation within specialized domains of construction education. Additionally, student enrollment data was analyzed to explain the current diversity trends among students entering construction-related programs. The study also provided a comparison of the diversity of student enrollments by different degree levels (undergraduate, master's, and doctoral) to identify the shift of student demographics at different educational stages which could be useful in predicting the diversity landscape of future industry professionals and researchers. Understanding the disparities of representation in each degree level also helps pinpoint where the interventions may be most needed to support and retain minorities and women in construction education. Furthermore, the examination of faculty diversity data provides critical insight into racial and gender representation among educators in the construction domain such as trends in faculty demographics, persistent challenges and barriers to career advancement, etc. Analyzing diversity across different faculty academic ranks (Assistant, Associate, and Full Professor) also offered valuable insights into potential disparities in career progression and representation of faculty from different minority groups.

2.4. Review on best practices

To identify best practices and strategies for enhancing diversity in construction education programs, a literature review was conducted. The keywords used during the literature search included construction education, engineering education, faculty diversity, student diversity, underrepresented minorities, interventions, best practices, retention, and recruitment, and priority was given to studies published within the last 15 years. The reference used also included reputable sources such as the International Journal of STEM Education, ASEE Annual Conference proceedings, and other ASCE sources. This summary of best practices aims to provide initial strategic directions on effective interventions to improve women and minorities' diversity in higher education based on existing empirical research.

3. Result and discussion

3.1. Student Diversity

3.1.1. Graduates

The data on construction-related program graduates from 2011 to 2021 has revealed the severity of racial and gender diversity within construction education over the past decade. Overall, although there have been minimal improvements in women and minority representation, construction graduates are still predominately white and male compared to their shares of the US population [16]. The composition of all graduates in construction education categorized by sex and race/ethnicity between 2011 and 2021 is illustrated in Figure 1. Despite a notable decline from 73.22% to 64.3% in eleven years, white graduates still constitute a large majority of construction graduates. Throughout this period, the Hispanic/Latino proportion has experienced the largest increase compared to other races by doubling their representation from 7.97% to 16.38%. However, this proportion is still below their 18.9% share of the overall US population. Asian graduates' representation has remained steady during this period at around 8%. Meanwhile, the percentage of Black/African American graduates grew slightly from 3.69% to 4.6%, but they are still severely underrepresented compared to a 12.6% Black/African American population.

