

## **ABSTRACT**

*Building Information Modeling (BIM) has transformed the global construction industry, enhancing project efficiency. The success of BIM implementation is measured not only technically but also in user satisfaction. This research analyzes BIM implementation service quality and user satisfaction in Indonesian building construction projects. Using a quantitative descriptive approach with SERVQUAL, a questionnaire was filled out by 100 respondents from 37 projects. Data were analyzed through SEM-PLS and Important Performance Map Analysis (IPMA) to identify areas for improvement. Root Cause Failure Analysis (RCFA) and Failure Mode and Effect Analysis (FMEA) were conducted through a Forum Group Discussion (FGD) involving four BIM experts, providing Risk Priority Numbers (RPN) to assess potential failures and improvement impacts on BIM implementation in Indonesia.*

*Key findings indicate a positive perception of BIM implementation quality, with Tangible and Responsiveness significantly influencing satisfaction. Improvements were identified in seven indicators, including Physical Facilities, BIM Equipment, Visualization Quality, Response to Changes, Communication Processes, Problem-Solving Abilities, and BIM Data Security. Recommendations include adding CDE-Design collaboration accounts, upgrading hardware, improving internet speed, implementing CDE document management SOP, and regularly backing up data. These improvements resulted in a 36.34% increase in BIM implementation service quality performance, significantly impacting user satisfaction in Indonesian construction projects.*

**Keywords:** *BIM, SEM-PLS, FMEA, Service Quality, User Satisfaction, Construction, Indonesia.*



UNIVERSITAS  
MERCU BUANA

## ABSTRAK

*Building Information Modelling* (BIM) telah memajukan industri konstruksi global dengan efisiensi proyek yang ditingkatkan. Keberhasilan implementasi BIM tidak hanya dilihat dari aspek teknis, namun juga kepuasan pengguna. Penelitian ini menganalisis kualitas layanan Implementasi BIM dan meningkatkan kepuasan pengguna di proyek konstruksi gedung di Indonesia. Dengan pendekatan kuantitatif deskriptif menggunakan SERVQUAL, kuesioner diisi oleh 100 responden dari 37 proyek di Indonesia. Data dianalisis melalui SEM-PLS dan *Important Performance Map Analysis* (IPMA) untuk mengidentifikasi area perbaikan. Dilakukan juga *Root Cause Failure Analysis* (RCFA) dan *Failure Mode and Effect Analysis* (FMEA) melalui *Forum Group Discussion* (FGD) yang melibatkan empat ahli BIM. Mereka memberikan nilai *Risk Priority Numbers* (RPN) untuk menilai potensi kegagalan dan dampak perbaikan pada implementasi BIM di Indonesia.

Temuan utama menunjukkan persepsi positif terhadap kualitas implementasi BIM dengan faktor *Tangible* dan *Responsiveness* signifikan terhadap kepuasan. Perbaikan diidentifikasi pada tujuh indikator, melibatkan Fasilitas Fisik, Peralatan BIM, Kualitas Visualisasi, Respon terhadap Perubahan, Proses Komunikasi, Kemampuan Memberikan Solusi, dan Keamanan Data BIM. Rekomendasi termasuk penambahan akun kolaborasi *CDE-Design*, upgrade perangkat keras, peningkatan kecepatan internet, SOP manajemen dokumen CDE, dan *backup data* rutin. Dengan perbaikan, terjadi peningkatan kinerja kualitas layanan implementasi BIM 36,34%, berdampak signifikan pada kepuasan pengguna di proyek konstruksi Indonesia.

**Kata Kunci:** BIM, SEM-PLS, FMEA, *Service Quality*, *User Satisfaction*, Konstruksi, Indonesia.



UNIVERSITAS  
MERCU BUANA