

MANAGEMENT COMPETENCIES FOR PREVENTING AND REDUCING
STRESS AT CONSTRUCTION SITE

LIM WEI HAN

A project report submitted in partial fulfillment of the
requirement for the award of the degree of
Master of Science (Construction Management)

Faculty of Civil Engineering
Universiti Teknologi Malaysia

JUNE 2009

To my beloved mother, father, brother

and

Bi Xia

ACKNOWLEDGEMENTS

Firstly, I would like to express my deepest gratitude to my supervisors, En. Abdul Rahim Abdul Hamid and Dr. Khairulzan Yahya, for their generous advice, kind assistance and patiently guidance. Thanks you for all your time and valuable experiences that have shared with me regarding this study.

Secondly, I want to appreciate all the respondents from the contractor organizations, who generously spent their precious time to participate in the questionnaire survey of this study. I also want to thank my entire friends who directly or indirectly assisted me in this project study.

Last but not least, sincere gratitude and appreciation is forwarded to my family for care, moral support and understanding during five years of studying in Universiti Teknologi Malaysia.

LIM WEI HAN

Faculty of Civil Engineering

Universiti Teknologi Malaysia

ABSTRACT

Construction industry involved very complicated process and extensive linkages to more than hundred of upstream and downstream industries. Therefore, an effective leadership of managerial level of construction organization is needed to well manage and control their subordinates in order to make sure the efficiency and productivity of the construction work. However, both managerial level of the construction organization and their subordinates also would experience stress due to increase of workload and work pressure. Hence, management competency has become significant in human resource practice in order to increase individual and organizational effectiveness. Consequently, a study on management competency of the managerial level is conducted for preventing and reducing stress at construction site in Johor. A total of 78 sets of questionnaires have been collected from several professions within 20 organizations. Among the 78 number of respondents, 21 persons were from managerial level and 57 persons were from subordinates' level. From the survey, managerial levels have the highest percentage score of sub-competency in managing conflict meanwhile the subordinates level assess their managerial level as the participative/empowering is having the highest percentage score among all the listed sub-competency for preventing and reducing stress at construction site. Generally, the managerial level and subordinates level have the same perception that the managerial level is having the highest percentages score in competency of managing and communicating existing and future work among all of the competency. The managerial level behaviour is an important determinant of theirs subordinate stress levels. Thus, throughout the study, the managerial level of the construction organization can have better understanding on stress as well as the skills, abilities and behaviours needed to implement the management standard and manage their subordinates in a way that minimizes work-related stress in construction works.

ABSTRAK

Industri pembinaan melibatkan proses yang amat rumit dan berhubungkait rapat dengan ratusan industri-industri yang lain. Oleh itu, keberkesanan kepimpinan pihak pengurus dalam organisasi pembinaan diperlukan untuk mengurus dan mengawasi pekerja bawahannya dengan baik, demi untuk memastikan kecekapan dan produktiviti dalam kerja pembinaan. Bagaimanapun, tidak mengira pihak pengurusan ataupun pekerja bawahan mereka dalam organisasi pembinaan juga akan menghadapi stres akibat daripada peningkatan beban kerja dan tekanan kerja. Maka, kecekapan dalam pengurusan menjadi penting dalam praktik sumber manusia agar dapat meningkatkan keberkesanan kerja individu dan organisasi. Demikian, satu kajian ke atas kecekapan pengurusan dalam pihak pengurus telah dijalankan untuk mencegah dan mengurangkan stres kerja di tapak pembinaan di Johor. Sejumlah 78 set borang soal selidik telah dikutip daripada beberapa golongan profesion antara 20 buah organisasi. Antara 78 bilangan responden, 21 orang adalah daripada pihak pengurusan dan 57 orang adalah pekerja bawahan. Daripada tinjauan, pihak pengurus mempunyai peratus markah tertinggi dalam menguruskan konflik, sementara itu, pekerja bawahan menilai pihak pengurus mereka dengan peratus markah tertinggi dalam penyertaan/memberi kuasa kepada pekerja bawahan demi untuk aspek mencegah dan mengurangkan stres kerja. Secara umum, pihak pengurus dan pekerja bawahan mempunyai pendapat yang sama bahawa pihak pengurus mempunyai peratus markah tertinggi dalam kecekapan untuk mengurus dan menyampaikan kerja pada masa ini dan masa akan datang. Kelakuan pihak pengurusan adalah satu penentu penting ke atas tahap tekanan pekerja bawahan. Oleh itu, sepanjang kajian, pihak pengurusan organisasi pembinaan dapat memperolehi pemahaman yang lebih baik tentang stres, kemahiran dan keupayaan serta kelakuan yang perlu ada untuk melaksanakan standard pengurusan dan berupaya menguruskan pekerja bawahan mereka dalam sebegitu rupa agar dapat mengurangkan stres kerja dalam kerja pembinaan.

