

INTISARI

Industri minyak dan gas bumi di Indonesia memegang peranan yang sangat vital dalam pengelolaan dan pasokan energi nasional. Untuk mendukung hal tersebut, keandalan peralatan infrastruktur, khususnya tangki penyimpanan, menjadi krusial demi memastikan kelancaran dan keamanan proses pengolahan minyak mentah menjadi bahan bakar. Penelitian ini bertujuan untuk mengidentifikasi faktor determinan kualitas proyek serta merumuskan strategi peningkatan efektivitas manajemen proyek konstruksi tangki timbun.

Metodologi penelitian ini menggunakan pendekatan kuantitatif. Pengumpulan data melibatkan survei terhadap lima responden ahli dari bidang *Engineering Manager*, *Quality Control Manager*, *Senior Engineer*, *Head of Safety Project* yang dipilih melalui *purposive sampling*. Metode studi Delphi diterapkan dalam dua tahap. Putaran pertama dengan 30 pertanyaan dan putaran kedua mengerucut pada 9 pertanyaan. Analisis data menggunakan uji Kendall's W untuk mengukur kesesuaian jawaban responden serta *Importance-Performance Matrix* sebagai alat perumusan strategi peningkatan manajemen proyek.

Temuan studi mengidentifikasi tiga hambatan kritis yang dinilai memiliki kinerja rendah sehingga menghambat efektivitas proyek. Faktor-faktor tersebut meliputi ketentuan hierarki dokumen sebagai pedoman kerja (A4), ketersediaan dokumen standar dan gambar referensi (B2), serta tingkat kompetensi personel Quality Control (E4). Tingkat kepuasan untuk faktor-faktor ini tercatat sangat rendah pada putaran kedua, berkisar antara 20% hingga 40%. Hasil statistik melalui uji Kendall's W (nilai 0,508–0,815; p 0,003–0,038 < 0,05) membuktikan adanya konsensus yang kuat di antara para ahli. Hal ini menegaskan bahwa aspek utama—ketersediaan dokumen, kepatuhan standar, keselamatan, pengendalian mutu, dan tanggung jawab pemangku kepentingan—secara kolektif dan signifikan menentukan keberhasilan mutu proyek konstruksi tangki timbun.

Kata kunci: tangki timbun, kilang minyak, manajemen mutu proyek dan studi Delphi

ABSTRACT

The oil and gas industry in Indonesia plays a vital role in national energy management and supply. To support this, the reliability of infrastructure equipment, particularly storage tanks, is crucial to ensuring the smooth and safe processing of crude oil into fuel. Therefore, this study aims to identify quality determinants and formulate strategies to improve the effectiveness of storage tank construction project.

*The research methodology employed a quantitative approach. Data collection involved a survey of five expert respondents from the field of Engineering Manager, Quality Control Manager, Senior Engineer, Head of Safety Project were selected through purposive sampling. The Delphi study method was applied in two stages. The first round consisted of 30 questions, and the second round narrowed down to nine questions. Data analysis used the Kendall's *W* test to measure the suitability of respondents' answers and the Importance-Performance Matrix as a tool for formulating strategies for improving project management.*

*The study findings identified three critical barriers deemed to have low performance, thus hampering project effectiveness. These factors include the provision of document hierarchy as work guidelines (A4), the availability of standard documents and reference drawings (B2), and the competency level of Quality Control personnel (E4). Satisfaction levels for these factors were recorded as very low in the second round, ranging from 20% to 40%. Statistical results from Kendall's *W* test (values 0.508–0.815; p 0,003–0,038 < 0.05) demonstrated a strong consensus among experts. This confirmed that the key aspects—document availability, standards compliance, safety, quality control, and stakeholder responsibility—collectively and significantly determine the success of storage tank construction projects.*

Keywords: storage tanks, oil refineries, project quality management and Delphi studies