



Relationship between quality of building maintenance management services for indoor environmental quality and occupant satisfaction

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ARTICLE INFO

Article history:

Received 9 November 2010

Received in revised form

18 April 2011

Accepted 21 April 2011

Keywords:

Building maintenance management

Post-occupancy evaluation

Indoor environmental quality

Help desk service

Thermal comfort

Adaptive theory

ABSTRACT

Two surveys were carried out to investigate the correlation between building maintenance management services for indoor environmental quality (IEQ) and occupant satisfaction. Each maintenance management organization manager was surveyed using the Evaluation Index of Maintenance Management Service Quality, created by Akira Takakusagi. Seven office buildings in Seoul, Korea were investigated in the first survey, and two buildings from the first survey were selected for analysis in the second survey. One is a building with good maintenance management services but low occupant satisfaction, and the other is an office building with low maintenance management services but high occupant satisfaction.

From the first survey, we found that maintenance management service level was highly correlated to the level of management services provided, up to 60%. However, up from 60%, the correlation was dropped. To explain these results, two selected cases were investigated in the second survey. Results are;

1) Occupants in both offices reported equal levels of IEQ satisfaction, although the actual level of IEQ was lower in office E than it was in office B.

2) A comparison of the adaptive behaviors in the two offices showed that they were not significantly different, despite the different adaptive opportunities (operable window, personal temperature controller) between them.

3) Office E showed higher satisfaction with help desk services than did Office B. When occupants actively used the help desk, there was a positive effect on their satisfaction with the indoor environment.

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1. Introduction

The indoor environments of many large office buildings are controlled by mechanical systems that consume considerable amounts of energy to provide uniform and constant indoor conditions. Moreover, people spend more time than ever before in their offices now, the comfort and satisfaction of occupants with regard to their indoor environments becomes more important than before. Especially, because these occupants' health and satisfaction to IEQ (Indoor Environment Quality) influence to productivity of office workers, building owner and manager has to consider this issue importantly [1,2]. Since the oil shortage of the 1970s, studies to resolve this issue have been performed and have produced several adaptive models. The thermal adaptive model considers three feedback mechanisms: physiological (acclimatization), psychological (expectation), and behavioral (occupant control) those [3]. Behavioral feedback is further categorized into personal adjustments (clothes, activities, eating and drinking hot/cold beverages), technological or

environmental adjustments (the use of windows, blinds, fans, and HVAC) and cultural adjustments (siestas, dress code).

In this study, we focus on maintenance management services as one of the variables of behavioral feedback and psychological adjustment.

This study is based on the idea that maintenance management services play an important role in indoor environments and suggests ways in which these services can be optimized for occupant satisfaction. Also, the maintenance management organization has an obligation to deliver quality services to their occupants; with this in mind, occupant comfort and satisfaction are directly related to the quality of service provided by the building maintenance management organization. The emphasis in this study is on the consequences of strategic planning on how to best manage buildings in order to improve conditions for occupants and users.

Due to the close interactions between building management and user satisfaction, it is necessary to investigate the relationships between these two factors in order to improve both the service quality and occupant comfort. To investigate this correlation, the two factors must first be quantified. Here we quantified service quality using the Takakusagi tool [4] and occupant comfort using a POE survey.

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