TABLE OF CONTENTS

CHAPTER	TITLE	PAGE
	TITLE PAGE	i
	DECLARATION	ii
	DEDICATION	iii
	ACKNOWLEDGEMENTS	iv
	ABSTRACT	v
	ABSTRAK	vi
	TABLE OF CONTENTS	vii
	LIST OF TABLES	xi
	LIST OF FIGURES	xiii
	LIST OF ABBREVIATIONS	xv
	LIST OF APPENDICES	xvi
1	INTRODUCTION	1
	1.1 Introduction	1
	1.2 Problem Statement	3
	1.3 Aim and Objectives of Study	5
	1.4 Scope of Study	5
	1.5 Significance of Study	6
	1.6 Methodology of Study	6
	1.7 Arrangement of Report	7
2	LITERATURE REVIEW	10
	2.1 Introduction	10
	2.2 Definition of Stress	11

2.3	Definition of Workplace Stress	12
2.4	Types of Stress	13
2.4.1	Eustress (Positive/Good Stress)	14
2.4.2	Distress (Negative/Bad Stress)	15
2.4.3	Yerkes-Dodson Principle	15
2.5	Sources of Workplace Stress	17
2.5.1	Physical/Task Stressors	18
2.5.2	Psychological Stressors	19
2.5.2.1	Lack of Control/Predictability	19
2.5.2.2	Stress Related to Job Conditions	20
2.5.2.3	Role Stressors	22
2.5.2.4	Interpersonal Conflict	23
2.5.2.5	Career Development	24
2.5.2.6	Organisational Structure	24
2.5.2.7	Home-Work Interface	25
2.6	Stress Model	25
2.6.1	General Adaptation Syndrome (GAS)	27
2.6.1.1	Stage One - Alarm Reaction	28
2.6.1.2	Stage Two - Stage of Resistance	29
2.6.1.3	Stage Three - Stage of Exhaustion	29
2.7	Workplace Stress Model	30
2.7.1	NIOSH Model of Job Stress	31
2.7.2	Demand-Control Model	32
2.7.3	Palmer Model of Work Stress	33
2.7.4	Cooper Occupational Stress Model	35
2.8	Costs of Workplace Stress	36
2.8.1	Costs of Workplace Stress for Individual	36
2.8.2	Costs of Workplace Stress for Company or Organization	37
2.9	Stress Prevention System	38
2.9.1	A Step-Wise Approach	38
2.9.1.1	Stress Recognition	39
2.9.1.2	Stress Assessment	40
2.9.1.3	Anti-Stress Intervention	42

2.9.1.4	Monitoring and Evaluation	44
2.10	Stress Management Competency	46
2.10.1	Background to Competency Framework	46
2.10.2	Application of Competency Framework to Stress Management	47
2.10.3	Develop Stress Management Competency Framework	48
2.10.4	Vital Role of Line Manager	55
2.11	Workplace Stress within Construction Industry	56
2.11.1	Sources of Workplace Stress within Construction Industry	57
2.11.2	Line Managers - Project Managers and Stress	60
3	METHODOLOGY OF STUDY	62
3.1	Introduction	62
3.2	First Stage	63
3.3	Second Stage	64
3.3.1	Primary Data	64
3.3.1.1	Questionnaire	65
3.3.2	Secondary Data	67
3.4	Third Stage	68
3.4.1	Frequencies Statistical Analysis	68
3.4.2	Average Index Analysis	68
3.5	Fourth Stage	72
3.6	Summary	73
4	RESULTS AND DISCUSSION	74
4.1	Introduction	74
4.2	Data Collection	74
4.3	General Information of Respondents	75
4.3.1	Profession of Respondents	75
4.3.2	Working Experience of Respondents	77
4.4	Analysis of the Management Competency	78
4.4.1	Respectful and Responsible: Managing Emotions and	

