

The logo for Kingston University London, featuring the text "Kingston University London" in white on a blue square background. The text is stacked vertically: "Kingston" on the first line, "University" on the second, and "London" on the third.

Kingston
University
London

STAKEHOLDER INCLUSIVENESS IN MEGAPROJECTS:
MANAGING THE LOCALS FOR SUSTAINABLE
DEVELOPMENTS

Francesco Di Maddaloni

KINGSTON BUSINESS SCHOOL
Kingston University
Kingston Hill, Kingston upon Thames KT2 7LB

Di Maddaloni, Francesco
F.dimaddaloni@kingston.ac.uk

© Francesco Di Maddaloni and
Kingston Business School

*This thesis is being submitted in partial fulfilment of the requirements of
the University for the appropriate award.*

Abstract

This dissertation elaborates on the challenges and opportunities of achieving better project performance through the involvement of a broader range of project stakeholders. The research on stakeholder management has focused primarily on those actors able to control project resources, while for major infrastructure and construction projects, the management of the legitimate ‘secondary stakeholder’, such as the local community, remains widely unexplored. Due to the perceived benefit shortfalls of these projects, well-organised actions from ‘secondary stakeholder’ groups have led to delays, cost overruns and significant damage to the organisation’s reputation.

Stakeholder management is an essential process that aims to maximise positive inputs and minimise detrimental attitudes by taking into account the needs and expectations of all project stakeholders. However, the current project stakeholder management mechanisms mainly offer an instrumental perspective, which aims to make the stakeholders comply with project needs. Therefore, this dissertation thesis asserts that a broader inclusiveness of secondary stakeholders, such as the local communities, who could be armed with the organisation’s strategy, is required to enhance the performance and sustainable development of major infrastructure and construction projects. Nevertheless, this dissertation suggests how this class of stakeholder is perceived, defined and categorised by project managers in the construction industry.

Controversies exist regarding the balance between the social and economic benefits of major infrastructure projects. In particular, delivering social and economic benefits to stakeholders who are directly impacted by these projects in their everyday life has historically been a challenging task for project managers. This dissertation thesis culminates by developing a new methodological approach that combines real options and scenario planning and allows project managers to better assess the long-term impact of major investment projects on local communities. In this way, project managers can optimise their efforts and use of public resources.

The three project management studies that make up this book expand the traditional normative or ethical perspective on the stakeholder management arena. It elucidates the importance of a new class of project stakeholders (i.e., the local community) and how their involvement can enhance the benefits and the sustainable development of major infrastructure and construction projects.

Keywords: megaprojects, stakeholder inclusiveness, local community, sustainable development, benefit realisation.

Acknowledgements

This doctoral dissertation could not have been written alone. My research work has steadily evolved as it has been negotiated in different research groups, conferences, seminars, presentations, and classes that I have taken and given. I am deeply grateful to both the academic scholars and the project management community that have left their mark on my work.

I am extremely grateful to my academic supervisor, Professor Giampiero Favato, who has rescued me in turbulent times and kindly escorted me through the challenging research process. I also thank Dr Riccardo Vecchiato for his endless support and for showing me the ropes in the academic circles. I owe a special thanks to Dr Kate Davis for starting me along the academic writing path and for being my first co-author. All my supervisors have provided me with vital lessons relating to both my research work and academic life in general.

Moreover, I am also indebted to my former supervisor, Dr Steve Priddy, who was the first one showing support for my research proposal, stimulating in me the idea of perusing an academic career. I am also grateful for the wisdom shared and opportunities provided by Professor Rodney Turner, who has introduced and welcomed me into the project management academic family.

My writing has taken place at the Kingston Business School Department of Accounting, Finance and Informatics. Here I met sharp-witted colleagues who have provided daily support, constructive critique and novel ideas, along with interminable lunches and coffee breaks. I am obliged to the colleagues, scholars and administrators in this institution for their help and assistance. The organisation I have been fortunate enough to work in has kept me committed and enthusiastic about my research.

The three essays in this dissertation thesis are based on extensive data gathered over the last four years. The work of collecting the data has depended on the support and kindness of many people, to all of whom I am exceedingly grateful.

Finally, I am most indebted to those closest to me. My family and friends have provided vital support throughout the challenging research process and have been there for me at all times. Without them, I could not have been the researcher and, most importantly, the person I am today.

Thank you all.

Kingston upon Thames, Surrey, UK
4th of July 2018

Francesco Di Maddaloni

Table of Contents

PART I

Preface.....2

Key notions for the purpose of the study.....5

**Synthesis: Local community stakeholder, megaprojects and sustainable
developments.....8**

 Significance: The need for better benefit realisation in
 megaprojects.....8

 Rethinking the local communities' inclusiveness in
 megaprojects.....11

 Project Manager's perception of the local communities' stakeholders
 in megaprojects.....13

 A novel approach for megaprojects' evaluation.....15

 Research Questions & Objectives.....17

 Essay One.....17

 Essay Two.....18

 Essay Three.....19

Positioning: Research Design and Methodology.....20

 Research Philosophy.....20

 Research Approach.....24

 Research Strategy.....27

 Rationale for Systematic Literature Review (Essay One).....28

 Rationale for Comparative Qualitative Interviews (Essay Two).....29

 Rationale for Retrospective Case Study (Essay Three).....31

Methodology and Data.....	33
Contribution, Limitations and Future Research.....	36
Outlook.....	40
Summary: Highlights of the Essays.....	46
References.....	52

PART II

Essay One

Di Maddaloni, F., Davis, K., 2017. **The influence of local community stakeholders in megaprojects: rethinking their inclusiveness to improve project performance.** In the *International Journal of Project Management*, 35 (8), 1537-1556.

Essay Two

Di Maddaloni, F., Davis, K., 2018. **Project Manager's perception of the local communities' stakeholder in megaprojects. An empirical investigation in the UK.**
In the *International Journal of Project Management* 36, 542-565.

Essay Three

Di Maddaloni, F., Favato, G., Vecchiato, R. 2018. **Sustainable development and uncertainty management of public infrastructure transportation projects. Combining real options with scenarios.**

Manuscript has been submitted to Regional Studies (Status: Under Review).

An earlier version of the paper peer reviewed and presented at the 2018 European Academy of Management (EURAM) Annual International Conference.

PART I

Preface

“The state is the coldest of all cold monsters. Coldly it lies, too; and this lie creeps from its mouth: ‘I, the state, am the people.’ ... Everything about it is false; it bites with stolen teeth”. Friedrich Nietzsche ‘Thus Spoke Zarathustra’

The main argument of this dissertation is reflected in Nietzsche’s words. Public infrastructure and construction projects may represent a great opportunity for the economic and social development of local communities. However, too often these projects have been used as a tool to enhance political ambitions and self-interests and have been unable to deliver the promised benefits to those taxpayers financing these projects. Too often, the main issue has been the inability to deliver both economic and social benefits to all project stakeholders, thus resulting in the waste of even more limited public resources. In project management work, solving this problem means being able to cope with the complexity and uncertainty of large investments in which competing interests often emerge. This doctoral thesis maintains that project managers need to facilitate the delivery of major infrastructure projects by bringing their promised benefits either at the local, regional or national level.

This study concerns the inclusion of a broader range of project stakeholders (e.g., community groups, unions, consumer advocates, etc.) into managerial decisions to enhance sustainable developments. Due to the unavoidable impact of major infrastructure and construction projects on both people and places, this study examines the important task of better assessing the long-term benefits of such projects on local communities. In this way, project managers and policymakers can optimise their

efforts and use of public resources. The unexplored role of the local community stakeholder in megaprojects is investigated from a project management perspective, which suggests the way this legitimate class of stakeholder is perceived, defined and categorised by project managers in the construction industry. Moreover, this perspective also suggests how their involvement could improve the performance and sustainability of these projects.

The broader inclusiveness of ‘secondary stakeholders’ towards more sustainable and ethical megaprojects has only recently captured the attention of both academics and practitioners in the project management arena (Eskerod and Huemann, 2013). Despite the expected boom in infrastructure investments, it is essential to minimise the waste of public resources by creating a better decision-making process that enables the selection of the most beneficial projects for local communities and long-term sustainable development. In academia and practice, the relevance of sustainable development for project management is highlighted in the need for integrating broader societal objectives within projects. A new methodological approach is presented to help different stakeholders to develop a shared understanding of the potential benefits of new investments projects and to ultimately enhance the sustainable development of local urban systems and communities.

Consisting of three essays, this doctoral thesis, although multidisciplinary, follows qualitative research principles. In the essays, the common denominators for all project stakeholders are the sustainable development and benefits realisation of large infrastructure and construction projects, but the different theoretical and methodological perspectives and research designs reveal different aspects of the phenomena. Furthermore, the essays were written for publication in highly ranked academic journals. These essays not only target the most influential project

management journals but also target a different academic field related to strategic planning. Following a chronological order, the first two essays have been published after a rigorous peer review process. The third, and last one, is currently under review and being considered for publication. Each of the papers discuss issues that are of current interest. The International Journal of Project Management and Regional Studies have their own research traditions and much to offer in understanding theories and practices in management and planning studies.

It is the aim of the author is for each paper to have singular focuses that are related but do not overlap. Moreover, one or more research questions are addressed by each essay with its own scope, focus and purpose, and each in turn builds on and develops the previous papers. Together, the essays provide a logical flow and coherent overall story about the phenomena under investigation. Patience is requested from readers of this dissertation thesis. The three essays use somewhat different terminology that caters to the traditions of the specific academic field in question. Although the three essays represent an integrated and coherent whole, a few repetitions are somehow unavoidable, as the same themes and ideas are developed and considered from different perspectives. To avoid possible repetition, the aim of the Synthesis section is not to summarise but to present the main argument of the dissertation by unfolding key elements in project and stakeholder management. For convenience, a short summary of the main points of each essay is also provided immediately after the Synthesis section.

Key notions for the purpose of the study

Mega construction projects have been defined as major tools to satisfy human, economic and social needs and elevate a country's social image (Kara et al., 2016; Jia et al., 2011) and as massive investments of infrastructure, initiated by the government, which have extreme complexity, long schedules and immense life spans (Flyvbjerg et al., 2003; Sun and Zhang, 2011). The common characteristics of megaprojects include a strategically aligned set of multiple projects, costs in excess of US \$500 million and a completion time that can exceed 10 years (Major Project Association, 2014; Miller and Lessard, 2000). Possessing unique features in terms of their level of aspiration and stakeholder involvement, megaprojects attract high social-economic and political interests and high industrial and public attention (Turner and Zolin, 2012).

Secondary stakeholders include community groups, unions, consumer advocates, competitors, special interest groups, environmentalists, the media and other non-governmental organisations (Aaltonen et al., 2008). Secondary stakeholders do not have a formal contractual relationship with the project or direct legal authority over the project (Eesley and Lenox, 2006). However, they can influence the project (Clarkson, 1995). To advance their claims, secondary stakeholders may engage in a set of actions resulting in negative consequences to direct operational costs and to the reputation of the focal organisation (Eesley and Lenox, 2006).

