Unveiling the Drive: What makes citizens adopt citizen science apps for coastal environment monitoring

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The world faces severe environmental threats, namely climate change and the biodiversity crisis. Mitigating environmental degradation requires collective action, reliant on thematically and geographically comprehensive scientific datasets. States must report environmental data on the areas under their national jurisdiction to comply with their environmental commitments. However, this process is often costly and time-consuming, resulting in heterogeneous data availability.

Citizen science (CS) is a powerful tool fostering large datasets (through continuous, cost-effective data collection and processing over large area extensions), data transparency, and public engagement and participation. However, engaging and retaining citizens in long-term voluntary participation poses challenges. This study addresses this issue by unveiling the drivers of the adoption of CS apps, focusing on coastal environment monitoring, an activity supported by numerous CS initiatives.

Our methodology combined four theories in a tailor-made conceptual model for investigating the adoption and use of CS apps for coastal environment monitoring: UTAUT 2, Citizen Empowerment, Green self-identity and Hofstede's cultural dimensions (described in Cardoso-Andrade et al., 2022). The research design is presented in Figure 1.

The findings of our conceptual model, which were based on responses to an online questionnaire addressing the constructs of the model, highlight key drivers such as habit, citizen empowerment, facilitating conditions, and environmental performance expectancy (Figure 2). Moreover, collectivist societies and individuals with a green self-identity (who adopt pro-environmental behaviors) are more prone to adopt these apps. Based on these findings, we propose guidelines to improve citizen engagement and retention in CS projects for coastal environment monitoring through their apps (Cardoso-Andrade et al., 2022).

Reference

Cardoso-Andrade, M., Cruz-Jesus, F., Troncoso, J.S., Queiroga, H., & Gonçalves, J.M. (2022). Understanding technological, cultural, and environmental motivators explaining the adoption of citizen science apps for coastal environment monitoring. *Global Environmental Change*, *77*, 102606.

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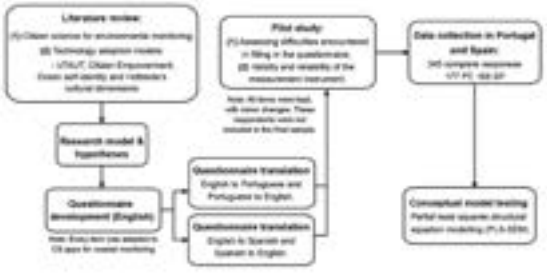

FIGURE 1
Data collection and analysis process.

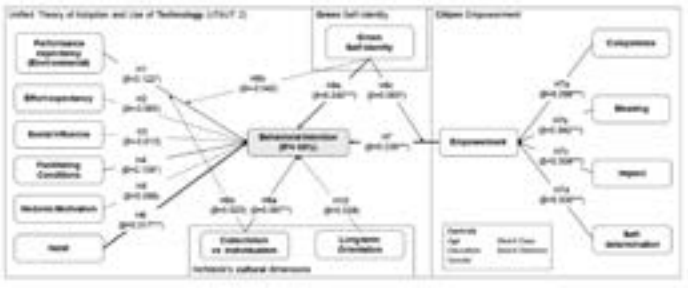

FIGURE 2
Figure 2. Structural model results. (Notes: *Significant at .05; **Significant at .01; ***Significant at .001.)