

Neighborhood Institutional Resources during High School Foster Mexican-origin Students' Postsecondary STEM Pursuits

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OVERVIEW: This study explores whether Mexican-origin students' STEM postsecondary pursuits were associated with the availability of neighborhood institutions providing resources and opportunities that foster STEM persistence.

AUDIENCE: Grant funders; Informal educators; Policymakers; Professional development providers; Science education leaders; Outreach specialists; STEM educators

KEY POINTS

- During the high school-to-college transition, Mexican-origin students' STEM pursuits are highly responsive to neighborhood institutional resources (i.e., non-profit organizations and local labor market structures).
 - Our findings highlight specific types of neighborhood institutional resources that may address some of the challenges Mexican-origin students face while navigating the STEM pathway.
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INTRODUCTION High school is an important time for students to envision their future career options and lifestyles, and their conception of the future is based, at least partly, on funds of knowledge built in their surrounding learning environments and the opportunities they afford. Mexican-origin youth, an ethnic minority population who has received limited attention in science education research, actively seek local opportunities and their postsecondary education pursuits are closely related to available career prospects within their communities. Therefore, this study explored whether Mexican-origin students' postsecondary STEM pursuits were associated with the availability of institutional resources in their neighborhoods.

FINDINGS We found that Mexican-origin students were more likely to pursue postsecondary STEM if there were more minority- and immigrant-serving organizations and STEM-focused jobs within their neighborhoods (i.e., zip code). These resources may not only ensure the flow of STEM-related resources and opportunities for Mexican-origin youth's academic achievement, but also protect these adolescents from the ecological dangers and alienation prevalent in the STEM fields.

In the case of immigrant- and minority-serving organizations specifically, they bring culturally adaptive strategies to their curriculum generally—STEM or otherwise—that may not stereotype or debase Mexican culture as traditional approaches have often done. Whereas more educational institutions in Mexican-origin students' neighborhoods were associated with a lower likelihood of STEM pursuits. Educational institutions may not be culturally responsive enough to support Mexican-origin youth because STEM learning is historically shaped by European middle-class men, often harboring racial and ethnic discriminatory structures and practices.

TAKEAWAYS Neighborhood institutional resources may address the structural inequalities in access to resources and opportunities that foster STEM minorities' persistence in the STEM pathway. A variety of extracurricular educational activities and enrichment opportunities with culturally responsive pedagogies may be beneficial for Mexican-origin youth's STEM pursuits.