

# Design for Clean Technology Adoption

## Application of Discrete Choice Analysis and the Theory of Planned Behavior for Development Engineering

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### Abstract

What motivates technology adoption in low income-regions? For years, international development has sought to provide technologies to address the many challenges for people living at the 'bottom of the pyramid'. Despite these efforts, evidence suggests that technology accessibility and ownership do not necessarily translate to technology adoption and use. During the past three years, I have studied technology adoption in low resource settings to find out what drives technology adoption and what are the impacts of humanitarian-based technologies in practice. To find systematic answers to these questions, this research integrated methodologies from engineering design, economics, and psychology. Sponsored by the National Science Foundation – Civil, Mechanical, and Manufacturing Innovation division, this dissertation highlights how user behavior and use-context should systematically inform engineering design in a quantitative approach. The holistic framework developed in this work provides insights for technology designers, policy makers, and international development project managers to follow a more user-oriented, context-appropriate and systematic approach to design more marketable clean technology alternatives. As a result, products and intervention strategies are more likely to align with user intentions and beliefs, which improves the likelihood of technology adoption.

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