Stakeholder inclusiveness is the embracing of a broad range of stakeholder groups rather than focusing narrowly on primary stakeholders, such as owners, suppliers, employees, and customers, in order to meet or exceed stakeholder needs and expectations. Stakeholder inclusiveness is the extent to which all stakeholders are considered by the focal organisation (Eskerod et al., 2015a). Stakeholders are considered regardless of their power in relation to the organisation (Mitchell et al., 1997) and regardless of their potential to help or harm the organisation (Freeman, 1984).

Sustainable development, a high-level objective in constitutional documents and official policies of state, regional and local governments (Hyunjung and Darnall, 2018; Mossner, 2016), aims at reconciling economic, social and environmental efforts through the elaboration of more comprehensive long-term strategies and societies' wider involvement in decision making (Meadowcroft, 2013; Rickards et al., 2014; Zeemering, 2018). Sustainable development also means optimising the use of public money by selecting the most beneficial projects for local communities and their long-term wealth (Graute, 2016; Heckman, 2015).

Uncertainty has been defined as follows: "The property of a project which makes it difficult to understand, foresee and keep under control its overall behaviour, even when given reasonably complete information about the project system" (Vidal et al., 2011: 719).

Real options are based on a quantitative approach rooted in financial research (Smit and Trigeorgis, 2006). Real options refer to the options embedded in investment opportunities, such as the options to delay, expand, switch, suspend, contract or abandon an investment (Myers, 1977). This approach shows that corporate liabilities can be valued using option-pricing techniques. Real options represent a significant discontinuity from the traditional discounted cash flow (DCF) approach. This approach emphasises that many initial investments create relevant opportunities that give the firm the opportunity (but not the obligation) to make subsequent follow-up investments (Trigeorgis, 1996). The flexibility inherent in the opportunity (but not the obligation) to make further investments in additional assets allows public managers to take advantage of favourable outcomes and avoid losses.

Scenarios are alternative views of the future in the form of different configurations of key drivers of change in the business environment. Their rationale is not to predict the future but rather to enable decision makers to revise their assumptions about the future and their mental models (Schoemaker, 1993). Scenarios allow managers to explore the future outcomes and consequences for different stakeholder values (Klosterman, 2014).

Synthesis:

Megaprojects, local community stakeholder and sustainable development

SIGNIFICANCE: THE NEED FOR BETTER BENEFITS REALISATION IN MEGAPROJECTS

The goal of this dissertation thesis is to establish how the inclusiveness of a broader range of project stakeholders can better facilitate the sustainable development of major infrastructure and construction projects. It is believed that bringing megaprojects benefits either at the local, regional or national level represents a key, but challenging, task for project managers. Project managers are in need of a structured approach that will enable them to cope with the uncertainty surrounding megaproject developments. By minimising the negative impact of such projects on both people and places and selecting the most beneficial and viable project for the wider communities, project managers and policymakers can catalyse their efforts and use of public resources. This section introduces the primary focus of the research and provides background on the central research constructs.

Public infrastructure and construction projects can be major tools to enhance economic and social development (Jia et al., 2011; Kara et al., 2016). Therefore, it is not surprising that more and larger infrastructure projects are continuously proposed and introduced, with the global expenditure on infrastructure estimated to be US \$3.3 trillion a year for the period from 2016 to 2030 (McKinsey Global Institute, 2016). Infrastructure spending is mainly driven by large-scale projects, which have unique features in terms of their level of aspiration, lead times, complexity and stakeholder involvement (Barlow, 2000; Flyvbjerg, 2014). Therefore, it is typical that construction

megaprojects are attracting more attention, as their growth results in an increased impact on people, budgets and urban spaces (Xue et al., 2015).

According to Flyvbjerg (2014) and Hu et al. (2014), the terms ‘major projects’ or ‘major programme’ are frequently used interchangeably to define large public projects when referring to megaprojects. When defining a ‘megaproject’, the common characteristics in the literature include a strategically aligned set of multiple projects, costs in excess of \$500 million and completion times of more than 5 years (Highway Administration of the United States, 2007; Major Project Association, 2014; Miller and Lessard, 2000). Notably, project managers are faced with increasing budget constraints, and, thus, the design, evaluation and selection of such highly costly projects has become particularly critical in turbulent economic conditions (Greespan, 2004; Matti et al., 2017; NETLIPSE, 2016).

Although the likely benefits of megaprojects are largely recognised, the uncertainty surrounding their impact represents a key challenge for project managers, especially because of the length of the lifecycle of such projects (Marshall and Cowell, 2016; Zanni et al, 2017). The uncertainty of major infrastructure and construction projects is due to their complexity, i.e., “the property of a project which makes it difficult to understand, foresee and keep under control its overall behaviour, even when given reasonably complete information about the project system” (Vidal et al., 2011: 719). Therefore, managing time and cost constraints is regarded as ‘firefighting’ to keep afloat, which leads to unrealistic estimates in order to meet goals, while ignoring setting the real benefits in the feasibility stage (Flyvbjerg et al., 2003). It is recognised that benefits realisation is an important element for improving project performance (Laursen and Svejvig, 2016; Turner, 2014). Likewise, I believe that benefits realisation has a greater impact on project performance, in which it is essential to

minimise the waste of public resources by creating a better decision-making process that includes the needs and expectations of a broader range of project stakeholders and that leads towards more sustainable megaprojects.

The relevance of sustainable development has become increasingly important for project management, and this fact has been highlighted in academia (e.g., Aarseth et al., 2017; Eskerod and Huemann, 2013; Silvius et al., 2017) and practice (see IPMA and PMI code of ethics). Project managers are tasked with making the optimal investment decisions by selecting the most appropriate project for the wider community and simultaneously managing numerous, large and conflicting interests (Lee and Lee, 2018). The dominance of the engineering project management approach has focused strongly on rigid procedures aimed primarily to deliver assets within the target time, cost and quality. As a result, both project managers and policy makers have often overlooked the social and political context of major infrastructure and construction projects, leading to unsustainable investments, poor stakeholder management, public opposition and benefit shortfalls (Bruzelius et al., 2002; Malekpour et al., 2017).

Projects as vehicles for change play a crucial role in the sustainable development of organisations and society, and recent debates have encouraged research in integrating broader societal objectives (sustainable developments) within projects (process and final goals) (Huemann and Silvius, 2017). Sustainable development has been regarded as a high-level objective in constitutional documents and official policies of state, regional and local governments (Mossner, 2016). By looking specifically at the local community level and at the interconnections within which megaprojects and the stakeholder local community interact, this thesis considers the relationship between sustainability and project management more with respect to the sustainability of the

delivery of the project (the process of realising the product) than to the sustainability of the project deliverable (the product that the project realises) (Kivila et al, 2017).

Sustainable development aims at reconciling economic, social and environmental efforts through the elaboration of more comprehensive long-term strategies and societies' wider involvement in decision making (Meadowcroft, 2013; Rickards et al., 2014). In recent years, project managers have faced legitimate pressure to demonstrate greater ethical responsibility in their decision making, requiring them to be attuned to the cultural, organisational and social environments surrounding projects (Deutsch and Valente, 2013; Wideman, 1990). Although Freeman (1984) was the first scholar who clearly identified the strategic importance of other groups and individuals to the organisation, "the resulting work on stakeholder management has focused almost exclusively on primary groups that are critical to the firm's survival in its current business" (Hart and Sharma, 2004, p.9). It is in fact evident that research has narrowly focused on those actors important to the project's economic interests, such as suppliers, sponsors and customers, overlooking the human and social needs around project developments (Aaltonen and Kujala, 2010; Eskerod et al., 2015a; 2015b).

Rethinking Local Communities' Inclusiveness in Megaprojects

Because projects have limited resources, project managers cannot always address the concerns of every potential stakeholder, and the prevalence of the instrumental perspective to stakeholder management is thus evident (Bourne and Walker, 2005; Johnson et al., 2005; Mitchell et al., 1997). The instrumental perspective approach to stakeholder management, in which stakeholders are seen as providers of resources, aims to make the stakeholders comply with project needs (Derry, 2012, Mitchell et al.,

2007). However, especially in the last decade, there has been a growing interest from both practitioners and academics in redefining business processes and management mechanisms in order to allow major infrastructure and construction projects to balance economic activity with the environmental and social impact that they generate. The literature shows the interest for more ethical and sustainable projects and a conscious endeavor for fairness and engagement of all stakeholders through an inclusive and holistic perspective to stakeholder management (Eskerod and Huemann, 2013; Eskerod et al., 2015a; 2015b; Freeman et al., 2007). In contrast to the instrumental perspective, the holistic approach aims to engage with a broader group of stakeholders, who could be armed with the organisation's strategy by meeting or exceeding these stakeholders' needs and expectations and by balancing the project's economic, ecologic and social interests. By positioning the study towards a normative or ethical perspective to stakeholder management (e.g., Cleland, 1986; Eskerod and Huemann, 2013; Freeman, 1984), this dissertation thesis reinforces the need for a broader inclusiveness of stakeholders essential for enhancing the often undelivered benefits of megaprojects.

The focus on megaprojects benefits has been from the national government's or the large public or private organisations' perspective (Mok et al., 2015), in which the local context of these projects and related stakeholder management practices are often overlooked and therefore warrant investigation (Di Maddaloni and Davis, 2017). Due to the perceived benefit shortfalls of major infrastructure and construction projects, well-organised actions from 'secondary stakeholder' groups have led to delays, cost overruns, and significant damage to the organisation's reputation (e.g., Hooper, 2012; Letsch, 2013; Teo and Loosemore, 2017; Watts, 2014). For instance, understanding and minimising the effect of megaprojects on people and places can help manage the

project benefits by rethinking a more holistic approach that will take into account those stakeholders regularly affected by these projects, namely, the local community. By identifying connections and major assumptions on the influence of local community stakeholders in megaprojects, this dissertation remarks stakeholder management as an essential process designed to maximise positive inputs and minimise detrimental attitudes of all project stakeholders (Bourne and Walker, 2005; Cleland and Ireland, 2007).

