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## Understanding one's global comfort in open-plan office: A case study in South Korea

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### ABSTRACT

Indoor environmental quality plays a critical role in occupant comfort in open-plan offices. Poor acoustic environments can have adverse impacts on occupants, leading to disturbed concentration (1) and reduced performance (2). Studies have also shown that poor speech intelligibility can have negative effects on employee performance (3) and job satisfaction (4). In addition to the acoustic environment, other environmental factors have been found to affect occupants in such office settings. For instance, thermal and visual environments are linked to employee commitment and competence (5–7), while indoor air quality has been shown to affect individuals' health and job satisfaction (8–10). While it is clear that all environmental qualities have crucial impacts on occupants, no single attribute can explain an individual's entire comfort level. Researchers have thus acknowledged the combined effects of these factors in influencing an individual's comfort perception. Global comfort refers to an individual's overall subjective assessment of their comfort level in a specific environment. It takes into account a broad range of environmental factors, including the thermal environment, acoustic environment, air quality, and visual environment. Previous studies have investigated these factors either wholly or partially to understand their impact on comfort (11,12).

The present study reviews literature on variables influencing occupant comfort in various settings, with a specific focus on open-plan offices. The primary objective is to enhance our understanding of the multiple factors that contribute to occupant comfort and their intricate interactions. Additionally, this review seeks to provide an up-to-date overview of the existing research in this field. Based on the findings of the literature review, the study identifies personal and contextual factors as significant variables requiring further investigation.

In order to understand the complex interactions between personal and contextual factors and their impact on occupant comfort in open-plan offices, this study conducted in-depth interviews with employees working in open-plan offices in South Korea. Age, gender, health status, personality traits, and personal preferences are some personal factors that affect occupants' comfort perception, while work characteristics, office layout, and urgency of task are some contextual factors. Moreover, this case study in South Korea suggests that cultural factors may also be significant contextual factors, underscoring the need for additional research across diverse cultures. The study emphasizes the need for further research on the

combined effects of various factors on occupant comfort in open-plan offices, particularly regarding the interactions between personal and contextual factors. A multidisciplinary approach that incorporates data from various sources and methods is required for future research in this area. Suggestions for future research are discussed.

Keywords: Indoor environment, Combined effects, Global comfort, Open-plan office

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