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Field evaluation of office chair comfort

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Seated time on task and poorly designed chairs aggravate discomfort in sitting, affecting performance. The office chairs used in Sri Lanka vary considerably in design i.e. between adjustable and fixed type. Frequently, these chairs are poorly designed. Abeysekara (2009) finds a mismatch between chairs and occupants in Sri Lanka. We find that office employees often report of back pain and dissatisfaction due to their chairs, and this highlights the importance of designing chairs that provide sufficient comfort that would improve performance at work. It is noted that users' subjective response in relation to comfort is the basis for selecting chairs. Hence this study intends to investigate office chair comfort using the subjective method developed by Helander and Zhang (1997). This method assumes that comfort and discomfort are two different but interconnected entities affected by different sets of variables.

Ninety office employees (24 males and 66 females) from the University of Moratuwa, Sri Lanka, participated in this study. All of the participants were clerical or administrative officers. Five different types of office chairs currently used by office employees were selected. Feelings such as impression, relax, relief, neck pain, upper back pain, mid back pain, low back pain, upper leg pain, lower leg pain and fatigue were included in this questionnaire to be rated on a 7 - point numerical rating scale. Rating scales to measure both comfort and discomfort independently on a 7 – point scale also were included in the questionnaires. It is assumed that the questionnaire will measure the feelings of experimental subjects at different levels that are elicited by different chairs in the office environment. In the factor analysis, two factors were separated. Neck pain, upper back pain, mid back pain, low back pain, upper leg pain, lower leg pain and fatigue were separated under factor 1 which was the discomfort factor. Impression, relax and relief were separated under factor 2 which was the comfort factor. Whereas the chairs used in this study were generally poorly designed.

The results confirmed that the chair evaluation methodology developed by the previous researchers and applied in this study is sensitive enough to discriminate chairs according to their comfort levels in field evaluation. The chair evaluation results show that adjustable chairs with cushions are more comfortable than the fixed type chairs with hard seat surfaces. From the result obtained, it is also concluded that incorporation of adjustability is important in designing a comfortable chair.

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