

Modelling the WELL building concepts for office environments: PLS-SEM approach

Carmen Y.M. Tan, Rahimi A. Rahman and Yong Siang Lee
*Faculty of Civil Engineering Technology,
Universiti Malaysia Pahang Al-Sultan Abdullah, Kuantan, Malaysia*

WELL building
concepts for
office
environments

Received 8 April 2023
Revised 15 June 2023
Accepted 31 July 2023

Abstract

Purpose – The health, well-being and productivity (i.e. WELL) of office building occupants are vulnerable to poor office environments. Therefore, this study aims to identify new features and concepts of office buildings in supporting occupants' WELL. To achieve that aim, this study: explores new WELL features for office buildings, develops new WELL concepts for office buildings and examines the influence of the newly developed WELL concepts on existing WELL building standard (WELL v2) concepts.

Design/methodology/approach – The first phase involved ten experts to assign weightage for health, well-being and productivity. In the second phase, 206 questionnaire survey data were collected from office building occupants throughout Malaysia. Exploratory factor analysis established new WELL concepts for office buildings. Partial least-squares structural equation modelling examined the influence of the newly developed WELL concepts on the existing WELL v2 concepts.

Findings – Two new WELL concepts were developed: “space and services”, consisting of sufficient space, workstation privacy, office layouts, building automation systems, cleanliness and information technology (IT) infrastructure, and “building security”, consisting of security systems and safety at parking lots. Here, “space and services” influences all existing WELL v2 concepts, and “building security” influences the water, nourishment, mind and community concepts of WELL v2.

Originality/value – This study uncovers holistic WELL building concepts to support occupants' health, well-being and productivity with additional new features and concepts for construction industry policymakers to establish holistic building assessment tools.

Keywords WELL building concepts, Office building, Health, Well-being, Productivity

Paper type Research paper

1. Introduction

The quality of office environments has a significant impact on occupants' health (Othman *et al.*, 2020; Dovjak and Kukec, 2019), well-being (Potrč Obrecht, 2019; Altomonte *et al.*, 2020) and productivity (Candido *et al.*, 2016; Haynes *et al.*, 2017). Unfortunately, office building features focus little on occupants' health, well-being or productivity (i.e. WELL). Building-related illnesses, including lethargy, headache, giddiness, itchy skin and irritated nose, eyes or throat, decrease productivity and escalate medical leaves days and costs. For instance, in the USA, the annual cost lost due to building-related illnesses ranges from US\$10bn to US\$70bn (Awada *et al.*, 2021). The World Health Organization (WHO) stated that a hostile office environment can cause mental illness. Globally, anxiety and depression have caused



This work was supported by Universiti Malaysia Pahang (PDU213001-1). The authors thank the participants for their time and participation in the survey to make this study possible. The authors are also grateful to the editors and anonymous reviewers for their insightful comments, which improved this paper's quality.