

ABSTRACT

Development of a Compliance Framework for Safety Management Practices in Manufacturing Companies in Trinidad and Tobago

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This research undertook to develop a self-assessment compliance framework for manufacturing companies, to evaluate and improve the extent to which their occupational safety and health management systems (OSHMS) comply with desired safety practices. A four-phased approach was used: (1) review safety elements and other safety considerations through a literature review; (2) survey manufacturing companies to measure the extent to which OSHMS were met and to scrutinise hypothesised influences of OSHMS development; (3) structure a hierarchy of safety elements and use the Analytic Hierarchy Process (AHP) to establish expert-informed element priorities for OSHMS development; and (4) construct and validate an OSHMS self-assessment instrument for companies to score their OSHMS compliance against established safety elements.

Several OSH elements were under-implemented. Hypothesis-testing revealed that OSHMS are affected by mandatory- and voluntary-element implementation, continual improvement focus, and company attributes. AHP priorities were assigned to 26 elements that support OSHMS development, and a point-based evaluation framework and self-assessment instrument were generated. The instrument rating addressed both the OSHMS' current-state and intended future state. Rating guidelines incorporated a 'Plan-Do-Check-Act' approach to promote continual OSHMS improvement. Also, the instrument's utility for assessing a company's current state and projecting its future intent was validated in two manufacturing companies.

Focused on an under-researched field in the Caribbean, this study generated manufacturing sector statistics and insights about OSHMS. The novelty of this study includes its contribution of an OSHMS compliance framework and self-assessment instrument. Proper adoption of the framework and instrument would boost manufacturers' self-efficacy, empowering them to better understand and improve their OSHMS through coordinated measurement, planning, and implementation efforts. Users could tailor the self-assessment instrument to fit their company's unique context, with guidance from the compliance framework. The framework also has the potential to support OSHA's efforts to enhance OSHMS development and improvement in T&T.

Keywords: Occupational safety and health management system; Manufacturing; Survey; Principal components analysis; Analytic Hierarchy Process; Self-assessment; Continual improvement; Trinidad and Tobago; OSHMS; OSH; PCA; AHP; T&T.