BLACK WOMEN IN STEM: REIMAGINING THE ROLE OF INFORMATION SCIENCE AS A PATHWAY TO STEM EQUITY IN THE UNITED STATES

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Abstract

- The gender and racial gap in STEM fields is an issue of national importance that seeks urgent attention.
- This paper highlights the experiences of Black women in STEM and implications for policy and practice.

Introduction

Many scholarly works have been published on the need to increase the participation of Black women in STEM fields. The low representation of Black women in STEM fields is an issue of social justice and economic advancement in countries like the United States.

Introduction (Cont'd)

- There is a lack of ethnic and gender diversity in STEM disciplines.
- By implication, this has led to the underrepresentation of women of color in STEM careers.
- In 2021, half (51%) of the US workforce comprised women (NCSES 2023).
- Only a third of these women were in STEM careers.
- 9% of the total workforce was Black.

Introduction (Cont'd)

- There have not been notable developments with all the research and funding poured into addressing this problem.
- There is a dearth of literature on this issue from an information science approach.
- This paper, through a literature review, explores the perceptions and experiences of Black women in STEM fields, and
- Suggests using an information-science-oriented approach towards exploring this gap.

Literature Review

Black women in STEM academic spaces.

Women are significantly underrepresented in STEM fields in academia, and even much worse for women of color (Casad, 2020).

Racism and sexism among Black women in STEM.

Race and gender identities are the most important factors that govern people's interactions with African American women pursuing STEM degrees (Charleston et al., 2014).

Challenges faced by Black women in STEM

Black women in STEM experience various challenges that impede their success in the field.

"I've been thinking about these issues since I was an undergrad studying computer science at Harvard, where I was one of only six women majoring in the field. When I was a professional computer scientist, nobody in upper management looked like me. I've thought about it almost every day since, when I look around to see I'm still one of the only Black women in AI, in data journalism, or at tech conferences."

—Meredith Broussard (2023)

Black women in STEM academic spaces.

- Black female undergraduates in STEM majors feel isolated and excluded because of the toxicity of their environment (Ong et al, 2011; Charleston et al., 2014).
- Black female students who were Chemistry majors in a predominantly White college experienced racism and sexism in their department (Esposito, 2011).
- Doctoral and post-doctoral students in an Engineering department had few Black female Faculty and faced gendered microaggressions (McGee and Bentley, 2017).
- In 2016, only 5% of Black women were awarded a baccalaureate degree in STEM, while White women accounted for 27% and even less than 5% in recent years (National Science Foundation, 2019).

Racism and sexism among Black women in STEM

- Black women studying Computer Science complained that assumptions and stereotypes were made about them based on their race and gender identity.

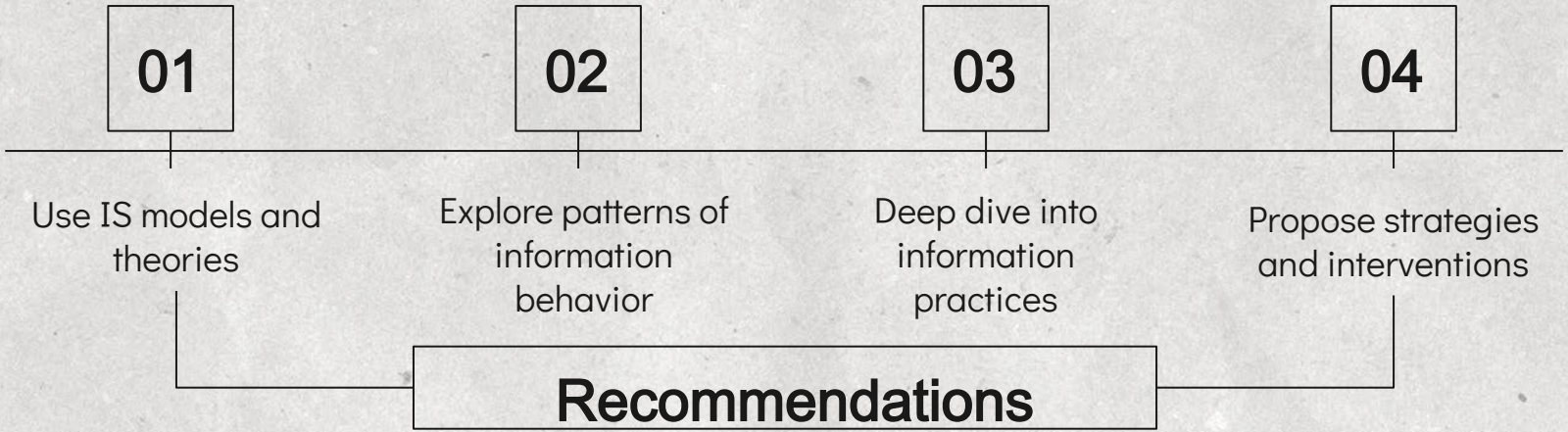
- Many college students pursuing a STEM discipline would usually doubt their competence because the STEM environment presumes them to lack the necessary aptitude and ability to succeed because of their color and gender (McGee and Bentley, 2017)

Challenges faced by Black women in STEM

- Maltreatment
- Assumptions and stereotypes
- Unwelcoming environment and culture.
- Unsupportive relationships

Implications for Information Scientists and STEM Policy and Practice

Race and gender identities are major determinants of Black women's success and retention in STEM



Directions for Future Research

To further investigate the low participation of Black women in STEM fields, future studies should examine:

- The motivations behind universities' recruitment criteria and methods
- The relationship between the social and family background of Black girls and women and their STEM experiences.
- The intersection of race and gender identities and the influence on information practices.
- Information marginalization and lived experiences of Black women in STEM.

Thanks!

Questions?

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