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Peer Review

Review of: "Where Are the Female Role Models in Science?"

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This study offers a meaningful attempt to specify women role models in STEM fields. I acknowledge the importance of highlighting women engineers and scientists who navigate persistent challenges in work–life integration, a concern that is particularly salient in many Global South contexts where institutional supports and professional infrastructures may be unevenly developed. By documenting concrete figures and their professional achievements, the study has the potential to illuminate how female role models emerge, gain recognition, and exert influence across national and cultural settings. In this sense, the manuscript addresses a socially and practically significant issue with clear relevance to gender equality, talent development, and the sustainability of STEM careers. To further strengthen the scholarly contribution and enhance the generalizability of the findings, however, several aspects of the study could be developed more explicitly.

First, the manuscript would benefit from a more transparent and systematic articulation of the sampling logic underlying the identification of specific individuals as role models. While the inclusion of recognizable names can be informative and illustrative, the analytical value of these cases depends heavily on the credibility and rigor of the selection process. At present, it is not entirely clear why these particular figures were chosen over others, nor whether they represent typical, exemplary, or exceptional cases within their respective contexts. To address this issue, the authors may wish to provide a detailed description of the sampling procedures and processes, including the criteria used to define a “role model,” the sources from which candidates were identified, and the decision rules applied to finalize the sample. Clarifying whether the sampling strategy follows purposive, theoretical, reputational, or criterion-based logic would substantially improve the methodological transparency of the study and allow readers to better assess the scope and boundaries of the conclusions. Such clarification is

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particularly important if the study aims to inform policy or educational practice, where the legitimacy of role model identification carries substantive implications.

Second, the manuscript appears well positioned to move beyond descriptive accounts of individual figures toward more generalized theoretical insights about the formation and functioning of role models in STEM. Currently, the discussion centers primarily on who the role models are, but the study could be further enriched by articulating how role models emerge and what underlying mechanisms enable them to exert influence. For example, the authors might consider identifying the shared characteristics, career trajectories, institutional supports, or symbolic resources that distinguish individuals who become widely recognized as role models from those who remain less visible despite similar achievements. Developing such analytical dimensions would allow the study to contribute not only to representation but also to theory building regarding role model formation, visibility, and diffusion.

Last, a comparative perspective between Global South and Global North contexts could offer an especially valuable extension of the argument. Rather than treating these contexts as merely geographic categories, the authors could conceptualize them as institutional environments characterized by differing labor market structures, gender norms, educational systems, and policy regimes. This approach would enable the study to specify how contextual conditions shape the attributes and trajectories of role models. For instance, role models in the Global South may be distinguished by resilience in resource-constrained environments, boundary-spanning capabilities across professional and familial domains, or symbolic leadership in communities where female representation in STEM remains limited. In contrast, role models in the Global North may derive legitimacy from institutional recognition, research productivity, or leadership positions within established professional networks. Explicitly theorizing these contextual differences would help clarify whether the study aims to identify universal characteristics of role models, context-specific patterns, or an interaction between the two.

Overall, the manuscript addresses an important and timely topic with clear societal relevance. With greater methodological transparency regarding sample selection and a more explicit effort to derive generalized and comparative insights from the cases presented, the study has strong potential to make a substantive contribution to the literature on gender, careers, and professional development in STEM fields.

Declarations

Potential competing interests: No potential competing interests to declare.