

**A FRAMEWORK TO ASSESS LEADERSHIP QUALITY
OF CONSTRUCTION LEADERS**

PRALAYESH GUHA



**DEPARTMENT OF CIVIL ENGINEERING
INDIAN INSTITUTE OF TECHNOLOGY DELHI
APRIL 2026**

© **Indian Institute of Technology Delhi (IITD), New Delhi, 2026**

A FRAMEWORK TO ASSESS LEADERSHIP QUALITY OF CONSTRUCTION LEADERS

by

PRALAYESH GUHA

Department of Civil Engineering

Submitted

*In fulfilment of the requirements of the degree of Doctor of Philosophy
to the*



INDIAN INSTITUTE OF TECHNOLOGY DELHI

APRIL 2026

CERTIFICATE

This is to certify that the thesis entitled “**A framework to assess leadership quality of construction leaders,**” being submitted by **Mr. Pralayesh Guha** to the Indian Institute of Technology Delhi for the award of the degree of **Doctor of Philosophy** is a bonafide record of the research work carried out by him under my supervision and guidance. The thesis work, in my opinion, has reached the requisite standard, fulfilling the requirements for the degree of Doctor of Philosophy.

The contents of this thesis, in full or in parts, have not been submitted to any other University or Institute for the award of any degree or diploma.

Prof. Kumar Neeraj Jha

Department of Civil Engineering
Indian Institute of Technology Delhi
New Delhi 110016, India

ACKNOWLEDGEMENTS

First and foremost, I would like to thank God for guiding and helping me to complete this thesis at its best.

I would like to extend my sincere gratitude to my guide Prof. K. N. Jha, Department of Civil Engineering, IIT Delhi, for his constant support, encouragement, consistent, inspiring guidance, and utmost cooperation at every stage throughout the duration of the study. It was a highly educative and memorable experience working under his supervision.

I am thankful to my student research committee members, Prof. Arvind Kumar Nema and Prof. Vasant Matsagar of Department of Civil Engineering, IIT Delhi, and Prof. Ravi Shankar, Department of Management Studies, IIT Delhi, for providing me with their valuable inputs throughout my study.

I wish to take this opportunity to extend my sincere thanks to all faculty and staff members of the Department of Civil Engineering, IIT Delhi for all possible help and guidance rendered by them in my work.

As is the case with any empirical research, the respondents and interviewees played a major role in providing me with significant inputs. I am grateful to all the respondents and interviewees who contributed by filling in the questionnaire, sparing their valuable time, and giving insight into my research problem.

I would like to express my heartfelt gratitude to Dr. Santu Kar (Assistant Professor, IIT Guwahati) for his unwavering support throughout my academic journey, from my initial induction into the department to the final submission of my thesis. Over the past seven years, his invaluable guidance as a co-author of my journal publications

and as a fellow research scholar has been instrumental in shaping and structuring my research topic. His continuous encouragement has been a source of strength, helping me remain steadfast in my pursuit despite numerous challenges along the way.

I thank my research group colleagues and friends Dr. Ajit K. Sinha, Dr. Satish Kumar V., Dr. Abhilasha Panwar, Mr. Abdullah, Mr Murali krishna, Mrs. Garima Bhagat, Mr Padam Narayan, and Mr Aman Ahlawat with whom I have spent a lot of time in technical discussions at various stages of my research.

I would like to extend my deepest gratitude to my parents, in-laws for their constant support and encouragement throughout the course of study. I wholeheartedly thank my loving wife, Antara Guha, and daughters, Debangshi Guha and Shivanshi Guha, for their unconditional love and cooperation, without which this study would not have been possible at all.

PRALAYESH GUHA

ABSTRACT

Effective leadership is a critical factor in determining the success of a construction project. It has a significant impact on schedule adherence, cost controls, safety measures, and quality performance. Thus, developing and evaluating leadership quality is crucial. However, leadership evaluation frameworks utilized in the construction industry are still limited to formal qualifications, tenure-based experience indicators, and technical competencies. Emotional quotient (EQ), leadership style (LS), resilience (RE), spiritual quotient (SQ), and flow state (FS) are some critical psychological dimensions that are often overlooked by these traditional approaches. These dimensions are essential for successfully navigating the multifaceted complexity, safety imperatives, and sustainability mandates of contemporary projects. Thus, this research aims to investigate three interconnected questions: which psychological characteristics have the greatest impact on the effectiveness of construction leadership; how these characteristics can be measured scientifically and compiled into a composite index; and how such an index can be utilized to categorize, cultivate, and deploy high-performing leaders within the Indian construction industry.

