

**CONCEPTUAL FRAMEWORK OF
LEADERSHIP CAPACITIES AMONG
PROJECT TEAM TO DRIVE
SUCCESSFUL COLLABORATION IN BIM
CONSTRUCTION PROJECT : A CASE
STUDY IN THE KLANG VALLEY AREA**

**NUR AQILAH NATASHA
BINTI MOHD FADZLI**

Master in Construction Management

UNIVERSITI TEKNOLOGI MARA

JULY 2024

ABSTRACT

This comprehensive research investigates the leadership capacities essential for driving successful collaboration in Building Information Modelling (BIM) construction projects, particularly focusing on the Klang Valley area. Firstly, the research aims to identify the main leadership challenges among project teams, investigate key indicators of effective leadership, and establish a conceptual framework for leadership capacities in BIM projects. Through systematic literature review and a questionnaire survey administered to 30 respondents of BIM professionals and practitioners, this research provides critical insights into the field. The findings reveal that training and skill development in BIM methodologies are of paramount importance, identified as the highest priority challenge. Additionally, efficient resource management and effective communication of complex BIM details are also critical. Moreover, managing resistance to change, coordinating multiple teams, and navigating cultural and organizational differences are significant challenges that need addressing. Furthermore, technological challenges, such as bridging skill gaps and keeping up with advancements, alongside management challenges like equitable resource distribution and conflict resolution, are explored in depth. Consequently, key indicators of leadership capacities include the ability to articulate a clear project vision, facilitate transparent communication, and uphold ethical standards. Based on these insights, the research proposes several strategic recommendations, such as prioritizing continuous learning, enhancing communication strategies, developing comprehensive change management protocols, fostering cultural awareness and organizational alignment, and proactively adopting cutting-edge technologies. Ultimately, these recommendations are crafted to address current industry challenges and capitalize on the evolving landscape of BIM technologies, aiming to foster an environment conducive to collaboration, innovation, and sustainable success in BIM construction projects.

Keywords : Building Information Modelling, Leadership, Challenges, Project Teams

ACKNOWLEDGEMENT

All praises to Allah, the most merciful, and blessings upon Prophet Muhammad PBUH, whose exemplary life serves as a guiding light for navigating the challenges of this world in the name of Islam. Foremost, I express my profound gratitude to my supervisor, Dr. Juhaizad Bin Ahmad, whose selfless dedication, time, and unwavering support have been instrumental in supervising and guiding me throughout the course of this research. His tireless efforts, invaluable constructive comments, vast knowledge, and continuous encouragement have not only facilitated my research journey but also made navigating long nights and meeting deadlines significantly more manageable. I extend my heartfelt thanks to my co-supervisor, Dr. Raja Nor Husna Binti Raja Mohd Noor, whose direct contributions in analysis work have significantly enriched this research. The guidance and insights provided by them have played a pivotal role in easing the challenges encountered during my research endeavours. I am sincerely thankful to my friends for their unwavering physical and moral support throughout my academic journey. Their assistance has been a constant source of strength. Lastly, and perhaps most importantly, I attribute credit to my beloved mother, [REDACTED] Binti [REDACTED], and my late father, [REDACTED] Bin [REDACTED], for their unending belief in me and the boundless support they have provided in all my pursuits. I express profound appreciation to all my family members, both direct and indirect, who have lent their hands in various ways throughout the completion of my study. In essence, this significant accomplishment would not have been possible without the collective support and encouragement of these remarkable individuals. My heartfelt thanks to each one of them for contributing to the realization of this academic milestone.

TABLE OF CONTENTS

	Page
AUTHOR’S DECLARATION	ii
ABSTRACT	iii
ACKNOWLEDGEMENT	iv
TABLES OF CONTENTS	v
LIST OF TABLES	viii
LIST OF FIGURES	ix
LIST OF SYMBOLS	x
LIST OF ABBREVIATIONS	xi
CHAPTER ONE : INTRODUCTION	1
1.1 Research Background	1
1.2 Problem Statement	3
1.3 Research Questions	6
1.4 Research Objectives	6
1.5 Scope of the Study	7
1.6 Significance of the Study	8
1.7 Structure of the Thesis	10
CHAPTER TWO : LITERATURE REVIEW	13
2.1 Introduction	13
2.2 Challenges That Arise in Leadership Capacities Among the Project Team to Drive the Success of Collaborative Practices in BIM Construction Projects	14

CHAPTER ONE

INTRODUCTION

1.1 Research Background

Natural disintegration occurs throughout the complicated life cycle of construction project operation, involving predetermined stages that cover a project from the beginning to its completion and may require a lot of information and documentation (Othman, 2020). Working together, professionals from various organisations must fulfil certain tasks and responsibilities within the project's objectives and scope, which is necessary for construction projects (Rahmawati, 2020). The existence of bulk documentation and the sharing of disjointed information can lead to miscommunication, the need for ongoing confirmation, disappointment, a lack of trust, and conflicts. The productivity of a project and its traditional objectives such as time, cost, and quality are typically impacted by the aforementioned issues (Othman, 2020).

In the last decades, most industrial sectors have undergone a significant evolution connected with product and process innovation, with digital technology being used to boost productivity and quality. However, in the Architectural, Engineering, Construction, and Operation (AECO) sector, quality, productivity, and sustainability have occasionally not maintained pace, resulting in the sector's productivity stagnating. According to Rodrigues (2022), the implementation of technology in this industry has the potential to enhance its production and efficiency. Several internal and external causes are responsible for this condition, including operation fragmentation, the lack of skilled employees, and oversights in information transfer, either within a project or from one project to another (Craveiro, 2019).

In recent years, the construction industry has witnessed a transformative shift with the widespread adoption of Building Information Modelling (BIM) technology. BIM, a sophisticated digital tool that allows the creation and management of detailed 3D models, has revolutionized the way construction projects are planned, designed, executed, and managed. Building information modelling (BIM) has gained recognition in Malaysia's construction industry due to its ability to improve productivity, cost savings, and enhanced collaboration among project teams. Through regulations and