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Determinants of Employee Readiness for Industrialised Building System (IBS) Adoption in Construction Projects

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ABSTRACT

In the building sector, the Industrialised Building System (IBS) improves productivity, quality assurance, and sustainability. However, because of workforce issues, its implementation in Malaysia is still uneven (CIDB, 2024). With an emphasis on knowledge, training and development, organisational support, and IBS performance, this study examines at important factors that influence an employee's willingness to adopt the IBS. Regression analysis of a survey of 150 industry professionals showed that these characteristics contributed to 30.7% of the variance ($R^2 = 0.307$), indicating a considerable influence on IBS acceptability. The results show that in order to develop a workforce ready for the IBS implementation, organised training programmes and robust organisational support are essential.

Keywords: IBS performance, knowledge, organisational support, training and development

INTRODUCTION

A contemporary response to the inefficiencies of conventional building techniques, the Industrialised Building System (IBS) was first implemented in the 1960s to alleviate the housing scarcity (Alawag et al., 2023; Saberi et al., 2022). The IBS implementation in Malaysia's construction sector increased from 10% in 2000 to about 40% in 2020 (CIDB, 2024). However, because of employee resistance, productivity gains continue to be inconsistent. The successful deployment of the IBS depends on the employees' readiness.

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PROBLEM STATEMENT

Employee unreadiness related obstacles such skill gaps, change aversion, and a lack of organisational support keep the IBS implementation below optimal levels (Alawag et al., 2023; Lee & Lim, 2023). According to a CIDB (2024) study, employees resistance prevents only 30% of projects from completely implementing the IBS.

RESEARCH OBJECTIVE

To investigate the key factors influencing employees' readiness and engagement with the IBS in the Malaysian construction industry.

LITERATURE REVIEW

The variables chosen in this study, namely employees' knowledge (EK), training and development (T&D), organisational support (OS), and IBS performance (IBSP) are based on extensive literature highlighting critical role in the employees' readiness of the Industrialised Building System (IBS).

Employee Readiness

Employee readiness is the degree to which people are psychologically and technically equipped to accept change and successfully implement new systems or technology in the workplace (Armenakis et al., 2002; Ismail et al., 2019).

Employee Knowledge

One of the main factors affecting employees' willingness to embrace the system is their level of understanding regarding the IBS. Research indicates that employee resistance may result from a lack of knowledge and comprehension of the IBS advantages, construction methods, and cost effectiveness (Ismail et al., 2019). Employees with higher knowledge levels tend to have a positive attitude towards the IBS (Razak & Awang, 2014).

Hypothesis 1: Knowledge significantly influences employees' readiness of the IBS application.

Training and Development

Training programs are critical for providing staff with the skills they need to effectively use the IBS technology. Training lowers ambiguity and increases trust in the IBS implementation (CIDB, 2024).

Hypothesis 2: Training and development significantly influence employees' readiness of the IBS application.

Organisational Support

Organisational support, including management and employee commitment, increases the likelihood of accepting the IBS if employees experience significant support from their organisation (Ministry of Works Malaysia, 2023). Previous study has demonstrated that a lack of organisational support leads to employee resistance.

Hypothesis 3: Organisational support significantly influences employees' readiness of the IBS application.

IBS Performance

Employee views on the adoption of the IBS are influenced by its perceived performance, which includes sustainability, efficiency, and quality control (Musa et al., 2015). Employees are more likely to integrate the system and work more effectively if employees understand the advantages of the IBS in building projects.

Hypothesis 4: The IBS performance significantly influences employees' readiness of the IBS application.

The result of the regression test analysis is shown in Table 1.

Table 1
Regression test analysis

Independent Variable	Beta (β)	Significant Value	Remarks
IBS Performance (IBSP)	0.249	0.021*	Supported
Employee Knowledge (EK)	0.239	0.018*	Supported
Training and Development (T&D)	0.247	0.013*	Supported
Organisatonal Support (OS)	-0.219	0.017*	Supported
R Square	0.307		
Adjusted R Square	0.271		

**Note.* N=122, **p<0.01, *p<0.05; dependent variable = employee readiness (EA)

Table 1 of the regression test analysis showed that all independent variables had a statistically significant relationship with employee readiness. Employee readiness of the IBS was significantly influenced by variables such as the IBS performance (β = 0.021), employee knowledge (β = 0.018), training and development (β = 0.013) and organisational support (β = 0.017).

CONCLUSION

Knowledge dissemination, training programmes and organisational support are key drivers of employee readiness towards the IBS. Future research should explore additional socio-cultural factors influencing the IBS readiness.

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