This research utilized a mixed-methods methodology, which combined inductive qualitative investigation with deductive quantitative modeling. It was founded on a pragmatic philosophy that incorporated interpretivist and positivist paradigms. In order to conceptualize and operationalize the research components, a comprehensive literature synthesis was carried out. This synthesis included a wide range of leadership theories, from traditional trait, behavioral, and contingency models to more modern transformational, servant, and adaptive models. In order to identify gaps in the integration of EQ, LS, RE, SQ, and FS as antecedents and moderators of project performance metrics, such as schedule variance, cost deviation, defect

minimization, and safety incident rates, parallel streams of literature in construction management practice and positive psychology were reviewed.

The conceptual framework and survey instruments were refined based on the insights gained from interviews with twenty domain experts, including senior project managers, safety officers, organizational psychologists, and technologists. A three-stage survey was conducted among 256 construction professionals (project managers and site engineers) working on major building and infrastructure projects in India. The purpose of the survey was to obtain quantitative data. The data was checked for reliability and validity. The data was analyzed using partial least squares structural equation modeling (PLS-SEM) to test the hypothesized relationship. Further, the analytic network process (ANP) derived the empirical weights for each psychological dimension that were used to determine the leadership quality index (LQI) of the leaders. A clustering technique was then utilized to classify leaders based on their leadership performance.

According to the findings, leaders' emotional maturity, competency, and sensitivity significantly improve safety outcomes, while emotional sensitivity enhances quality performance. Moreover, the present study established that leaders' years of experience positively influence these EQ dimensions, suggesting that experienced leadership can amplify the benefits of positive psychology in construction management. In the context of leadership style, democratic leadership was found to considerably enhance quality and safety performance. Moreover, leaders' years of experience in the industry positively influence the leadership styles. In addition, resilience was found to have a modest association with spiritual quotient, which leads to purpose-driven and ethical decision-making, and a large correlation with flow state, indicating that adaptive coping mechanisms enable optimal engagement under pressure. Resilience and flow

state are two factors that independently predict gains in decision-making speed and adaptive problem-solving under stress.

Further, using ANP, the leadership quality index (LQI) was constructed by assigning weights of emotional quotient (0.270), democratic leadership style (0.200), resilience (0.185), flow state (0.129), and spiritual quotient (0.216). Clustering analysis revealed three distinct leader archetypes: Top-Performing leaders ($n = 118$), exhibiting above-average scores across all psychological dimensions and achieving superior safety and quality outcomes; Moderate-Performing leaders ($n = 85$), with mixed trait profiles and performance metrics; and low-performing leaders ($n = 53$), whose lower EQ and FS scores corresponded to underperformance. As a result, the LQI serves as a diagnostic instrument that is both data-driven and capable of being replicated, allowing for leadership evaluation and individualized development interventions.

This research contributes to the advancement of leadership theory by incorporating psychological constructs into a coherent leadership development framework and fills important gaps in previously established models. The leadership quality index and its classification system would provide construction companies with a powerful instrument for identifying leaders, providing targeted training, and monitoring performance, which would ultimately result in an improvement in project safety and quality.

The reliance on self-reported measures, prone to common-method bias, the cultural uniqueness of the Indian construction context, and the exclusion of variables such as educational attainment, organizational communication patterns, and technical competency constitute significant limitations of the study. The validation of the LQI must be undertaken in diverse geographical and cultural contexts, integrating emerging constructs such as the adversity quotient and servant leadership, and employing

longitudinal case studies to evaluate the dynamic progression of leadership effectiveness. The examination of technology-driven implementation, achievable via mobile applications, integrated human resource platforms, or embedded decision-support systems, could substantially improve real-time assessments and customized development trajectories.

This study elucidates how emotional intelligence, adaptability in leadership styles, psychological resilience, spiritual quotient, and facilitation of flow states interact to impact the efficacy of construction leadership. By offering theoretical enhancement and an empirically validated practical instrument, it significantly contributes to the prompt, secure, and sustainable delivery of created assets. Furthermore, it provides a fundamental framework for subsequent research in leadership and project management.

