CLAIMS AVOIDANCE IN ROAD PROJECTS: COROLLARY CONTRIBUTIONS OF LESSONS FROM THE PAST

Amarasinghe Arachchige Himalee Priyangika

(189565 F)

Dissertation submitted in partial fulfilment of the requirements for the degree Master of Science in Construction Law and Dispute Resolution

Department of Building Economics

University of Moratuwa

Sri Lanka

February 2023

DECLARATION OF THE CANDIDATE AND SUPERVISOR

I declare that this is my own work, and this thesis/dissertation 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.

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

Signature:	Date:
The supervisor/s should certify the thesis/dissertate	ion with the following declaration.
The above candidate has carried out researchesis/Dissertation under my supervision.	arch for the Masters/MPhil/PhD
Signature of the supervisor:	Date:

DEDICATION

To my Mother & Father...

ACKNOWLEDGEMENTS

This dissertation was submitted in partial fulfilment of the requirements for the Master of Science in Law and Dispute Resolution. To fulfil the aforementioned requisites, enormous backing was received from many people and organisations. Hence, I am immensely grateful to all of them. This work would not have been possible without my supervisor, senior lecturer Dr. Chandanie Hadiwattage. Therefore, I would like to express my sincere appreciation to Dr. Chandanie Hadiwattage for her supervision, constructive criticism, encouragement, and guidance, which made the work a success.

Then, I am grateful to the Head of the Department, Dr. (Mrs.) Anuradha Waidyasekara as well as senior lecturers, lecturers, and staff members of the Department of Building Economics for their support in innumerable ways for the efficacious completion of this research.

I am grateful to all those industry practitioners who allocate their valuable time to me and their corporation, professional guidance, extensive personal guidance, and insightful comments. Last, I convey my heartfelt thankfulness to my husband, my loving two children, and friends, especially to Ms. Samurdi Baduge, for enthusiastically giving me her valuable advice, and utmost support and continuously inspiring me to complete the research successfully.

Claims avoidance in road projects: Corollary contributions of lessons from the past

Claims in road/expressway construction are contemplated by many project stakeholders to be one of the most unpleasant and disruptive measures of a project. Claims in road/highway construction projects in Sri Lanka are inevitable, and there is no exception to the other countries. These claims result in an extension of time, cost overruns, and adversarial interrelation between the stakeholders. Therefore, avoidance of claims gets paramount importance; hence knowledge generated on projects must analytically be incorporated into succeeding projects. However, it is perceived that projects continuously fail to avoid claims efficiently and effectively. The study was approached through a literature review, five case studies, and seven semi-structured interviews with claim consultants, RDA consultants, and project directors. An in-depth study was carried out through content analysis. First, it identified the current practices of claim avoidance, the rescindable nature of claims, and strategies for claim avoidance.

It is identified that new strategies need to be developed and applied in claims avoidance in road/highway construction projects. The study revealed that incorporation of lessons learned practices, proper contract document through a centralised project management unit, timely acquisition of land, the establishment of real-time contract duration, effective pre-contract process and site investigation, early intervention of stakeholders, honour the contractual provisions, avoidance of late deliverables, change the attitude towards the claims, and increase the awareness of the RDA consultants are as main strategies for claim avoidance.

Further, this research bridges the gap between knowledge and claim avoidance through a lessons-learned system to overcome claims in future projects based on the views of the experts in the field. Computer-based feedback software systems, commercial meetings, and PPR are identified as the best tools for obtaining lessons learned knowledge in foreign-funded road projects in Sri Lanka. This study presents an integrated database information system that can be used to capture and disseminate claim-related information in the form of "lessons learned" to utilise in forthcoming projects. Accordingly, a conceptual framework has been developed for the successful implementation of the system.

