

**THE INTEGRATION OF QUALITY MANAGEMENT SYSTEM  
IN CONSTRUCTION INDUSTRY**

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of the requirements for the award of the degree of Master in Science  
(Construction Management)**

**Faculty of Civil Engineering  
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**APRIL, 2010**

## **ABSTRAK**

Industri pembinaan mengalami masalah untuk mengawal kualiti produk pembinaan kerana permintaan untuk kualiti produk pembinaan yang semakin meningkat. Oleh demikian, industri pembinaan perlu meningkatkan kualiti produk supaya setanding dengan industri pembinaan dari dalam atau luar negara. Konsep sistem pengurusan kualiti telah diperkenalkan untuk mengawal kualiti produk pembinaan. Tunjang kepada konsep tersebut ialah dengan menggunakan proses yang efektif untuk memperolehi produk yang berkualiti. Namun, sistem ini mempunyai kekurangan dimana sistem ini diimplementasikan secara berasingan. Walaupun begitu, konsep integrasi sistem pengurusan kualiti telah diperkenalkan untuk mengatasi kekurangan tersebut. Konsep integrasi sistem pengurusan kualiti ialah gabungan kesemua sistem seperti sistem pengurusan alam sekitar dan sistem pengurusan keselamatan dan kesihatan pekerja yang diimplementasikan secara berasingan untuk menjadi satu sistem yang tunggal. Tujuan kajian ini adalah untuk mengkaji secara keseluruhan potensi untuk mengimplementasikan integrasi sistem pengurusan kualiti secara keseluruhan dalam bidang pembinaan. Kaedah yang digunakan untuk kajian ini adalah dengan membuat temubual bersama pakar, kajian kes dan soalan kajiselidik. Oleh itu, kajian ini adalah penting untuk industri pembinaan yang hendak meningkatkan kualiti produk dan prestasi kerja. Melalui kajian, didapati sistem integrasi tersebut mempunyai potensi untuk diimplementasikan dalam bidang pembinaan. Malah, terdapat beberapa syarikat pembinaan yang telah mengimplementasikan sistem tersebut. Kekangan utama yang dihadapi untuk mengimplmentasikan sistem tersebut adalah kos permulaan yang tinggi dan kurang pemahaman terhadap konsep sistem.

## **ABSTRACT**

Malaysian construction industry is facing problems to assure the construction quality due to the increasing demand in quality of delivered product. Therefore, Malaysian construction industry must impose on higher quality product to compete aggressively both at regional or international industry. The concept of quality management system has been introduced to the construction industry to control the product quality and continually improve the effectiveness and efficiency of its performance. The main thrust of a quality management system is to define the processes that will lead to the quality of end result or product. However, the implementation of quality management system is often treated independently within an organization and this contributes to the limitation of the system. With regards to the current system that has been implemented independently, the concept of integrated quality management system is introduced. Integrated quality management system is a combination of various quality management systems such as Environmental Management System and Occupational Safety and Health Management System into one coherent management system. The main aim of this study is to review the potential of applying integrated management system to construction industry. The methodologies adopted for this study are interviews with expert panel, conducting case studies and questionnaire survey. Hence, the results of study are important for the construction industry that wishes to enhance their end product quality and performance. It is found that there is a strong potential in applying integrated quality management system. Indeed this study has found that there are few construction companies have implemented this integrated system. The main challenges for applying this system are higher initial cost and lack of understanding of the concept.

**TABLE OF CONTENTS**

<b>CHAPTER</b>	<b>TITLE</b>	<b>PAGE</b>
	TITLE PAGE	i
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENTS	iv
	ABSTRAK	v
	ABSTRACT	vi
	TABLE OF CONTENT	viii
	LIST OF TABLES	xiv
	LIST OF FIGURES	xvii
	LIST OF ABBREVIATIONS	xix
	LIST OF APPENDICES	xx