सारांश

निर्माण परियोजना की सफलता निर्धारित करने में प्रभावी नेतृत्व एक महत्वपूर्ण कारक है। इसका अनुसूची पालन, लागत नियंत्रण, सुरक्षा उपायों और गुणवत्ता प्रदर्शन पर महत्वपूर्ण प्रभाव पड़ता है। इस प्रकार, नेतृत्व गुणवत्ता का विकास और मूल्यांकन करना अत्यंत महत्वपूर्ण है। हालांकि, निर्माण उद्योग में उपयोग किए जाने वाले नेतृत्व मूल्यांकन ढाँचे अभी भी औपचारिक योग्यताओं, कार्यकाल-आधारित अनुभव संकेतकों और तकनीकी दक्षताओं तक सीमित हैं। भावनात्मक भागफल (EQ), नेतृत्व शैली (LS), लचीलापन (RE), आध्यात्मिक भागफल (SQ) और प्रवाह अवस्था (FS) कुछ महत्वपूर्ण मनोवैज्ञानिक आयाम हैं जिन्हें इन पारंपरिक दृष्टिकोणों द्वारा अक्सर अनदेखा किया जाता है। ये आयाम समकालीन परियोजनाओं की बहुआयामी जटिलता, सुरक्षा अनिवार्यताओं और स्थिरता आदेशों को सफलतापूर्वक नेविगेट करने के लिए आवश्यक हैं।

इस प्रकार, यह शोध तीन परस्पर जुड़े प्रश्नों की जांच करने का लक्ष्य रखता है: कौन सी मनोवैज्ञानिक विशेषताएँ निर्माण नेतृत्व की प्रभावशीलता पर सबसे अधिक प्रभाव डालती हैं; इन विशेषताओं को वैज्ञानिक रूप से कैसे मापा जा सकता है और एक समग्र सूचकांक में संकलित किया जा सकता है; और ऐसे सूचकांक का उपयोग भारतीय निर्माण उद्योग में उच्च-प्रदर्शन करने वाले नेताओं को वर्गीकृत करने, विकसित करने और तैनात करने के लिए कैसे किया जा सकता है।

इस शोध में एक मिश्रित-विधि पद्धति का उपयोग किया गया, जिसने आगमनात्मक गुणात्मक जांच को निगमनात्मक मात्रात्मक मॉडलिंग के साथ संयोजित किया। यह एक व्यावहारिक दर्शन पर आधारित था जिसमें व्याख्यावादी और प्रत्यक्षवादी प्रतिमानों को शामिल किया गया था। शोध घटकों को अवधारणात्मक बनाने और

संचालित करने के लिए, एक व्यापक साहित्य संश्लेषण किया गया। इस संश्लेषण में नेतृत्व सिद्धांतों की एक विस्तृत श्रृंखला शामिल थी, जो पारंपरिक विशेषता, व्यवहारिक और आकस्मिक मॉडल से लेकर अधिक आधुनिक परिवर्तनकारी, सेवा-आधारित और अनुकूल मॉडल तक थी। परियोजना प्रदर्शन मेट्रिक्स, जैसे अनुसूची विचरण, लागत विचलन, दोष न्यूनीकरण और सुरक्षा घटना दरों के पूर्ववर्तियों और मध्यस्थों के रूप में EQ, LS, RE, SQ और FS के एकीकरण में अंतराल की पहचान करने के लिए, निर्माण प्रबंधन अभ्यास और सकारात्मक मनोविज्ञान में साहित्य की समानांतर धाराओं की समीक्षा की गई।