Key words: Claim avoidance, Strategies. Lessons learned, Road/expressway projects

TABLE OF CONTENTS

DECLARA	TION OF THE CANDIDATE AND SUPERVISOR	i
DEDICATI	ON	ii
ACKNOW	LEDGEMENTS	iii
ABSTRAC	Т	iv
TABLE OF	CONTENTS	V
LIST OF F	GURES	ix
LIST OF T	ABLES	X
LIST OF A	BBREVIATIONS	xi
1. CHAP	TER 1: INTRODUCTION TO THE RESEARCH	1
1.1 Back	ground	1
1.2 Resea	arch problem	5
1.3 Aim	and objectives	5
1.4 Resea	arch methodology	5
1.5 Scope	e and limitations	6
1.6 Chap	ter breakdown	6
2. CHAP	TER 02: LITERATURE REVIEW	8
2.1 Ir	ntroduction	8
2.2 N	ature of claims in road construction projects	8
2.3 Ir	npacts of possible claims on road construction projects	10
2.4 C	auses of claims in road construction projects	13
2.5 C	laim avoidance	20
2.5.1	Proper contract documents	23
2.5.2	Constructability and biddability reviews	23
2.5.3	Efficiently manage design professionals	24
2.5.4	Proper site investigation and identification of site condition	24
2.5.5	Realistic contract duration	25
2.5.6	Delay in land acquisition	25
2.5.7	Contractor's risk analysis	26
2.5.8	Claims mitigation during construction and contract administration	27

2.5.8	2.1 Periodic review	28
2.5.8	Reduce change orders	29
2.5.8	Reduce late deliverables	29
2.5.8	2.4 Proper scheduling	29
2.5.9	Managing contractor's submittals /shop drawings	30
2.5.10	Improved owner guidelines	30
2.5.11	Change the project delivery system	30
2.6 St	rategies for claims avoidance	31
2.7 Co	ontributions of lessons from the past for claim avoidance	31
2.7.1	Knowledge management	32
2.7.2	Learning organisation	34
2.7.3	Lessons learned	34
2.7.3	.1 Difficulties faced in implementing lessons learned	37
2.7.3	2.2 Use of IT for lessons learned	38
2.7.4	Post-project reviews as a tool for lessons learned	39
2.7.5	Lessons learned process	40
2.8 Su	ımmary	42
3. CHAP	TER 3: RESEARCH METHODOLOGY	43
3.1 In	troduction	43
3.2 Re	esearch Philosophy	43
3.3 Re	esearch approach	44
3.4 M	ethodological choice	44
3.5 Re	esearch strategy	44
3.6 Ti	me horizon	45
3.7 Re	esearch design	45
3.7.1	Sampling	46
3.7.2	Data collection	47
3.7.3	Data analysis	48
3.8. Sumr	mary	49
4. CHAPTE	R 4: DATA ANALYSIS AND RESEARCH FINDINGS	50

4.1	Introduction	50
4.2	Case studies	50
4.3	Content analysis	53
4.3.1	Causes of claim	54
4.3.2	Rescindable nature of claims	54
4.3	3.2.1 Claims due to pandemic and adverse inflation	55
4.3	3.2.2 Land acquisition	56
4.3	3.2.3 Misapprehension of Inputs percentages	56
4.3	3.2.4 Variation claims due to errors in quantities	57
4.3	3.2.5 Variations due to inaccurate contract document	57
4.3	3.2.6 Variations due to non-identification of the scope of work	58
4.3	3.2.7 Unforeseen physical conditions	59
4.3	3.2.8 Interest claim	59
4.3.3	Strategies for claim avoidance	60
4.3	3.3.1 Incorporation of lessons learned practices	60
4.3	3.3.2. Proper contract document	61
4.3	3.3.3 Timely acquisition of land	62
4.3	3.3.4 Establishment of real-time contract duration	62
4.3	3.3.5 Effective pre-contract process and site investigation	63
4.3	3.3.6 Early intervention of stakeholders	63
4.3	3.3.7 Honor the contractual provisions	63
4.3	3.3.8 Late deliverables	64
4.3	3.3.9 Change the attitude towards the claims	64
4.3	3.3.10 Increase the awareness of the RDA consultants	65
4.3	3.3.11 Make the consultant answerable	65
4.3.4	Lessons learned as a strategy to claim avoidance	65
4.3	3.4.1 Identify the requirement	65

