A NOVEL FRAMEWORK TO ASSESS THE LEVEL OF ENERGY CULTURE MATURITY: THE CASE OF TEXTILE AND APPAREL INDUSTRIAL ORGANISATIONS

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DECLARATION

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. I retain the right to use this content in whole or part in future works (such as articles or books).

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The supervisor/s should certify the thesis with the following declaration. The above candidate has carried out research for the PhD thesis under my supervision. I confirm that the declaration made above by the student is true and correct.

Name of the supervisor: Prof. Udayangani Kulatunga

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DEDICATION

I dedicate this piece of work to my loving wife Mahesha and son Vinuth in return for the departed time and unconditional love.

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ABSTRACT

Global progress of energy-related improvements is considerably behind the curve due to the slow progress of existing initiatives. Hence, there is a pressing need for alternative approaches. Emerging energy culture research area has been identified as a promising approach to look at the lower progress of energy-related improvements. However, energy culture maturity frameworks have not been established yet despite the ability for performance improvement proved by other culture maturity frameworks, like safety culture maturity. Hence, this study aimed to develop a mechanism to assess the level of energy culture maturity focused on the textile and apparel industrial organisations in Sri Lanka, which is the major energy-consuming industry in the country with considerable energy issues. This study was conducted in two (02) phases to develop and evaluate an energy culture maturity assessment framework. Phase I developed the energy culture maturity framework using three (03) steps. Accordingly, Steps 1 and 2 developed a draft energy culture maturity framework using 10 and 15 semi-structured interviews respectively. Then, Step 3 refined the draft framework using three (03) focus groups with four (04) participants each. Phase II of the study evaluated the applicability of Phase I's framework using three (03) case studies of large-scale textile and apparel industrial organisations in Sri Lanka. The findings of the study revealed a novel energy culture maturity assessment framework and its applicability for assessing the energy culture maturity of large-scale textile and apparel industrial organisations in Sri Lanka. This study not only took the innovative step of developing the first energy culture maturity conceptual framework and energy culture maturity framework for textile and apparel industrial organisations but also provides a robust mechanism for policymakers and practitioners to assess the level of energy culture maturity in textile and apparel industrial organisations.

Keywords: energy culture; energy culture maturity; textile and apparel industrial organisations

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ABBREVIATIONS

Abbreviation	Description
BMS	Building Management Systems
CAQDAS	Computer Assisted Qualitative Data Analysis Software
CMM	Capability Maturity Model
ETI	Ethical Trading Initiative
GOTS	Global Organic Textile Standard
GRS	Global Recycled Standard
IEA	International Energy Agency
ISO	International Organisation for Standardisation
JASTECA	Japan Sri Lanka Technical and Cultural Association
KPI	Key Performance Indicator
LED	Light Emitting Diode
LEED	Leadership in Energy and Environmental Design
PDCA	Plan, Do, Check, Act
SBTI	Science Based Targets Initiative
SLSEA	Sri Lanka Sustainable Energy Authority
WRAP	Worldwide Responsible Accredited Production

LIST OF APPENDICES