<b>CHAPTER</b>	<b>TITLE</b>	<b>PAGE</b>
1	INTRODUCTION	
1.1	Introduction	1
1.2	Problem Statement	3
1.3	Aim and Objectives	3
1.4	Scopes and Limitations	4
1.5	Brief Research Methodology	4
2	CONCEPT OF QUALITY MANAGEMENT SYSTEM	
2.1	Introduction	6
2.2	Quality Management History and Gurus	7
2.2.1	Quality Management Gurus	8
2.2.1.1	Early 1950's Americans who took the messages of Quality to Japan	8
2.2.1.2	Late 1950's Japanese who developed new concepts in response to the Americans	12
2.2.1.3	1970's-1980's Western gurus who followed the Japanese industrial success	16
2.3	Basic Concept of Quality, Quality Dimensions and Parameters	17
2.3.1	Quality Dimensions	19
2.3.2	Quality Parameters	21
2.4	Basic Concept of Quality Management System	22
2.4.1	Quality Management System	22
2.4.2	Quality Control	23
2.4.3	Quality System	25
2.4.4	Quality Assurance	25
2.4.5	Total Quality Management (TQM)	27

3	BASIC CONCEPT OF INTEGRATED QUALITY MANAGEMENT SYSTEM	
3.1	Introduction	30
3.2	Integration of Management System	31
3.2.1	Quality Management System Concept	33
3.2.1.1	Management Responsibilities	34
3.2.1.2	Planning	34
3.2.1.3	Resource Management	35
3.2.1.4	Construction Process Control	36
3.2.1.5	ISO9001 Standard Guidelines for Quality Management System	37
3.2.2	Environmental Management System Concept	38
3.2.2.1	Environmental Policy	39
3.2.2.2	Planning	40
3.2.2.3	Implementation and Operation	41
3.2.2.4	Checking and Corrective Action	41
3.2.2.5	Management Review and Continual Improvement	41
3.2.2.6	ISO14001 Standard Guidelines for Environmental Management System	42
3.2.3	Occupational Safety and Health Management System Concept	43
3.2.3.1	Occupational Safety and Health Policy	43
3.2.3.2	Planning and Implementing	43
3.2.3.3	Measurement and Evaluation	44
3.2.3.4	Management Review	45
3.2.3.5	ISO18001 Standard Guidelines for Occupational Safety and Health Management System	45

4	RESEARCH METHODOLOGY	
4.1	Introduction	46
4.2	Literature Review	46
4.3	Interview with Expert Panels	47
4.4	Questionnaire Survey	49
4.4.1	Questionnaire Survey	49
4.5	Development of Conceptual Framework	50
4.6	Data Analysis	51
4.6.1	Frequency Analysis	51
4.6.2	Average Index	51
5	DATA ANALYSIS	
5.1	Introduction	53
5.2	Interview Questions	54
5.4.1	Implementation of current Quality Management System	54
5.4.2	Current Management System Effectiveness in Improving Company Performance	56
5.4.3	Company Concern on Implementing Quality Control Management System in Construction Stage	59
5.4.4	Best Strategy to achieve effectiveness in implementation of Quality Control Management System	61
5.4.5	Challenges faced by company when implementing the current management system	64
5.4.6	Perception on Integration of Quality Management System	67
5.4.7	Perception on Advantages of the Integrated Management System	70

5.4.8	Challenges to achieve the Concept of Integration Quality Management System	72
5.3	Questionnaire Survey	75
5.3.1	Background Study of the Respondents (Section A)	75
5.3.2	Integration of Quality Control Management System (Section B)	78
5.3.2.1	The elements in Quality Control Management System	81
5.3.3	Implementation of Integration Management System (Section C)	95
5.3.4	Benefits and Challenges of Integration Management System	100
6	INTEGRATION OF QUALITY MANAGEMENT SYSTEM: CASE STUDY	
6.1	Introduction	104
6.2	Case Study Background	104
6.2.1	Putrajaya 4G10	105
6.2.2	Putrajaya 4G11	106
6.2.3	Putrajaya P17	106
6.3	Concept of Integrated Quality Management System	107
6.3.1	Top Management Responsibilities	107
6.3.1.1	Top Management Commitment In Establishing Organization Policy, Objectives and Targets	107
6.3.1.2	Strive for Customer Requirements	108
6.3.1.3	Establishment of Quality Policy	108
6.3.1.4	Effective Quality Management System Planning	109