Project Manager's Perception of the Local Communities' Stakeholder in Megaprojects

Although major steps have been made in recent years, the stakeholder local community has received little attention from both practitioners and academics in the project management arena (Di Maddaloni and Davis, 2017). Although the secondary stakeholders, including the local community, have legitimate concerns, as they are the risk bearers in the projects (Olander, 2007), the local community seems often to be excluded from the communications plan, and their inputs and needs remain not well perceived by project managers (Aaltonen and Kujala, 2010; Di Maddaloni and Davis, 2018; Olander and Landin, 2008). This phenomenon can be related to the limited time spent on the initiation phase of the project and the rush towards project approvals, which in turn prevents a solid stakeholder identification, classification and assessment strategy (Pinto and Winch, 2016; Flyvbjerg, 2005). What has emerged is that the academic thinking of major infrastructure and construction projects seldom aligns project objectives with those that often pay for these projects, the local community (Choudhury, 2014). While stakeholder theory recognises the growing importance of

communities as a new class of stakeholders, the issue of their identification and prioritisation has never been fully resolved (Crane and Ruebottom, 2011). The local community cannot be treated as a single homogeneous, easily identified group, and in the stakeholder management literature, the concept of local community has been left constantly unclear and undefined (Atkinson and Cope, 1997; Skerratt and Steiner, 2013). Nevertheless, Dunham et al. (2006) raised the ‘problem of community’ as indicative of the definitional problems within stakeholder theory and of the lack of application of knowledge to the local community in practice. To date, more than ten years after his study, Dunham et al.’s work has not been advanced by scholars in the stakeholder management field.

Therefore, one of the aims of this dissertation thesis is to accomplish a compulsory step towards a better understanding of the current body of knowledge and the further development of stakeholder theory by empirically investigating the most common conceptualisation of what community means to the project managers of major infrastructure and construction projects. Due to the physical impact of megaprojects, this study emphasises the traditional view, which, based on geography or place-based community, is centred on the physical proximity of the members to the project developments (Dunham et al., 2006; Driscoll and Starik, 2004). Managing the local community will help manage benefits by aligning megaprojects objectives and interests with those of the wider community (Eweje, 2010; Li et al., 2012a; 2012b). I believe that enhancing a shared view of project objectives aids in achieving better project performance and is a key success factor for both project managers and policy makers in order to achieve sustainable development.

A Novel Approach for Megaproject Evaluation

Although the literature on megaprojects is moving forward, the classic project evaluation methods have been inefficient in capturing and including the views of a broader range of stakeholders and in balancing their economic and social needs and expectations. The management and organisation literature illustrates various techniques that have helped public decision makers cope with the growing uncertainty of their business environment, especially the complexity of the political, economic, social and technological changes (Porter et al., 2004). However, although many models have been created to facilitate the process of managing major infrastructure and construction projects, the net present value (NPV) is still by far the dominant method used to evaluate this kind of project (Coates and Kuhl, 2003; Halawa et al., 2013; Sobel et al., 2009).

In this dissertation thesis, I elucidate an alternative to the traditional discounted cash flow (DCF) approach, which project managers and policy makers have used to evaluate strategic investments. Megaprojects are dynamic by nature. It is therefore controversial that their evaluation and approval are judged by a rather static approach, such as the NPV. The DCF approach determines the NPV of an investment project by focusing on the present value of expected streams of cash inflows and that of expected streams of cash outflows. However, in doing so, this method ignores the benefits attributable to the ability to delay (or stop) irreversible investment decisions and thereby to profit from new information about key changes in the external environment, as long as this information becomes available. Precisely, the NPV approach assumes that a decision is taken only once, without any possibility to modify the characteristics of the investment project later on. Due to the well documented complex and uncertain nature of large infrastructure and construction projects, I believe that a new

methodological approach is required in the evaluation and approval of these highly risky projects in order to deliver the promised benefits to a broader range of stakeholders.

By combining real options with scenario planning, this dissertation thesis introduces an effective tool for practitioners to address the current limitations in practice. The model attempts to incorporate both the social and economic impact of major infrastructure and construction projects on both primary and secondary project stakeholders. Using such a model will aid project managers and policy makers in ensuring that their projects are successful and welcomed either at the local, regional or national level. Therefore, the presented approach will help to achieve sustainable development (both economic and social) through a broader inclusiveness of stakeholders in the project decision-making process. Specifically, the model not only generates qualitative data (through scenarios) for capturing and clarifying the views and needs of primary and secondary stakeholders at each stage of the project life cycle but also provides quantitative data (through real options) in order to evaluate these views: this provides the flexibility and the opportunity (but not the obligation) to make further investments in additional assets in order to allow public managers to take advantage of favourable outcomes and avoid losses.

I believe that the widespread use of scenarios and real options in different industries and the recent (but still limited) application of these same tools in the construction sector offers an opportunity to advance the management of major infrastructure and construction projects, fostering their long-term social and economic benefits. In particular, recent works have suggested novel approaches to integrating real options with scenarios so that decision makers can combine the quantitative and qualitative strengths of these two methods (Favato and Vecchiato, 2017; Miller and Wallers,

2003). Therefore, one last objective of this dissertation thesis is to seize this opportunity by exploring how public policymakers and project managers can make integrated and seamless use of scenarios and real options to better cope with the growing uncertainty of new major infrastructure and construction projects and thus improve the projects' benefit realisation and sustainable development.

RESEARCH QUESTIONS & OBJECTIVES

By recognising the importance of generating the research question through problematisation, rather than a gap-spotting approach (Alvesson and Sandberg, 2011), my aim is to consolidate the extant research by establishing connections and identifying major assumptions and limitations in the literature within the identified domains relevant to the stakeholder management practices of major infrastructure and construction projects at the local community level. Therefore, my goal is to present an innovative methodology that includes the needs and expectations of a broader range of stakeholders into the decision-making process and that leads to better project approval and sustainable development. Although interrelated, the following three essays have their own objectives and research questions. They are presented as follows:

Essay 1

Objectives

- (1) To understand the interconnections within which major infrastructure and construction projects and the stakeholder local community interact.

- (2) To identify current stakeholder management approaches in major infrastructure and construction projects.
- (3) To investigate how the local community stakeholder has been conceptualised and treated in the current body of knowledge relevant to stakeholder theory.

Research Question

By interrogating the literature, I aimed to investigate the following question: How are the stakeholder management practices of public major infrastructure and construction projects manifested at the local community level?

Essay 2

Objective

- (1) To understand the project manager's perception of the stakeholder local community in major public infrastructure and construction projects.

Research Questions

- (1) How is the local community stakeholder perceived, identified and categorised by project managers in major public infrastructure and construction projects?
- (2) How can stakeholder management practices enhance the inclusiveness of the local community and thus the overall performance of major public infrastructure and construction projects?

Essay 3

Objectives

- (1) To understand whether and how a new methodological approach that enables real options into scenario planning can help identify and assess ex ante the likely benefits of major public infrastructure and construction projects for a broader range of project stakeholders.
- (2) To explore how project managers and public policy makers can make an integrated and seamless use of scenarios and real options to better cope with the growing uncertainty of new major infrastructure and construction projects and thus improve the projects' sustainable development.

Research Question

- (1) How can project managers and public policy makers use scenarios and real options to enhance the social and economic benefits of major public infrastructure and construction projects?

POSITIONING: RESEARCH DESIGN AND METHODOLOGY

To address the above mentioned research questions, this dissertation thesis aims to investigate how the stakeholder management practices of major infrastructure and construction projects are applied at the local community level and how project managers can better include the stakeholders' views in their project evaluation to achieve sustainable development. Through a systematic literature review (essay 1), a comparative qualitative interview research (essay 2), and a retrospective case study (essay 3), the research seeks to achieve a coherent and logic design that will provide additional knowledge in the area of project and stakeholder management. In order to build defensible results, the philosophy, strategy, methods of data collection and an analysis of the proposed research are discussed and supported by the research methods literature.

Research Philosophy

Paradigms may be defined as the worldviews or belief systems that guide researchers (Guba and Lincoln, 1994). Two major social science paradigms or models have been the reason for an endless debate during the past four decades: the positivist/empiricist approach and the constructivist/phenomenological orientation. The positivist paradigm underlines what are called quantitative methods, while the constructivist paradigm underlies qualitative methods (Guba and Lincoln, 1994). Despite the fact that since the mid-1980s, quantitative research has continued to exert a powerful influence and to reflect a higher preference in academic publications, qualitative research has become more influential. Increasingly importance has been given to the study of human behaviour and the social world. In this extent, the well-

established strategies and methods of the quantitative research have found it even more difficult to explain the human behaviour in measurable terms (Bryman and Bell, 2011).

Drawing on Creswell (2012), Table 1 provides a summary of the philosophical assumptions of the two main paradigms.

	Positivism Paradigm	Phenomenological Paradigm
Ontology (nature of reality)	Reality is objective and singular, apart from the researcher, and social phenomena and their meanings have an existence that is independent of social actors.	Reality is subjective as seen by participants in a study, and the world is socially constructed and understood only by examining the perceptions of the human actors.
Epistemology (the relationship of the knower to the known)	The positivist position focuses on causality and generalisation, and the researchers are independent from that being researched.	The interpretivist position focuses on observable phenomena and subjective meaning, which both provide acceptable knowledge.
Axiology (role of values in inquiry)	Researchers are independent of the data and maintain an objective stance. Scholars believe that the object they are studying is unaffected by their research activities.	Researchers are value bound. These values help determine what are recognised as facts and the interpretations that are drawn from them.
Generalisation	The positivist believes that time- and context-free generalisations are possible.	The interpretivist believes that time- and context-free generalisations are not possible.
Causal Linkages	There are real causes that are temporally precedent to or simultaneous with effects.	It is impossible to distinguish causes from effects.
Logic	In deductive logic, there is an emphasis on arguing from the general to the particular or an emphasis on a priori hypotheses (or theory).	In inductive logic, there is an emphasis on arguing from the particular to the general or an emphasis on "grounded" theory.

Table 1: Philosophical Assumptions

As noticed, quantitative and qualitative research represents different research strategies with different peculiarities in terms of epistemological issues, ontological concerns and the role of theory (Bryman and Bell, 2011). However, the task of distinguishing between the two is not as easy as it might seem. Although the strength

of one approach can be associated with the weakness of the other, they could also have similar characteristics, as many writers argue for the possibility of doing mixed method research (MMR) to maximise the strengths and minimise those weakness of each approach.

However, although I recognise the importance that research philosophy plays in drawing our beliefs about the world and therefore the way in which findings are shown and justified, I also believe that the boundaries between philosophical assumptions are not markedly defined and that such labelling (deduction/positivism-induction/interpretivism) is somehow misleading and of no real partial value (Saunders et al., 2012). Thus, according to Tashakkori and Teddlie (2010), I stressed the importance and predominance of the research question over the paradigm. The philosophy behind the research should not be a limitation for integrating both qualitative and quantitative methods together when necessary. It is therefore important to underline that in this dissertation thesis, I will try to overcome the boundaries of inductive approach and theory building to which qualitative works are purely associated.

In our research questions, the philosophy behind the research is mainly driven by a phenomenological orientation towards an exploratory and inductive approach. Based on a constructivist epistemology and from a qualitative perspective, reality or knowledge is socially and psychologically constructed; the qualitative paradigm views the relationship between the knower and the known as inextricably connected (Yilmaz, 2013).