वैचारिक ढाँचे और सर्वेक्षण उपकरणों को बीस डोमेन विशेषज्ञों के साथ साक्षात्कारों से प्राप्त अंतर्दृष्टि के आधार पर परिष्कृत किया गया, जिनमें वरिष्ठ परियोजना प्रबंधक, सुरक्षा अधिकारी, संगठनात्मक मनोवैज्ञानिक और प्रौद्योगिकीविद् शामिल थे। भारत में प्रमुख निर्माण और बुनियादी ढाँचा परियोजनाओं पर काम करने वाले 256 निर्माण पेशेवरों (परियोजना प्रबंधकों और साइट इंजीनियरों) के बीच एक तीन-चरणीय सर्वेक्षण आयोजित किया गया। सर्वेक्षण का उद्देश्य मात्रात्मक डेटा प्राप्त करना था। डेटा की विश्वसनीयता और वैधता की जाँच की गई। परिकल्पित संबंध का परीक्षण करने के लिए डेटा का विश्लेषण आंशिक न्यूनतम वर्ग संरचनात्मक समीकरण मॉडलिंग (PLS-SEM) का उपयोग करके किया गया। इसके अलावा, विश्लेषणात्मक नेटवर्क प्रक्रिया (ANP) ने प्रत्येक मनोवैज्ञानिक आयाम के लिए अनुभवजन्य भार प्राप्त किए जिनका उपयोग नेताओं के नेतृत्व गुणवत्ता सूचकांक (LQI) निर्धारित करने के लिए किया गया। फिर नेताओं को उनके नेतृत्व प्रदर्शन के आधार पर वर्गीकृत करने के लिए एक क्लस्टरिंग तकनीक का उपयोग किया गया। निष्कर्षों के अनुसार, नेताओं की भावनात्मक परिपक्वता, दक्षता और संवेदनशीलता सुरक्षा परिणामों में महत्वपूर्ण सुधार करती है, जबकि भावनात्मक संवेदनशीलता गुणवत्ता प्रदर्शन को बढ़ाती है। इसके अलावा, वर्तमान अध्ययन ने स्थापित किया कि नेताओं के अनुभव के वर्ष इन EQ आयामों को

सकारात्मक रूप से प्रभावित करते हैं, यह सुझाव देते हुए कि अनुभवी नेतृत्व निर्माण प्रबंधन में सकारात्मक मनोविज्ञान के लाभों को बढ़ा सकता है। नेतृत्व शैली के संदर्भ में, लोकतांत्रिक नेतृत्व को गुणवत्ता और सुरक्षा प्रदर्शन को काफी हद तक बढ़ाने के लिए पाया गया। इसके अलावा, उद्योग में नेताओं के अनुभव के वर्ष नेतृत्व शैलियों को सकारात्मक रूप से प्रभावित करते हैं। इसके अतिरिक्त, लचीलेपन को आध्यात्मिक भागफल के साथ मामूली संबंध पाया गया, जो उद्देश्य-संचालित और नैतिक निर्णय-निर्माण की ओर ले जाता है, और प्रवाह अवस्था के साथ एक बड़ा सहसंबंध, यह दर्शाता है कि अनुकूली मुकाबला तंत्र दबाव में इष्टतम जुड़ाव को सक्षम करते हैं। लचीलापन और प्रवाह अवस्था दो ऐसे कारक हैं जो स्वतंत्र रूप से तनाव के तहत निर्णय लेने की गति और अनुकूली समस्या-समाधान में लाभ की भविष्यवाणी करते हैं। यह शोध मनोवैज्ञानिक निर्माणों को एक सुसंगत नेतृत्व विकास ढाँचे में शामिल करके नेतृत्व सिद्धांत की प्रगति में योगदान देता है और पहले स्थापित मॉडलों में महत्वपूर्ण अंतराल को भरता है। नेतृत्व गुणवत्ता सूचकांक और इसकी वर्गीकरण प्रणाली निर्माण कंपनियों को नेताओं की पहचान करने, लक्षित प्रशिक्षण प्रदान करने और प्रदर्शन की निगरानी के लिए एक शक्तिशाली साधन प्रदान करेगी, जिसके परिणामस्वरूप अंततः परियोजना सुरक्षा और गुणवत्ता में सुधार होगा।

स्व-रिपोर्ट किए गए उपायों पर निर्भरता, जो सामान्य-विधि पूर्वाग्रह के प्रति संवेदनशील है, भारतीय निर्माण संदर्भ की सांस्कृतिक विशिष्टता, और शैक्षिक उपलब्धि, संगठनात्मक संचार पैटर्न और तकनीकी दक्षता जैसे चरों का बहिष्करण अध्ययन की महत्वपूर्ण सीमाएँ हैं। LQI के सत्यापन को विविध भौगोलिक और सांस्कृतिक संदर्भों में, विपरीत परिस्थिति भागफल और सेवक नेतृत्व जैसे उभरते निर्माणों को एकीकृत करते हुए और नेतृत्व प्रभावशीलता की गतिशील प्रगति का मूल्यांकन करने के लिए अनुदैर्ध्य केस अध्ययनों को नियोजित करते हुए किया जाना चाहिए। प्रौद्योगिकी-संचालित कार्यान्वयन की जांच, जो मोबाइल एप्लिकेशन, एकीकृत मानव संसाधन प्लेटफार्मों या एम्बेडेड