6.3.1.5	Responsibility, authority and effective communication	112
6.3.1.6	Management Review	113
6.4	Resource Management	114
6.4.1	Provision of Resources	114
6.4.2	Human Resources	114
6.4.3	Availability of Infrastructure	115
6.4.4	GoodWorking Environment	116
6.5	Product Realization	116
6.5.1	Planning of Product Realization	116
6.5.2	Customer Related Process	122
6.5.3	Design development	124
6.5.4	Procurement	127
6.5.5	Production and service provision	130
6.5.6	Control of monitoring and measuring equipment	135
6.5.7	Communication, Participation and Consultation	134
6.5.8	Operation Control for Environment, Safety and Health	135
6.5.9	Emergency Preparedness and Response Plan	135
6.5.10	Incident Investigation	136
6.6	Measurement, Analysis and Improvement	137
6.6.1	Monitoring and Measurement Tool	140
6.6.2	Monitoring and Measurement of Environmental, Safety and Health Performance	141
6.6.3	Evaluation of Environmental, Safety and Health Compliance	142
6.6.4	Control of Nonconforming Product	142
6.7	Control of Non-Conforming Product, and Environmental, Safety and Health Non-Conformities	143
6.8	Data Analysis	144
6.9	Improvement	144

	6.9.1 Corrective Action for Nonconforming Product	145
	6.9.2 Preventive Action to Eliminate Nonconforming	146
7	RESEARCH FINDINGS	
	7.1 Current Quality Management System for Construction Project	147
	7.2 ISO Quality Standard	148
	7.3 Concept of Integration Management System	148
	7.4 Conceptual Framework of Integrated Quality Management System	151
	7.5 Evaluation on Integrated Quality Management System	154
	7.6 Benefits Implementing Integration Management System	156
	7.6 Challenges in Implementing the Integration Management System	159
8	CONCLUSION AND RECOMMENDATION	
	8.1 Conclusions	161
	8.2 Recommendations	163
	REFERENCES	164
	APPENDICES	167

## LIST OF TABLES

<b>TABLE NO</b>	<b>TITLE</b>	<b>PAGE</b>
Table 2.1	Seven Basic Tools of Quality	13
Table 2.2	Quality Dimension (Garvin, 2000)	20
Table 2.3	Nine Different Quality Dimension (Besterfield, 2001)	20
Table 3.1	Quality Management System (Based on ISO9001 Standard Guidelines)	37
Table 3.2	Environmental Management System (Based on ISO14001 Standard Guidelines)	42
Table 3.3	Occupational Safety and Health Management System (Based on ISO18001 Standard Guidelines)	45
Table 4.1	Background Study of the Interviewees	48
Table 5.1	Data Analysis on Interviewee answer for Interview Question no. 1	55
Table 5.2	Type of Management System Breakdown	56
Table 5.4	Tabulation on Interviewees Perception on Interview Question no. 2	57
Table 5.4	Summary of the Effectiveness of Current Quality Management System	58
Table 5.5	Tabulation on Interviewees Answer on Interview Question no. 3	59
Table 5.6	Interviewees answer on Interview Question no. 5	62
Table 5.7	Summary of Interviewees Answer on Interview Question no. 5	62
Table 5.8	Interviewees answer on Interview Question no. 7	65

Table 5.9	Summary of Interviewees Answer on Interview Question no. 7	66
Table 5.10	Interviewees answer on Interview Question no. 9	68
Table 5.11	Summary of Interviewees Answer on Interview Question no. 9	69
Table 5.12	Interviewees answer on Interview Question no. 10	71
Table 5.13	Summary of Interviewees Answer on Interview Question no. 10	72
Table 5.14	Interviewees answer on Interview Question no. 11	74
Table 5.15	Summary of Interviewees Answer on Interview Question no. 11	75
Table 5.16	Type of Company	75
Table 5.17	Classification of Implemented Current Management System	76
Table 5.18	Type of ISO Certification	77
Table 5.19	Personal Involvement in Integration Quality Control Management System Implementation	78
Table 5.20	General Requirements	82
Table 5.21	Document Requirements	83
Table 5.22	Management Responsibilities	85
Table 5.23	Planning	88
Table 5.24	Resource Management	89
Table 5.25	Product Realization	91
Table 5.26	The efficiency of Current Management System	95
Table 5.27	The Similarity Between Current Quality Management System With Integrated Quality Management System	96
Table 5.28	The Comparison Between the Effectives of Current Quality Management System with Integrated Quality Management System	97
Table 5.29	Integration of Management System	98
Table 5.30	Integrated Quality Management System as one of the	