4.3.4.2 Document lessons learned	66
4.3.4.3 Content and format	68
4.3.4.4 Repository, communication, and dissemination	69
4.3.4.5 Review	70
4.3.5 The barriers to implementing lessons learned	70
4.4 Summary	71
5 . CHAPTER 5: CONCLUSIONS AND RECOMMENDATIONS	72
5.1. An overview of the study	72
5.1.1. Accomplishment of the first objective	73
5.1.2 Accomplishment of the second objective	73
5.1.3 Accomplishment of the third objective	73
5.1.4 Accomplishment of the fourth objective	74
5.1.5 Accomplishment of the fifth objective	75
5.1.6 Accomplishment of the sixth objective	76
5.2 Conclusion	78
5.3. Recommendations	78
5.3.1. Contribution to the knowledge	78
5.3.2. Industry practitioners	78
5.4. Limitations of the research	79
5.5. Further research directions	79
REFERENCES	80
APPENDIX A: INTERVIEW GUIDE FOR RDA CONSULTANTS	91
APPENDIX B: INTERVIEW GUIDE FOR CLAIM CONSULTANTS	94
APPENDIX C: INTERVIEW GUIDE FOR PROJECT DIRECTORS	95

LIST OF FIGURES

Figure 2.1: Classification of claims based on the provisions of the Red Book (FIDIC)
Figure 2.2: Type of claims and frequency relationship
Figure 2.3: The basic relationship between conflicts, claims, and dispute 11
Figure 2.4: Continuum model of risk, conflict, claim, and dispute
Figure 2.5: Causes of claims and frequency relationship
Figure 2.6: Ranked causes of claims in construction projects
Figure 2.7: Common causes of construction claims and disputes
Figure 2.8: Causes of claims in road projects
Figure 2.9: The responsibilities of the claims control process switch to different parties in the project life cycle
Figure 2.10: Risk classification in road projects in Sri Lanka
Figure 2.11: List of Sub-clauses which require engineer's determination28
Figure 2.12: SECI model
Figure 2.13: Lesson learned Process
Figure 2.14: Process of basic lessons learned
Figure 3.1: Research stages
Figure 4.1: Coding structure of claim avoidance
Figure 4.2: A Computer base Feedback software system is used as proposed lesson learned practice
Figure 4.3: Content of the lessons learned report69
Figure 5.1: Conceptual framework for claim avoidance

LIST OF TABLES

Table 2.1: The resultant impact of claims in construction projects as identified by t	the
lifferent authors	13
Γable 2.2: Main courses of claims	15
Γable 2.3 Frequency and percentage analysis of claims basis	.16
Γable 2.4: Sources of claim and dispute	.17
Γable 2.5 Significant Claim-Causes in projects	.19
Γable 2.6: Five Building Block of Organization Learning	.34
Γable 3.1: Interviewee's profile	.48
Table 4.1: Summary of Claim Events in Case Studies	.50
Γable 4.2: Avoidable / unavoidable status of the claims	.51

LIST OF ABBREVIATIONS

BIM - Building Information Modeling

BOQ - Bill of Quantities

BOT - Build-Operate-Transfer

EOT - Extension of Time

EPC - Engineering Procurement Construction

FIDIC - International Federation of Consulting Engineers

ICT - Information and Communication Technologies

ISO - International Organization for Standardization

IT - Information Technology

MCSW - Mobile Cloud Shared Workspace

PMU - Project Management Units

PPR - Post-Project Review

RDA - Road Development Authority

SBD - Standard Bidding Document

TEC - Technical Evaluation Committee

TQM - Total Quality Management