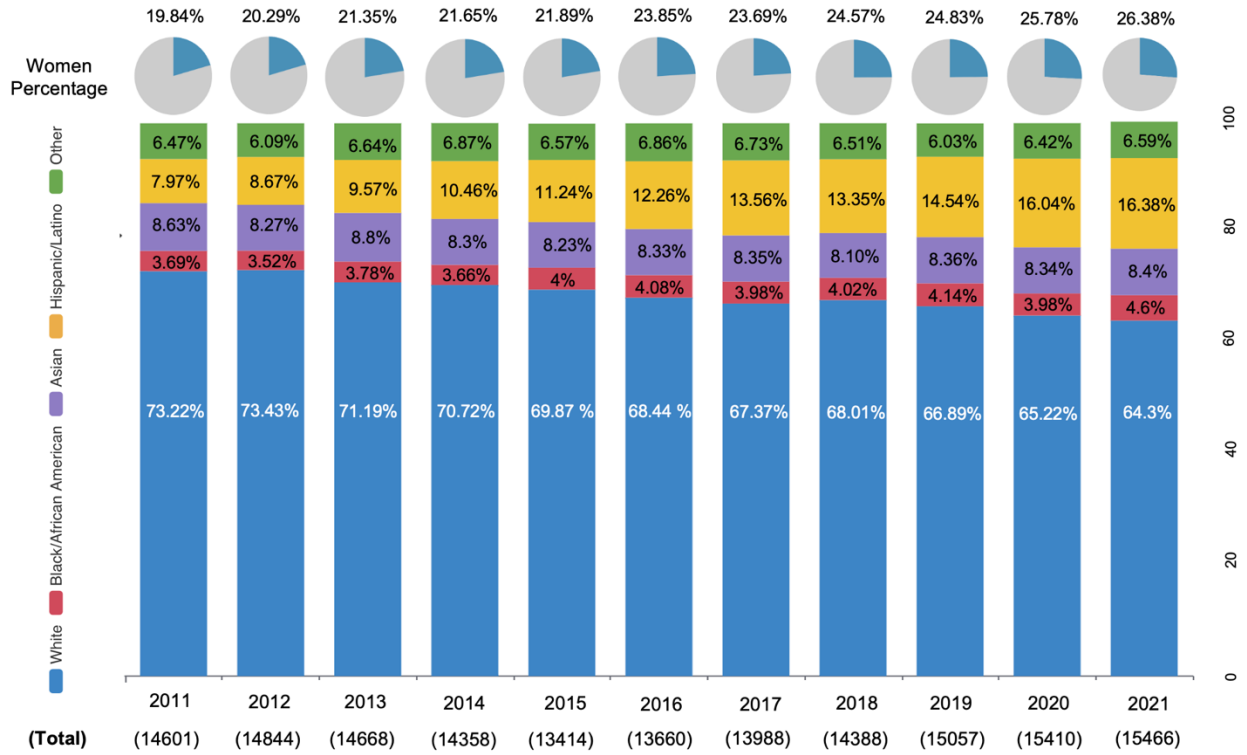

Figure 1. Trends in racial and gender composition of graduates from construction-related programs (2011-2021)

The data also demonstrated improvement in the representation of women among construction graduates over the past decade. The proportion of female graduates increased from 19.84% in 2011 to 26.38% by 2021. Although, this change signifies progress for women in the historically male-dominated field, reaching the near gender parity remains a significant challenge.

In addition, the data from the five construction-related programs in 2021 indicated a significant disparity in racial and gender representation (see Figure 2). Overall, white and male students are overrepresented across all five construction-related degree programs. White students made up the majority of graduates, ranging from 56.25% in construction trades to 69.29% in construction engineering. The result also shows an overwhelming representation of men across the five programs, ranging from 70.39% male graduates in civil engineering to 89.78% in civil engineering and technologies. Meanwhile, Asian student representation is notably high in civil engineering at 9.72%, but significantly lower in other programs. This trend aligns with Asian students' tendency to pursue prestigious STEM programs, such as science and engineering [17]. This pattern reflects the cultural and educational preferences within the Asian student community. Moreover, the percentage of Hispanic/Latino graduates from the construction trades program is notably low at just 1.56%, compared to double-digit representation across the other four construction programs. Studies reveal that limited career advancement, family influence, low wages, and dangerous working conditions are the major factors discouraging Hispanic/Latino students from pursuing education in construction trades or working in the construction industry [18], [19]. Furthermore, Black/African American graduates represent 31.25% of construction trades programs, 13.64% in civil engineering and technologies, and less than 5% in each of the other three programs. In addition, the result shows far greater numbers of graduates (12558) from the civil engineering programs compared to construction engineering, construction trades, civil engineering and technologies, and construction engineering and technologies. The students' preference for civil engineering could be largely due to the significant employment opportunities and potential for high-level positions that the degree offers [20].