	Having Intergrity	78
	4.4.1.1 Analysis of Results from the Feedback of Managerial Level	78
	4.4.1.2 Analysis of Results from the Feedback of Subordinates' Level	81
4.4.2	Managing and Communicating Existing and Future Work	83
	4.4.2.1 Analysis of Results from the Feedback of Managerial Level	83
	4.4.2.2 Analysis of Results from the Feedback of Subordinates' Level	85
4.4.3	Managing the Individual within the Team	88
	4.4.3.1 Analysis of Results from the Feedback of Managerial Level	88
	4.4.3.2 Analysis of Results from the Feedback of Subordinates' Level	90
4.4.4	Reasoning/Managing Difficult Situation	92
	4.4.4.1 Analysis of Results from the Feedback of Managerial Level	92
	4.4.4.2 Analysis of Results from the Feedback of Subordinates' Level	94
4.4.5	Overall Data Profiling	96
5	CONCLUSIONS AND RECOMMENDATIONS	106
	5.1 Introduction	106
	5.2 Conclusions of Study	106
	5.3 Limitations of Study	108
	5.4 Recommendations for Further Study	109
	REFERENCES	110
	APPENDIX	115

LIST OF TABLES

TABLE NO.	TITLE	PAGE
2.1	Summary of major Job Stressors (Source: Rice, 1999)	17
2.2	Comparison of Key Features of Stress Models (Source: Rice, 1999)	26
2.3	Checklist for Stressor	40
2.4	Management Competency framework with positive and negative behavioural indicators	50
2.5	Refined Management Competency for preventing and reducing stress at work	52
3.1	Calculation of Sub-Competency Score	70
3.2	Calculation of Competency Score	71
4.1	Profession detail of respondents from managerial level	76
4.2	Profession detail of respondents from subordinates' level	76
4.3	Managerial Competency about Respectful and Responsible: Managing Emotions and Having Integrity	79
4.4	Subordinates Competency about Respectful and Responsible: Managing Emotions and Having Integrity	82
4.5	Managerial Competency about Managing and	

	Communicating Existing and Future Work	84
4.6	Subordinates Competency about Managing and Communicating Existing and Future Work	86
4.7	Managerial Competency about Managing the Individual within the Team	88
4.8	Subordinates Competency about Managing the Individual within the Team	90
4.9	Managerial Competency about Reasoning/Managing Difficult Situation	93
4.10	Subordinates Competency about Reasoning/Managing Difficult Situation	95
4.11	Percentage Score for each Sub-Competency	97
4.12	Percentage Score and Classification for each Competency	103
4.13	Average Percentage Score and Classification for each Competency	105

LIST OF FIGURES

FIGURE NO.	TITLE	PAGE
1.1	Methodology of Study	9
2.1	Yerkes-Dodson Curve (Source: Seaward, 2004)	16
2.2	General Adaptation Syndrome (Source: Selye, H., 1978)	30
2.3	NIOSH Model of JOB Stress (Source: NIOSH, 1999)	31
2.4	Demand-Control Model (Source: Landy, 2007)	32
2.5	Palmer Model of Work Stress (Source: Palmer, 2001)	34
2.6	Cooper Occupational Stress Model (Source: Greenberg, 1999)	35
2.7	The Plan-Do-Check-Act Cycle (Source: Martino, 2001)	45
2.8	Physical Factors causing Workplace Stress	57
2.9	Organisational Factors causing Workplace Stress	58
2.10	Job Demand Factors causing Workplace Stress	58
2.11	Job Role Factors causing Workplace Stress	59
2.12	Other Factors causing Workplace Stress	59
3.1	Sample of Radar Plot	72

4.1	Percentages of Feedback from managerial level and subordinates' level	75
4.2	Profession detail of respondents from managerial level and subordinates' level	76
4.3	Working experience of respondents from managerial level and subordinates' level	77
4.4	Tabulation of Percentage Score for each Sub-Competency	99
4.5	Radar Plot for Percentage Score of each Sub-Competency from the viewpoint of Managerial Level	100
4.6	Radar Plot for Percentage Score of each Sub-Competency from the viewpoint of Subordinates' Level	100
4.7	Radar Plot for Percentage Score of each Sub-Competency from the viewpoint of Managerial Level and Subordinates' Level	101
4.8	Tabulation of Percentage Score for each Competency	103
4.9	Radar Plot for Average Percentages Score of each Sub-Competency	104

