A FRAMEWORK FOR TOTAL QUALITY MANAGEMENT IN SRI LANKAN BUILDING CONSTRUCTION PROJECTS

Amani Dias

189597E

Dissertation submitted in partial fulfilment of the requirements for the degree of Master of Science in Project Management

Department of Building Economics

University of Moratuwa
Sri Lanka

March 2024

DECLARATION

I hereby declare that this submission is my own work and that to the best of my knowledge, it contains neither materials previously published or written by another person nor material, to a substantial extent, has been accepted for the award of any degree or diploma of a university or other institute of higher studies, except where references are mentioned.

Further, I acknowledge the intellectual contribution of my research supervisor Dr. Sachie Gunatillake for the successful completion of this research dissertation. I affirm that I will not make any publication from this research without the name of my research supervisor as contributing author unless otherwise, I have obtained written consent from my research supervisor.

Also, I hereby grant to the University of Moratuwa the non-exclusive right to reproduce and distribute my thesis/dissertation, in whole or in part in print, electronic or other media. I retain the right to use this content in whole or part in future works (such as articles or books).

Signature: Date: 21/03/2024

(M.L.A.P. Dias)

The above candidate has carried out research for the Masters/MPhil/PhD thesis/ Dissertation under my supervision.

Signature of the supervisor:

…….

(Dr. Sachie Gunathilake) Date: 21/03/2024

ABSTRACT

A FRAMEWORK FOR TOTAL QUALITY MANAGEMENT IN BUILDING CONSTRUCTION PROJECTS IN SRI LANKA

Building construction has significant quality issues, and those quality issues have led to negative impacts on the outcome of the final product. Total Quality Management (TQM) in building construction allows people to buy a quality product with an economic value. Therefore, TQM is becoming increasingly popular worldwide. Managerial/ stakeholder, technical, environment/material/equipment and cultural/political are the main categories of quality problem factors of building construction. building construction has become much more prevalent in Sri Lanka. Further, the TQM application to building construction is under-research in the Sri Lankan construction industry. Therefore, this study aimed to propose a framework for TQM in building construction projects in Sri Lanka.

An extensive literature survey was carried out to explore the background of TQM related to the research area. Eventually, a set of benefits and implementation barriers were identified.

A mixed method (qualitative and quantitative) approach was adopted whereby the research problem was approached through semi-structured interviews and a questionnaire survey. The semi-structured interview guideline was prepared to get an overall idea about TQM before going in depth. Semi-structured interviews were conducted as the first step with twelve respondents who are currently engaged in building construction projects. Then as the second step, sixty-five questionnaires were distributed among construction professionals working in Sri Lanka. The questionnaire survey reported a 53.8% response rate. Further, the interview findings and literature findings were analysed through content analysis. The collected data from the questionnaire survey were analysed using statistical tools (mean).

According to the primary data and initial literature review conducted in the research four types of quality, problems are identified, namely managerial-related quality problems, technical-related quality problems, environment-related quality problems and cultural and political quality problems. According to the questionnaire survey, technical-related quality problems have the highest impact on building projects in Sri Lanka. The comparative analysis of the secondary data has proved that better customer satisfaction, reduction of rework, improved budget performance and improved relationships with architects' engineers and Subcontractors are major benefits of the application of TQM in Sri Lankan building projects.

The strategies that emerged through the data analysis were used to develop a TQM framework for building projects in Sri Lanka.

Keywords: *Buildings, Quality Problem Factors, Total Quality Management*

DEDICATION

I dedicate this piece of work to my beloved family……

ACKNOWLEDGEMENT

Firstly, my sincere appreciation goes to my supervisor Dr. Sachie Gunatilake who encouraged and helped me throughout the research her considerable feedback and deep interest, truly encouraged me to make this arduous task a success.

Secondly, I am particularly grateful to the academic coordinator Ch. Qs Mr Indunil Seneviratne, all the other module lecturers and all other staff members of the Department of Building Economics for their immense assistance and advice during the programme of this study and, throughout my academic career.

Thirdly, with pleasure, I want to give my affectionate gratitude to my family members, batch mates and many others who helped me very substantially with their invaluable moral support. Their encouragement in all my endeavours was enormous.

Finally, my special thanks must go to all the respondents, interviewees, publishers, and authors of all the printed and electronic resources that I have referred for this research, those resources were very helpful in completing this assessment.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF ABBREVIATIONS

ISO	International Standards Organisation
PDCA	Plan-Do-Check-Act
QM	Quality Management
QMS	Quality Management System
TQC	Total Quality Control
TQM	Total Quality Management