UNIVERSITI TEKNOLOGI MARA

A STRATEGIC FRAMEWORK OF GREEN PROCUREMENT FOR THE MALAYSIAN CONSTRUCTION INDUSTRY

MOHD SALLEHUDDIN MAT NOOR

Thesis submitted in fulfillment of the requirement for the degree of **Doctor of Philosophy** (Built Environment)

Faculty of Architecture, Planning and Surveying

May 2019

ABSTRACT

The global Sustainable Development Goal 2030 highlights seventeen (17) objectives to be optimized; one of them is enabled by Green Procurement (GP) through Sustainable Consumption and Production principle. In the Malaysian context, reformation of the construction industry which relates to GP and environmental sustainability was expected to be achieved through two major strategic reforms, the Construction Industry Master Plan (CIMP) 2006 and Construction Industry Transformation Program (CITP) 2016. As a consequence, GP was introduced in 2009 and now became one of the key strategies of CITP. However, the continuing problem that confronts is the low traction of the industry in embracing environmental sustainability through GP. A key factor that has been associated to the low traction has been the validity of the strategy in implementing the GP itself. The aim was to establish a strategic framework of GP for the Malaysian construction industry. The objectives selected to achieve this aim were to (a) identify the suitable SM theories that can be applied to structure for GP in the Malaysian construction industry; (b) identify the variables which impact the GP for the Malaysian construction industry; (c) develop a GP strategic framework for Malaysian construction industry from Objective 1 and Objective 2(A); and (d) test the applicability of the GP strategic framework for the Malaysian construction industry. A mixed research methodology was adopted to operationalize the research underpined in the Qualitative Embedded Model. Critical literature review was undertaken to identify the pertinent strategic management theories. The variables which impact the GP were identified through Meta-Data analysis of research papers and government publications. These were then classified into (external) macro and (internal) micro classifications of variables which forms the GP ecosystem. Hypotheses were developed to test the validity of the macro and micro variables within the ecosystem. The consequent emergent GP Strategic Framework was validated by drawing comments from the expert persons on GP in the Malaysian construction industry. The novelty of the research findings is it bridges the gap in formulating GP implementation in the Malaysian construction industry and broadening the horizon of environmental sustainability through macro variables in policy making of Regulation, Standard, Promotion, Training and Education and Practice. These variables are implemented in construction project management of Inception, Design Development, Tender Documentation, Construction and Handover. More importantly, the research pointed the need to address Newtonian Mechanistic thinking that had limited the resourcefulness of human being in thinking strategically and the possibility of fostering healing within this paradigm.

ACKNOWLEDGEMENT

In the name of God, The Most Gracious, The Most Merciful.

I send blessings to the last prophet SAW until the end of time.

My deepest thank is to UiTM for providing me an unforgettable opportunity and platform to rediscover my potential and also to my supervisors. They are Prof Dr Masran Saruwono, Prof Dr Jasmine Ahmad and especially Assoc. Prof Dr Fadzil Hassan who had handholding me fatherly, giving me a chance to really see through my potential, growing up as a person, and enlighten me in a very unique way. As such, you have been an enormous influence in my personal development. I would also like to thanks to my PhD colleagues for bearing the delusion of becoming and believing ourselves as doctorate holder although we are still candidates, sharing and helping each other in time of needs. Not to forget, my "shared value" doctorate colleagues who have been very instrumental in the PhD process and providing real moral support until the end, Ts Dr Haryanti Mohd Affandi, Ts Dr Firdaus Mustafa Kamal, Sr Dr Khairil Hizar Md Khuzaimah, Dr Hairuddin Mohamad, Dr Haryati Mohd Isa, Dr Normaizura Ahmad Noorhani and other names of colleagues that played their major roles in their way. This I say to you - just be humble in every step and help each other in whatever ways we can as what we give in this world, will be reflected through the world.

Many thanks are also dedicated to professional individuals within Construction Industry Development Board (CIDB), Construction Research Institute Malaysia (CREAM), Cawangan Kos dan Ukur Bahan (CKUB) and Cawangan Alam Sekitar dan Tenaga (CAST) of Public Work Department who have been professionally guide and realigned this research process.

To my family especially my siblings, you have played your role which influence me indirectly especially my sister, Rabiatul Adawiah Mat Noor, who have suggested the external examiner name when I was long searching for one and have been listening to my rant on the hardship of the research process. As to my parents, my late father, Mat Noor Saad, you have been an enormous influence in my philosophical foundation since my childhood (although you might not realise it and now I knew). My mother, Fatimah Yeob who has been sharing her wisdom in the thick and thin of my life and in this PhD journey, your soothing voice always calmed me in my hard times and your wisdom always has its place in my heart. To my best friend, Aisha Shakirah Abdul Mutalib who had given me endless real motivation – indeed, God has always blessed you.

At the end, I would like to say this as I always say that this experience and achievement is impossible without the help and love from these individuals. Hence, this immense effort in publication of the thesis goes down to all of you.

May God reward all of you with the best reward! Amin.

TABLE OF CONTENTS

	Page
CONFIRMATION BY PANEL OF EXAMINERS	ii
AUTHOR'S DECLARATION	iii
ABSTRACT	iv
ACKNOWLEDGEMENT	v
TABLE OF CONTENTS	vi
LIST OF TABLES	xvi
LIST OF FIGURES	xxi
LIST OF ABBREVIATIONS	xxvii
CHAPTER ONE: INTRODUCTION	1
1.1 Background of the Study	1
1.1.1 Strategic Management and Environmental Sustainability	2
1.1.2 Green Procurement in Malaysian Construction Industry	2
1.2 Problem Statement	2
1.3 Research Aim and Objectives	6
1.4 Research Questions	7
1.5 Research Methodology	7
1.6 Research Scope	8
1.6.1 Malaysian Construction Industry	8
1.6.2 Green Procurement	8
1.6.3 Strategic Framework	8
1.6.4 Strategic Framework of Green Procurement for the Malaysian	O
Construction Industry	9
1.6.5 Research Methodology	9
1.7 Novelty of the Research	9
1.8 Thesis Outline	9
1.8.1 Chapter 1: Introduction of the Research	9

CHAPTER ONE INTRODUCTION

1.1 Background of the Study

Climate change is recognized as one of the major societal challenge in modern history, a paradox to human relation with environment which is crucial. This is translated within various ideas as environment has it proper place in people heart and mind. The influence of environment to the human condition is extraordinary; a symbolism to the human condition itself but has been degraded within the Industrial Revolution through natural resource exploitation which has corrosive impact to the human nature. It now has become a civil strife that must be solved in sheer instant.

Various efforts were taken by the national governments to achieve the environmental sustainability. Along the journey, political debate, market mechanism and public intervention had incited various interpretation of best way to achieve the environmental sustainability moderated by the government.

The construction industry has been identified as one of the major industries that directly contribute to environmental sustainability through the development of built environment. The Malaysian construction industry is also notoriously known as the biggest polluters as can be observe from the various reports of environment issues which is continuing until today. This had forced the construction industry to reform through two (2) strategic reforms plan; the Construction Industry Master Plan (CIMP) 2006 which continued in the Construction Industry Transformation Program (CITP) 2016. Both strategic plans emphasized the importance of environmental best practices to achieve sustainable built environment. To holistically achieve sustainable built environment, Green Procurement (GP) was introduced by the Malaysian government in 2009 to major industries of Malaysia including its construction industry. Among major programs under the GP banner was MyHijau Program which is a platform believed will enabled environmental best practice being embraced holistically and transform the Malaysian construction industry.