LIST OF ABBREVIATIONS

ILO	International Labour Organization
HSE	Health and Safety Executive
NIOSH	National Institute of Occupational Safety & Health
CIPD	Chartered Institute of Personnel and Development
GAS	General Adaptation Syndrome
UK	United Kingdom
MSDs	Musculoskeletal Disorders
AI	Average Index

LIST OF APPENDICES

APPENDIX	TITLE	PAGE
A	Questionnaire Survey Form	115

CHAPTER 1

INTRODUCTION

1.1 Introduction

Nowadays, the modern lifestyle is full of hassles, deadlines, frustrations, and demands. All of these aspects impose high physical demands on human bodies and emotional costs on human lives (Ornelas, 2003). Consequently, stress is readily acknowledged to be a common feature of these modern lives (ILO, 2001).

In modern life, the word “stress” has many connotations and definitions based on various perspectives of human conditions. In Eastern philosophies, stress is considered to be an absence of inner peace. Meanwhile, in western culture, stress can be described as a loss of control (Seaward, 2004). According to Lazarus (1984), stress can be defined as a state of anxiety produced when events and responsibilities exceed one’s coping abilities. Besides, Selye (1978) defined stress as the nonspecific response of the body to any demand places upon it to adopt, whether that demand produces pleasure or pain.

From the perspective of workplace, the work-related stress can be defined as the adverse reaction people have to excessive pressures or other types of demand placed on them at work (HSE, 2008). According to NIOSH (1999), the job stress can be defined as the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker.

Workplace stress or stress is not necessarily a negative phenomenon and it would therefore be a mistake to concentrate only on its pathological effects (ILO, 2001). In fact, the stress is a normal affair in life (Ahmad Shukri, 2007). Therefore, a moderate level of stress is necessary to be an important motivated factor for individuals, and without some pressures, life would become boring and without purpose (Ornelas, 2003). Besides, a moderate level of stress can be instrumental in achieving a dynamic adaptation to new situations (ILO, 2001).

However, stress has a very high cost for individuals, companies and organizations if the stress is gradually increased (ILO, 2001). According to NIOSH (1999), when the stressful situations go unresolved, the individual's body is kept in a constant state of activation, which increases the rate of wear and tear to biological systems. Ultimately, fatigue and damage results, and the ability of the body to repair and defend itself can become seriously compromised. As a result, the risk of injury or disease is escalates.

For the company or organization, the costs of stress may take in many forms. These include absenteeism, higher medical costs and staff turnover, with the associated cost of recruiting and training new workers (ILO, 2001). Over the past two decades, the proportion of workers who describe themselves as “highly stressed” has increased significantly and found that 70% of workers reported that job stress caused health problems that led to decreased productivity (Eisen, 2008). According to Eisen (2008) again, an estimated 90% of medical patients have stress symptoms; subsequent stress-related health care costs US industries \$69 billion annually. Besides, direct medical costs of stress-related conditions are estimated to be between US \$150 and US \$300 billion annually.

Construction industry constitutes an important element of the country's economic development (Fadhlin Abdullah, 2004). It involved very complicated process and extensive linkages to more than hundred of upstream and downstream industries. Therefore, one of the important parties who involve in the construction industry is managerial level of the organization such as project managers. The managerial level of the construction organization has their responsibility to well

manage and control their subordinates in order to make sure the efficiency and productivity of the construction works.

According to a research of Loosemore and Waters (2004), there is accumulating evidence that stress levels among construction professionals are gradually increased from days to days. Therefore, the managerial level of the construction organization as well as their subordinates also would experience stress due to increase of workload and the pressure. Hence, management competency has become leading in human resource practices and is often applied in organizations to guide selection assessment, development, and performance appraisal (Heinsman, 2008). According to Heinsman (2008) again, management competency can be described as an integrated set of human resource activities aimed at optimizing the development and the use of employee competencies in order to increase individual effectiveness, and, subsequently, to increase organizational effectiveness.

Therefore, a study on management competency of the managerial level is conducted for preventing and reducing stress at construction site. The managerial level behaviour is an important determinant of their subordinate stress levels. Throughout the study, the managerial level of the construction organization can have better understanding on stress as well as the skills, abilities and behaviours needed to implement the management standard and manage their subordinates in a way that minimizes work-related stress in construction works.