Yilmaz (2013, p.311) describes qualitative research as “an emergent, inductive, interpretive and naturalistic approach to the study of people, cases, phenomena, social

situations and processes in their natural settings in order to reveal in descriptive terms the meanings that people attach to their experience of the world”. Qualitative research emphasises words rather than quantification in the collection and analysis of data (Bryman and Bell, 2011). In line with my research questions, this approach investigates the "why" and "how" of the investigated topic, not just "what", "where" and "when". Theory is supposed to be an outcome of an investigation rather than something that precedes it. In this way, qualitative research is deemed to be much more fluid and flexible than quantitative research is, emphasising discovery rather than verification.

- The *ontological assumption* behind the study is that the world is socially constructed and understood only by examining the perceptions of the human actors; this reality is subjective as seen by participants in a study. The aim to elucidate the concept of local community and its broader inclusiveness in project evaluation for better benefit realisation and the sustainable development of megaprojects represents an inductive approach in which theory is developed from the observation and understanding of empirical reality. The perceptions of project managers towards the meaning of local community would be explored with the aim to better understand what local community means to them and how current strategies can be further enhanced to improve the performance of major infrastructure and construction projects.

- The study's *epistemological position* is towards interpretivism, which involves an examination of the relationship between the researcher and that, which is being researched (Bryman and Bell, 2011). The study assumes that both observable phenomena and subjective meaning provide acceptable knowledge (Saunders at al., 2012).

- The *axiological assumption* of the study is concerned with value. The study considers that researchers are value bound. According to Hussey and Hussey (1997), these values help determine what are recognised as facts and the interpretations that are drawn from them.

- Referring to the *methodological assumption*, the study will examine a small sample, in which the process of the research is supported and triangulated by the use of different data collection methods (e.g., secondary data through bibliographic information). This assumption helps to obtain different perceptions of the phenomena and to look for patterns that may be repeated in other similar situations (Creswell, 2012).

Research Approach

By considering project management as a multidisciplinary field (e.g., Blomquist et al., 2010; Litteau et al., 2010), the emerging literature offers an opportunity for combining different disciplinary approaches. In order to be able to construct an overall understanding of project management practices at the local community level of megaprojects, the three essays in my dissertation use an array of research strategies and accommodate the research questions in a suitable way. In fact, despite the fact that this dissertation thesis is mainly qualitative, embracing an inductive process, it also entails elements of deduction through a systematic literature review (e.g., Tranfield et al., 2003).

The study follows a qualitative principles approach through a flexible research design that does not have structured rules, which is clear evidence that the theory is an

outcome of the research. Therefore, the research philosophical assumptions, problems, and questions aim to interpret the social world from the perspective of the people being studied (Bryman and Bell, 2011). Rather than testing theories, by capturing other people's meanings, the research makes prepositions to better enhance stakeholder management procedures.

The mainly inductive approach in this research does not require the selection of a sample of sufficient size in order to generalise conclusions and to facilitate replication. Rather, it aims to demonstrate the trustworthiness of the findings through a small sample size investigated in a comparative qualitative interview research design (e.g., Hyde et al., 2006). The research advances the normative and ethical approach to stakeholder theory by recognising the importance of 'secondary' project stakeholders and by enlarging the understanding by project managers in major infrastructure and construction projects, of what is meant by local community stakeholders. The current body of knowledge in project management is advanced by a new perspective of local community stakeholder identification, classification and assessment. Nevertheless, building from the perceived need of a better tool for project evaluation and the inclusiveness of stakeholders, a conceptualised innovative method is proposed, applied and validated through a retrospective case study (e.g., Mills et al., 2010).

While literature suggests that secondary stakeholders are playing an increasingly important role in large construction projects because of their ability to influence project outcomes, no specific approaches have been developed to combine the views of both primary and secondary project stakeholders towards megaproject sustainable development.

Therefore, the questions in this research are explicitly stated and based on streams of literature representing three knowledge areas relevant for investigating (1) megaprojects, (2) stakeholder analysis, and (3) the local community. By mapping and investigating those potential boundary areas, the aim is to consolidate the extant research by establishing connections and identifying the major assumptions that underlie the literature within the identified domains and that are relevant to the stakeholder management practices of major infrastructure and construction projects at the local community level (Figure 1).

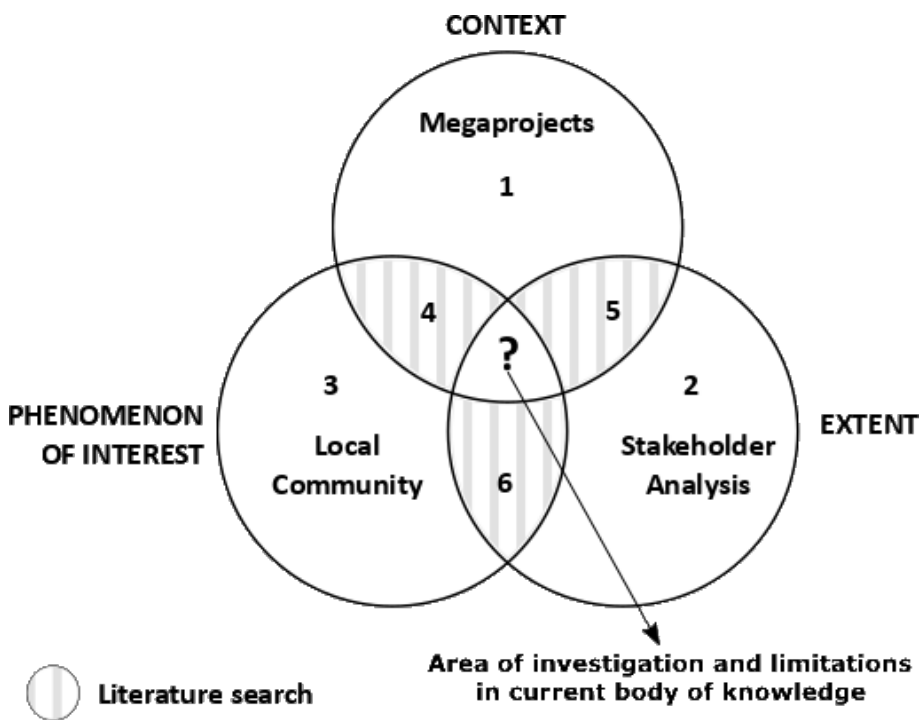


Figure 1. Organising Framework for Literature Search

The abovementioned questions in this dissertation thesis emerged through a systematic literature review. These questions have been answered either through conceptualisation or empirical evidence. The aim of better understanding ‘secondary’ stakeholders inclusiveness for sustainable megaprojects justifies the qualitative and

exploratory approach to best answer questions from a topic rarely debated in previous academic papers.

Research Strategy

According to Saunders et al. (2012), the research strategy is described as the general plan of how you will go about answering the research questions. For Ritchie et al., “the research design is not a discrete stage, but a process where the relationships between study design, theory and data collection are iterative, and each should inform and be informed by the others” (2014, p.74). Therefore, the research design can be seen as the plan that logically turns the research questions into a project able to address the research problem in the best possible way. The conceptualisation of the research design and relative strategies employed is summarised in Figure 2.

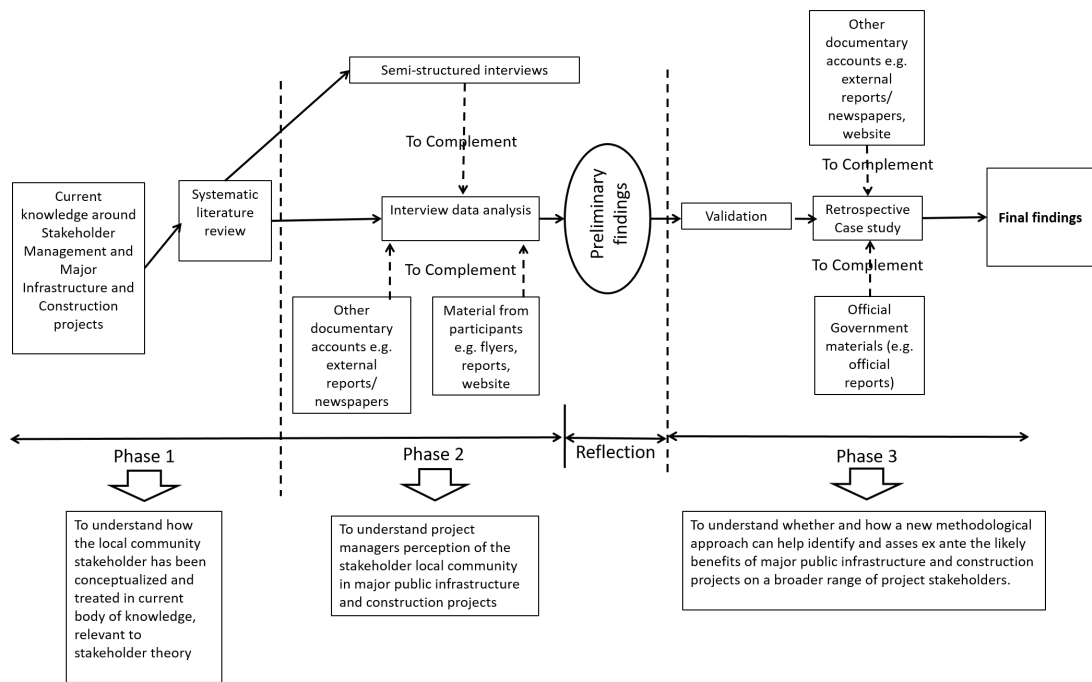


Figure 2. Conceptual representation of the research design, adapted from Teo and Loosemore (2014)

Rationale for Systematic Literature Review (Essay 1)

Literature review is regarded as a useful methodology to gain an in-depth understanding on a research topic, identifying the current body of knowledge and stimulating aspiration for future research (Mok et al., 2015). Among the different approaches to review the current body of knowledge, the systematic review has been argued to provide the most efficient and transparent method for identifying and evaluating extensive literatures (Mulrow, 1994). In fact, according to Okoli and Schabram (2010), a systematic literature review is a comprehensive and reproducible method for identifying, evaluating and synthesising the existing body of completed and recorded work produced by researchers, scholars and practitioners.

The systematic literature review has become an essential scientific activity that is necessary to improve the quality of the review process by employing a transparent and reproducible procedure (Tranfield et al., 2003). Nevertheless, Hemingway and Brereton (2009) note that a systematic review differs from a traditional review in that it is peer reviewed and its findings are explicitly documented to permit replication. The systematic review has been applied in management research in order to combine evidence in existing studies and to create new knowledge, which is essential for conducting new research (Mostafa et al., 2016; Rousseau et al., 2008).

Problems have arisen from stakeholder management in major infrastructure and construction projects and the need for better sustainable developments, giving rise to a structured approach of systematic review of existing literature in this domain. Therefore, this dissertation thesis adapts and combines the guidelines suggested by Tranfield et al. (2003) and Mok et al., (2005) to conduct a systematic literature review. This approach is also in line with the PRISMA systematic method for minimising bias and errors by providing ‘high-quality’ evidence (Moher et al., 2009).