निर्णय-समर्थन प्रणालियों के माध्यम से प्राप्त की जा सकती है, वास्तविक समय के आकलन और अनुकूलित विकास पथों में पर्याप्त सुधार कर सकती है।

यह अध्ययन स्पष्ट करता है कि भावनात्मक बुद्धिमत्ता, नेतृत्व शैलियों में अनुकूलनशीलता, मनोवैज्ञानिक लचीलापन, आध्यात्मिक भागफल और प्रवाह अवस्थाओं की सुविधा निर्माण नेतृत्व की प्रभावकारिता को प्रभावित करने के लिए कैसे परस्पर क्रिया करती है। सैद्धांतिक वृद्धि और एक अनुभवजन्य रूप से सत्यापित व्यावहारिक साधन प्रदान करके, यह निर्मित संपत्तियों की त्वरित, सुरक्षित और टिकाऊ डिलीवरी में महत्वपूर्ण योगदान देता है। इसके अलावा, यह नेतृत्व और परियोजना प्रबंधन में बाद के शोध के लिए एक मूलभूत ढाँचा प्रदान करता है।

TABLE OF CONTENTS

CERTIFICATE.....	i
ACKNOWLEDGEMENTS	ii
ABSTRACT.....	iv
TABLE OF CONTENTS	viii
LIST OF FIGURES.....	xiii
LIST OF TABLES.....	xiv
LIST OF ABBREVIATIONS	xvi
CHAPTER 1.....	1
INTRODUCTION	1
1.1 Background	1
1.1 Leadership Traits and the Psychological Aspects of Leadership.....	5
1.2 Motivation for the Research.....	6
1.3 Research Aim	14
1.4 Research Questions	15
1.5 Research Objectives	15
1.5.1 Research Approach Adopted in this Study	16
1.6 Research Scope	16
1.6.1 Targeted Construction Leaders	17
1.6.2 Focused Leadership Traits	17
1.7 Organization of the Thesis	17
1.8 Summary	20
1.9 Overview of Research Methodology.....	22
CHAPTER 2.....	24
LITERATURE REVIEW	24
2.1 Overview of the Construction Industry	24
2.2 Future Growth Prospects in India and Globally.....	25
2.3 Theoretical Concepts and Definitions of Leadership.....	28
2.4 Different Styles of Leadership and Their Impact on Project Safety and Quality Performance	32

2.5 EQ and Its Importance on the Construction Leaders and Safety and Quality Performance	34
2.6 Parameters of Positive Psychology (Spiritual Quotient, Resilience, and Flow State), Their Impact on Construction Leaders and Project Performance	41
2.6.1 Positive Psychology.....	41
2.6.2 Resilience	42
2.6.3 Spiritual Quotient	44
2.6.4 Flow State.....	46
2.7 Leadership Index	47
2.8 Clusterization of Leaders	50
2.9 Research Gap Emerging from the Literature	55
2.9.1 Emotional Quotient	56
2.9.2 Leadership Style	57
2.9.3 Positive Psychology.....	58
2.9.4 Integrated Leadership Framework in Construction.....	59
2.10 Summary	62
CHAPTER 3	64
HYPOTHESIS DEVELOPMENT	64
3.1 Introduction	64
3.2 Emotional Quotient in Construction Leadership.....	65
3.2.1 Years of Experience and Its Relation with EQ Parameters	65
3.2.2 Team Size and Its Relation with EQ Parameters.....	67
3.2.3 Safety Performance and Its Relation with EQ Parameters	69
3.2.4 Quality Performance and Its Relation with EQ Parameters	71
3.3 Leadership Styles	72
3.3.1 Year of Experience and Leadership Styles.....	72
3.3.2 Leadership Style and The Size of the Team Handled	74
3.3.3 Leadership Styles and Safety Performance	75
3.3.4 Leadership Styles and Quality Performance	76
3.4 Resilience, Flow State, and Spiritual Quotient in Construction Leadership	78
3.4.1 Relationship of Leadership Maturity with RE, SQ, and FS	78
3.4.2 Relationship of Leaders' RE, SQ, and FS with Construction Project Safety and Quality Performances	80