1.2 Problem Statement

Over the last century, the nature of work has gone through drastic changes and it is still changing at whirlwind speed (NIOSH, 1999). Perhaps now, work-related stress or job stress poses a threat to the health of the workers and, in turn, to the health organization.

The Health and Safety Executive commissioned research has indicated that over half a million people in the UK experience work-related stress at a level that they believe is making them ill, up to five million people feel “very” or “extremely” stressed by their work and work-related stress costs society about £3.7 billion every year. In 2005/2006, a total of 10.5 million working days were lost to stress, depression, and anxiety (HSE, 2005). Therefore, this indicated that very few organizations are likely to escape the impact of stress-related absence and employee stress. Where the stress-related problems lead to an employee to absent from work with the average of 29 working days are lost (Donaldson-Feilder, 2008). Furthermore, the Chartered Institute of Personnel and Development (CIPD) survey 2007 stated that 40 percent of the responding organizations reported an increase in stress-related absence.

In construction industry, the confrontational nature of construction projects produced significant levels of stress for the construction professionals (Loosemore and Waters, 2004). Loosemore and Waters (2004) also stated that the construction site managers, also discovered significant levels of stress and the high levels of stress among site managers damaged productivity, although the level at which stress became destructive was peculiar to an individual. From here, it clearly shows that the managerial level as well as the subordinates also would experience stress in construction works.

Therefore, the managerial level such as project manager is responsible for implementing people management practices on a day-to-day basis as well as managing the stress for preventing and reducing stress at work. From this study, the management competency of the managerial level such as project manager in the construction industry is evaluated in order to prevent and reduce stress at construction works.

1.3 Aim and Objectives of Study

The aim of this project is to study the management behaviours for preventing and reducing stress at construction sites and the objectives of this study are as follows:

- i. To study the stress prevention system in construction work.
- ii. To identify management competencies for preventing and reducing stress in construction work.
- iii. To evaluate the managerial own's competencies for preventing and reducing stress at construction site.
- iv. To evaluate subordinates' viewpoint on their management competencies for preventing and reducing stress at construction site.

1.4 Scope of Study

In order to achieve the objectives of this study, the scope of study only focusing on the development of construction industry in Malaysia. The scopes of data collection in this study focus on the following aspects:

- i. The construction company such as contractors who involved civil construction in the area of infrastructures and building.
- ii. The selected construction company must have their own's managerial staffs such as project managers or site manager as well as their subordinates such as site supervisors, architect, quantity surveyor or administration staff.
- iii. The selected construction companies are located around the Johor due to the availability of good number of projects.

Furthermore, the scope in literature review of this study will be focus on the aspects of stress and workplace stress, types of stress, sources of workplace stress, stress and

workplace stress model, costs of workplace stress, stress prevention system, management competencies of managerial level in preventing and reducing stress and workplace stress within construction industry.

1.5 Significance of Study

Stress in the workplace is ubiquitous and increasingly costly. Therefore, this study is significant to assist the managerial level of construction organization to manage stress at construction site.

Throughout this study, the managerial level of construction organization can get clear understanding on management competency needed for preventing and reducing work-related stress at construction site. According to Heinsman (2008), the successful implementation of management competency in the organization can bring a lot of advantages. Therefore, the managerial level of construction organization is important to take concern on their management competency as the stress in workplace may affect the efficiency and productivity of their subordinates.

Furthermore, this study can be used as the guideline for future development and the construction's managerial level to recognize stress and try to reduce it in order to create a healthy working environment.

1.6 Methodology of Study

In this study, the following methodology has been adopted in order to achieve the objective of the study and the methodology of study is illustrated in Figure 1.1 which is being carried out in four (4) stages.

- i. In order to achieve the first and second objective, a review of the literature was conducted such as stress prevention system as well as the collection of skills and behaviours required by the managerial level to prevent and reduce stress at work.
- ii. The third and final objective were achieved through the questionnaire survey in order to evaluate the management competency needed for preventing and reducing stress at construction site.

1.7 Arrangement of Report

The study report consists of five chapters where the content of each chapter are summarized as follows:

Chapter 1 consist of introduction of the entire study and provides an overall view of the study. It covers the introduction, problem statement, aim and objectives of study, scope of the study, significance of the study, methodology of study and arrangement of report.

Chapter 2 focus in literature review that based on findings from various different sources of information such as journal, technical papers, books, research paper etc. This chapter includes introduction, definition of stress and workplaces stress, types of stress, sources of workplace stress, stress and workplace stress model, costs of workplace stress, stress prevention system, stress management competency and workplace stress within construction industry.

