

**STUDY OF INFLUENTIAL FACTORS ON SAFETY
CULTURE OF SHIPBUILDING INDUSTRY – CASE
STUDY ON DOCKYARDS IN SRI LANKA**

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MSc/PG Diploma in Occupational Safety and Health Management

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**Dissertation submitted in partial fulfilment of the requirements for
the MSc/PG Diploma in Occupational Safety and Health
Management**

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Declaration of the Candidate & Supervisor

“I declare that this is my own work, and this thesis does not incorporate without acknowledgement any material previously submitted for a degree or Diploma in any other University or institute of higher learning and to the best of my knowledge and belief it does not contain any material previously published or written by another person except where the acknowledgement is made in the text.

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The above candidate has carried out research for the master's Dissertation under my supervision.

Name of Supervisor: Prof. (Mrs.) Menaha Thayaparan

.....

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Signature of the supervisor:

Date

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Abstract

The shipbuilding industry plays a crucial role in Sri Lanka's economy, particularly in foreign exchange earnings, yet it operates in a high-risk environment characterized by complex tasks, advanced technology, and diverse worker involvement. Despite its growth, the sector faces significant safety challenges, with human error accounting for nearly 98% of industrial accidents.

In Sri Lanka, from 2010 to 2020, the construction sector, including shipbuilding, reported 311 fatal accidents, highlighting the urgent need for improved safety practices. This research assesses the current safety culture in Sri Lanka's shipbuilding industry and identifies influential factors and indicators that can guide improvements in safety practices.

A mixed-methods approach, combining qualitative and quantitative data, was employed, including focus group discussions and document reviews from a selected dockyard. The study identifies seven influential factors and fourteen indicators that shape safety culture, with only one indicator rated as excellent, while most were rated poor.

The safety culture maturity level of the selected dockyard was found to be "Mostly Reactive" based on the DuPont Bradley Curve, with top management participation in safety patrol visits identified as an enabler for positive safety culture. This research provides critical insights into the barriers and enablers of safety culture in Sri Lanka's shipbuilding industry and offers recommendations for improving safety practices to reduce accidents and fatalities.

Keywords: Dockyards, Safety culture, Shipbuilding industry, Sri Lanka

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List of Abbreviations

Abbreviation	Description
AI	Artificial intelligence
BBS	Behavior-based safety
EU	European Union
EDB	Export Development Board
FGD	Focus Group Discussion
ILO	International Labor Organization
IMO	International Maritime Organization
ISO	International Organization for Standardization
IoT	Internet of Things
LNG	Liquid Nitrogen Gas
OHSMS	Occupational Health and Safety Management Systems
PPE	Personal Protective Equipment
SMS	Safety Management Systems
SOLAS	Safety of Life at Sea
UNCTAD	United Conference on Trade and Development

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Appendix 01: Format For Incident Notification

Appendix 02: Format For reporting Unsafe Act

Appendix 03: Format of Accident record

Appendix 04: Format of Unsafe Observation Report