Rationale for Comparative Qualitative Interview (Essay 2)

The exploratory purpose of this dissertation thesis will be encapsulated into a comparative design strategy, which through its flexibility, aims to provide insight into the participants’ individual or personal experience and to produce an illuminating picture of the subject. Hence, according to Bryman and Bell (2011), this strategy encourages researchers to consider what is unique and what is common across cases or situations, allowing theoretical reflection on the findings. Comparative design embodies the logic of comparison in that it implies that we can understand social

phenomena better when they are compared in relation to two or more meaningfully cases or situations (Bryman and Bell, 2011).

The comparative design may be realised in the context of either quantitative or qualitative research. However, for the scope of this dissertation thesis, the qualitative context was deemed to be the most appropriate in order to best answer our research questions. Through the use of qualitative interview research (Hyde et al., 2006), a number of people are used as cases. The element and unit of analysis included semi-structured interviews that focused on specific kinds of individuals, such as project managers, communication managers and senior managers, with over 20 years of experience and directly involved in the management of the secondary stakeholders of major infrastructure and construction projects.

The main argument and rationale in favour of the comparative qualitative interview research is that it improves theory building (Marshall, 1984). According to Hantrais (1996), the benefits of this type of exploratory research are evident when individuals or teams set out to examine particular issues or phenomena and compare their manifestations in their sociocultural settings. Nevertheless, by comparing two more cases or situations, the researcher is in a better position to establish the circumstances in which a theory will or will not hold (Yin, 2018).

Without repeating the same concepts over again, one of the purposes of this dissertation thesis was to understand the project managers' perception of the stakeholder local community in major public infrastructure and construction projects. This evaluation was qualitative and was based on secondary data analysis and semi-structured interviews. The first phase of the evaluation focused on fifteen different major infrastructure and construction projects in the UK over the last decade. This

phase involved a documentary review of reports relating to these undertakings. In addition, individual interviews were conducted with participants for each of the megaprojects. In total, 19 interviews with project/communication/senior managers were conducted across the 15 projects. This approach to evaluation enabled the researcher to take account of the heterogeneity and complexity of major infrastructure and construction projects and their different impact (positive/negative) at the local level.

Rationale for Retrospective Case Study (Essay 3)

As stated by Ritchie et al., "One approach to comparison, and one that aids in-depth exploration and insight into the research phenomenon more generally, is case study design" (2014, p.66). According to Collis and Hussey (2014), the case study design strategy has been adopted indifferently by both interpretivists and positivists to explore a single phenomenon (the case) in a natural setting using a variety of methods to obtain in-depth knowledge (Collis and Hussey, 2014).

Following Ritchie et al. (2014, p.66), the particular features associated with case studies can be characterised as follows:

- The focus on an individual unit (Flyvbjerg, 2006; Stake, 2006)
- The fact that the study is detailed and intensive (Bryman and Bell, 2011)
- The fact that the phenomenon is studied in context (Creswell, 2012; Yin, 2018)
- The opportunity to use multiple data collection methods (Creswell, 2012; Berg and Lune, 2012)

My study comprised two main activities: (1) developing an innovative procedure that evaluates the project evaluation process of major infrastructure and construction projects under uncertainty and (2) performing this procedure retrospectively in an empirical case study. I applied and validated the new methodological procedure to a case of a major transportation infrastructure project in Rome, in which an infrastructure investment decision had followed previously adopted strategies for investment. Such retrospective analysis enabled a deep clarification and understanding of project evaluation under uncertainty by suggesting an innovative way to achieve sustainable solutions.

Mainly drawing on the qualitative case study approach (Creswell, 2012; Yin, 2018), our study includes longitudinal elements provided through historical documentation elucidating project developments in different phases of their life cycle. This method has helped the researcher to reinforce the trustworthiness of the study. Nevertheless, based on the data available, a retrospective case study design (e.g., Malekpour et al., 2017; Mills et al., 2010) was chosen as the strategy to support the application of the previously conceptualised evaluation method. The example promised to serve as an instrumental case for exploring and illustrating some of the current limitations that project managers and policymakers are facing in the project evaluation process.

According to Mills et al. (2010), there are two dimensions of longitudinal case studies: (1) whether the event being studied has already occurred (historical case) and (2) whether researchers have access to informants who were involved in the events or phenomena being studied (retrospective case). In both designs, the events have already occurred, and process outcomes are known.

Retrospective design takes advantages of the fact that data are collected from multiple prior periods all at once. Moreover, there are a few benefits that can be underlined in support of this chosen strategy for better answering research questions: (1) Retrospective studies can be very insightful and provide interesting findings about a prior event (Mills et al., 2010). (2) Retrospective cases support research-based teaching approach, which is typical for works that have educational purpose and dedicated to practitioners (e.g., Olander and Landin, 2005). (3) Retrospective design is suitable for situations in which a new interpretation of an existing event or phenomena is sought, but the event or phenomena in question has such a long gestation period that concurrent study is unattractive or impractical (Amatucci and Grant, 1993). (4) This strategy is most suitable when the focus of the study is on processes that recur over an extended period of time and archival documentation and willing informants are available (Crossan and Berdrow, 2003).

Methodology and Data

The three essays in this dissertation thesis were designed to fill voids in the current research into the stakeholder management of major infrastructure projects and are targeted at answering my research questions. Note that the three essays approach the investigated topic from diverse settings, as shown in Table 1.

Essay no.	General Research Question	Research Philosophy	Research Approach	Research Strategy	Data Collection Methods	Analysis Methods
One	How the stakeholder management practices of public major infrastructure and construction projects are manifested at the local community level?	Pragmatism	Inductive/ Deductive	Systematic Literature Review	Bibliographic research for paper retrieval	Content analysis
Two	How is the local community stakeholder perceived, identified and categorised by project managers in major public infrastructure and construction projects? How can stakeholder management practices enhance the inclusiveness of the local community and thus the overall performance of major public infrastructure and construction projects?	Interpretivism	Inductive	Comparative Qualitative Interview	Semi-structured interviews	Cluster and Thematic Analysis
Three	How can project managers and public policymakers use scenarios and real options to enhance the social and economic benefits of major public infrastructure and construction projects?	Interpretivism	Inductive	Retrospective Case Study	Bibliographic research	Content analysis

Table 1. Methodological overview of the essays

The different perspectives emerged by using an array of methods aimed to capture theories and practices for a better benefits realisation and for the sustainable development of megaprojects. By capturing a holistic picture of stakeholder management practices at the local level of major infrastructure and construction projects, the aspiration is to reveal some elements that do not fit a previous understanding. One goal is to choose methods that complement each other in a logical

flow and to thus increase the trustworthiness of the findings by building defensible results.

Data for my essays was collected in the UK. The research design called for an array of both primary and secondary qualitative data. I targeted experienced senior project and communication managers directly involved in the management of secondary stakeholders in major infrastructure and construction projects. This purposive sample allowed the capturing of key manager's experiences, feelings and perspectives, which were discussed and contextualised, covering fifteen of the most representative megaprojects across the UK. The description and justification of the specific population that has permitted me to address my research questions are detailed in the essays.

According to Bryman and Bell (2011), three factors are the most important criteria for the evaluation of business and management research: reliability, replication, and validity. However, following the suggestions of Guba and Lincoln (1994), I prefer to assess the qualitative study with the criteria of trustworthiness, which is composed of the following four factors:

- Credibility, which parallels internal validity
- Transferability, which parallels external validity
- Dependability, which parallels reliability
- Confirmability, which parallels objectivity

In this dissertation thesis, my aim is to pay sufficient attention to the question of the trustworthiness and the dependability of the study and thus to errors reduction. The credibility (internal validity) and dependability will be enhanced by the triangulation of the findings, in which data from different sources suggest similar conclusions. If

the measure is not reliable, it cannot be valid; therefore, through the triangulation of primary and secondary data, my goal has been to achieve a genuine understanding of the investigated dilemma.

CONTRIBUTION, LIMITATIONS AND FUTURE RESEARCH

The results and contributions of my research are described in detail in the three essays, and selected central outcomes are described in the next section. Some general comments on the contribution of this dissertation thesis are made here.

This research has offered the opportunity to explore project and stakeholder management from different perspectives. As a result, this research is genuinely multidisciplinary. It brings together different disciplines that study approaches for better project performance in a way that benefits all of them. The notion of stakeholder management employed in this study expands the one often adopted in project front-end (instrumental approach) to include a broader range of stakeholders in the decision-making process. The inclusion of their social and economic needs shapes the use of alternative project management tools towards a more sustainable development of megaprojects. The aim is to bring megaproject benefits either at the local, regional or national level, maximising the use of even more limited public resources. The three essays draw from and contribute to the different fields interested in the management of large infrastructure and construction projects.

A particular contribution is made in interpreting and expanding the current body of knowledge surrounding the normative or ethical perspective to stakeholder theory (Cleland, 1986; Eskerod and Huemann, 2013; Freeman 1984) to serve modern

practices in which innovative tools for better project evaluation form an intrinsic component. Although methods such as real options and scenarios can add value to mitigate the natural uncertainty surrounding major infrastructure and construction projects, these methods have not received the attention they deserve in practical project management work. The understanding of combining the quantitative strengths of real options to the qualitative strengths of scenarios in megaproject evaluation is of major importance in the practical quest to facilitate the delivery of infrastructure and construction benefits to a wider range of project stakeholders and achieve sustainable development.

This study concentrated on an examination of current managerial practices of major public infrastructure and construction projects; public-private-partnerships (PPP) were not studied. The scope of the studies and the units used in the analysis are a natural limitation on a practice view. Due to the nature of the study, results cannot be generalised. However, it is believed that the presented results can be transferred from one setting to another. Again, this is a recognised limitation, which requires further empirical evidence and future thinking for enlarging the current body of knowledge in the project management arena. Nevertheless, contextual and practical limitations associated with the research methods used are recognised and specified in the essays.

More research is required to show the different ways in which a broader inclusiveness of project stakeholders can contribute to facilitate (or not) the delivery of megaproject benefits, especially at the local community level. Moreover, indeed, this research dissertation focuses on the perspective of the project managers rather than on that of the local community stakeholders. Although this was a preliminary and necessary step before more extended interrogation with the local community groups could take place, it represents also a recognised limitation. Future research might build upon this study

and focus on the perspective of the local community so that the results can complement the presented findings and expand the current knowledge of how project managers might enhance the inclusiveness of the local community and thus the long-term benefits of major infrastructure and construction projects. Nevertheless, the conceptualised identification and classification of the local community that emerged from the project's managers' perceptions was exclusively concerned with one country (UK), which suggests a need for a comparison with other geographical settings to enhance the robustness and trustworthiness of the illustrated results.