Chapter 3 describe in detail on the methodology of study which covered all the stages in preparation of this study report.

Chapter 4 analysed the data using frequency analysis and average index analysis from the questionnaire survey. Chapter 4 also will discuss in detail all the data analysed and the findings will be highlighted.

Chapter 5 concludes all the finding which leads to the achievement of the objectives of the study. This chapter also suggests some recommendation for further study.

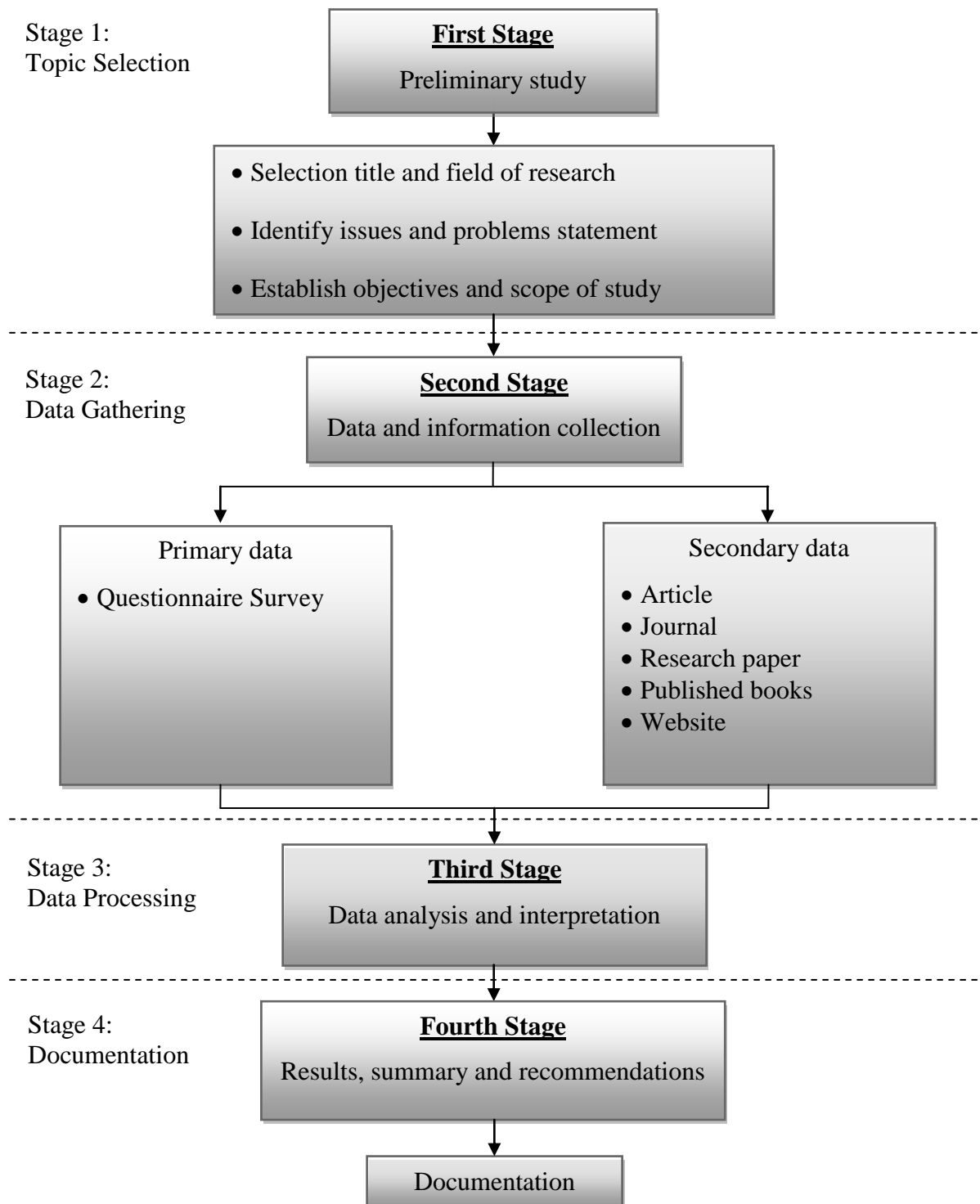


Figure 1.1: Methodology of Study