3.4.3 Interrelationship between Leader's RE, SQ, and FS	81
3.5 Summary	82
CHAPTER 4.....	84
RESEARCH METHODOLOGY	84
4.1 Introduction	84
4.1.1 Overview of the Research Methodology	84
4.2 Research Philosophy, Approach, Strategy, and Method Choices	91
4.2.1 Justification for Research Philosophy	93
4.3 Data Collection and Analysis	93
4.4 Research Methodology Adopted in this Research	94
4.4.1 Identification of Critical Leadership Parameters: Literature Review and Expert Consultation Protocol	99
4.4.2 Developing the Questionnaire	100
4.4.3 Stage 2 Questionnaire Survey	103
4.4.3.1 Pilot Survey.....	103
4.4.3.2 Sample Size.....	104
4.4.3.3 Conducting Questionnaire Survey	106
4.4.4 Development of the Hypothesized Model.....	109
4.4.5 Assessment of the Model.....	109
Assessment of the Measurement Model	109
Assessment of the Structural Model	111
4.4.6 Determining the Weight of the Leadership Quality Parameters (Stage 3 Questionnaire)	112
Step 1: Weights of the Parameters without Considering Interdependencies ..	113
Step 2: Interdependence Matrix	115
Step 3: The weight of Parameters considering Interdependencies	115
4.4.7 Validation of the Ranking of the Parameters	116
4.4.8 Determining the Leadership Quality Index	116
4.4.9 Categorizing Construction Leaders Based on Their Index Values	117
4.5 Validity and Reliability of the Research Design.....	119
4.5.1 Construct Validity	119
4.5.2 Internal Validity.....	120
4.5.3 External Validity	121

4.5.4 Reliability	122
4.6 Justification of Analytical Methods	123
4.6.1 PLS-SEM over CB-SEM.....	123
4.6.2 ANP over AHP	124
4.6.3 Two-Step Cluster Analysis.....	125
4.7 Summary	128
CHAPTER 5.....	131
EQ AND PROJECT PERFORMANCE.....	131
5.1 Introduction	131
5.2 Results and Analysis	132
5.3 Discussion	140
5.4 Summary	145
CHAPTER 6.....	149
LEADERSHIP STYLE AND PROJECT PERFORMANCE	149
6.1 Introduction	149
6.2 Results	150
6.3 Discussion	155
6.4 Summary	161
Chapter 7	163
POSITIVE PSYCHOLOGY AND PROJECT PERFORMANCE	163
7.1 Introduction	163
7.2 Results	164
7.3 Discussion	170
7.4 Summary	174
Chapter 8	177
DEVELOPING LEADERSHIP INDEX AND CLUSTERING USING INDEX VALUE	177
8.1 Introduction	177
8.2 Results	178
8.2.1 Interrelationships among the Parameters.....	178

Single-headed arrows indicate hypothesised directional relationships tested through PLS-SEM; double-headed arrows indicate correlational or moderating relationships between constructs.	179
8.2.2 Weights of the Parameters using ANP	179
8.2.3 Validation of the Ranking of the Parameters	181
8.2.4 Leadership Quality Index	182
Classification of Leaders	182
8.3 Discussion	186
8.4 Summary	201
CHAPTER 9.....	203
SUMMARY AND CONCLUSION	203
9.1 Introduction	203
9.2 Summary	203
9.3 Conclusion.....	206
9.4 Research Contribution to the Theory	209
9.4.1 EQ and Project Performance	209
9.4.2 Leadership Styles and Project Performance	210
9.4.3 Impact of Resilience, Spiritual Quotient, and Flow States on Construction Management	211
9.4.4 Developing LQI of Construction Leaders	211
9.5 Research Contribution to Practice.....	212
9.6 Limitations of this Research.....	214
9.7 Future Scope.....	217
REFERENCES.....	222
APPENDIX A Questionnaire for Part 1 Survey	242
APPENDIX B Questionnaire for Part 2 Survey	245
APPENDIX C Questionnaire for Part 3 Survey	254
APPENDIX D Questionnaire for Part 4 Survey	259
PUBLICATIONS/ SUBMISSIONS BASED ON THIS THESIS	261
BIO DATA OF THE AUTHOR	262