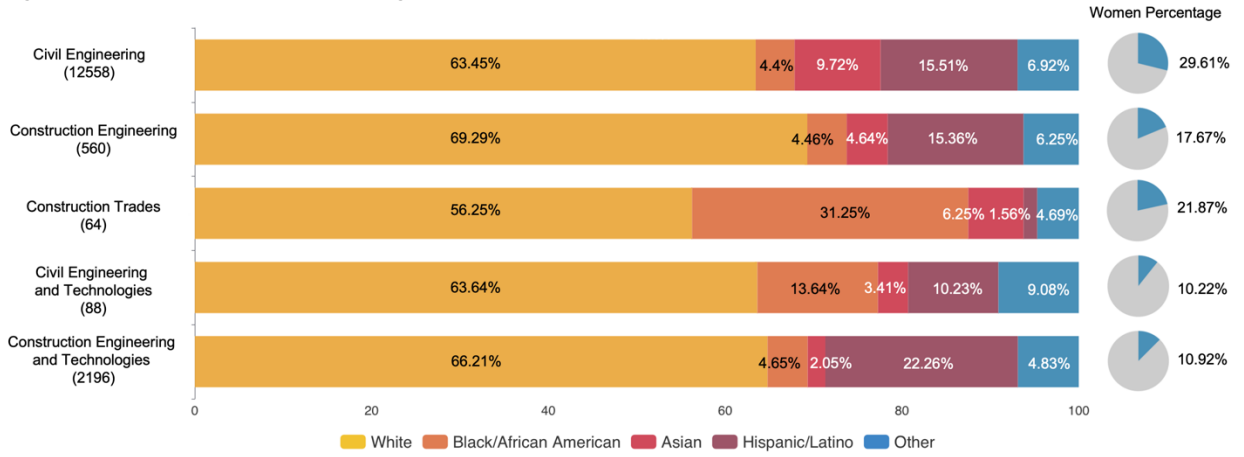

Figure 2. Demographic composition by race and gender of 2021 graduates in five construction-related programs

3.1.2. Enrollment

Overall, the data on student enrollment into construction-related programs indicates an increasing trend in racial diversity over the three years, with the rise of non-white student representation. However, gender diversity experienced a concerning downward trajectory, with a declining share of enrolled female students. The racial and gender breakdown of student enrollment in construction-related programs from 2019 to 2021 is illustrated in Figure 3.

White students made up the majority, comprising over 57% of total enrollment each year. The Hispanic/Latino representation increased by just under 2 percent from 17.8% in 2019 to 19.75% in 2021. Similarly, Black/African American student enrollment has slightly increased from 4.70% to 5.16%, while Asian student enrollment went from 8.43% to 8.89% in that same timeframe. The increase in racial diversity over this period suggests a gradual but positive shift toward a more

inclusive academic environment. However, additional efforts are still required to accelerate the progress of diversity in the enrollment of construction programs.

In addition, the already significant gender disparity has grown even larger, with the share of women declining over these three years. The percentage of women enrollment in construction programs has declined from 29% in 2019 to just 26.66% in 2021. This downward trend indicates that the strategies and efforts to retain female students in construction education have not been successful. The decrease may be attributable in part to persistent gender stereotypes that portray construction as a male-dominated field.