	Approaches to Total Quality Management	99
Table 5.31	Benefits of Integration System	100
Table 5.32	Challenges in Implementing the Integration Management System	103
Table 7.1	Integrated Quality Management System Concept	150
Table 7.2	Quality Management System, Environmental Management System and Occupational Safety and Health Management System in Deming's PDCA cycle	151
Table 7.3	Conceptual Framework of Integrated Quality Management System	152
Table 7.4	Element in Integration Management System	155
Table 7.5	Respondents' Evaluation on Integrated Quality Management System Elements	158
Table 7.6	Benefits gain from Integrated Quality Management System	158
Table 7.7	Challenges in implementing Integrated Quality Management System	160
Table 7.8	Similarity Between Interviewees and Respondents Perception on Challenges in Implementing the Integrated Quality Management System with Information Gained from Literature Review	160

## LIST OF FIGURES

<b>FIGURE NO</b>	<b>TITLE</b>	<b>PAGE</b>
Figure 1.1	Brief Work Sequence on Research Methodology	5
Figure 2.1	Deming's Cycle	10
Figure 2.2	Dr. Joseph M. Juran Quality Trilogy	11
Figure 2.3	Ishikawa Diagram	13
Figure 2.4	Taguchi Methodology	15
Figure 2.5	Relationship of Total Quality Management Core	18
Figure 3.1	Quality management system model (Abdul Rahim, 2004)	32
Figure 3.2	Environmental Management System model (Abdul Rahim, 2004)	32
Figure 3.3	Occupational Safety and Health Management System model (Abdul Rahim, 2004)	33
Figure 5.1	Percentage Diagram of Interviewees Answer on Interview Question no.3	61
Figure 5.2	Classification on type of company	76
Figure 5.3	Awareness and understand the management system	78
Figure 5.4	Responsibility in the management system	79
Figure 5.5	Participation for continual improvement	80
Figure 5.6	Standard of compliance in work	81
Figure 5.7	Frequency Analysis of General Requirements	82
Figure 5.8	Frequency Analysis of Document Requirements	84
Figure 5.9	Frequency Analysis of Management Responsibilities	86

Figure 5.10	Frequency Analysis of Planning	88
Figure 5.11	Frequency Analysis of Resource Management	90
Figure 5.12	Frequency Analysis of Product Realization (I)	92
Figure 5.13	Frequency Analysis of Product Realization (II)	93
Figure 5.14	Frequency Analysis of Product Realization (III)	94
Figure 5.15	Percentage on the Effectiveness of Current Management System	95
Figure 5.16	Percentage of Similarity in Current Quality Management System and Integration Quality Control Management System	96
Figure 5.17	Percentage on Comparison in Effectiveness of the Management Systems	97
Figure 5.18	Percentage of Integration Quality Control Management System	98
Figure 5.19	Percentage of Integration Quality Control Management System towards Total Quality Management System	99
Figure 5.20	Frequency Analysis of Integration Quality Control Management System Benefits	101
Figure 5.21	Frequency Analysis of Challenges in Implementing Integration Quality Control Management System	103
Figure 6.1	Quality Management System Model	111
Figure 6.2	Tendering Process and Pre-construction/Planning Process	118
Figure 6.3	Summary of Planning of Product Realization and the Output	119
Figure 6.4	Design development work process	126
Figure 6.5	Procurement and Construction Work Process	129
Figure 6.6	Production and Services Provision Work, Control Monitoring and Measurement Process	133

Figure 6.7	Measurement, Analysis and Improvement Work Process	138
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## **LIST OF ABBREVIATIONS**

EDMS	Electronic Document Management System
EMS	Environmental Management System
ISO	International Standard Organization
JKKP	Jabatan Keselamatan dan Kesihatan Pekerja
JKR	Jabatan Kerja Raya
OSHMS	Occupational Safety and Health Management System
QMS	Quality Management System

