

ABSTRAK

Perkembangan teknologi di dunia konstruksi berkembang pesat dengan munculnya inovasi teknologi *Building Information Modeling* (BIM). BIM hadir dengan menekankan fitur integrasi dan kolaborasi yang memberikan banyak manfaat dan dapat menyelesaikan berbagai macam masalah. Meskipun BIM menjanjikan banyak manfaat, implementasinya seringkali menghadapi banyak kendala dan tantangan, terutama pada kontraktor kecil dan menengah. Oleh karena itu, penelitian ini akan berfokus pada potensi dan tantangan yang berupa faktor pendukung dan penghambat yang dihadapi oleh kontraktor kecil dan menengah di Indonesia dalam mengimplementasikan teknologi BIM. Penelitian ini menggunakan jenis penelitian deskriptif dengan pendekatan kuantitatif. Data primer diperoleh melalui penyebaran kuisioner kepada kontraktor kecil dan menengah dengan jumlah 50 responden. Pengolahan data dilakukan menggunakan metode *Partial Least Squares Structural Equation Modeling* (PLS-SEM) dengan bantuan aplikasi SmartPLS dan Ms. Excel. Hasil penelitian menunjukkan bahwa 38 dari 53 indikator dinyatakan valid dan reliabel. Pada analisis *Path Coefficients* menunjukkan beberapa faktor seperti Karakteristik BIM, Lingkungan Eksternal, Personal/Individu, Organisasi, Teknologi, dan Manajemen memiliki hubungan yang positif dengan peningkatan implementasi BIM. Sebaliknya, pada faktor Manfaat BIM, Lingkungan Internal, dan Teknis menunjukkan hubungan yang negatif. Berdasarkan analisis yang telah dilakukan, disusun rekomendasi strategi guna meningkatkan implementasi BIM atau memberikan solusi yang lebih efektif. Didapatkan 5 Strategi, yaitu di antaranya: Integrasi Pendidikan dan Pelatihan BIM yang Berkelanjutan, Edukasi Kesadaran dan Motivasi Perusahaan, Simulasi Evaluasi dan Optimalisasi Proyek Berbasis BIM, Standarisasi Perangkat Lunak, dan Bangun Dorongan dari Klien.

Kata kunci: Implementasi, BIM, Kontraktor Kecil dan Menengah, Persepsi, SmartPLS

ABSTRACT

The rapid development of technology in the construction industry has been driven by innovative technology called Building Information Modeling (BIM). BIM emphasizes integration and collaboration features that offer numerous benefits and solutions to various challenges. However, despite its promises, BIM implementation often faces many obstacles and challenges, especially among small and medium-sized contractors. Therefore, this research will focus on the potential and challenges, including supporting and inhibiting factors faced by small and medium-sized contractors in Indonesia when implementing BIM technology. This research employs a descriptive research type with a quantitative approach. Primary data is obtained through questionnaire distribution to 50 respondents from small and medium-sized contractors. Data processing was conducted using the Partial Least Squares Structural Equation Modeling (PLS-SEM) method with the assistance of SmartPLS and Ms. Excel applications. The research results indicate that 38 out of 53 indicators were deemed valid and reliable. Path Coefficients analysis revealed that several factors such as BIM Characteristics, External Environment, Personal/Individual, Organization, Technology, and Management have a positive relationship with the improvement of BIM implementation. Conversely, factors like BIM Benefits, Internal Environment, and Technical aspects show a negative relationship. Based on the conducted analysis, recommendations for strategies to enhance BIM implementation or provide more effective solutions were formulated. Five strategies were identified, including: Sustainable Integration of BIM Education and Training, Company Awareness and Motivation Education, Simulation Evaluation and Optimization of BIM-Based Projects, Software Standardization, and Client Encouragement.

Keywords: *Implementation, BIM, Small and Medium-sized Contractors, Perceptions, SmartPLS.*