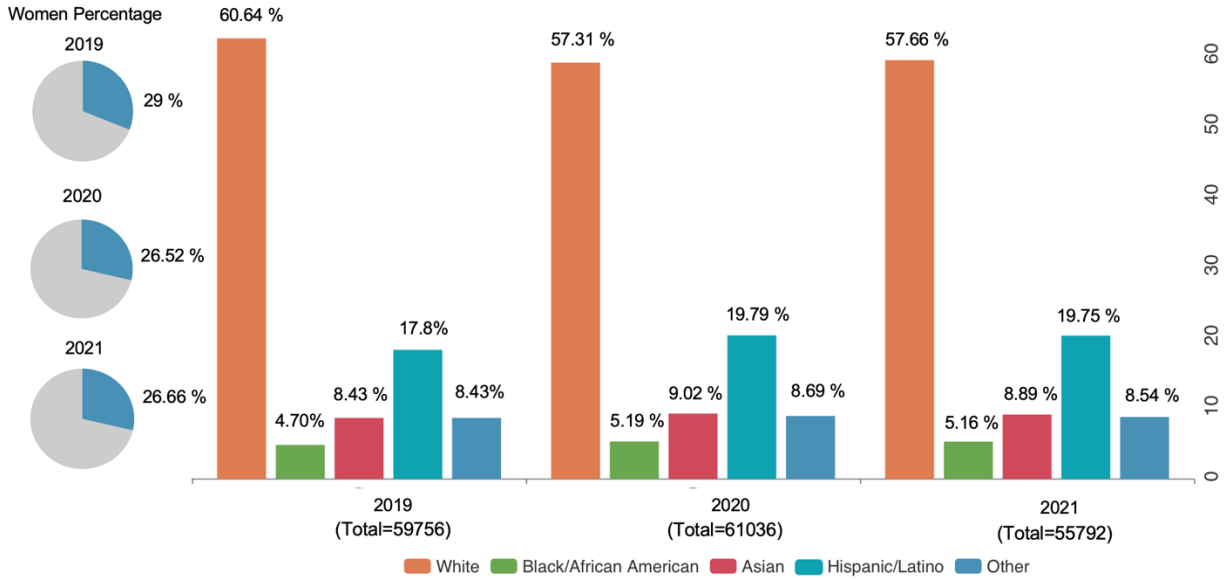

Figure 3. Racial and gender diversity in construction program enrollment (2019-2021)

Analyzing enrollment patterns across undergraduate, master's, and doctoral levels within construction-related programs provides critical insights into the dynamics of representation among different academic stages in construction higher education. Figure 4 illustrates the racial and gender distribution among undergraduate, master's, and doctoral students enrolled in 2021 within the construction-related program. Overall, racial diversity declines at the doctoral levels compared to masters and undergraduate enrollments. The combined share of non-white students falls from 42.41% for undergraduates to 44% at the master's to 36% for the doctoral level. Hispanic/Latinos are the largest minority group in undergraduate enrollment with 20.42%. However, their representation drops noticeably to 13.66% at the master's level and just 10.65% in the doctoral program. This trend suggests an increasing barrier for Hispanic/Latino students to academic advancement compared to white students [19]. Meanwhile, the enrollment data of Black/African American students reveals fluctuations in their representation across academic levels over the year. Black/African Americans comprised 5.18% of undergraduate enrollment and declined to 4.33% at the master's level, there is a slight increase to 6.32% at the doctoral level. On the other hand, Asian student representation increased from undergraduate enrollment (8.63%) to master's (12.65%) construction program enrollment, indicating initial strides toward higher degree attainment. However, the regression to 9.05% in doctoral program enrollment suggests the potential hurdle or limitations hindering Asian students from achieving proportional representation in doctoral-level construction programs.

In addition, gender disparity progressively decreases across undergraduate, master's, and doctoral levels, with the rise in female enrollment at higher-level programs. Specifically, females comprised 25.49% of the undergraduate enrollment, a share that rose to 36.34% at the master's level and further increased to 44.97% for the doctoral program. The data exhibited a significant

decrease in the gender imbalance at higher academic levels that could signal growing prospects for women's employment in the industry's leadership positions. This trend aligns with research findings that women often perceive advanced degrees as essential for overcoming gender biases and securing leadership roles [21].

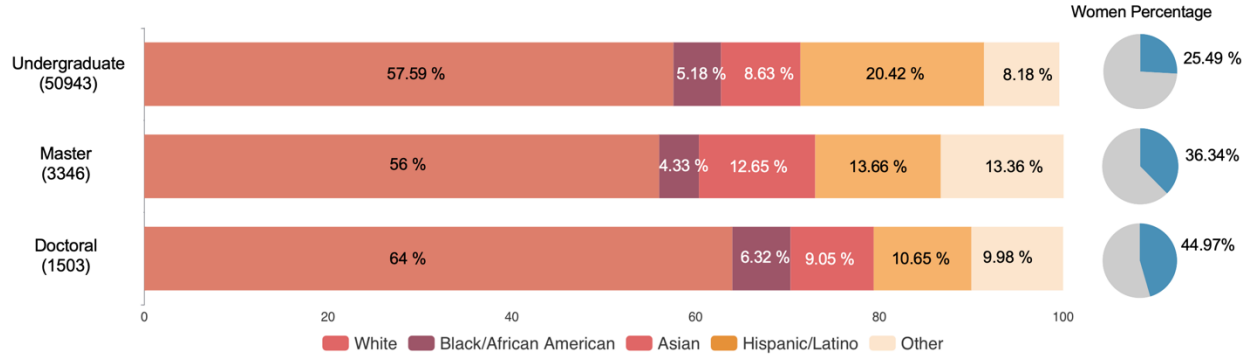

Figure 4: Distribution of racial and gender diversity among undergraduate, master's, and doctoral program enrollment in 2021.

