ABSTRAK

Perhitungan *Quantity Take Off* (QTO) merupakan tahapan krusial dalam penyusunan anggaran biaya proyek konstruksi, sehingga ketelitian metode yang digunakan sangat memengaruhi hasil akhir. Penelitian ini bertujuan membandingkan volume pekerjaan besi dan beton yang dihitung menggunakan metode konvensional dan metode berbasis *Building Information Modeling* (BIM).

Metode penelitian menggunakan pendekatan kuantitatif dengan metode eksperimental. Data diperoleh melalui perhitungan volume berdasarkan gambar kerja dua dimensi untuk metode konvensional, sedangkan BIM menggunakan model digital tiga dimensi. Analisis difokuskan pada perbedaan volume, tingkat akurasi, dan efisiensi kedua metode.

Hasil penelitian menunjukkan metode konvensional menghasilkan volume yang lebih tinggi dibandingkan BIM, dengan selisih 4,07% pada pekerjaan beton dan 9,85% pada pekerjaan besi. Hal ini membuktikan bahwa BIM lebih akurat, presisi, dan efisien dibandingkan metode konvensional, sehingga lebih tepat diterapkan pada perencanaan biaya konstruksi modern.

Kata kunci: Quantity Take Off, Metode Konvensional, Building Information Modeling, Besi, Beton.

ABSTRACT

Quantity Take-Off (QTO) calculations are a crucial stage in preparing a construction project budget, so the accuracy of the method used significantly impacts the final result. This study aims to compare the volume of steel and concrete work calculated using conventional methods and those based on Building Information Modeling (BIM).

The research method employed a quantitative approach with experimental methods. Data were obtained through volume calculations based on two-dimensional working drawings for the conventional method, while BIM used a three-dimensional digital model. The analysis focused on differences in volume, accuracy, and efficiency between the two methods.

The results showed that the conventional method produced higher volumes than BIM, with a difference of 4.07% for concrete work and 9.85% for steel work. This demonstrates that BIM is more accurate, precise, and efficient than the conventional method, making it more appropriate for modern construction cost planning.

Keywords: Quantity Take-Off, Conventional Method, Building Information Modeling, Steel, Concrete.