**LIST OF APPENDICES**

<b>APPENDIX</b>	<b>TITLE</b>	<b>PAGE</b>
A	Questionnaire Survey	167
B	Questionnaire	174

## **CHAPTER 1**

### **INTRODUCTION**

#### **1.1 Introduction**

Currently, the construction industry is being viewed as poor quality emphasis compared to other sectors (Kubal, 1994; Kanji and Wong, 1998; Wong and Fung, 1999). Therefore, many criticisms have been directed to construction industry for the poor workmanship of the end product and not worth the money value. Rowlinson and Walker (1995) stated that the construction industry is also characterized by its non-standardisation. Besides that, over the decades, the construction industry has had raised serious concerns about the construction activities contribution towards the environmental impacts. The concerns are raised due to the increasing in global environmental awareness among the community. It is estimated about 40% of the materials entering the world's economy each year and 25% of the world's usage of wood (Kein, 1999). Besides, site construction also produces atmospheric pollutants and negligence of construction sites may result in spillage of substances which are washed away into water sources.

Unfortunately, nowadays, there are many obstacles faced by construction projects. It is normal for construction projects to experience extensive delays,

exceeded initial or estimated cost and the most vital is the workmanship quality (Odeh, 2001). These days, clients are more knowledgeable and conscious on the quality of work and it is very challenging task to deliver the quality that would satisfy the client's standard (Torbica and Stroh, 2001). Construction industry also facing problems to assure the construction quality because of the nature of operation is complicated (Kanji and Wong, 1998). The construction industry consists of a multitude of occupations professions and organizations (Sommerville, 1994). They are involved in different phases of construction and each one play a different role in delivering a quality project. Failure of any of the parties will affect the quality of the final project (Kanji and Wong, 1998).

Construction industry also has gained the reputation of being a highly hazardous industry due to the high incidence of accidents and fatality rates (Ahmadon et al, 2006). Occupational Safety and Health (OSH) at work is an issue that affecting al business especially in construction industry where the major issue for the companies mainly due to the fear of prosecution. Consequently, the betterment of safety and health in construction industry goal and in the processes is vital to provide safer workplaces, improve productivity accompanied by reduced costs, better time performance and increase profitability (Ahmadon et al, 2006). As in construction management field, there are several standard of management systems such as ISO9001 for Quality System, ISO14001 for Environmental System and OHSAS18001 for Occupational Safety and Health Management System where the management systems are treated independent functions within organizations to ensure all the aspects and organization's purpose are met. However, many professionals believe that these systems should be harmonized ultimately in some manner. The integrated management system will integrates all components in construction into one coherent business to enable achievement of its purpose and mission focusing on quality, environment, safety and health.

## **1.2 Problem Statement**

Apparently, the standard of Malaysian construction industry is still arguable and below the expectation compared to international construction industry. Although the construction industry has implemented a few types of management system such as quality management system, environmental management system, safety and health management system, total quality management system and others, still the end product delivered by the construction industry not up to client's expectation. Applying the current management systems independently only could improve a few construction impacts but by integrating the current management system, it will open wide all the vital construction components that needs to be taken into consideration and will gained a long term benefits. In order to ensure the construction activities always deliver a quality end product with less impact towards the community, quality, environment, safety and health management system must be implemented in an organization. These are the four cornerstones of a functional management system and the organization must equally focus on these systems. If the managers and employees are focus on only one of these systems, the performance of the management system may suffer (Holdsworth, 2003). Unfortunately, Malaysian construction industries are short of documented management systems which can interrelated the aspects of quality, environmental, safety and health. On the other hand, an organization also can no longer afford to have a staff that specialist to address everything on specific management system.

## **1.3 Aim and Objectives of Study**

The main aim of this study is to review the potential of applying integrated quality management systems for construction. The objectives of the study are as follow:

- (i) To investigate the quality management system practice in Malaysian construction industry.
- (ii) To investigate the potential of applying the concept of integrated quality management system for construction project.
- (iii) To determine the challenges in achieving the integrated quality management system for construction industry.