3.1.3. Student Recruitment and Retention Strategies

To enhance student diversity in construction higher education, comprehensive recruitment strategies are needed. Findings from multiple studies indicate that targeted outreach and engagement efforts, including summer camps, school visits by industry representatives, workshops, and mentorship programs have proven to the effective strategies in to increase high school students' interests in engineering programs, especially among women and underrepresented minorities, which can encourage them to consider careers in the designated field [22]–[25]. Providing students with exposure to the construction industry is crucial for recruiting them into construction management or civil engineering programs. Universities' initiatives can include organizing outreach activities targeted at prospective students, such as career fairs focused on engineering and construction professions, science fairs for high school students, or open house events that showcase curricula and research [26]. Furthermore, introducing female students to construction programs at an early stage, offering career guidance, and promoting their participation in engineering courses are key strategies for attracting women into the construction fields [27] In addition, partnerships with minority-serving institutions that have higher proportions of female and underrepresented students can also help creating pathways for students into engineering programs, thereby enabling greater diversity in undergraduate engineering education [28]. In one study, a collaboration program between a community college and a university enabled 21% of students to enroll in engineering majors after one year of participation [29]. Moreover, different studies have highlighted the importance of scholarships and financial assistance in supporting underrepresented students [30], [31]. Offering financial aid specifically for underrepresented groups can help alleviate financial barriers that may prevent them from pursuing education in construction and civil engineering programs. Institutions could also review their admissions approaches to identify and minimize any existing biases or barriers that disproportionately impact minority, female, or disadvantaged applicants. This includes ensuring processes are holistic and consider the full context of a student's achievements and potential, not just narrow academic criteria [32]. In addition, research has shown that having diverse recruitment panels and reviewers in the admissions process can help reduce unconscious biases and ensure more inclusive consideration of applicants from underrepresented backgrounds [33]. Also, admissions committees with historically marginalized groups are more inclined to admit applicants from low socioeconomic status backgrounds [34].

Increasing retention of enrolled female and minority students is also critical in improving diversity in construction education. Studies have shown that an inclusive curriculum that incorporates

diverse perspectives and experiences into course materials can foster a greater sense of belonging among underrepresented students thereby enhancing their academic performance, engagement, and graduation rates [35]. Thus, faculty development training on inclusive curriculum and teaching is essential for educators in developing inclusive classroom environments. This training enhances educators' understanding of obstacles to learning such as implicit bias while also empowering them to create content that resonates with students from diverse backgrounds, thereby strengthening student engagement and retention [36]. In addition, diversity among faculty and staff in higher education is crucial in creating a supportive environment for minority students [37]. Research findings consistently show a significant positive connection between faculty diversity and student academic performance, especially among students with marginalized backgrounds [38]. Having faculty with shared gender and socioeconomic backgrounds as the underrepresented students could provide role models who can offer guidance, support, and encouragement, to students in overcoming challenges in their academic journey toward graduation [39]. Moreover, student support programs like mentoring and counseling services are particularly beneficial for students who might struggle with the traditional academic environment. These programs provide additional layers of support in fostering student's sense of belonging [40]. Specific examples include mentorship programs where students are paired with upperclassmen or industry members for guidance [25]. Construction programs could also provide case studies of successful women or underrepresented students in both the construction industry and academia as examples to inspire students to overcome historical barriers. Overall, developing inclusive curricula, implementing targeted student support programs, diversifying faculty and staff, and highlighting role models from underrepresented groups can together create a more welcoming and supportive academic environment, thereby enhancing the retention of students from diverse backgrounds.

