MERGING ACADEMIC RESEARCH AND INDUSTRY DEVELOPMENT REQUIREMENTS FOR AN INNOVATIVE CONSTRUCTION MANAGEMENT PRACTICE

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DECLARATION

I declare that this is my own work and this thesis do not incorporate without acknowledgment any material previously submitted for a Degree or a 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 any other person except where the acknowledgement is made in the text.

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ABSTRACT

This study advances the knowledge in the field of research based innovations, in terms of prerequisites, specific to construction management context. Previously, the enhanced role of academic research in realising innovations through various reciprocals among universities, regulatory bodies, and industries was presented via Triple Helix Model (THM). Successively, the model has been explored to a great extent concerning many economic sectors. In parallel, developing knowledge based construction economies has become a mainstream theory in response to the lack of research activities within the construction organisations. Consequently, a paradigm-shift in the field of built environment research has been called over the last three decades. Yet, construction management indicates weak signs of research-based innovative development, confirming non-presence of the critical requirements of THM operation. However, no study so far has investigated on such requirements, creating a knowledge gap in explaining the inability of academic research fostering construction management innovations. Hence, this research aimed to investigate the Critical Success Factors (CSFs) of merging academic research with industry development requirements to cultivate an innovative construction management practice.

Accordingly, a compressive literature review uncovered theoretical explanations on research problem, forming the conceptual framework for the study. Refining the framework, a field study was conducted, combining inductive and deductive approaches informed by a pragmatist philosophical stance. Research objectives posed, four (04) Research Questions (RQs) with explanatory and exploratory purposes, and therefore, were answered through a mixed method. The perspectives of academia and construction industry of Sri Lanka were initially obtained through surveys. Academic census comprised 49 units and industry survey obtained the views of organisations and practitioners separately with a 510 unit stratified sample. The findings of the surveys were inductively explored in front of critical cases from industry, and academia through case studies and expert opinions. Quantitative data were analysed statistically, whilst content analysis was performed with qualitative data. The findings were validated externally through opinions of three (03) high-profile experts, each engaged in all three (03) disciplines, academic, industry, and industry regulation.

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While each RQ were answered in detail, overall, the findings confirmed the significance of academic research in cultivating an innovative management practice. Yet, the study revealed poor knowledge dissemination and utilisation in the context. Due to poor industry orientation of academic research, and construction industry operating as a Red Ocean, with inherited characteristics of price based competition, leads to a lack of research collaborations. In bridging the gap, the ultimately developed **M**odel of CSFs for **R**esearch Driven **I**nnovations (MRI) for construction management' reveals the CSFs of creating knowledge, consensus, and innovation spaces, with reference to actionable stakeholders. MRI defines the role of academia, regulatory bodies, and construction industry as novelty producers, legislative controllers, and wealth generators, respectively. The paired interactions among the three (03) contenders generate the knowledge infrastructure and political economy for the creation of the consensus space. The consensus space urges establishment of a Knowledge Brokering Hub (KBH) to administer strategic research partnerships between the academia and the industry. Therefore, given that, the knowledge space and consensus spaces are created, an academic research righteously initiated inside the innovation space, executed properly, and disseminated strategically, has the potential to foster innovations in construction management.

Key words: Academic Research; Construction Management Practice; CSFs; Innovation; Research Knowledge Dissemination and Utilisation.

DEDICATION

To my family

in return of departed time, and unconditional love...

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LIST OF ABBREVIATIONS

AGM	:	Annual General Meeting
AIQS	:	Australian Institute of Quantity Surveyors
ARB	:	Architects Registration Board
BOS	:	Blue Ocean Strategy
BS	:	British Standards
CCI	:	Chamber of Construction Industry Sri Lanka
CEA	:	Central Environment Authority
CEO	:	Chief Executive Officer
CHPB	:	Centre for Housing Planning and Building
CIDA	:	Construction Industry Development Authority
CNCI	:	Ceylon National Chamber of Industries
CPD	:	Continuous Professional Development
CSF	:	Critical Success Factor
EMS	:	Environmental Management System
ERP	:	Enterprise Resource Planning
GDP	:	Gross Domestic Product
ICT	:	Information and Communication Technology
ICTAD	:	Institution for Construction Training and Development
IFAWPCA	:	International Federation of Asian and Western Pacific Contractors' Associations
IPAC	:	Intellectual Property Advisory Committee
ISO	:	International Organisation for Standardisation
IT	:	Information Technology
IQSSL	:	Institute of Quantity Surveyors Sri Lanka

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KBH	:	Knowledge Brokering Hub
MBA	:	Master of Business Administration
MCKU	:	Model - Chain of Knowledge Utilisation
MD	:	Managing Director
MPhil	:	Master of Philosophy
MRI	:	Model of CSFs for Research Driven Innovations
MSc	:	Master of Science
NCASL	:	National Construction Association of Sri Lanka
NCCSL	:	National Chamber of Commerce Sri Lanka
NCE	:	National Chamber of Exporters
NEDC	:	National Economic Development Council
NRC	:	National Research Council
NSF	:	National Science Foundation
NWS&DB	:	National Water Supply and Drainage Board
OBE	:	Objective Based Education
OHSAS	:	Occupation Health and Safety Advisory Service
OPA	:	Organization of Professional Associations
PhD	:	Doctor of Philosophy
PLC	:	Public Limited Company
PMKD	:	Pipeline Model of Knowledge Dissemination
QA	:	Quality Assurance
QMS	:	Quality Management System
R&D	:	Research and Development
RIBA	:	Royal Institute of British Architects
RICS	:	Royal Institution of Chartered Surveyors

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ROS	:	Red Ocean Strategy
SAP	:	Systems Applications and Products
SLIA	:	Sri Lanka Institute of Architects
SLAAS	:	Sri Lanka Associate for the Advancement of Science
SLIE	:	Sri Lanka Institution of Engineers
SLNAC	:	Sri Lanka National Arbitration Centre
SLSI	:	Sri Lanka Standards Institution
SPSS	:	Statistical Package for Social Sciences
THM	:	Triple Helix Model
UDA	:	Urban Development Authority
UK	:	United Kingdom
UN	:	United Nations
USA	:	United States of America

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