

**DEVELOPMENT OF A FRAMEWORK TO MINIMISE
OCCUPATIONAL HEALTH AND SAFETY HAZARDS
IN APPAREL MANUFACTURING PLANTS IN SRI
LANKA**

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Master of Science in Occupational Safety and Health Management

Department of Building Economics

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Thesis submitted in partial fulfillment of the requirements for the degree
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Declaration

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Abstract

The apparel sector in Sri Lanka, a major export factory, supports approximately 350,000 direct and 1 million indirect jobs, but it presents numerous hazards that threaten safety and wellbeing of worker. Occupational Health and Safety (OHS) is broadly divided into occupational safety, which addresses injury risks and workplace hazards, and occupational health, which focuses on physical and mental health. The International Labor Organization categorizes OHS hazards into six types: physical, ergonomic, psychological, biological, chemical, and radiation. The aim of this study is to develop a framework to propose strategies to minimize the OHS hazards in apparel manufacturing factories in Sri Lanka. Conducted a comprehensive literature review on OHS hazards in global and Sri Lankan apparel manufacturing and focusing on hazard control strategies. A quantitative approach was employed using structured questionnaires directed at shop-floor employees and management team members from major Sri Lankan apparel factories. Shop-floor employees provided insights on hazard identification, while management responses helped to develop strategies for minimizing hazards. The analysis included reports on working environmental factors from factories over the last three financial years to identify health hazards and propose mitigation strategies. Key issues identified include improper lighting, sharp objects, blocked exits, poor ergonomic designs, prolonged hours, adverse temperature and humidity conditions, and exposure to fabric dust, compounded by gaps in safety training, communication, and hazard reporting. To address these challenges, the study recommended enhancing training programs, strengthening internal audits, improving emergency exit routes, systematically reviewing exposure reports, and upgrading safety devices and PPE systems. These strategies are recommended to foster a safer and healthier work environment for the workforce in the apparel factories.

Keywords: Occupational Health and Safety, Apparel factories, OHS Hazards,

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Appendix B: Questionnaire 2 - Identifying Suitable Occupational Health and Safety Management Strategies

Appendix C – Occupational Exposure Monitoring Results

Appendix D - Meeting Record with the Supervisor

List of Abbreviations

ACGIH	American Conference of Government Industrial Hygienists
ASHARE Engineers	American Society of Heating, Refrigeration and Air-Conditioning
BILS	Bangladesh Institute of Labor Studies
CTDs	Cumulative Trauma Disorders
GDP	Gross Domestic Product
HIV	Human Immunodeficiency Virus
ILO	International Labor Organization
MSDs	Musculoskeletal disorders
OHS	Occupational Health and Safety
OHSMS	Occupational Health and Safety Management Systems
OSH	Occupational safety and health
OSHA	Occupational Safety and Health Administration
PELs	Permissible Exposure Limits
PPE	Personal Protective Equipment
RMG	Readymade Garments
SHC	Safety and Health Committee
SOP	Standard Operating Procedure
SPSS	Statistical Package for the Social Sciences
TVOCs	Total Volatile Organic Compounds
UK	United Kingdom
US	United States
USA	United States of America
USD	United States Dollar
WHO	World Health Organization
WHS	Workplace Health and Safety