Future studies should also address the typical limitations of the use of scenarios and real options in the management of uncertainty surrounding major infrastructure and construction projects. Even if scenarios and real options can help project managers and policymakers to reflect on the value of the main drivers of change and to reach a broader consensus among stakeholders, the anticipation of future evolution of these changes remains subjective and strongly dependent on the perceptions and personal opinions of dominant players and their interests.

I have emphasised the importance of moving beyond traditional project management approaches for the evaluation of major infrastructure and construction projects in order to better assess them and to encompass their long-term impact and the benefits to stakeholders for social and economic development. However, especially in megaprojects, it is difficult to take into account all the drivers of changes affecting the future profitability and social value of the project and their impact. Project managers have the difficult task of selecting a limited number of variables (drivers of change) on which to focus their analytical efforts.

Nevertheless, by pointing out its main advantages and limitations, I have illustrated the application of the presented methodology in the case of a major transportation project in Italy. I hope that future studies might improve the accuracy and dependability (reliability) of the framework by applying it to different types of projects and urban contexts and will thus further explore the scenario planning and real options interrelationships that will benefit the sustainable development of major infrastructure and construction projects.

OUTLOOK

In this section, I combine elements from the three essays and stakeholder management literature to discuss the inclusiveness of a broader stakeholders' view in the decision-making process of major infrastructure and construction projects as a way of achieving better benefits realisation and sustainable development.

It is hoped that this dissertation thesis has contributed to provide valuable insights to improve, at least partially, the recorded poor performance of construction megaprojects. I have combined together the two terms of megaproject and local community, proposing that managing the local community stakeholder will help manage the benefits and sustainable development of major infrastructure and construction projects. A new methodological approach for better project evaluation that is able to include the views of a broader range of stakeholders is the culmination of this dissertation effort.

The systematic literature review revealed that the two concepts of megaprojects and local community stakeholders have been rarely investigated together. This situation offered an opportunity to shed light on a growing sensible topic that deserves much more attention and in-depth thinking from both academics and practitioners in the project management arena. Taking a project management perspective, this study elucidated current stakeholder practices at the local community level by shaping argumentation regarding those actors directly affected by the project developments and, ironically, systematically excluded from any decision making: the local community.

There are many cases in which megaprojects have been cluttered by misrepresentation and flawed decision making. Although major positive steps have been recently made,

megaprojects have historically performed poorly in terms of cost estimation and public support, and they are often considered a built-in recipe for local impact but not local benefits. Therefore, I hope that this dissertation thesis will improve the accountability in project decision making through a new effective model for project evaluation that is able to include a broader range of stakeholders' views. The first required step was to focus on those secondary stakeholders rarely considered in the current literature, with the objective of drawing a better concept and understanding of 'local community', which has been blurringly defined in the current academia of project management.

In Essay One, the output of the systematic literature review was twofold; it not only provided guidance for sustainable improved decision making for practitioners by rethinking their approach towards a more inclusive stakeholder engagement at the local level of major infrastructure and construction projects but also provided scholars with theoretical implications and future research initiatives. Within the review, Essay One investigated to what extent the broader inclusiveness of 'secondary' stakeholders was treated in the current body of knowledge, which led to the investigation of deficiencies in current methods used to manage and engage secondary stakeholders' groups and to therefore achieving better benefits realisation and sustainable developments.

Di Maddaloni and Davis (2017) examined the stakeholders' managerial practices at the local level of major infrastructure and construction projects in 91 peer-reviewed articles to identify recurring themes in the literature from published academic journals from 1997 to 2015. What has been revealed is that stakeholder management in megaprojects has strongly relied on traditional approaches that focus on the management of those stakeholders able to control project resources. The review shows

the lack of an existing stakeholder management method that incorporates both the views of primary and secondary stakeholders who are impacted on in their everyday life by major infrastructure and construction projects.

Although it is suggested that seeking local community opinions in the initiation phase of the project and monitoring the megaproject impact at the local level can help improve project performance, little has been done to understand and minimise the impact of major construction projects on secondary stakeholders and to conceptualise the notion of the stakeholder local community in the context of megaprojects. The abovementioned outcomes have therefore suggested future research endeavours from a topic rarely explored. The identified deficiencies in both theory and practice have been addressed in my other two publication works, Essay Two and Essay Three.

Essay Two presents an exploratory study aimed at investigating how the local community stakeholder is perceived, defined and categorised by project managers in major infrastructure and construction projects and how their involvement could improve the performance of these projects.

By investigating the stakeholder management practices applied at the local level of megaprojects, the UK setting offered an advanced perspective of secondary stakeholder management that represents a starting point for future research efforts and developments in the area. Evidence from the 19 interviews suggests difficulties when identifying the local communities involved in major infrastructure and construction projects. However, Di Maddaloni and Davis (2018) demonstrated that common themes, which facilitated categorisation, emerged in their behavioural attitudes and actions towards megaprojects. Drawing from the local communities' perceived behaviours and attitudes could help managers allocate the right resources and efforts

on those stakeholders possessing a proactive, neutral or oppositional perception about the project.

Essay Two recognises the need to move from an instrumental approach for stakeholder management and towards a more inclusive stakeholder management approach, in line with Eskerod et al. (2015a; 2015b). Recent years have shown a growing interest for more ethical and sustainable megaprojects and therefore towards an approach of 'exceeding stakeholder needs and expectations' (Freeman et al., 2007). However, the interviews elucidated that exceeding stakeholder needs is mainly achieved through the individuals' high commitment and knowledge, which organisations often fail to capture in order to enhance their internal capabilities. In line with Pinto et al. (2009), this dissertation thesis reinforces that building trust is an effective way of inclusion that helps project managers recognise the needs and expectations of the different affected groups in major infrastructure and construction projects.

The study emphasised the need for a 'proactive' stakeholder management approach that takes into account both the view of primary and secondary stakeholders. Through building internal capabilities for secondary stakeholder management, organisations have to recognise the need for an innovative tool that is able to create the right vision for megaprojects and to deliver not just assets but also to bring extra values (both economic and social) either at the national, regional or local level. Therefore, both Essay One and Essay Two have created the bases for presenting an innovative method that will improve the performance of megaprojects by assessing their benefits to a broader range of project stakeholders.

Building on the previous work of Favato and Vecchiato (2017), Essay Three designs a new methodology aimed at helping project managers and policy makers plan

investments in new major infrastructure projects. By integrating real options and scenarios into a seamless model, I have illustrated through a specific case of a megaproject in Italy how the innovative approach is able to capture both the economic and social benefits of such projects. The concrete application of the new methodological approach illuminates such benefits by highlighting their role and likely impact on the long-term value of the projects.

The main challenge for both project managers and policymakers to deliver both economic and social benefits to all project stakeholders can be therefore minimised, resulting in the effective use of even more limited public resources. Precisely, driven by the normative or ethical perspective of stakeholder theory, the new methodological approach allows different stakeholders to develop a shared understanding of the potential benefits of major infrastructure and construction projects. Nevertheless, the presented approach allows project managers to develop a holistic understanding of the long-term impact of alternative investment projects by taking into account the needs and expectations of both primary and secondary stakeholders.

The main outcome of the proposed methodology is therefore a better selection of projects that are likely to contribute the most to enhance the sustainable development of local urban systems and communities. In order to cope with the growing uncertainty in the business environment, the methodological approach reduces the financial risks inherent in major investment projects by framing these projects at different stages of their life cycle, with each giving the right but not the obligation to move forward to the next stage.

In particular, the main contribution of the integrated approach is to highlight that major infrastructure and construction projects can evolve over time and that the opportunity

to obtain and process new information creates value for project managers and all project stakeholders. By focusing on the limited resources available, project managers can make use of the proposed methodology in order to create the right vision for major infrastructure and construction projects, working towards more sustainable projects and bringing extra value either at the national, regional or local level.

Summary

HIGHLIGHTS OF THE ESSAYS

Essay One

The influence of local community stakeholders in megaprojects: Rethinking their inclusiveness to improve project performance

Authors. Di Maddaloni F. and Davis K.

Methodology and data. A Systematic Literature Review of 91 peer-reviewed articles was conducted through content analysis.

General research question. How are stakeholder management practices of public major infrastructure and construction projects manifested at the local community level?

Summary. This paper organises and synthesises different extant research streams through a systematic literature review to identify connections and major assumptions on the influence of stakeholders at the local community level, on major public infrastructure and construction projects. By examining 91 peer-reviewed articles, the findings suggest that research on stakeholder management has focused strongly on those stakeholders able to control project resources, while the effect on the legitimate ‘secondary stakeholders’, such as the local community, remains widely unexplored. Due to the unavoidable impact of major infrastructure and construction projects on both people and places, it is suggested that seeking local community opinions in the initiation phase of the project and monitoring the megaproject impact at the local level can help improve project performance.

Main contributions. This study consolidates the disparate literature to identify the issues that have prevented to date a full integration of a holistic (inclusive) approach to the PIC projects’ stakeholder engagement, which is essential for ethical and sustainable development over time. By focusing on those legitimate actors suffering the most from megaproject developments, namely, the local community, the systematic literature review aims to record the existing literature on how stakeholder management practices of major public infrastructure and construction projects are manifested at the local community level. The output provides scholars and practitioners with future research directions and practical implications for an inclusive stakeholder management approach in construction megaprojects.

Personal contribution.

- Building research question and objectives
- Design of the research methods
- Development of the organising framework
- Design of the journals' retrieval process
- Identification of the initial list of keywords
- Selection of the academic journals
- Establishment of the inclusion and exclusion criteria
- Screening and filtering selected journals
- Conducting content analysis
- Descriptive findings
- Conceptual findings
- Conceptual framework
- Managerial implication
- Conclusions

Essay Two

Project manager's perception of the local communities' stakeholders in megaprojects. An empirical investigation in the UK.

Authors. Di Maddaloni F. and Davis K.

Methodology and data. Semi-structured interviews were conducted with 19 project and communication managers in the UK on stakeholder management at the local level of major infrastructure and construction projects.

General research questions. (1) How is the local community stakeholder perceived, identified and categorised by project managers in major public infrastructure and construction projects? (2) How can stakeholder management practices enhance the inclusiveness of the local community and thus the overall performance of major public infrastructure and construction projects?

Summary. Based on an exploratory study conducted in the UK, this study investigates how the local communities' stakeholder is perceived, defined and categorised by project managers in major public infrastructure and construction projects. Due to the perceived benefits shortfall of construction megaprojects, well-organised actions from 'secondary stakeholder' groups have led to delays, cost overruns, and significant damage to the organisation's reputation. Stakeholder management is an essential process that aims to maximise positive inputs and minimise detrimental attitudes by taking into account the needs and requirements of all project stakeholders. However, the 19 semi-structured interviews conducted with senior managers directly involved in the management of secondary stakeholders in megaprojects showed that current project stakeholder management mechanisms are reactive rather than proactive. This approach to stakeholder management mainly offers an instrumental perspective, which aims to make the stakeholders comply with project needs. Therefore, it is recognised that a broader inclusiveness of secondary stakeholders, such as the local communities who could be harmed by the organisation's strategy, is required to enhance the performance and sustainability of major infrastructure and construction projects.

