

**Vulnerability of a low-income community in South Africa to air pollution:
Exploring the use of structural equations modelling to identify appropriate
interventions**

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ABSTRACT

In this study, the relationship between certain household traits and specific environmental health outcome variables was explored in a low-income community from a peri-urban settlement in eMbalenhle, South Africa, with the aim of locating focus areas for targeting appropriate intervention. The susceptibility of this community to environmental pollution-related health outcomes may also be influenced by household-characterizing factors such as nutritional status, hygiene behaviours and other diseases that affect their immune system. Structural equations modelling was used to capture the possible web of relationships between the household traits and a combined respiratory health outcome variable. Specifically, the two traits considered at household level were socioeconomic status and household environment, both of which were latent. Results revealed that primary interventions to improve respiratory health should include converting non-flush toilets to flush toilets, increasing the number of toilets, ensuring regular waste collection, increasing access to medical care and increasing the household income.