LIST OF FIGURES

Fig. 4.1. Flow of the research methodology.....	98
Fig. 5.1. Hypothesized model of EQ parameters	139
Fig. 6.1. Hypothesized model for the leadership style.....	153
Fig. 7.1. Hypothesized model for the positive psychology.....	169
Fig. 8.1. Interrelationship among the parameters.....	178
Fig. 8.2. Flow chart to implement LQI.....	196

LIST OF TABLES

Table 2.1. EQ assessment questionnaires used by the researchers	36
Table 4.1a: Operationalisation of Saunders' Research Onion in this Study	86
Table 4.2. Respondents' profiles	107
Table 4.3. Research Logic Map	126
Table 5.1. Percentage distribution of the respondents falling in the score matrix of emotional quotient	134
Table 5.2.a. Reliability and validity of the EQ paramets data	134
Table 5.2.b. Reliability and validity of the project performance data	135
Table 5.3. HTMT ratios for the EQ model	135
Table 5.4. Hypothesis test results for the EQ model	135
Table 6.1. Percentage distribution of the respondents falling in the score matrix of leadership style.....	151
Table 6.2.a. Reliability and validity of the leadership style measurement model	151
Table 6.2.b. Reliability and validity of the project performance data	151
Table 6.3. HTMT ratios for leadership styles	152
Table 6.4. Hypothesis test results for the leadership styles	154
Table 7.1. Percentage distribution of the respondents falling in the score matrix....	165
Table 7.2.a Reliability and validity of the positive psychology parameters.....	166
Table 7.2.b Reliability and validity of the project performance data.....	166
Table 7.3. HTMT ratios of the positive psychology model.....	167
Table 7.4. Goodness of fit (GOF) measures of the positive psychology model.....	167
Table 7.5. Hypothesis test results of the positive psychology model.....	170

Table 8.1. Pairwise comparative matrix of parameter with respect to LQI and parameter weights (w_1) without interdependencies	179
Table 8.2. Pairwise comparative matrix of parameters with respect to EQ.....	180
Table 8.3. Interdependent matrix of parameters (w_2).....	180
Table 8.4. Weight of the parameters with interdependencies among them.....	181
Table 8.5. Rankings of the parameters of the leadership index	182
Table 8.6. Detail of cluster.....	185
Table 8.7. Detail of the cluster values.....	185
Table 8.8.a Sector-wise demographic profile of respondents.....	194
Table 8.8.b Sector-wise mean LQI and individual parameter scores with inferential statistics.....	194
Table 8.8.c Sector-wise distribution of leaders across quality clusters	195
Table 8.8.d Sector-wise parameter comparison: mean values, p-values, and Cliff's delta effect sizes	195
Table 8.9 Recommended training and focus area as per the LQI value and cluster...	200

LIST OF ABBREVIATIONS

AHP	Analytic Hierarchy Process
AI	Artificial Intelligence
ANP	Analytic Network Process
AQ	Adversity Quotient
ASCE	American Society of Civil Engineers
AVE	Average Variance Extracted
BIM	Building Information Modeling
CAGR	Compound Annual Growth Rate
CFI	Comparative Fit Index
CR	Composite Reliability
α / CA	Cronbach's Alpha
DBSCAN	Density-Based Spatial Clustering of Applications with Noise
DL	Democratic Leadership
ECVI	Expected Cross-Validation Index
EQ	Emotional Quotient
EU	European Union
FS	Flow State
GDP	Gross Domestic Product
GOF	Goodness of Fit
HTMT	Heterotrait-Monotrait Ratio
IFI	Incremental Fit Index
IoT	Internet of Things
K-means	K-means clustering
LQI	Leadership Quality Index

LS	Leadership Style
NIP	National Infrastructure Pipeline
PLS-SEM	Partial Least Squares - Structural Equation Modeling
RE	Resilience
RMSEA	Root Mean Square Error of Approximation
SA	Strongly Agree (used in survey responses)
SD	Strongly Disagree (used in survey responses)
SEM	Structural Equation Modeling
SMEs	Small and Medium-sized Enterprises
SQ	Spiritual Quotient
TLI	Tucker-Lewis Index
TQM	Total Quality Management
UK	United Kingdom
USD	United States Dollar
VIF	Variance Inflation Factor
χ^2/DF	Chi-Square / Degrees of Freedom