

ABSTRAK

Avni Puspantari Lumbantobing: *Analisis Non-Physical Waste dengan Metode Last planner system Pada Proyek Gedung Onkologi Terpadu Medan*. Skripsi. Fakultas Teknik Universitas Negeri Medan. 2025.

Proyek konstruksi gedung kesehatan seperti Gedung Onkologi Terpadu Medan sering menghadapi tantangan inefisiensi akibat *Non-Physical Waste* yang tidak terlihat secara fisik namun berdampak signifikan terhadap kinerja proyek. Penelitian ini bertujuan untuk mengidentifikasi jenis-jenis *Non-Physical Waste*, menentukan *waste* paling dominan, dan menganalisis dampaknya terhadap efisiensi proyek.

Penelitian menggunakan metode campuran (*mixed methods*) dengan pendekatan kualitatif dan kuantitatif. Populasi penelitian mencakup *stakeholder* proyek termasuk kontraktor, subkontraktor, dan *quality control*. Sampel dipilih secara *purposive* sebanyak 5 responden yang terlibat langsung pada fase *basement*. Instrumen penelitian meliputi observasi terstruktur selama 2 minggu, wawancara semi-terstruktur, dan studi dokumen proyek. Data dianalisis melalui kategorisasi *waste*, perhitungan frekuensi, pengukuran *Percent Plan Complete (PPC)*, dan Analisis Pareto. Interpretasi data dilakukan dengan triangulasi untuk memvalidasi temuan.

Hasil penelitian mengungkapkan lima jenis *waste*: *Waiting* (43,75%), *Defect* (31,25%), *Transportation* (12,5%), *Inventory* (6,25%), dan *Unused talent* (6,25%). *Waiting* dan *Defect* merupakan *waste* dominan secara kolektif menyumbang 75% dari total *waste* yang teridentifikasi. Dampaknya tercermin dari fluktuasi nilai *PPC* sebesar 77,78% pada Pekan 36 dan 90,9% pada Pekan 37, menunjukkan ketidakstabilan dalam keandalan perencanaan mingguan. Temuan ini mengkonfirmasi bahwa *Non-Physical Waste* berkontribusi signifikan terhadap inefisiensi aliran kerja dan penurunan produktivitas proyek.

Kata Kunci: *Non-Physical Waste, Lean Contruction, Last Planner System, Percent Plan Complete, Efisiensi Proyek*

ABSTRACT

Avni Puspantari Lumbantobing: *Analysis of Non-Physical Waste Using the Last Planner System Method in the Medan Integrated Oncology Building Project. Thesis. Faculty of Engineering, State University of Medan. 2025.*

Health facility construction projects such as the Medan Integrated Oncology Building often face efficiency challenges due to Non-Physical Waste - inefficiencies that are not physically visible yet significantly impact project performance. This study aims to identify types of Non-Physical Waste, determine the most dominant waste categories, and analyze their impact on project efficiency.

The research employs a mixed-methods approach combining qualitative and quantitative methodologies. The study population includes project stakeholders comprising contractors, subcontractors, and quality control personnel. A purposive sample of 5 respondents directly involved in the basement phase was selected. Research instruments included structured observations over 2 weeks, semi-structured interviews, and project document analysis. Data were analyzed through waste categorization, frequency calculation, Percent Plan Complete (PPC) measurement, and Pareto Analysis. Data interpretation utilized triangulation to validate findings.

The results revealed five types of waste: Waiting (43.75%), Defect (31.25%), Transportation (12.5%), Inventory (6.25%), and Unused Talent (6.25%). Waiting and Defect emerged as the dominant waste categories, collectively contributing 75% of total identified waste. Their impact was reflected in PPC value fluctuations of 77.78% in Week 36 and 90.9% in Week 37, indicating instability in weekly planning reliability. These findings confirm that Non-Physical Waste significantly contributes to workflow inefficiencies and decreased project productivity.

Keywords: *Non-Physical Waste, Last Planner System, Percent Plan Complete, Project Efficiency, Lean Construction*

