

An Empirical Assessment of Indoor Environmental Quality in Developing Sub-Saharan Countries: Evaluation of Existing Gaps and Potential Risk

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Abstract : Indoor environmental quality (IEQ) remains a global concern because it impacts people's comfort, health, performance, and general well-being. People spend a significant amount of time in buildings or while commuting, hence ensuring the minimal risk in indoor spaces by ensuring suitable IEQ. IEQ studies are limited regarding developing sub-Saharan countries, whereas there is also a huge risk and concern for the current population and geometric growth as many cities in the region will become mega-cities by 2040 (World Bank report). The absence of suitable IEQ regulations and energy poverty are reasons to assess the IEQ gaps for increased awareness of sustainable interventions to minimize the associated risk. This study evaluates the gaps and potential hazards that exist in the IEQ of sub-Saharan countries using empirical studies of hospital occupants and BRT bus passengers and drivers. The Surveys were conducted in 3 cities of the Democratic Republic of Congo and Lagos metropolis of Nigeria. The results suggest that gaps exist in IEQ for these regions. The gaps indicate existential risk to people's health, comfort, and well-being. The inferential conclusions are that there is a need for further scientific studies, improvement in IEQ conditions, and ensuring suitable regulations for developing sub-Saharan countries.

Keywords : health hazards, hospitals indoor environmental quality, indoor spaces, occupants, sub-Saharan countries, vehicles

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