Main contributions. This study presents empirical findings of investigations into the role of the local community as a growing important class of stakeholders and how their management and engagement could improve project performance by reducing benefits shortfalls in major infrastructure and construction projects. This study addresses the lack of definition of the local community in the stakeholder management field, a limitation even more evident in the context of megaprojects that have prevented stakeholder management practices at the local level from being effectively captured. For instance, the aim of the study is to offer an in-depth investigation to both academics and practitioners of the role covered by the local community stakeholders in major infrastructure and construction projects. Specifically, this investigation will achieve a greater understanding of how project managers define and categorise this

class of stakeholders and how this perception contributes to the development and approval of more ethical and sustainable megaprojects.

Personal contribution.

- Conduct a literature review
- Development of research questions
- Design of research methods
- Design of interview questions
- Piloting interviews
- Conducting interviews
- Transcription of interviews
- Analysis of interviews
- Collection and analysis of secondary data
- Conceptualisation of primary/secondary data
- Findings and discussions
- Conclusion and recommendations

Essay Three

Sustainable development and uncertainty management of public transportation and construction projects. Combining real options with scenarios.

Authors. Di Maddaloni F., Favato, G., Vecchiato, R.

Methodology and data. A new methodological approach was conceptually developed and applied to a retrospective case of a major transportation project in Rome, Italy.

General research questions. How can project managers and public policy makers use scenarios and real options to enhance the social and economic benefits of major public infrastructure and construction projects?

Summary. Controversies exist regarding the balancing of social and economic benefits of major transportation infrastructure projects for the wider communities. In particular, delivering social and economic benefits to those stakeholders directly impacted in their everyday life by the project outcomes have historically resulted in a challenging task for project managers. This study shows that by catalysing their resources and efforts, scenarios and real options can be very helpful in allowing public decision makers to develop a holistic understanding of the long-term impact of alternative investment projects and thus to select the most relevant ones. Through the empirical case of a megaproject in Italy, a new approach is presented and applied to overcome the difficulty in evaluating/quantifying *ex ante* the outcomes of such projects that might yield huge benefits to the society. Nevertheless, this study develops a shared understanding of the transformational impact of new major investments projects, by ultimately, enhancing the research on the sustainable development of local urban systems and communities.

Main contributions. Building on a recent work of Favato and Vecchiato (2017), this study integrates real options and scenarios into a seamless model and adapts it to the construction industry. This study conceptualises a new methodology that broadens classic project management tools aimed at helping project managers and policy maker plan investments in new infrastructure projects. The contribution of this study allows the capture and evaluation of both the economic and social benefits of megaprojects to a broader range of project stakeholders. Nevertheless, the new methodological approach (1) allows different stakeholders to develop a shared understanding of the potential benefits of major construction projects; (2) allows project managers to develop a holistic understanding of the long-term impact of alternative investment projects; (3) allows the selection of the project that are likely to contribute most to the sustainable development of local communities; and (4) reduces the financial risks inherent to the uncertainty of major infrastructure and construction projects. This approach aims to enable project managers to work on a greater number of viable projects over time by bringing their benefits equally at the local, regional, national, and international level.

Personal contribution.

- Conducting a literature review
- Development of research questions
- Design research methods
- Conceptualisation of the existing model
- Case study selection
- Collection and analysis of secondary data
- Application of the model to a case study
- Scenarios' evaluation
- Real option evaluation
- Findings and discussions
- Conclusion and recommendations

References

- Aaltonen, K., Kujala, J., Oijala, T. (2008). Stakeholder salience in global projects. *International Journal of Project Management* 26, 509-516
- Aaltonen, K., Kujala, J. (2010). A project lifecycle perspective on stakeholder influence strategies in global projects. *Scandinavian Journal of Management*, 26, 381-397.
- Aarseth, W., Ahola, T., Aaltonen, K., Okland, A., Andersen, B. (2017). Project sustainability strategies: A systematic literature review. *International Journal of Project Management*, 35 (6), 1071-1083
- Alvesson, M., Sandberg, J. (2011). Generating Research Questions through Problematisation. *Academy of Management Review*, 36 (2), 247–271.
- Amatucci, F. M., Grant, J. H. (1993). Eight strategic decisions that weakened Gulf Oil. *Long Range Planning* 26, 98-110.
- Atkinson, R., Cope, S. (1997). Community participation in urban regeneration in Britain. In Hoggett, P. (Eds.), *Contested communities*. Bristol Policy Press. 201-221
- Barlow, J. 2000. Innovation and learning in complex offshore construction projects. *Research Policy*, 29, 973-989
- Berg, B., Lune, H. (2012). *Qualitative research for the social sciences*, 8th edition. Pearson International Edition, Boston.
- Blomquist, T., Hällgren, M., Nilsson, A., Söderholm, A. (2010). Project-as practice: in search of project management research that matters. *Project Management Journal* 41 (1), 5–16
- Bourne, L., Walker, D. (2005). Visualising and mapping stakeholder influence. *Management Decision* 43 (5/6), 649-60.
- Bryman, A., Bell, E. (2011). *Business research methods*, 3rd edition. Oxford University Press, Oxford.
- Bruzelius, N., Flyvbjerg, B., Rothengatter, W. (2002). Improving accountability in mega projects. *Transport Policy*, 9, 143-154
- Choudhury, B. (2014). Aligning Corporate and Community Interests: From Abominable to Symbiotic. *Brigham Young University Law Review*, 2 (3), pp. 257-308.
- Clarkson, M. (1995). Stakeholder framework for analyzing and evaluating corporate social performance. *Academy of Management Review*, 20 (1), pp. 92-117
- Cleland, D.I., Ireland, L.R. (2007). *Project Management: Strategic Design and Implementation*, 5th edition. McGraw-Hill, New York
- Coates, E.R., Kuhl, M.E. (2003). Using simulation software to solve engineering economy problems. *Computers and Industrial Engineering* 45, 285-294.

- Collis, J., Hussey, R. (2014). *Business research: A practical guide for undergraduate and postgraduate students*, 4th edition. *Palgrave Macmillan*, Hampshire, UK.
- Crane, A., Ruebottom, T. (2011). Stakeholder theory and social identity: Rethinking stakeholder identification. *Journal of Business Ethics*, 102, 77-87.
- Creswell, J.W. (2012). *Qualitative inquiry and research design: Choosing among five approaches*, 3rd edition. *Sage*, Thousand Oaks.
- Crossan, M. M., Berdor, I. (2003). Further remarks on retrospective accounts in organizational and strategic management research. *Academy of Management Journal*, 40, 1243-1252.
- Derry, R. (2012). Reclaiming marginalised stakeholders. *Journal of Business Ethics*, 111, 253–264
- Deutsch, Y., Valente, M. (2013). Compensating outside directors with stock: the impact on non-primary stakeholders. *Journal of Business and Ethics*, 116, 67-85.
- Di Maddaloni, F., Davis, K. (2017). The influence of local community stakeholders in megaprojects: Rethinking their inclusiveness to improve project performance. *International Journal of Project Management*, 35 (8), 1537-1556.
- Di Maddaloni, F., Davis, K. (2018). Project Manager’s perception of the local communities’ stakeholder in megaprojects. An empirical investigation in the UK. In *International Journal of Project Management*, 36, 542-565
- Driscoll, C., Starik, M. (2004). The primordial stakeholder: advancing the conceptual consideration of stakeholder status for the natural environment. *Journal of Business Ethics*, 49, pp. 55-73.
- Dunham, R., Freeman, R.E., Liedtka, J. (2006). Enhancing stakeholder practice: A particularised exploration of community. *Business Ethics Quarterly*, 16 (1), pp.23-42
- Eesley, C., Lenox, M.J. (2006). Firm responses to secondary stakeholder action. *Strategic Management Journal, Strategic Management*, 27, pp. 765-781
- Eskerod, E., Huemann, M. (2013). Sustainable development and project stakeholder management: what standards say. *International Journal of Managing Projects in Business*, 6 (1), 36-50.
- Eskerod, P., Huemann, M., Ringhofer, C. (2015a). Stakeholder inclusiveness: enriching project management with general stakeholder theory. *Project Management Journal*, 46 (6), pp. 42-53.
- Eskerod, P., Huemann, M., Savage, G. (2015b). Project stakeholder management - Past and present. *Project Management Journal*, 46 (6), 6-14.
- Eweje, J. (2010). Investigating factors that affect project manager decisions on oil and gas megaprojects, and how they impact the realization of strategic value. PhD Thesis, *Skema Business School*, Lille, France.
- Favato, G., Vecchiato, R. (2017). Embedding real options in scenario planning: A new methodological approach. *Technological Forecasting & Social Change*, 124, 135-149

- Flyvbjerg, B. (2006). Five misunderstandings about case-study research. *Qualitative Inquiry* 12, 219-245.
- Flyvbjerg, B. (2005). Design by Deception: The Politics of Megaproject Approval. *Harvard Design Magazine*, 22, pp.50-59.
- Flyvbjerg, B. (2014). What you should know about megaprojects and why: An overview. *Project Management Journal*, 45 (2), pp. 6-19.
- Flyvbjerg, B., Bruzelius, N., Rothengatter, W. (2003). Megaprojects and risk: An anatomy of ambition. *Cambridge University Press*, Cambridge.
- Freeman, R.E. (1984). Strategic Management: A Stakeholder Approach. *Pitman Inc.*, Boston
- Freeman, R.E., Harrison, J.S., Wicks, A.C. (2007). Managing for Stakeholders: Survival, Reputation and Success. *New Haven Yale University Press*.
- Graute, U. (2016). Local authorities acting globally for sustainable development. *Regional Studies*, 50 (11), 1931-1942
- Greenspan, A. (2004). Risk and Uncertainty in Monetary Policy. *The American Economic Review*, 94 (2), 33-40.
- Guba, E.G., Lincoln, K. (1994). Competing paradigms in qualitative research, in Denzin, N.K., Lincoln, Y.S. (eds). *Handbook of qualitative research*. Sage, Thousand Oaks
- Halawa, W.S., Abdelalim, A.M.K., Elrashed, I.A. (2013). Financial evaluation program for construction projects at the pre-investment phase in developing countries: A case study. *International Journal of Project Management*, 31, 912-923.
- Hantrais, L. (1996). Comparative research methods. *Social Research Update*, 13.
- Hart, S.L., Sharma, S. (2004). Engaging fringe stakeholders for competitive imagination. *Academy of Management Executive*, 18 (1), 7-18.
- Hemingway, P., Brereton, N. (2009). What is a systematic review?, What is...? Series, 2nd ed. The University of Nottingham, UK.
- Hooper, J. (2012). Italy's high-speed train line under the Alps gathers pace. *The Guardian*, 9th of April 2012.
- Hu, Y., Chan, A.P.C., Le, Y., Jin, R. (2014). From construction management to complex project management: Bibliographic analysis. *Journal of Management in Engineering*, 11, 1-11.
- Huemann M., Silviu, G. (2017). Projects to create the future: Managing projects meets sustainable development. *International Journal of Project Management*, 35 (6), 1066-1070.
- Hussey, J., Hussey, R. (1997). Business research: A practical guide for undergraduate and postgraduate students. *Macmillan Business*, Wiltshire.
- Hyde, P., McBride, A., Young, R., Walshe, K. (2006). Role redesign: New ways of working in the NHS. *Personnel Review*, 34 (6), 697-712.

