



Bachelor's Degree Inclusion for Women of Color

Effectiveness Scores in the UK and US

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ABSTRACT

Women of Color are underrepresented in STEM at the undergraduate level and are especially underrepresented in fields like computer science. Those who persist in these fields experience isolation, micro-aggressions, and sexual harassment. Little is known about the finer details of the underrepresentation and particularly the kinds of institutions where Women of Color thrive and the policies and practices that may lead to more inclusive cultures. The Centering Women of Color in STEM (CWCS) project is a collaborative research project using quantitative analysis to determine where underrepresented women graduate with bachelor's degrees in STEM in the UK and the US.

We present the results from the UK research, for which we have devised an 'effectiveness score' to represent the culmination of factors we believe most affect Black, Asian, and Minority Ethnic (BAME) women's participation in computer science at the undergraduate level. We have designed the effectiveness score much like a league table and remain open to discussion and suggestions for improving the scale.

We also present results from the US research, for which we have devised an 'effectiveness score' that represents the number of women of color (WoC) who graduate with degrees in STEM from an institution, normalized by the size of the department and the demographic makeup of the institutions. We used this score to investigate trends among institutions where WoC are thriving.

Finally, we present an online portal, where this analysis is made available to the public.

1 WHAT WE DID

US data consists of 12 years (2008-2019) of graduation data from the Integrated Postsecondary Education Data System (IPEDS) from which we calculated effectiveness scores for computer

science, math, and physics for each institution by comparing the representation of WoC among bachelor's degrees earners in the department to their representation at the institution. We then used these scores to compare departments and investigate trends related to institutional characteristics.

UK data was drawn from the Higher Education Statistics Agency (HESA.) These graduation data were combined with a variety of measures, drawn from research into the university experiences of BAME women, that could act as a proxy for the inclusivity of those institutions.

1.1 PORTAL FEATURES

We have made the results of our analysis available in an online portal. The portal includes the following features: *Insights* contains a summary of institutional trends; *Map* shows the geographic location of institutions along with their effectiveness scores; *Benchmark* displays comparisons between institutions and their peers; and *School Finder* allows users to search for specific institutions.

2 COMPUTER SCIENCE INSIGHTS

2.1 INSIGHT 1

In the US, departments in minority serving institutions and women's colleges tend to graduate proportionally more women of color, even after controlling for institutional racial demographics, than primarily white co-educational institutions.

2.2 INSIGHT 2

In the UK, departments at the former polytechnic universities graduate more BAME women, even after controlling for institutional racial demographics, than Russell Group universities.

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