

Ergo Synergy: Modeling the Interplay of Environmental Ergonomic Factor, Workstation Design, and Physical Comfort on Productivity through Structural Equation Modeling

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Abstract

This study investigates the intricate relationships that exist between worker productivity, ergonomics environmental factors, workstation design, and physical discomfort. The study's primary focus was on the impact of these elements and how they interact in a business setting. The subject of this study was the employees of a luxury department store in Middle East with more or less 500 employees. PLS-SEM was employed in the study to analyze this intricate interaction between the components. The study includes the Rapid Office Strain Assessment (ROSA), a technique for evaluating the ergonomic condition of workstations. The ROSA exposure score of 4 indicates that there is room for significant improvement in the ergonomics of the workspace. The study also confirmed that productivity and workstation design are positively correlated. Furthermore, the study demonstrated a negative relationship between environmental ergonomic elements and physical discomfort, underscoring the importance of enhancing the workplace. Lastly, the study confirmed that physical discomfort reduced productivity in this type of business. This study emphasizes how important workplace ergonomics are to raising worker productivity and well-being. It offers insightful information about the connections between ergonomics, surroundings, discomfort level, and output. The proposals include extensive workstation enhancements, department- and demographic-specific activities, and noise-related stress management techniques. Organizations looking to build more ergonomic and productive work environments should use the study's findings as a guide.

Keywords

Ergonomic factors, Physical discomfort, PLS-SEM, Productivity, and ROSA.

Biographies

Hazel Agustin is a professional in supply chain and logistics. She embodies a compelling subject for a master's thesis, epitomizing the fusion of real-world expertise and academic ambition. Holding certificates in Project Management, Logistics and Supply Chain Management, Purchasing Management, and Lean Six Sigma White Belt, she boasts a comprehensive skill set. Her academic foundation is equally robust, with a Bachelor's degree in Psychology and Business Administration Major in Marketing Management. As she actively pursues her master's degree in industrial engineering, her journey shows the practicality of academic growth and the application of diverse knowledge in professional settings. While learning the Finnish language, she exemplifies the pursuit of global insights. Her area of research interest and expertise are Psychology, Psychotherapy, Economics, Global supply chain risk analysis, Design and analysis of various experiments, and Ergonomics.