3.2. Faculty Diversity

Diverse faculty in higher education significantly influence student success by enhancing learning experiences and outcomes, thereby increasing higher graduation rates [41]. The findings indicate a considerable disparity in the racial composition of construction education faculty compared to the broader demographics of the United States. Specifically, the combination of Black/African American and Hispanic/Latino faculty was extremely low, amounting to just less than 10% of the entire construction program faculty population (Figure 5). This is a severe underrepresentation considering that Black/African Americans and Hispanic/Latinos constitute 13.6% and 19.1% respectively of the entire US population [16]. Meanwhile, Asian faculty were the most well-represented minority group, comprising 24 to 25% of the total faculty in the construction program with only 6.3% of the total population. The data further revealed a notable decrease in racial diversity at higher academic ranks, with the reduction of minority faculty from Assistant to Associate and Full Professor positions (Figure 6). In 2021, non-white faculty members comprised 45.37% of assistant professors, 40.66% of associate professors, and only 38.62% of full professors. This decreasing trend also aligns with patterns observed in other academic disciplines. A 2022 report by ASEE discovered that over 53.5% of assistant professors in science and engineering disciplines belonged to minority racial/ethnic groups, a number which dropped to just 41.6 % at the full professor level [42]. This downward trend in diversity indicates systemic barriers to advancement for underrepresented groups in construction academia, especially for Black/African American and Hispanic/Latino faculty. Historical systemic discrimination has created opportunity and achievement gaps that accumulate throughout academic careers. Underrepresented groups continue to face obstacles in hiring, retention, and advancement at each successive career stage [43]. The declining diversity at higher ranks could also suggest that

academic institutions have systemic barriers embedded in their promotion processes. These mechanisms disadvantage minority faculty seeking advancement to tenured or senior status [44].

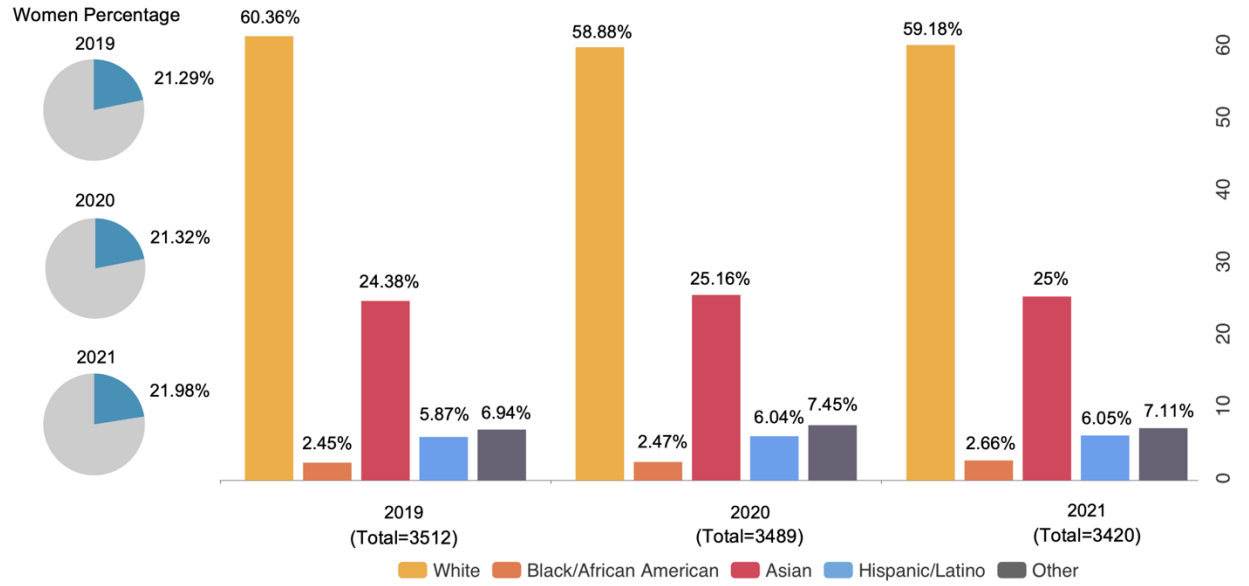

Figure 5: Racial and gender demographics of construction program faculty (2019-2021)