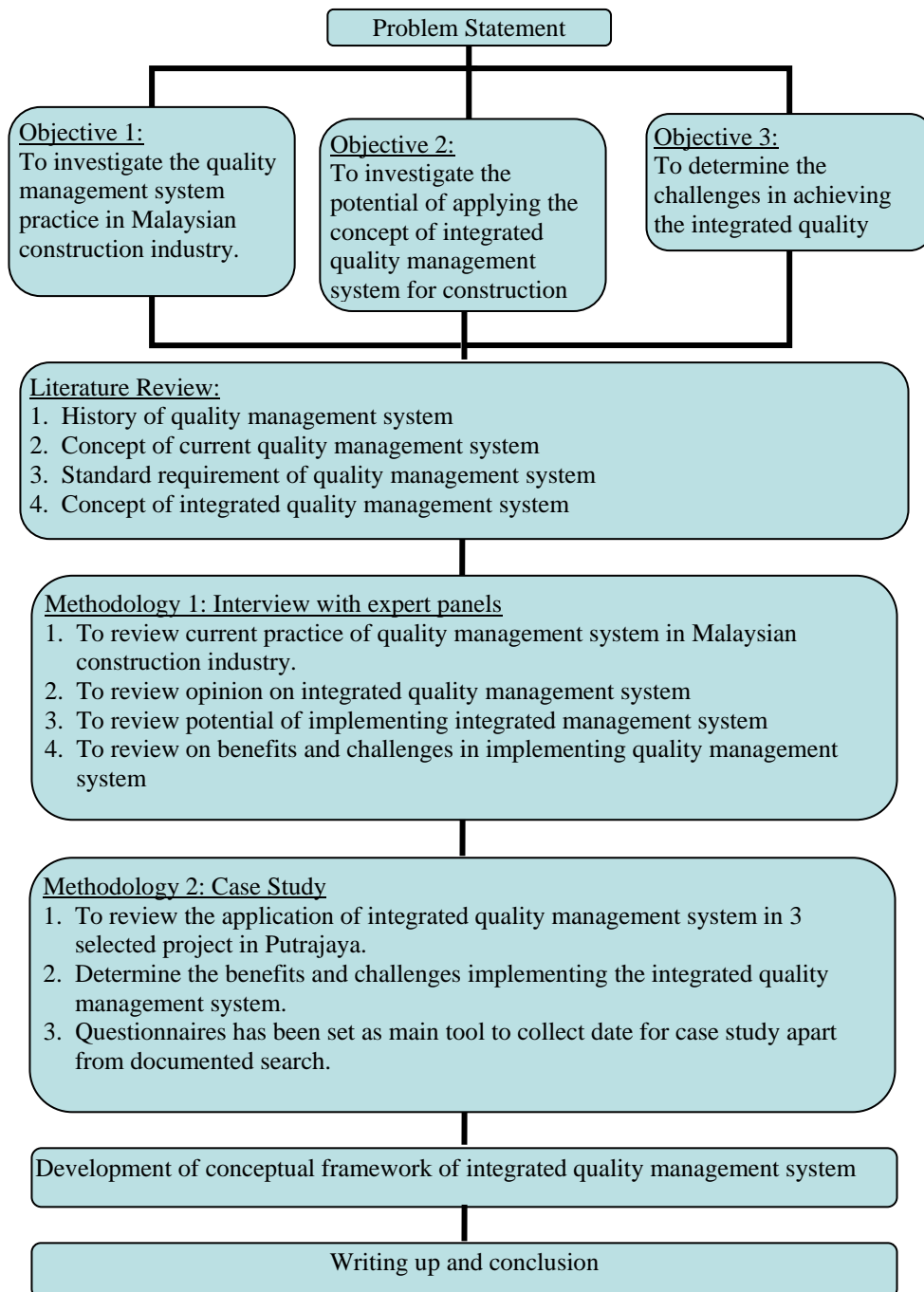
#### **1.4 Scope and Limitation**

The study is limited within the following scopes:

- (i) The case study conducted for integrated management system is confined within design and build project in Putrajaya area only.
- (ii) The questionnaire survey was distributed to the respondents involved in the construction project selected for the case study only.

#### **1.5 Brief Research Methodology**

The research methodologies done in this study are shown briefly in Figure 1.1.



**Figure 1.1:** Brief Research Methodology

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