- Jaafari, A. (2004). In: Morris, P.W.G., Pinto, J.K. (Eds.), *Modelling in large projects. The Wiley Guide to Managing Projects*. Wiley, New York.
- Jia, G., Yang, F., Wang, G., Hong, B., You, R. (2011). A study of mega project from a perspective of social conflict theory. *International Journal of Project Management*, 29, pp. 817-827.
- Johnson, G., Scholes, K., Whittington, R. (2005). *Exploring corporate strategy: Text and cases*, 6th edition, *Prentice Hall*, Harlow
- Kara, M.A., Tas, S., Ada, S. (2016). The impact of infrastructure expenditure types on regional income in Turkey. *Regional Studies*, 50 (9), 1509-1519
- Kivila, J., Martinsuo, M., Vuorinen, L. (2017). Sustainable project management through project control in infrastructure projects. *International Journal of Project Management*, 35 (6), 1167-1183.
- Klosterman, R.E. (2014). Lessons learned about planning. *Journal of the American Planning Association*, 79 (2), 161-169
- Lee J., Lee L. (2018). Seeds of distrust: conflicts over sustainable development in a local fracking policy network in New York State. *Public Management Review* 20 (1), 166-171
- Letsch, C. (2013). Turkey protest spread after violence in Istanbul over park demolition. *The Guardian*, 31st May 2013
- IFC (2007). *Stakeholder engagement: A good practice handbook for companies doing business in emerging markets*. *International Finance Corporation*
- Laursen, M., Svejvig, P. (2016). Taking stock of project value creation: a structured literature review with future directions for research and practice. *International Journal of Project Management*, 34 (4), 736-747
- Li, T.H.Y., Ng, S.T., Skitmore, M. (2012a). Public participation in infrastructure and construction projects in China: From an EIA-based to a whole-cycle process. *Habitat International*. 36, 47-56.
- Li, T.H.Y., Ng, S.T., Skitmore, M. (2012b). Conflict or consensus: An investigation of stakeholder concerns during the participation process of major infrastructure and construction projects in Hong Kong. *Habitat International*, 36, 333-342.
- Litteau, P., Jujagiri, N.J., Adlbrecht, G. (2010). 25 years of stakeholder theory in project management literature (1984-2009). *Project Management Journal*, 41, 17-29.
- Major Projects Association (2014). A Fool with a Tool is still a Fool –Risk Management for Megaprojects and Major Programmes. *Saïd Business School*, Webinar, 20th of February 2014.
- Marshall, J. (1984). *Women managers: Travellers in a male world*. Chichester. Wiley.
- Marshall, T., Cowell, R. (2016). Infrastructure, planning and the command of time. *Environmental and Planning C: Government and Policy*, 34 (8), 1843-1866.
- Matti, C., Consoli, D., Uyarra, E. (2017). Multi-level policy mixes and industry emergence: The case of wind energy in Spain. *Environment and Planning C: Politics and Space*, 35 (4), 661-683

- McKinsey Global Institute (2016). Bridging Global Infrastructure Gaps. June 2016. *McKinsey and Company*.
- Meadowcroft, J. (2013). Reaching the limits? Developed Country engagement with sustainable development in a challenging conjuncture. *Environment and Planning C: Government and Policy*, 31, 988-1002
- Miller, R., Olleros, X. (2001). Project shaping as a competitive advantage. In Miller, R., Lassard (Eds.) *The Strategic Management of Large Engineering Projects – Shaping Institutions, Risks and Governance*, MIT Press, Cambridge.
- Miller, K.D., Waller, H.G. (2003). Scenarios, real options and integrated risk management. *Long Range Planning*, 36, 93-107.
- Mills, A.J., Durepos, G., Wiebe, E. (2010) Encyclopedia of case study research, 2nd vol. SAGE Publications Inc.
- Mitchell, R.K., Agle, B.R., Wood, D.J. (1997). Toward a theory of stakeholder identification and salience: defining the principle of who and what really counts. *Academy of Management Review*, 22 (4), 853-886
- Mok, K.Y., Shen, G.Q., Yang, J. (2015). Stakeholder management studies in mega construction projects: A review and future directions. *International Journal of Project Management*, 33, 446-457.
- Moher, D., Liberati, A., Tetzlaff, J. and Altman, D. G. (2009). The PRISMA Group. Preferred reporting items for systematic reviews and meta-analyses: The PRISMA statement, *PLoS Med*, 6 (7), 264-269.
- Mossner, S. (2016). Sustainable urban development as consensual practice: Post-politics in Freiburg: Germany. *Regional Studies*, 50 (6), 971-982.
- Mostafa, S., Chileshe, N., Abdelhamid, T.S. (2016). Lean and agile integration within offsite construction using discrete event simulation: A systematic literature review. *Construction Innovation*, 16 (4), 438-525.
- Myers, S.C. (1977). Determinants of corporate borrowing. *Journal of Financial Economics*, 5 (2), 147-175
- NETLIPSE. (2016). 10 years of managing large infrastructure projects in Europe: Lessons learnt and challenges ahead. Ovimec B.V. Deventer, The Netherlands
- Okoli, C., Schabram, K. (2010). A guide to conducting a systematic literature review of information system research. *Sprouts: Working Papers on Information Systems*, 10 (26), 1-50.
- Olander, S. (2007). Stakeholder impact analysis in construction project management. *Construction Management and Economics*, 25, 277-287.
- Olander, S., Landin, A. (2008). A comparative study of factors affecting the external stakeholder management process. *Construction Management and Economics*, 26, 553-561
- Pinto, J.K., Winch, G. (2016). The unsettling of “settled science”. The past and future of the management of projects. *International Journal of Project Management*, 34, 237-245.

- Porter, A.L., Ashton, B., Clar, G., Coates, J.F., Cuhls, K., Cunningham, S.W., Ducatel, K., Van der Duin, P., Georghiou, L., Gordon, T., Linstone, H., Marchau, V., Massari, G., Miles, I., Mogege, M., Salo, A., Scapolo, F., Smits, R., Thissen, W. (2004). Technology futures analysis: toward integration of the field and new methods. *Technological Forecasting and Social Change* 71, 287–303
- Rickards, L., Ison, R., Funfgeld, H. (2014). Opening and closing the future: Climate change, adaption, and scenario planning. *Environment and Planning C: Government and Policy*, 32 (4), 587-602.
- Ritchie, J., Lewis, J., Naughton Nicholls, C., Ormston, R. (2014). Qualitative research practice: A guide for social science students & researchers, 2nd edition. Sage, Thousand Oaks.
- Rosseau, D.M., Manning, J., Denyer, D. (2008). Evidence in management and organizational science: assembling the field's full weight of scientific knowledge through syntheses. *The Academy of Management Annuals*, 2 (1), 475-515.
- Saunders, L., Lewis, P., Thornhill, A. (2012). Research methods for business students, 6th edition. *Pearson Education Limited*, Essex
- Silvius, A.J.G., Kampinga, M., Paniagua, S., Mooi, H. (2017). Considering sustainability in project management decision making: An investigation using Q-methodology. *International Journal of Project Management*, 35, 1133-1150
- Skerratt, S., Steiner, A. (2013). Working with communities of place: complexities of empowerment. *Local Economy*, 28 (3), 320-338.
- Smit, H.T.J., Trigeorgis, L. (2006). Real options and games: Competition, alliances and other applications of valuation and strategy. *Review of Financial Economics*, 15, 95–112.
- Sobel, M.J., Szmerekovsky, J.G., Tilson, V. (2009). Scheduling projects with stochastic activity duration to maximize expected net present value. *European Journal of Operational Research* 198, 697-705.
- Stake, R.E. (2006). Multiple case study analysis. *Guilford*. New York
- Sun, J., Zhang, P. (2011). Owner organization design for mega industrial construction projects. *International Journal of Project Management*, 29, 828-833.
- Tashakkori, A., Teddlie, C. (2010). Handbook of mixed methods in social and behavioural research, rev. edn. *Sage*, Thousand Oaks.
- Teo, M., Loosemore, M. (2017). Understanding community protest from a project management perspective: A relationship-based approach. *International Journal of Project Management*, 35 (8), 1444-1458.
- Tranfield, D., Denyer, D., Smart, P. (2003). Towards a Methodology for Developing Evidence-Informed Management Knowledge by Means of Systematic Review. *British Journal of Management*, 14, 207-222.
- Trigeorgis, L. (1996). Real options. Managerial flexibility and strategy in resource allocation. MIT Press, Cambridge, MA

- Turner, R. (2014). *Re: Systematic Literature Review*. [Email sent to Francesco Di Maddaloni, 12th August 2014].
- Turner, R., Zolin, R., (2012). Forecasting Success on Large Projects: Developing Reliable Scales to Predict Multiple Perspectives by Multiple Stakeholders Over Multiple Time Frames. *Project Management Journal*, 45 (5), 87-99.
- Vidal, L.A., Marle, F., Bocquet, J.C. (2011). Measuring project complexity using the Analytic Hierarchy Process. *International Journal of Project Management*, 26 (6), 591-600
- Watts, J. (2014). Anti-World Cup protest in Brazilian cities mark countdown to kick-off. *The Guardian*, 12th June 2014.
- Wideman, R.M. (1990). Managing the project environment. *AEW Services 1990-2001*, pp. 1-6
- Xue, X., Zhang, R., Zhang, X., Yang, J., Li, H. (2015). Environmental and social challenges for urban subway construction: An empirical study in China. *International Journal of Project Management*, 33, 576-588.
- Yimaz, K. (2013). Comparison of quantitative and qualitative research traditions: Epistemological, theoretical, and methodological differences. *European Journal of Education* 48(2), 311-25.
- Yin, R.K. (2018). Case study research and applications: Design and methods, 6th edition, *Sage Publications*, Thousand Oaks, California.
- Zanni, A.M., Goulden, M., Ryley, T., Dingwall, R. (2017). Improving scenario methods in infrastructure planning: A case study of long distance travel and mobility in the UK under extreme weather uncertainty and a changing climate. *Technological Forecasting & Social Change*, 115, 180-197.

PART II

**Papers have been removed for copyright reasons – see details
of citations on page vi.**