Regarding gender diversity, women were severely underrepresented within the faculty demographics of construction education. Female representation in construction domain faculty has seen a minor increase, with under 1% growth between 2019 and 2021. In 2021, women accounted for 43.4% of all faculty across majors nationally, while only 21.98% of construction program faculties were women. In addition, there is a noticeable disparity in the representation of women faculty across ascending academic ranks, with significantly fewer women at higher academic levels. The 2021 data illustrated a substantial gender gap, with the percentage of female faculty in the construction program, dropping from 33.33 % at the assistant professor tier to 23.56% at the associate professors' level and to only just 15.36 % at the full professor rank. Recent data from the American Association of University Women (AAUW) noted a similar trend, where 36% of full professors were women, compared to 44% for tenure-track faculty [45]. The imbalance in women's representation in higher academic ranks reflects a "leaky pipeline" [46] that highlights systemic barriers around career progression and retention for women faculty in construction education.

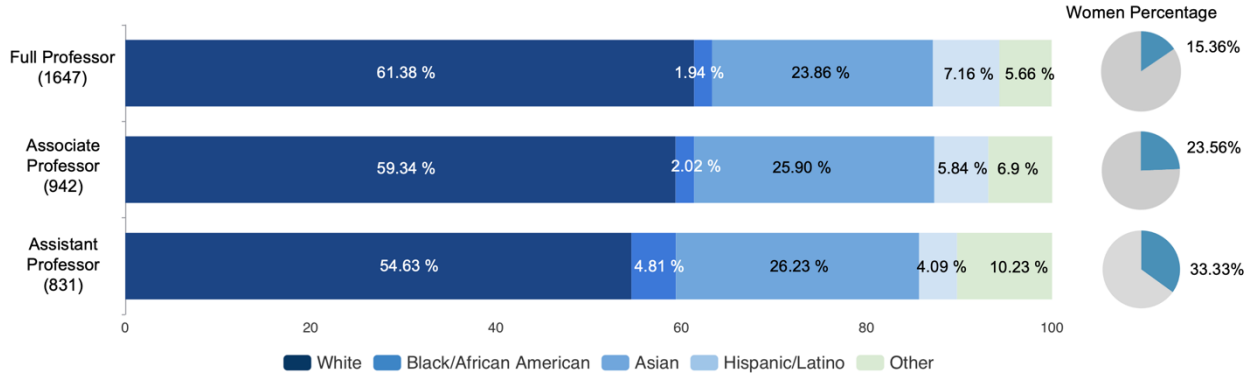

Figure 6. Racial and gender representation among construction program faculty by rank in 2021

3.2.1. Interventions for Faculty Diversity Improvement

A diverse range of action is required to meaningfully increase the presence of women and minorities among the faculty. One of the strategies includes refining recruitment processes and faculty search methods to reduce bias and increase outreach to a more diverse candidate pool which can be done by carefully drafting job advertisements (using inclusive language etc.) to convey openness to candidates from diverse backgrounds [47]. Research has shown that when hiring committees transparently articulate the significance of diversity and its benefit to the institution in job postings, and explicitly state a commitment to diversity, there is an increase in the number of applications submitted from underrepresented groups and the probability of hiring them [48]. Additionally, having a diverse faculty search committee also allows for a broader range of viewpoints and experiences which could enhance the recruitment process of diverse faculty members [49]. Implicit bias training workshops for faculty search committees can also help raise awareness of unconscious biases and improve efforts to improve faculty diversity [50]. Moreover, enhancing racial and gender representation within a higher education program requires not only recruiting diverse faculty candidates but also increasing the diversity within doctoral pipelines that feed into the academic profession [51]. Therefore, institutions could also prioritize inclusive recruitment, mentoring, and funding for underrepresented groups at the doctoral level. Furthermore, mentorship is essential for the professional growth of early-career faculty. Universities across the countries have used mentorship programs to improve retention rates and career advancement of underrepresented faculty [52]. These programs provide guidance, support, and networking opportunities that are crucial for junior faculty in navigating the complexities of academic careers. Additionally, effective mentorship can help mitigate feelings of isolation and build a sense of belonging for faculty from diverse backgrounds who may face unique challenges in the academic environment [53].

4. Conclusion

This study provides a detailed analysis of current trends and representation gaps in gender and racial diversity among students and faculty across U.S. construction higher education programs. Additionally, it synthesizes actionable strategies that construction education leaders can adopt to improve the enrollment and graduation rates for female and minority students, as well as increase faculty diversity through more inclusive recruitment and retention strategies. The findings revealed slight improvements in gender and racial diversity over the past decade, with modest rises in shares of women, Hispanic/Latino, Black/African American, and Asian graduates and enrollments. However, these groups all remain disproportionately underrepresented relative to their share of the population. There are also concerning reverse trends with the declining proportion of enrolled female students and lower racial diversity at doctoral levels compared to undergraduate and master's programs. In addition, the analysis also demonstrated a significant underrepresentation of women and minorities across all faculty ranks in construction education. The insights will inform researchers and leaders of the current diversity situation in construction education in shaping the priorities and initiatives to engage women and minority groups. The findings reaffirm the urgent need for strategies to accelerate progress on diversity and inclusion within construction programs across different areas such as student recruitment and retention, as well as faculty hiring and career development.

5. Limitations

This study focused specifically on construction-related programs that directly related to construction employment, therefore certain majors such as architecture, architecture engineering, and surveying engineering were intentionally excluded from the dataset since graduates from these programs do not necessarily enter directly into construction roles. The exclusion of these majors aims to enable a tighter analysis of the diversity issues in the construction industry. Additionally, degree completion data utilized in this research were limited to doctoral degree-granting universities to provide representation across all levels of higher education. Furthermore,

although recommendations for best practices in this study were compiled from recent peer-reviewed empirical studies, there are limitations in the ability to validate their efficacy and definitively assess their impact. The aim of the best practices summarized in this study is not to provide definitive guidance, but rather to inform overall strategic directions through a synthesis of existing research.

6. Recommendation for future research

Future research can focus on further exploration and analysis of the connection between racial and gender diversity in student graduates and enrollment to advance the understanding of retention issues and barriers faced by underrepresented student groups in construction programs. Additionally, future researchers can consider conducting specialized surveys of construction education administrators and faculty members to gather key insights on department-level best practices for improving diversity, equity, and inclusion such as diversity initiatives, policies, and recruitment strategies. Surveys could also cover the specific challenges underrepresented faculty face regarding career progression and sense of belonging and other relevant topics to understand key factors in the retention of diverse educators and creating a more inclusive academic environment. In addition, the authors suggest studying the publicly available construction industry's employment data to the degree awarded and enrollment data in construction education to analyze how well graduates from different demographic groups are transitioning into the construction industry and assess whether there are differences in employment rates or job placement among various groups. Geographic analysis could also be conducted to examine the geographic distribution of employment for diverse groups within the construction industry and whether graduates from specific regions are more or less likely to find employment opportunities. Finally, the authors suggest that future research should expand the scope of degree completion data beyond doctoral-granting universities by incorporating statistics from institutions that confer the highest degrees of associate's, bachelor's, or master's degree, to increase the comprehensiveness of student representation datasets for more detailed analyses.

Data Availability statement

The data utilized in this study were gathered from public sources such as IPEDS and ASEE and will be available by request including (1) degree completion in construction programs from 2011 to 2021 (2) Enrollment data in construction-related programs and from 2019 to 2021 (3) Diversity of faculty in construction related program from 2019 to 2021.

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